

Peer-to-peer education for youths on smart use of Information and Communication Technologies



D4.2 Didactical concept for IT-Peer training

Contract N°: IEE/12/997/SI2.644765

Start date of the project: 03/04/2013

End of the project: 02/04/2016

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Date of delivery: 30/11/2014



Co-funded by the Intelligent Energy Europe
Programme of the European Union

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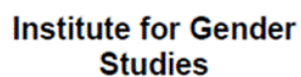
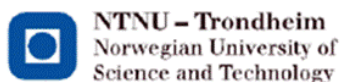


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1. Introduction¹

The daily use of virtual products and services is a matter of course for most young people and they are very familiar with the handling of the different devices. However the boundless use of IT causes a lot of impacts on the environment as well as social impacts. Hardly anybody is aware of these facts.

In the EU-project useITsmartly partners of Germany, Denmark, Netherlands, Norway and Austria analysed together with young people how IT can be used in a more energy efficient way. Therefore focus groups and creativity workshops with school classes were carried out and a toolbox with the results was created. The results of this work will now be spread among other young people by so-called "IT-Peers".

This didactical concept comprises guidelines for the IT peer training referring to the Intelligent Energy Europe (ITT) project "Peer-to-peer education for youths on smart use of Information and Communication Technologies" (in short: useITsmartly).

Among others this project aims at

- reducing the energy consumption related to IT usage (both at a residential and a system level), to develop new methods to facilitate practice change and to build the capacity for energy efficient IT use among young people.
- providing tangible numbers for the potential reduction of CO₂ emissions and energy savings by behavioural change concerning IT use.
- empowering young people to act as multipliers in their schools and other social contexts for spreading information and knowledge on smart IT-use and energy saving potentials
- inducing capacity building for energy efficient IT use among young people through establishing IT-peers in schools, who act as multipliers for the topic. Further initiating resource-efficient and climate-friendly-use of IT in schools.

This didactical concept is a deliverable from WP 4 of the useITsmartly project. On the basis of the outcomes from WP 2 and WP 3, in each country the respective consortium partners will train a group of young people as peer educators, who will be able to build capacity for smart IT use in their social environment among their peers. The training prepares the future peer educators to act as multipliers in various learning contexts: in formal fields of education such as schools and in non-formal learning settings (e.g. in youth organisations or in family activities).

Target groups

- *Young people (age 16 to 20 years):*

The primary target group of useITsmartly are young people in their role as IT users and future decision makers. They will be actively involved in all work packages of the project. These young people will be trained as peers and will be the target group to be reached by the trained peers.

¹ The following didactical concept is based on the results of discussions with the respective project partners especially in the previous consortium meetings.

- *Schools:*
Schools provide the major setting for the IT-peer education and are also involved in their role as public procurers of IT-equipment. Schools will be directly contacted by the partners in each country. Cooperation with school authorities and school networks will be established.
- *Youth organisations and others*
Institutions of non-formal youth work know the needs of young people very well and are very important communication partners between youth and society. Youth workers have very high social and pedagogical competences and great contacts to lots of young people. Each year a high number of projects are implemented together with the youths.

Based on this overall concept provided by the work package leader the contents and organisation of the trainings can be adapted to the specific needs (e.g. country specific issues, pre-knowledge of the future peer educators). As a result a broader range of training concepts will exist, which can be adapted by further countries. The present deliverable functions as a principal framework on which basis the further work from all partners will build on. At the end of the project guidelines for a European IT-peer training will be developed which considers gathering and dissemination of information and facts in all partner countries as well as the exchange of teaching and multiplication experiences, best practices and “lessons learned” of all partners.

2. About Peer Education

The current state of youth research shows that more and more young people live with the impression of having hardly any influence on political decisions. On the one hand they feel a kind of helplessness, on the other hand they point out, that under special circumstances they would be ready to take responsibility.

Preconditions for the participation on projects are:

- The youths want to be taken seriously.
- The youths want to have a say on what and how activities were carried out.
- The youths want to share experiences.
- The youths want to have fun in the project.

In order to strengthen youth involvement in all programs peer-education is a very effective approach.

2.1. What is Peer Education?

Peer education is a popular educational strategy which is based on several well-known behavioural theories such as Social Learning Theory (Bandura 1986), The Theory of Participatory Education (Freire, 1970), Diffusion of Innovation Theory (Rogers, 1983) and many others. Originally it is used in the health sector in the USA and becomes more and more important in the European countries as a well experienced educational method in the field of sustainability.

2.2. Why Peer Education?

The idea behind this strategy is, that well trained ordinary young people (peer educators) are in the best position to share their knowledge, attitudes, beliefs or behaviours to various topics such as public health or

ecology with other peers. In short: it is a dialogue between equals. Equals are people who have something in common such as age, gender, neighbourhood, income, racial and ethnic group, culture, ideals.

Peer education is viewed as an effective behavioural change strategy. It works well, because it is participatory and involves young people in discussions and activities. It empowers them to take action. In the peer training they learn more “by doing” than by just getting informed. The high social closeness and the common language between the peers form the best conditions, to initiate truthful and credible social learning processes and could further influence attitudes and behaviour. (Appel/Kleiber, 1998).

2.4. Benefits for peer-education

- Research shows that personal habits are built in the early childhood. Therefore prevention has to start as early as possible and should be carried out from those, who are widely accepted by the equals.
- Young people listen to young people. Equals discuss, support and inform other young people in the best way, because they have the same language and the same position.

3. ECVET: An instrument to increase transparency and quality comparison in European trainings

Due to the wide range of educational systems in Europe it is difficult, to create one didactical concept for peer education which fits to all countries. Different “learning frameworks” in different countries have to be considered, e.g. the place of learning (schools, universities, non-formal youth work), the length and kind of learning experience (e.g. different forms of organisations in secondary schools, different school types, different types of non-formal youth-work).

For some years the European Commission has encouraged the development of transparency instruments, which help to make various qualifications transparent, understandable and comparable. One of these instruments is ECVET, which stands for “European Credit system for Vocational Education and Training”. In June 2009 the European Commission issued a recommendation for ECVET adopted by the European Parliament and the Council. Another instrument to promote comparability is the European Qualification Framework for Lifelong Learning (EQF). “EQF is a common European reference framework, which links countries’ qualifications systems together, acting as a translation device to make qualifications more readable and understandable across different countries and systems in Europe.”² In order to cover the entire range of educational systems, the framework describes eight levels, which are defined by “descriptors”, showing what a learner knows, understands and is able to do at the end of the training. Level 1 is characterised by basic knowledge and skills and a low degree of autonomy and responsibility, whereas level 8 incorporates specialist knowledge, highly specialist skills and a high degree of autonomy and responsibility. According to the experience in former peer-training the following ECVET-sheets with the description of units and learning outcomes are designed for level 2.

² Source: Recommendation of the European Parliament and the Council of April 23rd, 2008 on the establishment of the European Qualifications Framework for lifelong learning

3.1. Learning outcome

ECVET is characterised as a transfer process, which includes the assessment, validation, recognition and accumulation of learning outcomes. A learning outcome is a structured description of qualifications. Output-oriented educational systems contrast with input-oriented or traditional systems most of the European educational standards still referring to. An input-orientation educational system forces teachers to commit to a governmental curriculum by complying with specifications concerning duration, place of learnings and content of the learning for each subject. An output-oriented system refers to a learning outcome, which is defined as a statement of what a learner know, understand and is able to do upon completion of a learning process. Therefore this didactical concept emphasises not only of the content of the teaching, but also more important of the competences and “social skills” of the trained young people. This is very essential for this project, in which more attention is given to the multiplication process than on the training itself. The training is just a tool to address a high amount of other peers in an attractive, youth adequate way, but nevertheless needs to be prepared very carefully.

In the European Qualification Framework learning outcomes are defined in terms of knowledge, skills and competences:

*“**Knowledge** means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual”*

*“**Skills** mean the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the Europe Qualifications Framework, skills are described as cognitive or practical skills”*

*“**Competence** means the proven ability to use knowledge, skills and personal, social and methodological abilities in work or study situations and in professional and /or personal development. In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy.”³*

When formulating the learning outcomes some ground rules are to be considered:

- Usage of active verbs (from the learner’s viewpoint rather than from the teacher’s viewpoint)
- Specification and contextualisation of the active verbs
- Avoidance of vague formulation

In order to understand this ground rules in a better way, examples of active verbs divided into the terms knowledge, skills and competences are listed below:

Verbs used under the descriptor “**knowledge**”

“Define, describe, identify, label, list, name, outline, express, remember, select, determine, present, have knowledge of, gather, classify, explain, write, recognise, measure, emphasise, repeat, report, know, match

Verbs used under the descriptor “**skills**”

³ <https://ec.europa.eu/esco/web/guest/escopedia> (accessed: 22/09/2014)

analyse, alter, apply, argue, assemble, itemise, split, demonstrate, express, choose, influence, illustrate by example, classify, compare, prepare, create, evaluate, produce, find, divide, contrast, discover, discuss

Verbs used under the descriptor **“competence”**

Use, solve, create, produce, organize, lead a team, instruct trainees, act independently, monitor work process, assume responsibility

By using the ECVET-system the quality and efficiency of the training in all partner countries should be improved as well as equity, social cohesion and active citizenship promoted and creativity and innovation enhanced.

Learning outcomes can be attained through a variety of learning methods (*see p.18 ff.*) in different learning settings (e.g. formal, non-formal)

3.2. Units

For better comparability and recording that the learners in all partner countries have achieved the expected output, learning outcomes are structured in a set of different units. These units are the base for the training program and assessment. When forming the following units for the IT-peer training it has been considered that sets of learning outcomes with a specific connection were pooled together. The following units are designed in such a way that they can be completed as independently as possible of other units and include all necessary learning outcomes. This means that it describes the intended professional competences as well as the necessary social and personal competences in this context. As the theoretical part of the IT-peer training is just a course of three days (minimum) the relevant learning outcomes are not to be too extensive and achievable in the given time. The units can be of great support during preparation of the IT-peer training, because it helps to consider and structure coherent learning outcomes. As the units always relate to only one part of the qualification they are a good tool also in between the training. The added value of units is more transparency, understanding and comparability of qualifications.

3.3. “ECVET-sheets” as a curriculum for IT-peer training


As mentioned before the WP-leader decided to create the didactical knowledge for level 2.

Referring to knowledge, skills and competence this means:

- **Knowledge**
Learners have a basic factual knowledge in the field of smart IT use.
- **Skills**
Learners have basic cognitive and practical skills required to use relevant information of smart IT use in order to carry out tasks and to solve routine problems using simple rules and tools.
- **Competence**
Learners work under supervision with some autonomy.


The following ECVET-sheets for the IT-peer training in Austria, Denmark, Germany, Netherlands and Norway consists of units and learning outcomes based on level 2.

4. Capacity building on Green IT: ECVET-SHEETS


| | | |
|--|--|---|
| <h2>IT-Peer Training</h2> | |  |
| <h3>„Methodical competences“</h3> | | Unit 1, Session 1,8 |
| <p>KNOWLEDGE</p> <p>He/She knows</p> <ol style="list-style-type: none"> 1. to express their expectations on the IT-peer training and multiplication process. 2. to recognise the process of the IT-peer training. 3. to emphasise the aim of peer education. 4. to recognise and describe his/her tasks in the IT-peer training and in the role of multiplier. 5. to describe the function of a vehicle. 6. to recognise the communication-habits of young adults (social media). 7. about different presentation-techniques and presentation-medias. 8. to select the most important didactical methods in peer education. 9. to identify the most important pedagogical approaches in peer education. 10. to recognise how to address and communication with young people in a proper way. | <p>SKILLS</p> <p>He/She can</p> <ol style="list-style-type: none"> 1. to create their own portfolio for the IT-peer training. 2. to choose the optimal presentation-techniques and proper media from a pool of teaching material and didactical methods (supported by the trainers). 3. to design and use an own teaching-concept for the multiplication process. 3. to work with a vehicle presented by peers, who were already involved in a “vehicle-workshop” and optionally develop a vehicle on his/her own. | |

COMPETENCES

1. He/She acts as a facilitator and multiplier on his/her own.
2. He/She monitor their own work and multiplication process.

| | |
|-------------------------|---|
| IT-Peer Training |  |
| Green Internet | Unit 2, Session 2,3 |

| | |
|--|---|
| <p>KNOWLEDGE</p> <p>He/She knows</p> <ol style="list-style-type: none"> 1. to name the most important facts about the usage of the internet from youths around the world: <ol style="list-style-type: none"> a.) number of users b.) average usage c.) social media. 2. to describe how the internet basically works: <ol style="list-style-type: none"> a.) net-configuration b.) provider c.) search engines d.) clouds, streaming. 3. to report about the ecological impact of internet usage: <ol style="list-style-type: none"> a.) CO₂- emissions b.) power consumption. | <p>SKILLS</p> <p>He/She can</p> <ol style="list-style-type: none"> 1. select a green search engine. 2. compare providers and choose a sustainable provider. 3. develop ideas and concepts for a conscious usage of the internet. |
| <p>COMPETENCES</p> <ol style="list-style-type: none"> 1. He/She assumes responsibility for a conscious and ecological friendly way of internet use. | |

| | |
|---------------------------|---|
| <h1>IT-Peer Training</h1> |  |
| <h2>Green IT</h2> | <p>Unit 3, Session 4,5,6</p> |

| | |
|--|--|
| | |
| <p>KNOWLEDGE</p> <p>He/She knows</p> <ol style="list-style-type: none"> 1. to define the main components, advantages and specialities of a “green” PC: <ol style="list-style-type: none"> a. hardware b. software. 2. to express the ecological footprint: <ol style="list-style-type: none"> a. raw materials and resources b. waste-Recycling c. embodied energy d. clean IT. 3. to emphasize sustainable usage: <ol style="list-style-type: none"> a. energy-efficient usage b. repair c. upgrade. | <p>SKILLS</p> <p>He/She can</p> <ol style="list-style-type: none"> 1. mark the differences of a standard pc and a green pc. 2. see the ecological impact of IT. 3. look up methods for the sustainable usage of IT. |
| <p>COMPETENCES</p> <ol style="list-style-type: none"> 1. He/She develops ideas for energy efficiency IT usage concepts. | |

IT-Peer Training



„Smart“ technologies

Unit 4,
Session 7

KNOWLEDGE

He/She knows

1. to describe the basics of different “smart” technologies and their goals:
 - a.) smartmeter
 - b.) smarthome
 - c.) smartgrids
 - d.) smartcities.
2. to explain the advantages and disadvantages of “smart” technology.

SKILLS

He/She can

1. to discuss the idea of “smart” technologies.
2. to argue the advantages and disadvantages of “smart” technologies.

COMPETENCES

1. He/She communicates “smart” technologies.

5. Organisation of the IT-Peer training

When starting organizing the IT-Peer training the following questions should be answered:

- Who will participate (target group)?
- Why will the IT-peer training take place (objectives)?
- What do they participants need and what is the content of the training program?
- Where and when will the training be held (venue, time)?
- How will the training be moderated (methods)?

5.1. Recruitment of Peer Educators

Recruitment and keeping peer educators (target group: young people, age: 16-20) is the first step in developing the IT-peer training and crucial for the success of the IT-Peer training. Before starting to contact schools and/or youth organisations the following points should be considered as well as the following be prepared:

Preparation

- Create a clear strategy for where and how to reach potential peer educators. Decide how many peer educators are needed and don't forget to consider your resources.
- Design a clear, well-defined, active and youth-adequate program for the IT-peer training so that headmasters and teachers as well as students have a clear idea about the outcomes of the training and the future work of the peer educators.
- Don't forget to consider benefits for the participants such as proper support, incentives (e.g. thesis, certification), awards, positive reinforcement, public recognition) in order to address them and keep them involved.
- Make a clear job-description for the work of the IT-peers.
- Develop an appealing recruitment material and don't forget to provide contact details such as telephone number or e-mail address (as well as the right logos).
- If you are not experienced with the work with young people make some pre-test with some young people, if the material and program is enough attractive for them.
- Identify recruitment sources (e.g. schools, partner organisations, project participants, NGO's in the field of education, sustainability, environmental protection, youth work with good contacts to young people)
- Involve relevant stakeholders in order to ensure local community support.
- Be aware of gender issues and ensure that the program as well as the peer education itself will focus on gender equity.

Formal education – school contacts

- Contact appropriated schools. Use school networks which have sustainability, techniques or environment protection in their school guidelines.
- Peer educators can be recruited from a previous vehicle-project. Consider this possibility before starting with the vehicle project and inform the participants about the possibility of becoming a peer educator as soon as the vehicle work starts.
- If possible, contact schools with which you are already familiar with (maybe through former projects).

- Evidence shows that usually just sending an e-mail to schools is not enough in order to get young people participating in the IT-peer training. Ask headmasters and teachers for a personal date so that you can present the program by yourself.
- If the program doesn't fit to the framework of a school ask your contacts what can be changed in the program in order to better fit to the educational system. Nevertheless be careful that the frame conditions for the IT-peer training can be sustained!
- Plan enough time for the addressed persons for answering to your offer.
- Make clear rules for reimbursing peer educators expenses. Transportation allowance and meals should be regarded as a basic support.

Non-formal education – contacts with NGO's, youth networks

- Contact appropriated NGO's, in which youths spend their leisure times (e.g. youth centres, youth organisation, NGO's with different backgrounds such as environment protection or sustainability).
- Peer educators can be recruited from a previous vehicle-project. Consider this possibility before starting with the vehicle project and inform the participants about the possibility of becoming a peer educator as soon as the vehicle work starts.
- Ask youth workers for their support, because they are in close contact with the youths and maybe they nominate some, who are respected by the others.
- Make a youth adequate and easy understandable advertisement and disseminate it through various communication channels (e.g. interpersonal communication, posters, flyer, social media, websites).
- Create a fair incentive system for the peer work of the youths in their leisure time (discuss, if you want to pay the youths or give some other incentive e.g. social and recreational opportunities, exchange and travel opportunities, public recognition; evidence shows that money doesn't always guarantee loyalty from peer educators).
- Ensure that the possible participants know beforehand about the criteria for receiving awards or opportunities.
- Make clear rules for reimbursing peer educators expenses. Transportation allowance and meals should be regarded as a basic support.

Linking vehicle theory with IT-peer education

For some students a vehicle workshop could be more appealing than an IT-peer training, because they feel more addressed by developing innovative products than by getting knowledge.

- Offer a vehicle workshop for one or more classes, but don't use the word "vehicle workshop". Instead call it "creativity workshop" or something similar.
- Inform the participants on the entire project "Use IT smartly" especially on the IT-peer training.
- Together with the students choose one or more vehicles, which ties in with central interests of them.
- While implementing the vehicle project give more information and facts on smart IT use.
- If possible identify some students, who would like to take part in the IT-peer training.
- Those participants coming from the vehicle workshop can play an important role in the IT-peer training by presenting their products and results.
- The results of the vehicle workshops can also be integrated in the multiplication process such as playing theatres, musicals and showing other performances in front of a big audience (e.g. schools, big events).

5.2. Selection process

If there are too many applications for the IT-peer training a selection is needed:

- Develop criteria for selecting peer educators (e.g. geographic origin, ability and willingness to dedicate adequate time to the training and multiplication process, previous experience and knowledge, relevant personal traits such as motivation, commitment, potential for a multiplier-function, flexibility, team oriented, gender, age, number of peers he/she can address).
- Ensure that the selection process is fairly and ethically correct and document it clearly.
- The selection decisions should be transparent and comprehensible and communicated to the candidates as soon as possible.

5.3. Identifying target audiences

Aim of the training is to empower young people to act as multipliers in their schools and other social contexts for spreading information and knowledge on smart IT use and energy saving potentials. In the entire project approx. 25.000 students should be directly reached through IT-peers, furthermore their teachers and families.

- Discuss the objectives and how they can be achieved.
- Identify the target audiences.
- Calculate the number of young people each peer-education has to address.

Example Austria:

A minimum of 5.000 – 6.000 students should be reached directly. In the Austrian IT-peer training 32 students will participate. After the training the peer educators has the task to act as a multiplier in their own school and to contact two further schools. Together with another IT peer (team of two) they will give presentations in the schools and can also be hired by the schools to develop further activities. In order to meet the proposed target each peer educator has to address at least 150 students.

5.4. Establishing an incentive system

As described above a system of reinforcement and incentive should be established.

- Make sure that at least some incentives or rewards are provided.
- Ensure that the incentive system is fair and transparent.

Example Austria:

To enhance the training and the work of the peers and appreciate them accordingly, the young people will receive a certificate, which will characterize them as "Green IT-peers". On the certificate, personal data, school, time extent of the training and their own practical work as a multiplier/peer are stated. The training content is listed at the back of the certificate. So it can be used as a valuable additional qualification for their own career. Their certificate will be ceremoniously presented to them.

5.5. Qualification of It-peer trainers

70 % of the results of a learning process can be lead back to the behaviour of the trainer. Therefore choose IT-peer trainers, moderators or facilitators very carefully. Wherever you feel you or the trainer have a lack of expertise, look for support through professionals.

Trainers should...

- be experienced in peer education and participation processes.
- be well informed about the topic “smart use of IT”.
- have fun in working with young people.
- be responsive to concerns of young people and have other requisite soft skills.
- be sensitive to gender issues.
- have methodological skills and have experienced the methods themselves.
- have anticipatory thinking.
- understand group and power dynamics and can act flexible (considering that the training program often needs to be changed due to different learning situations).

5.6. Job description of an IT-peer educator

Overview:

The mission of the IT-peer training is to empower young people to act as multipliers in their schools and other social contexts for spreading information and knowledge on smart IT use and energy saving potentials.

IT-Peers contribute to this mission by

- *providing information and knowledge about smart IT use to other students by using different approaches and methods such as*
 - presentations
 - group work with interactive actions
 - worksheets.
- developing innovative and target-group oriented teaching material.
- sharing experiences with other IT-peers.

Job Duties & Responsibilities

- Attend and actively participate in a group training session extending over at least 18 - 25 hours.
- Keeping a portfolio.
- Developing creative information- and teaching material, which should be used by him/herself.
- Discuss problems/concerns as they arise in the school or his/her social environment.
- Disseminate information and knowledge about smart IT use to at least 150 peers through innovative (presentation) methods and further to two other schools.

Required Qualities

- Interest in Green IT
- Efficient in working autonomous, but also in groups
- Competent in reflecting and monitoring the own work and the multiplication process
- Able to approach and speak to other peers
- Able to act under supervision as a facilitator and multiplier on his/her own

5.7. Reflection, Monitoring and Evaluation

Each training session should further be reflected and documented by the trainer as well as by the participants of the IT-peer training. This should help to be aware of which aspects of the training program work well, which need amendments or improvements and to what extent your program is meeting the learning outcomes and objectives. *A draft for a reflection sheet is provided in annex 7.*

The IT-peer training should be continuously monitored and evaluated by the trainer. Therefore adequate documents will be provided by the WP 5 leaders.

5.8. Training venue

The training venue should ensure a relaxed atmosphere and a bright and friendly interior of the rooms. Don't forget that the rooms should be big enough considering also group work.

Possible venues can be:

- Classrooms
- Rooms in youth organisations
- Extern seminar rooms

5.9. Settings of the IT-peer training

There are various possible settings for the trainings. Previous experience shows that two kinds of settings brought the best results. They are described as follows.

Training IT-peers from different schools in school time (formal education)

In this setting 2-4 IT-peers/school from 4-8 schools can attend the IT-peer training, which take place during school time in an extra meeting location. This training setting could have a good multiplication effect. The students could act as multipliers in their own schools and in their social field. This way a very high number of young people could be reached, even though only several peers are trained directly. The limited number of participants leads to the effect, that usually highly motivated and really interested young people are selected by the teachers. Experience showed that it is a great honour for these students to be part of the IT-peer training which is offered countrywide. Also very important is the relationship- and network aspect. When young people are usually very active in the field of sustainability or environment protection, they often felt as if they had been left alone referring to this issue. In these setting of IT-peer training peers from different schools meet to share and exchange ideas and work progress and even create projects and

activities together. Working together empowers the young people. This leads to better results in the multiplication process. After the training they further communicate through social networks. In the case of an official event the students are not only eager to present their work and to get the certificate, but also interested what has happened in the other schools as well. To meet young people of other schools is a fun factor itself. That the young people stay together at a nice place could be a very attractive point for this kind of setting. If you have some group activities or social games within the training or social activities in the spare time even better!

Training IT-peers in their leisure time (non-formal education)

Another option for the IT-peer training is to work together with youths in their leisure time (e.g. weekend- or afternoon sessions). Youth organisations and NGO's usually implement a lot of projects with the visitors, and it could be a good possibility, to integrate the IT-peer training in this setting. Young people visiting youth centres or other youth organisations are very heterogeneous and differ in their educational level. It could be even more difficult to get those youths as volunteers and would probably take much more effort to get enough participants for the IT-peer training as well as for the multiplication process. It has to be considered that this setting is more time-consuming, because in the leisure time it is hard to get the necessary bindings from the youths (e.g. youths often miss fixed dates). Also there is a greater risk of drop-outs. A different way of addressing young people and a different educational approach than in the formal sector is needed. Working with the formal context the training program focuses firstly more on knowledge and understanding and then on implementation. The non-formal sector has to offer a more low-threshold approach to the young people. The fun factor plays the most important role and is the incentive for the young people to participate. The participants of the training need practical experience and while doing something they get knowledge and understanding. The second focus should be on social activities, which also play a more important role than in the formal context. The vehicle theory starts on this point.

(The vehicle theory is described in detail in deliverable D.4.1.)

Other possible settings and their advantages and disadvantages are described in annex 3.

6. Didactical methods and materials for the IT-Peer trainings

Some of successful training methods, which are based on previous experience in peer education, are listed below. The methods can be adapted to the needs of the target group and the organizational set up of the training.

6.1. Meeting-café:

Objectives:

Teambuilding

Time:

30 min

Material:

Work sheets

Process:

This is a quite well experienced method for teambuilding especially for starting a (training-) program and can also be called “autograph-search”. Each participant will get a working-sheet with various statements. (see annex 4). Now he/she has to walk around and find persons, who can identify themselves with one or more statements. If he/she finds a person who agrees, this person has to sign the statement on the sheet of the interviewer. Then another round follows. At the end of this group work all statements should be signed, but it is also possible to stop the process earlier.

Remark:

The results can be used in a round of introductions, where the participants don't only present themselves, but present another participant.

6.2. Walk and talk

Objectives:

Reflexion and creating new ideas

Time:

30 min

Material:

none

Process:

Participants are asked to take a walk in a threesome side by side. The person in the middle starts to speak 5 minutes about the issue given by the trainer, such as: “How will you manage the multiplication process? Which method do you want to use and how will you address the other peers?” The other persons are not allowed to interrupt her/him in this time neither to raise any question to him or her. After 5 minutes the persons will change the position and another person will take the middle position speaking another 5

minutes about the issue. In a third round the last persons also speak 5 minutes. At the end of this process the participants will come back in the training room and the outcome as well as the accompanying emotional experience will be discussed in a plenary session.

Remark:

Usually the participants make quite interesting experiences in this kind of method, because people are not used to speak without being interrupted.

6.3. Walt-Disney-Method

Objectives:

Role play, help in making a decision

Time:

Depends, how much time the trainer want to spend on a special topic

Material:

Three chairs, 3 sheets of paper on which is written: dreamer, realist and critic; tape, paper, pens, alarm clock, possibly accessories to underline the different positions

Process:

This method is very good for bringing more clarification into a discussion and making visions and ideas more suitable for everyday use. It is a kind of role play where three specific roles are casted:

- **Dreamer**
This role didn't consider realistic implementation, but is very subjective and enthusiastic about new ideas.
- **Realistic**
This role has very practical-pragmatic points of view, develops action plans and analysis the necessary requirements, working steps and –mechanism for implementation.
- **Critic:**
This role analyses the suggestions of the other in a provocative way. The review is constructive and positive, in order to identify possible sources of error.

The three roles will start a discussion of a special topic given by the trainer and it will be discussed as long as the groups come to a common result. Those who are not integrated in the role play will observe the process and further write the different contributions on the flip chart. Afterwards an evaluation of the process as well as a discussion about the concrete results will be carried out.

Remark:

The role play is one of the options of the Walt-Disney-Method. Another possibility is just using the different roles for a group-discussion, where the roles are seen as three phases.

6.4. “Workshop for the Future”

Objectives:

Getting new ideas, creativity process

Time:

Depends how much time the trainer want to spend on a special topic

Material:

Flip chart, pens, stickers

Process:

The first step is to collect complaints from the group members. Comments should be taken down as they were spoken and have to be articulated in the form of a complaint. A good number of complaints should be collected (minimum of 15). Once the complaining process is completed, participants are given a means to assign their “Top 5 worst of” list by giving one point per complaint (this is best done by providing participants with stickers which they can distribute on the flipcharts). The result will be summarized and the group proceeds with the work on the most important issues identified in this process.

Remark:

This tool fulfills several significant targets, three of them are:

- airing one’s complaints freely can be a creative and liberating process
- listing complaints provides a good picture of what the issues at hand are
- creating a “group” “worst of” list makes the most pressing issues visible in a participatory way.

6.5. Working with pictures

Objectives:

Visualisation tool, emotional inputs from the participants

Time:

depends on the number of participants

Material:

Picture cards

Process:

Each participant is asked to choose a favourite picture from an array of different kinds of pictures. The aim of this exercise being that it gives participants a chance to first briefly introduce themselves and then to provide emotional input concerning their attitude towards the topic via the image s/he has selected.

Remark:

This is a good “ice breaker” tool when working with groups and is most adequate also for youth groups.

6.6. Group work

Objectives:

“learning by doing”, creative work process, learning self-responsibility

Time:

45 minutes (depends on how much time the trainer want to spend on a special topic)

Material:

Flip-chart paper, writing utensils

Process:

The group is subdivided into three small groups. The groups are asked to work out a consensus on the following two issues:

- What do you admire or what is praiseworthy about the IT use of youths?
- What do you think are the desires, needs and expectations of youths in regard to IT use?

After a work session of about 20 minutes, the groups present their findings in the form of slogans on a flip chart.

Remark:

“Learning by doing” is one of the most important methods in a peer training, but is very time consuming.

6.7. Role play simulation

Objectives:

The future IT educators rehearse situations in preparation for the future multiplication process and to improve their abilities within a role.

Time:

45 – 60 minutes (depends on how much time the trainer want to spend on a special topic)

Material:

paper, writing utensils

Process:

Groups are formed in order to develop a “smart IT use” related role play. Each group has one or two future IT educators and some peers or a whole school class and is asked to work out a likely scenario of what a “smart IT use” presentation or workshop with other peers could look like and what obstacles might evolve. After the work session the role plays will be performed in a plenary session.

Remark:

This simulation should contribute to building first person experience in a safe and supportive environment. Experience shows that this is a powerful teaching technique in face-to-face teaching.

7. Teaching guidelines – Social aspects

For the success of the IT-peer training not only technical knowledge, but also factual knowledge and problem solving skills as well as other “soft skills” are needed. Also the codes of ethics have to be considered. Therefore an essential part of the training is devoted to personality development of the future IT-peer educators. The following aspects should be integrated in the IT-peer program:

- *Empowerment*
During training the future peer educators are encouraged to dare to get involved. Evidence shows that young people are enormously strengthened in personality and also grow with the new task itself.
- *Motivation*
Future peer educators should be aware of their own motivation. What are the reasons for taking part in the IT-peer training?
- *Strength orientation*
Future peer educators are motivated to get involved with their own ideas, knowledge, skills and abilities – both in training and in the peer work. Their statements should be taken seriously by the trainer.
- *Activity orientation*
The program of the IT peer training should particularly focus to stimulating activities and “learning by doing” based on the evidence that people learn 10 % by reading, 20 % by hearing, 30 % by viewing, 50 % by hearing and viewing, 70 % by discrete explaining and 90 % by doing.
- *Updated, correct and unbiased information*
The program of the IT peer training should place a high priority on communicating current and unbiased information. The educational level of the participants should be taken into account, when planning the lessons and methods.
- *Personal responsibility, Self-determination, Independence*
The future peer educators should learn how to take personal responsibility for their work and action. This is very essential, especially for their function as role models for others. They should further be able to think critically about facts and habits taken for granted and to find creative and alternative solutions to unsustainable practices which tend to dominate in the IT use. Therefore during IT-peer training self-examination of values is promoted and values should not be imposed. Extremely useful are questions that help the future peer educators to explore and examine their values.
- *Awareness of individual limits*
The structure of the trainings should be designed in that way, that the participants are neither under challenged nor overworked. Experience shows further, that when realizing problems, many peer educators believe, that they must do nothing less than solve them, although their powers are actually quite limited. In the training the young people should learn, that in a helping and advising process, they can only work within the limit of their own control and everything else depends on the possibilities and willingness of the person, who is being taught.
- *Participatory democratic orientation*
The IT-peer training focuses on informed citizens, who are actively involved in the society and don't play a passive role leaving all political matters to a few selected leaders. Peer educators need to internalise the basic values of democracy and provide other peers with relevant information, building capacity and promoting sustainable values about smart IT use.

- *Transparency*
All decisions made during the IT-peer training and the multiplication process should be transparent and clear documented.
- *Reflexivity*
The ability to reflect should be encouraged through “reflection sheets”, which raise questions such as: “What is my opinion to the topic?”, “What was most/less interesting?”
- *Sustainability*
The future peer educators will advocate for the adoption of a sustainable and energy saving use of IT.
- *Gender and Diversity*
The principles of the feminist pedagogy should be considered in the IT-peer training. This means: “Do not assume categories (like sex, “not environmentally interested”), do not replicate stereotypes (only allowing “man/woman” categories in survey); allow for diversities: different ways of learning and knowledge, different kinds of actions; empower students: e.g. give room for personal experiences and solutions, do not let the same students dominate.”⁴

⁴ Gender and Diversity, presentation of Els Rommes, Radboud Univerriteit Nijmegen at the consortium meeting in Copenhagen, Oct.9th, 2014

8. Green IT-peer training in Austria – Training Program

As example the Austrian approach for implementing the IT-peer training is introduced below.

Recruiting peer educators

In Austria the recruiting of future IT-educators happens through two approaches. Firstly through contacts to particular teachers in different schools and secondly through an advertisement, which was sent to schools all around Austria. *(See annex 1)*

Organisation of the It-peer training

The first IT-peer training will start in February with 16 students coming from schools of the province of Styria. The meeting place will be a youth-hostel and the training will last 3 days. The second IT-peer training will take place in April also with 16 students, who will be recruited in Austrian wide schools.

For the trainings the students will be given time off by the schools.

Description of the training

In the following pages the training sessions are described more in detail. They refer to the learning outcomes, which are listed in the ECVET-sheets.

As the education- and concentration level differs in between the participants, experience shows that the IT-peer training program should not be seen as too fixed. Working with young people is a process which can lead to program changes and amendments due to the requirements and needs of the students. Sometimes teambuilding methods and other exercises, which can lighten the learning atmosphere, have to be integrated spontaneous in the program. Therefore it is necessary to have a clear agenda in mind, but also enough flexibility to not stick too much to it.

During the work on different green IT topics the students may come up with questions about how to solve these problems. Therefore it is planned that in each training session the discussion of the results of WP 3 – solutions for a smart use of IT – (written on index-cards) will be an integral part of all lessons, which is not explicitly expressed in the following description of the training. On the third day of the training further attention will be drawn to solutions, as they are very important for developing the individual didactical concept of each future peer educator.

Further individual reflection, feedback and discussion of the various topics will be special emphasized in each training session.

A short version of the Austrian IT-peer training program is provided in annex 2.

Session 1: Introduction

Expected outcomes:

1. The student knows to express their expectation on the IT-peer training and multiplication process.
2. The student knows to recognise the process of the IT-peer training.
3. The student knows to emphasise the aim of peer education.
4. The student knows to recognise and describe his/her tasks in the IT-peer training and in the role of a multiplier.
5. The student knows to recognise the communication-habits of their peers (social media).
6. The student knows to describe the function of a vehicle.
7. The student can create their own portfolio for the IT-peer training.

Materials:

Beamer, computer, ppt.-Presentation, work sheet “meeting-café”

Process:

The training will start with an address of welcome and a short introduction of the IT-peer trainer. Through the following presentation of the IT-peer trainer the participants of the training should get an entire knowledge about the project “Use IT smartly”, the program of the training and their tasks within the training as well as in the following multiplication process. Further the outcomes of WP 2 and WP 3 especially the communication-habits of equals will be introduced and discussed with the group.

Afterwards the future peer educators will shortly introduce themselves through two questions: “Who am I?”, “What am I good at?”

For team-building an introduction game called “meeting-café” will be played.

(Description of this method see p. 18 ff., a template of a possible “meeting-café” is attached in annex 4).

In the following pair work one person will interview the other and introduce him or her afterwards in a plenary session. Questions are: Why would I like to become an IT-peer? What do I would like to do? What do I expect from the training?

Remark:

An open and honest working atmosphere plays a very important role in the introduction phase.

Session 2: “I know what you did last summer”

Expected outcome:

1. The student knows to name the most important facts about the usage of the internet from youths around the world:
 - a. number of users
 - b. average usage
 - c. social media.

The peer educators can see the consequence of giving data to social networks or to the internet in general.

Materials:

Enough computers or smartphones with internet connection, index cards with solutions from WP 3

Process:

Previously a profile of a virtual person called Paul Maroni was set up by the IT-peer trainer.

The session starts with the task of the participants to search for answers to the following questions on the internet in pairs: How does this person live? What is his profession? What are his hobbies? What is he doing in everyday life? While looking up Paul they simultaneously have to count their “clicks” needed for the search and noting the amount in a work sheet. (*see annex 5*)

At the end of this task the results of the search will be summarized. The It-peer trainer informs the peer educators on how many personal data could be found from people all over the world.

The peer educators shall discuss, how much effort was needed to get private or intimate data about a person.

The basic information about data protection and privacy will be given to the peer educators by the IT-peer trainer or another IT-expert. Different security and privacy measurements will be worked out individually or in pairs instructed by the trainer. The peer educators shall collaboratively sum up the known security and privacy measurements.

Remark:

The topic of data safety and privacy is not the core of the content, but in this training it serves as a kind of vehicle in order to attract the attention of the participants. This issue was chosen because personal safety is widely discussed among the youths and an integrate part of their everyday life. The key issue “smart IT use” should be made accessible via this “small” vehicle.

Session 3: Green Internet

Expected outcome:

1. The student knows to describe how the internet basically works:
 - a. net-configuration
 - b. provider
 - c. search engines
 - d. clouds, streaming.
2. The student knows to report about the ecological impact of internet usage:
 - a. CO₂-emissions
 - b. power consumption.
3. The student can select a green search engine.
4. The student can compare providers and choose a sustainable provider.
5. The student can develop ideas and concepts for a conscious usage of the internet.
6. The student assumes responsibility for a conscious and ecological friendly way of internet use.

Materials:

Enough computers or smartphones with internet connection, picture cards, index cards with solutions from WP 3

Process:

The previously counted clicks (while chasing Paul) will be evaluated in the earlier groups and the connection between clicks, energy consumption and CO₂-emissions will be worked out with work-sheets. (see annex 5).

The basic configuration of the internet, the world internet usage and habits (e.g. social media) will be presented by the IT peer trainer. The presentation will start at the PC at home over to the internet service providers and end at the server farms of search engines (using picture cards). The energy-consumption of the home equipment, server-farms, search-engines, internet-service-providers, cloud-services etc. will also be visualised by the IT peer trainer.

The peer educators choose and compare green alternatives to the established companies (e.g. green search engines, green ISPs, etc.) in pairs. Each group will briefly present their findings.

Remark:

Session 2 is here linked to the core issue "energy saving through smart use of IT".

Session 4: Lifecycle of a computer

Expected outcome:

1. The student knows to explain the life-cycle of hardware.

Materials:

Beamer, Computer, ppt.-presentation, index cards with solutions from WP 3

Process:

An IT-expert will present the lifecycle of a computer through a Power point presentation and will discuss it with the participants.

Remark:

The head manager of Austria's first environmentally and socially sustainable IT-company will be invited to hold this lesson at the IT-peer training.

Session 5: Green IT

Expected outcome:

1. The student knows to define the main components, advantages and specialities of a “green” PC:
 - a. hardware
 - b. software.
2. The student knows to express the ecological footprint:
 - a. raw materials and resources
 - b. waste-recycling
3. The student knows to emphasize sustainable usage:
 - a. energy-efficient usage
 - b. repair
 - c. upgrade
4. The student can mark the differences of a standard PC and a green PC.
5. The student can see the ecological impact of IT.
6. The student can look up methods for the sustainable usage of IT.
7. The student develops ideas for energy efficiency IT usage concepts.

Materials:

Regular computer, “green” computer, toolkit, different components, index cards with solutions from WP 3

Process:

By disassembling two PCs – a common one and a "green" PC – the differences, the main components, advantages and specialities of these two concepts will be shown. The disassembling will be done by the peer educators as much as possible. During this procedure the IT-peer trainer will instruct the peer educators. The ecological footprint and the used raw materials will be shown and explained. After talking about the components the possibilities and problems of recycling, re-using, upgrading or repairing hardware will be shown to and discussed with the peer educators. Ideas for the sustainable and energy-efficient usage of IT will be brainstormed by the peer educators.

Remark:

Disassembling computers is a “learning by doing” process and has usually great effects.

Session 6: The net of embodied energy

Expected outcome:

1. The student knows to express the ecological footprint:
 - a. embodied energy
 - b. clean IT

Materials:

PC with internet-connection, paper, writing utensils, red thread, pin-needles, pin-cards, pin-board, self-made world map, work sheet, index cards with solutions from WP 3

Process:

Each peer educator makes a targeted search for 2 origin locations of selected raw-materials on the internet and notes the findings on pin-cards. The pin-cards will be fixed on the appropriate locations on a world map. With a red thread the pins will be connected to the producing site (e.g. china). Then the labour conditions in the Chinese electronics industry will be shown and discussed briefly. The lines on the map show the (long) distances between the origin location and the production factories.

Afterwards the peer educators fill in the attached work sheet "How much energy is contained in a smartphone" supported by the IT-peer trainer (*see annex 6*). The term "embodied energy" will be explained.

Remark:

The topic "clean IT" is only briefly touched in this session, because it isn't the core issue of this project. It would need much more time to go in depth.

Session 7: Smart technologies

Expected outcome:

1. The student knows to describe the basics of different “smart” technologies and their goals:
 - a. smartmeter
 - b. smarthome
 - c. smartgrids
 - d. smartcities
2. The student knows to explain the advantages and disadvantages of “smart” technology.
3. The student can discuss the idea of “smart” technologies.
4. The student can argue the advantages and disadvantages of “smart” technologies.

Materials:

Beamer, ppt.-Presentation, computer with internet-connection, picture-cards, video, index-cards with solutions from WP 3

Process:

A special Austrian advertisement regarding smart technologies will be shown as a starter. The ideas and the technology behind smart cities, grids, homes or meters will be presented by an IT-peer trainer. Also the tool "powtoon" will be demonstrated and in pairs a short video clip about a chosen smart technology will be designed. The developed video clips will be presented.

Remark:

“Powtoon” is a special tool for creating small video clips and cartoons and can be used instead of Power point.

Session 8: Didactical approaches and “soft skills” for the multiplication process

Expected outcome:

1. The student knows about different presentation-techniques and presentation-medias.
2. The student knows to identify the most important pedagogical approaches in peer education.
3. The student knows to recognise how to address and communicate with their peers in a proper way.
4. The student can choose the optimal presentation-techniques and proper media from a pool of teaching material and didactical methods (supported by the trainers).
5. The student can design and use an own teaching-concept for the multiplication process.
6. The student can work with a vehicle presented by peers, who were already involved in a “vehicle-workshop” and optionally develop a vehicle on his/her own.

Materials:

Beamer, computer with internet-connection, flip chart, paper, writing utensils, index-cards with solutions from WP 3, modular display system, action plans for the multiplication process

Process:

During the entire It-peer training the young people are instructed to think casually on possible ideas for their further multiplication work. In this session peers who already developed a “vehicle” in a previous “vehicle-workshop” are asked to present their results, as a further incentive how the multiplication process could be designed.

The ideas and solutions, the students come up with, will be collected and summarized on the flip chart.

In order to find the most realistic ideas the “Walt-Disney-Method” will be implemented. (*description of the methods see p.18 ff.*).

After collection of the best ideas the group work “Walk and Talk” will be carried out. As a result each future peer educator should at least have one idea, which will further developed in detail. The students will elaborate the next steps in pairs and a clear action plan, how to attract the other peers will be prepared. (150 peers should be addressed per peer educator).

The action plans will be presented and exchanged, hints for implementing will be given and further steps such as finalising the time-and action plan and contact to the teachers for support discussed.

Remark:

At the end of the training the future peer educators should have a clear understanding on their tasks and the next steps. The accompanying teacher will also be conducted in order to ensure that the youths will be supported by them.

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Annex