TENEGEN

LEONARDO DA VINCI - TRANSFER OF INNOVATION

TENEGEN CURRICULA

"Learning and knowledge are social, personal, flexible, dynamic, distributed, ubiquitous, complex and chaotic in nature." (Chatti, Jarke, Frosh Wilke 2007)

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1 The aim of the document

This document gives the basis for the module development for all partners. The aim is to define a unified structure, consistency among the modules, and work applying common agreements.

2 Tenegen modules

TC01	**E-learning concepts**
TC02	**Educational ICT tools**
TC03	**Networked Learning**
TC04	**Classroom event in Moodle**
TC05	**Sharing Open Learning Objects**

3 Module descriptions

3.1 E-learning concepts – Module 1

Tenegen Module-1 Description

1. Identification data

Basic data of the module

1.1	Course Title	Tenegen - Teaching the Net Generation
1.2	Module identifier	TC01
1.3	Module Title	E-learning concepts
1.4	Identifier in other (national) systems	OM 175/215/2005. (Agency for Educational Development and In service Training, HU) - Hungarian Ministry of Education and Culture PLP-762 - Accreditation Council for Adult Education Hungary
1.5	Instructor/contact	Mária Hartyányi
	E-mail	maria.hartyanyi@prompt.hu
1.6	Web	http://www.tenegen.eu
1.7.	Target group	teachers, trainers, teacher students

2. Rationale - Module description

Short summary for the potential participants to answer their question "Why I should take part this module?" It describes what kind of knowledge will be emphasized, what kind of competences will be developed by the module.
This module will help teachers to understand and apply the basic concepts of technology based teaching/learning (the e-learning state of the art, the e-learning trends), to the extent that they will be able to navigate, collaborate and discuss in the e-learning environment. They will also be able to analyze the needs of their students (Net Generation) and synthesize this new knowledge in evaluating their present pedagogical methods and the pedagogical programme of their schools. Finally they will be able to identify and categorize the web 2.0 tools, and explore their pedagogical potentials.

3. Learning objectives

Synonyms: aims, purposes, goals in general. The LOs express the intentions of the instructor, describe what he/she **want to achieve** within the module. They are clear concepts to express the direction of the module, they are descriptions of the most important competences the module will develop. **Broad statements that will include many subordinate competences.** All the applied tools (learning elements, course components, methods, coaching) applied to deliver the module, should promote the participants to achieve the LOs.. The teaching effectiveness of the instructors' will be evaluated against the objectives given here. The description of module LOs should have a standard taxonomy within a course.	
3.1	understand and apply the basic concepts of ICT based teaching/learning and e-learning trends, navigate, collaborate and discuss in an e-learning environment
3.2	identify and categorize the web 2.0 tools, explore their pedagogical potential
3.3	analyse the needs of their students (Net Generation) and synthesize the new knowledge in evaluating their present pedagogical methods and the pedagogical programme of their schools

4. Learning outcomes

Learning Outcome (OC) is the fixed, measurable **result** of one or more events of teaching/learning. (OCs define "what we get" versus LOs which define "what we want"). To formulate the outcomes is suggested to use Bloom's Taxonomy (see Annex 2.).	
The participants will be able to	
4.1	search for and select online educational resources
4.2	basic skills to collaborate online
4.3	basic skills to find, select and use web 2.0 tools (Hot potatoes, Mahara, WordPress, FaceBook, Del.icio.us, Picasa, Twitter, Scribd, YouTube, SlideShare, Google Image, Wikipedia, GoogleDocs, YahooGroup)
4.1	define the basic concepts of e-learning
4.2	identify the e-learning trends
4.3	evaluate the own pedagogical practice against the trends
4.4	evaluate the school's state against the trends
4.5	identify the new roles of the teachers
4.6	identify the needs of the target group: Net Generation
4.7	list and categorize web 2.0 tools
4.8	evaluate the pedagogical value of web 2.0 tools

5. Chapters

List the title of topics planned to deliver the knowledge and to develop competences connected with its weight within the module. (In each Tenegen module we planned 6-8 units).

	Title	Weight (%)
5.1	Concepts and history	15

5. Chapters

List the title of topics planned to deliver the knowledge and to develop competences connected with its weight within the module. (In each Tenegen module we planned 6-8 units).		
5.2	E-learning trends	10
5.3	Learning Management Systems	10
5.4	Technological changes emerging Web 2.0,Real Simple Syndication (RSS)	20
5.5	Web 2.0 tools at first glance	15
5.6	Net Generation	15
5.7	Teachers in the digital area	15

6. Participants responsibilities

The list of activities/tests/projects/collaboration expected the participants to fulfill – and their weight within the module to be able to calculate the global performance level of the participant.		
6.1.	Activity in collaboration (in discussion forums, in chats, communication with tutors e-mail, messages) in the given theme, summarizing the results in an own assignment	20%
6.2.	Evaluation report about the e-learning state-of-the-art of the school and the ICT tools usage in the pedagogical practice against the trends	25%
6.3.	Select a web 2.0 tool and analyze its pedagogical potential	25%
6.4	Report about the networking attitude and culture of the students	20%
6.5	Online test	10%

7. Assessment methodology

A clear explanation on the assessment process (methods and tools).		
7.1.	Methods	The assessment will be based on evaluation of the assignments and the level reached in the online test. The activities and the assignments will be evaluated by the tutor.
7.2.	Certificate of Achievement	30 credits in the Hungarian System of Teachers' Further Training Programme/Tenegen certificate in other countries.
7.3.	Threshold for success	<60%
7.4	Successfully completed	60%-80%
7.5	Excellent completion	>80%

8. Duration of module and expected working time

Estimated workload
The module lasts for 4-6 weeks. The estimated working time needed to fulfil the requirements: 6-8 hours per week - including collaboration time and the preparing of assignments. This may vary according the prior experiences and the individual learning path.

8. Duration of module and expected working time

Estimated workload			
8.1.	Duration	4-6	Weeks
8.2.	Estimated workload	6-8	hours/week

9. Prior knowledge/experiences - entry prerequisites

Lists of compulsory completed modules/ expected prior knowledge/competences to be successful	
9.1.	ICT basics, basic skills in office applications

10. Coaching

Correct definition of the roles and duties of the actors working together during the course	
Actor	Responsibilities
10.1. Instructor	The learning activities will be supervised by one person as an Instructor. The instructor is the author of the module, she/he is responsible for the professional correctness and. She/he o gives professional support for the activities of the tutors; o supervises and evaluate all activities going on during the course; o create a summary report of the performance based on the tutors report and the feedback of participants.
10.2. Tutor	The learning activities will be supported by the tutors. **One tutor will guide the work of maximum 8 participants.** The tutor will help the participants to fulfil their individual tasks, and carry out the assessment of their performances. She/he should facilitate the collaboration and learning activities. The tutor o follows the learning process of participants, keeps contact with the participants and with the instructor; o gives advice regarding learning methods; o organises and help project work; o suggests further web-materials if needed, but o evaluates the assignments. o creates an evaluation report for the instructor at the end of the module.
10.3. LMS administrator	Responsible for the correct operation of the LMS. He helps to solve technical problems in networking and communication with an inspection of 8 hours per day.
10.4. Secretary	Responsible for administrative issues, e.g. contracts (in Hungary this is obligatory for the provider in adult education), certificates, personal problems (postpones, dropout, etc.).

11. Human resource requirements of module realization

A list of the actors				
	Full name	Role	Title	Contact

11.1.	Mária Hartyányi	instructor	teacher	maria.hartyanyi@prompt.hu
11.2.	Later assigned	tutor		
11.3.	Later assigned	tutor		
11.4.	Later assigned	tutor		
11.5.	Gábor Lajtos	Moodle administrator		gabor.lajtos@prompt.hu
	Judit Mezei	Secretary		judit.mezei@prompt.hu

12. Delivery methods, supporting materials

Short description of the learning environment, handouts, guides supporting the learning activities	
12.1. LMS	As the learning environment of the module will serve the Moodle 1.9 Learning Managment System.
12.2. Tutor guide	Tutors will be provided with **Tenegen Tutor Guide** to define detailed list of their responsibilities, and help them with report template.
12.3. Study Guide	Participants will be served with **Tenegen Study Guide** to do the first step in the learning environment, help them to find content, to use the collaboration tools.
12.4. Content	All learning material, exact definition of assignments, tests, glossaries, feedbacks will be available in th LMS.

13. Equipments and materials required for module realization

Specifications of the technological background (SW/HW) both from the server and client side including the special built in modules, and connected modules.		
	Server side	Minimum requirements
13.1.	Minimum HW requirements of the Tenegen server	Disk space 160 MB (min) - requires more free space to store teaching materials; Memory: 256MB (min), 1GB (recommended) / more 1 GB / 50 users
13.2.	Minimum SW requirements of the Tenegen server	Web server software: Apache or IIS, MySQL database, PHP-Accelerator
	Client side	Minimum requirements
Every participants should have e-mail address and Internet access.		
	Minimum HW requirements of the participants' workstation	1,8 GHz CPU, 512 MB RAM, 80 GB HDD, 48xCD-ROM, Broadband Internet connection
	Minimum SW requirements of the participants' workstation	

14. Other conditions of module realization

References to any other documents which describe special conditions, requirements to the successful performance	
14.1 Unit descriptions	**Detailed description of the components** (learning outcomes, tools, descriptions of home work and collaboration methods etc**.) for each unit to clear the dependencies among the course elements – LOs, OCs, and assignments.** See the template in Annex 3.
14.2 TCF	**Tenegen Competency Framework** - ensures the integrity and coherency of the course. A collection of learning objectives and outcomes – structured by modules/units to see as the dependencies (redundancies) within the course.

15. Quality management

The methods and processes to evaluate the results during and at the and of the module. The aim of this tools to compare the original aims (what we intended) learning objectives with the realized product (what we get).	
15.1 Methods to collect data	1. Reviews of module, unit descriptions, syllabii, learning elements. 2. Feedback for module evaluation to measure the satisfaction of the participants 3. Self assessment at the beginning and at the end of the module 4. The number of the dropout, evaluation reports by the instructor and the tutors 5. Statistics provided by the LMS (number of posts, activities, etc.)
15.2. The methods of validation	Validation report (before the start of the module) to summarize the results of the reviews (1).
15.3. The methods of verification	Verification report (at the and of the module) to elaborate the results coming from the collected data (2,3,4,5), and to formulate the suggestions for modifications.

3.2 Newtworked Learning – Module 2

Tenegen Module-2 Description

1. Identification data

Basic data of the module

1.1	Course Title	Tenegen – Teaching the Net generation
1.2	Module identifier	NL01
1.3	Module Title	Networked Learning
1.4	Identifier in other (national) systems	
1.5	Instructor/contact	Dr. István Bessenyei
	E-mail	istvanbess@gmail.com
1.6	Web	
1.7.	Target group	Teacher, teacher students

2. Rationale - Module description

Short summary for the potential participants to answer their question "Why I should take part this module?" It describes what kind of knowledge will be emphasized, what kind of competences will be developed by the module.
An active knowledge exchange by the net generation takes place on the Internet in several networks. The main objective of the module is the systematic use of this potential in the education. The module gives an introduction to the network theory and to the connectivism as a learning theory. The module introduces use of interactive 2.0 tools in the networks. In this module the teachers will explore the ways of collaborative network learning, of collaborative knowledge building and of educational knowledge management. They will create e-portfolios, they will learn how to use e-portfolios and how to organize the learning in networks.

3. Learning objectives

Synonyms: aims, purposes, goals in general. The LOs express the intentions of the instructor, describe what he/she **want to achieve** within the module. They are clear concepts to express the direction of the module, they are descriptions of the most important competences the module will develop. **Broad statements that will include many subordinate competences.** All the applied tools (learning elements, course components, methods, coaching) applied to deliver the module, should promote the participants to achieve the LOs. The teaching effectiveness of the instructors' will be evaluated against the objectives given here. The description of module LOs should have a standard taxonomy within a course.	
3.1	Be familiar with the main concepts of: web 2.0, eLearning 2.0, connectivism, network theory, social networking

3.2	Use of ePortfolios with knowledge maps in network learning
3.3	Participate in social networks, use the potentials of social networks in education
3.4	Pedagogical use of web 2.0 interactive information and data management tools: Social bookmarking (diigo, delicious), Wikipedia, other wikis
3.5	Pedagogical use of web 2.0 interactive communication tools: Skype, blogging,
3.6	Pedagogical use of web 2.0 interactive media tools: Youtube, Flickr, Picasa web album
3.7	Pedagogical use of web 2.0 interactive virtual words: Second Life, games

4. Learning outcomes

Learning Outcome (OC) is the fixed, measurable **result** of one or more events of teaching/learning. (OCs define "what we get" versus LOs which define "what we want"). To formulate the outcomes is suggested to use Bloom's Taxonomy (see Annex 2.).	
The participants will be able to	
4.1	define main ideas of web 2.0, eLearning 2.0, connectivism, network theory, social networking;
4,2	create own ePortfolio in moodle's wiki-function with a structured knowledge map,
4,3	participate in social networks, search for special forums and groups, organise knowledge sharing in a network;
4.4	use of web 2.0 interactive information and data management tools (Social bookmarking:diigo, delicious, Wikipedia, other wikis);
4,5	use of web 2.0 interactive communication tools: Skype, blogging;
4,6	use of web 2.0 interactive media tools: Youtube, Flickr, Picasa web album;
4,7	use of web 2.0 interactive virtual words: Second Life, games.

5. Chapters

List the title of topics planned to deliver the knowledge and to develop competences connected with its weight within the module. (In each Tenegen module we planned 6-8 units).

	Title	Weight (%)
5.1	Introduction in the main ideas	15,00%
5.2	E-portfolios in network learning	20,00%
5.3	Social networks in education	20%
5.4	Interactive web 2.0 information and data management tools in education	15,00%
5.5	Interactive web 2.0 communication tools in education	10,00%
5.6	Interactive web 2.0 media tools in education	10,00%
5.7	Interactive web 2.0 virtual words in education	10%

6. Participants responsibilities

The list of activities/tests/projects/collaboration expected the participants to fulfill – and their weight within the module to be able to calculate the global performance level of the participant.		
6.1.	Activity in collaboration (in discussion forums, in chats, communication with tutors e-mail, messages) in the given theme	30%
6.2.	Three online assignments (2-4 pages/assignments) based online research work and collaboration.	3x10%
6.3.	Participation in web 2.0 interactive websites	30%
6,4	Online test	10%

7. Assessment methodology

A clear explanation on the assessment process (methods and tools).		
7.1.	Methods	The assessment will be based on the evaluation of the assignments an of participation in the interactive web 2.0 tools, and the level reached in the online test. The activities and the assignments will be evaluated by the tutor.
7.2.	Certificate of Achievement	30 credits in the Hungarian System of Teachers' Further Training Programme/Tenegen certificate in other countries.
7.3.	Threshold for success	<60%
7.4	Successfully completed	60%-80%
7.5	Excellent completion	>80%

8. Duration of module and expected working time

Estimated workload			
The module lasts for 4-6 weeks. The estimated working time needed to fulfil the requirements: 6-8 hours per week, - including collaboration time and preparing assignments. This may vary according the prior experiences and the individual learning path.			
8.1.	Duration	4-6	Weeks
8.2.	Estimated workload	6-8	hours/week

9. Prior knowledge/experiences - entry prerequisites

Lists of compulsory completed modules/ expected prior knowledge/competences to be successful	
9.1.	ICT basics

10. Coaching

Correct definition of the roles and duties of the actors working together during the course	
Actor	Responsibilities
10.1. Instructor	The learning activities will be supervised by one person as an Instructor. The instructor is the author of the module, she/he is responsible for the professional correctness and. She/he o gives professional support for the activities of the tutors; o supervises and evaluate all activities going on during the course; o create a summary report of the performance based on the tutors report and the feedback of participants.
10.2. Tutor	The learning activities will be supported by the tutors. **One tutor will guide the work of maximum 8 participants.** The tutor will help the participants to fulfill the individual tasks, she/he carry on the assessment of their performances. She/he should facilitate the collaboration and learning activities. The tutor will o follow the learning process of participants, keep contact with the participants and with the instructor; o give advice regarding learning methods; o organise and help project work; o suggest further web-materials if needed, but o evaluate the assignments. o create an evaluation report for the instructor at the end of the module.
10.3. LMS administrator	Responsible for the correct operation of the LMS. He helps to solve technical problems in networking and communication with an inspection of 8 hours per day.
10.4. Secretary	Responsible for administrative issues, like contracts (in Hungary it is obligatory for the provider in adult education), certificates, personal problems (postpones, dropout, etc.).

11. Human resource requirements of module realization

A list of the actors				
	Full name	Role	Title	Contact
11.1.	Dr. István Bessenyei	instructor	professor	istvanbess@gmail.com
11.2.	Later assigned	tutor		
11.3.	Later assigned	tutor		
11.4.	Later assigned	tutor		
11.5.	Gábor Lajtos	Moodle administrator		gabor.lajtos@prompt.hu
11.6	Judit Mezei	Secretary		judit.mezei@prompt.hu

12. Delivery methods, supporting materials

Short description of the learning environment, handouts, guides supporting the learning activities	
12.1. LMS	As the learning environment of the module will serve the Moodle 1.9 Learning Managment System.
12.2. Tutor guide	Tutors will be provided with **Tenegen Tutor Guide** to define detailed list of their responsibilities, and help them with report template.
12.3. Study Guide	Participants will be served with **Tenegen Study Guide** to do the first step in the learning environment, help them to find content, to use the collaboration tools.
12.4. Content	All learning material, exact definition of assignments, tests, glossaries, feedbacks will be available in th LMS.

13. Equipments and materials required for module realization

Specifications of the technological background (SW/HW) both from the server and client side including the special built in modules, and connected modules.		
	Server side	Minimum requirements
13.1.	Minimum HW requirements of the Tenegen server	Disk space 160 MB (min) - requires more free space to store teaching materials; Memory: 256MB (min), 1GB (recommended) / more 1 GB / 50 users
13.2.	Minimum SW requirements of the Tenegen server	Web server software: Apache or IIS, MySQL database, PHP-Accelerator
	Client side	Minimum requirements
Every participants should have e-mail address and Internet access.		
	Minimum HW requirements of the participants' workstation	1,8 GHz CPU, 512 MB RAM, 80 GB HDD, 48xCD-ROM, Broadband Internet connection
	Minimum SW requirements of the participants' workstation	

14. Other conditions of module realization

References to any other documents which describe special conditions, requirements to the successful performance	
14.1 Unit descriptions	**Detailed description of the components** (learning outcomes, tools, descriptions of home work and collaboration methods etc.**) for each unit to clear the dependencies among the course elements – LOs, OCs, and assignments.** See the template in Annex 3.
14.2 TCF	**Tenegen Competency Framework** - ensures the integrity and coherence of the course. A collection of learning objectives and outcomes – structured by modules/units to see as the dependencies (redundancies) within the course.

15. Quality management

The methods and processes to evaluate the results during and at the and of the module. The aim of this tools to compare the original aims (what we intended) learning objectives with the realized product (what we get).	
15.1 Methods to collect data	1. Reviews of module, unit descriptions, syllabii, learning elements. 2. Feedback for module evaluation to measure the satisfaction of the participants 3. Self assessment at the beginning and at the end of the module 4. The number of the dropout, evaluation reports by the instructor and the tutors 5. Statistics provided by the LMS (number of posts, activities, etc.)
15.2. The methods of validation	Validation report (before the start of the module) to summarize the results of the reviews (1).
15.3. The methods of verification	Verification report (at the and of the module) to elaborate the results coming from the collected data (2,3,4,5), and to formulate the suggestions for modifications.

3.3 Educational ICT tools – Module 3

Tenegen Module Description

1. Identification data

Basic data of the module		
1.1	Course Title	Tenegen - Teaching the Net Generation
1.2	Module identifier	TC03
1.3	Module Title	Educational ICT tools - from the synopsis to the e-learning curriculum)
1.4	Identifier in other (national) systems	OM 175/214/2005. (Agency for Educational Development and In service Training, HU) - Hungarian Ministry of Education and Culture PLP-761 - Accreditation Council for Adult Education Hungary
1.5	Instructor/contact	István Kiss
	E-mail	istvan@prompt.hu
1.6	Web	
1.7.	Target group	teachers, students, trainers

2. Rationale - Module description

Short summary for the potential participants to answer their question "Why I should take part this module?" It describes what kind of knowledge will be emphasized, what kind of competences will be developed by the module.
In this module the participants will understand and apply the basic concepts of e-learning elements, e-learning material, and will be acquainted with the main evaluation criteria of the pedagogical value the digital content. They will learn and practice how to design, select, create e-learning elements, and how to integrate them into e-learning material.

3. Learning objectives

Synonyms: aims, purposes, goals in general. The LOs express the intentions of the instructor, describe what he/she **want to achieve** within the module. They are clear concepts to express the direction of the module, they are descriptions of the most important competences the module will develop. **Broad statements that will include many subordinate competences.** All the applied tools (learning elements, course components, methods, coaching) applied to deliver the module, should promote the participants to achieve the LOs.. The teaching effectiveness of the instructors' will be evaluated against the objectives given here. The description of module LOs should have a standard taxonomy within a course.	
3.1	understand and apply the main concepts of e-learning elements, e-learning material
3.2	select and use ICT tools to create e-learning elements and use integrate them into the e-learning material
3.3	Select and use the ICT tools and web 2.0 applications for publishing online the e-learning materials

4. Learning outcomes

Learning Outcome (OC) is the fixed, measurable **result** of one or more events of teaching/learning. (OCs define "what we get" versus LOs which define "what we want"). To formulate the outcomes is suggested to use Bloom's Taxonomy (see Annex 2.).	
The participants will be able to	
4.1	identify the basic features of digital media elements
4.2	evaluate the pedagogical value of digital media objects
4.3	select ICT tools to create and edit educational media elements
4.4	select the ICT tool to integrate and publish e-learning material

5. Chapters

List the title of topics planned to deliver the knowledge and to develop competences connected with its weight within the module. (In each Tenegen module we planned 6-8 units).

	Title	Weight (%)
5.1	Basic concepts (hypertext, multimedia, hypermedia)	10
5.2	Media elements: features, specification	10
5.3	Ergonomic aspects (Text, Image, Audio Video, Animation)	10
5.4	Create and edit media elements using applications	20
5.5	E-learning material: integration,	30
5.6	Publishing online	20

6. Participants responsibilities

The list of activities/tests/projects/collaboration expected the participants to fulfill – and their weight within the module to be able to calculate the global performance level of the participant.		
6.1.	Activity in collaboration (in discussion forums, in chats, communication with tutors e-mail, messages) in the given theme, summarizing the results in an own assignment	20%
6.2.	Evaluation of a selected e-learning material, object	10%
6.3.	Select or create e-learning elements, describes with metadata and store in Moodle	15%
6.4	Design e-learning material and integrate the elements in a presentation or in web page	40%
6.5	Online test	15%

7. Assessment methodology

A clear explanation on the assessment process (methods and tools).		
7.1.	Methods	The assessment will be based on the evaluation of the assignments and the level reached in the online test. The activities and the assignments will be evaluated by the tutor.
7.2.	Certificate of Achievement	30 credits in the Hungarian System of Teachers' Further Training Programme/Tenegen certificate in other countries.
7.3.	Threshold for success	<60%
7.4	Successfully completed	60%-80%
7.5	Excellency completion	>80%

8. Duration of module and expected working time

Estimated workload			
The module lasts for 4-6 weeks. The estimated working time needed to fulfil the requirements 6-8 hours per week, - including the collaboration time and preparing assignments. This may vary according the prior experiences and the individual learning path.			
8.1.	Duration	4-6	Weeks
8.2.	Estimated workload	6-8	hours/week

9. Prior knowledge/experiences - entry prerequisites

Lists of compulsory completed modules/ expected prior knowledge/competences to be successful	
9.1.	ICT skills
9.2.	E-learning basics

10. Coaching

Correct definition of the roles and duties of the actors working together during the course	
Actor	Responsibilities
10.1. Instructor	The learning activities will be supervised by one person as an Instructor. The instructor is the author of the module, she/he is responsible for the professional correctness and. She/he o gives professional support for the activities of the tutors; o supervises and evaluate all activities going on during the course; o create a summary report of the performance based on the tutors report and the feedback of participants.
10.2. Tutor	The learning activities will be supported by the tutors. **One tutor will guide the work of maximum 8 participants.** The tutor will help the participants to fulfill the individual tasks, she/he carry on the assessment of their performances. She/he should facilitate the collaboration and learning activities. The tutor will o follow the learning process of participants, keep contact with the participants and with the instructor; o give advice regarding learning methods; o organise and help project work; o suggest further web-materials if needed, but o evaluate the assignments. o create an evaluation report for the instructor at the end of the module.
10.3. LMS administrator	Responsible for the correct operation of the LMS. He helps to solve technical problems in networking and communication with an inspection of 8 hours per day.
10.4. Secretary	Responsible for administrative issues, like contracts (in Hungary it is obligatory for the provider in adult education), certificates, personal problems (postpones, dropout, etc.).

11. Human resource requirements of module realization

A list of the actors				
	Full name	Role	Title	Contact
11.1.	Istvan Kiss	instructor	trainer	Istvan.kiss@prompt.hu
11.2.	Later assigned	tutor		
11.3.	Later assigned	tutor		
11.4.	Later assigned	tutor		
11.5.	Gábor Lajtos	Moodle administrator		gabor.lajtos@prompt.hu
	Judit Mezei	Secretary		judit.mezei@prompt.hu

12. Delivery methods, supporting materials

Short description of the learning environment, handouts, guides supporting the learning activities	
12.1. LMS	As the learning environment of the module will serve the Moodle 1.9 Learning Management System.
12.2. Tutor guide	Tutors will be provided with **Tenegen Tutor Guide** to define detailed list of their responsibilities, and help them with report template.
12.3. Study Guide	Participants will be served with **Tenegen Study Guide** to do the first step in the learning environment, help them to find content, to use the collaboration tools.
12.4. Content	All learning material, exact definition of assignments, tests, glossaries, feedbacks will be available in th LMS.

13. Equipments and materials required for module realization

Specifications of the technological background (SW/HW) both from the server and client side including the special built in modules, and connected modules.		
	Server side	Minimum requirements
13.1.	Minimum HW requirements of the Tenegen server	Disk space 160 MB (min) - requires more free space to store teaching materials; Memory: 256MB (min), 1GB (recommended) / more 1 GB / 50 users
13.2.	Minimum SW requirements of the Tenegen server	Web server software: Apache or IIS, MySQL database, PHP-Accelerator
	Client side	Minimum requirements
Every participants should have e-mail address and Internet access.		
13.3	Minimum HW requirements of the participants' workstation	1,8 GHz CPU, 512 MB RAM, 80 GB HDD, 48xCD-ROM, Broadband Internet connection
13.4	Minimum SW requirements of the participants' workstation	Windows XP, Microsoft Office Audacity, Gimp

14. Other conditions of module realization

References to any other documents which describe special conditions, requirements to the successful performance	
14.1 Unit descriptions	**Detailed description of the components** (learning outcomes, tools, descriptions of home work and collaboration methods etc**.) for each unit to clear the dependencies among the course elements – LOs, OCs, and assignments.** See the template in Annex 3.

14.2 TCF	**Tenegen Competency Framework** - ensures the integrity and coherency of the course. A collection of learning objectives and outcomes – structured by modules/units to see as the dependencies (redundancies) within the course.

15. Quality management

The methods and processes to evaluate the results during and at the and of the module. The aim of this tools to compare the original aims (what we intended) learning objectives with the realized product (what we get).	
15.1 Methods to collect data	1. Reviews of module, unit descriptions, syllabi, learning elements. 2. Feedback for module evaluation to measure the satisfaction of the participants 3. Self assessment at the beginning and at the end of the module 4. The number of the dropout, evaluation reports by the instructor and the tutors 5. Statistics provided by the LMS (number of posts, activities, etc.)
15.2. The methods of validation	Validation report (before the start of the module) to summarize the results of the reviews (1).
15.3. The methods of verification	Verification report (at the and of the module) to elaborate the results coming from the collected data (2,3,4,5), and to formulate the suggestions for modifications.

3.4 E-learning event in Moodle – Module 4

Tenegen Module-4 Description

1. Identification data

Basic data of the module

1.1	Course Title	Tenegen - Teaching the Net Generation
1.2	Module identifier	TC04
1.3	Module Title	Classroom events in Moodle
1.4	Identifier in other (national) systems	OM 175/216/2005. (Agency for Educational Development and In service Training, HU) - Hungarian Ministry of Education and Culture PLP-760 - Accreditation Council for Adult Education Hungary
1.5	Instructor/contact	Gábor Lajtos
	E-mail	gabor.lajtos@prompt.hu
1.6	Web	
1.7.	Target group	teachers

2. Rationale - Module description

Short summary for the potential participants to answer their question "Why I should take part this module?" It describes what kind of knowledge will be emphasized, what kind of competences will be developed by the module.

The aim of the module is to prepare the participants to work in an open source learning environment (LMS). It gives a detailed, practice-oriented demonstration of the learning-side and teacher-side activities offered by the LMS, and gives an introduction how to administer in the environment. The participants will be prepared, how to manage users, how to create courses, how to integrate e-learning content and activities. They will be able to design, create their own course, and publish tasks and tests for students, to supervise the learning event, generate collaboration and communication, and use methods to assess the learners' activities. They will then evaluate it against the pedagogical aims.

3. Learning objectives

Synonyms: aims, purposes, goals in general. The LOs express the intentions of the instructor, describe what he/she **want to achieve** within the module. They are clear concepts to express the direction of the module; they are descriptions of the most important competences the module will develop. **Broad statements that will include many subordinate competences.** All the applied tools (learning elements, course components, methods, coaching) applied to deliver the module, should promote the participants to achieve the LOs.. The teaching effectiveness of the instructors' will be evaluated against the objectives given here. The description of module LOs should have a standard taxonomy within a course.	
3.1	Design e-learning events (e-learning elements, activities, assessments)
3.2	Establish e-learning environment create course built from the selected and created e-learning elements. for running the e-learning events
3.3	Run and supervise and evaluate the e-learning event and evaluate it against the pedagogical aims.

4. Learning outcomes

Learning Outcome (OC) is the fixed, measurable **result** of one or more events of teaching/learning. (OCs define "what we get" versus LOs which define "what we want"). To formulate the outcomes is suggested to use Bloom's Taxonomy (see Annex 2.).	
The participants will be able to	
4.1	establish learning environment in Moodle and administering the learning process
4.2	design e-learning events, create a synopsis
4.3	use Web 2.0 tools in Moodle
4.4	generate and moderate debates
4.5	track on and assess students' activities
4.6	evaluate e-learning event

5. Chapters

List the title of topics planned to deliver the knowledge and to develop competences connected with its weight within the module. (In each Tenegen module we planned 6-8 units).

	Title	Weight (%)
5.1	Design an e-learning event	10
5.2	Create Moodle courses	20
5.3	Adding resources (Text, Web page, Link, etc.)	15
5.4	Adding activities (Task, Chat, Blog, Forum, etc.)	20
5.5	Roles in Moodle	10
5.6	Management of users' account	5
5.7	Assessment tools, learners' records	10
5.8	Evaluation tools	10

6. Participants responsibilities

The list of activities/tests/projects/collaboration expected the participants to fulfill – and their weight within the module to be able to calculate the global performance level of the participant.		
6.1.	Activity in collaboration (in discussion forums, in chats, communication with tutors e-mail, messages) in the given theme, summarizing the results in an own assignment	10%
6.2.	Create a synopsis to e-learning event	15%
6.3.	Establish an own course in Moodle, integrate the e-learning material	35%
6.4	Test the course with students	20%
6.5	Evaluate the learning event	20%

7. Assessment methodology

A clear explanation on the assessment process (methods and tools).		
7.1.	Methods	The assessment will be based on the evaluation of the assignments. The activities and the assignments will be evaluated by the tutor.
7.2.	Certificate of Achievement	30 credits in the Hungarian System of Teachers' Further Training Programme/Tenegen certificate in other countries.
7.3.	Threshold for success	<60%
7.4	Successfully completed	60%-80%
7.5	Excellently completed	>80%

8. Duration of module and expected working time

Estimated workload			
The module lasts for 4-6 weeks. The estimated working time needed to fulfil the requirements: 6-8 hours per week - including collaboration time and preparing assignments. This may vary according the prior experiences and the individual learning path.			
8.1.	Duration	4-6	Weeks
8.2.	Estimated workload	6-8	hours/week

9. Prior knowledge/experiences - entry prerequisites

Lists of compulsory completed modules/ expected prior knowledge/competences to be successful	
9.1.	ICT basics
9.2.	E-learning basics

10. Coaching

Correct definition of the roles and duties of the actors working together during the course	
Actor	Responsibilities
10.1. Instructor	The learning activities will be supervised by one person as an Instructor. The instructor is the author of the module, she/he is responsible for the professional correctness and. She/he o gives professional support for the activities of the tutors; o supervises and evaluate all activities going on during the course; o create a summary report of the performance based on the tutors report and the feedback of participants.
10.2. Tutor	The learning activities will be supported by the tutors. **One tutor will guide the work of maximum 8 participant.** The tutor will help the participants to fulfill the individual tasks, she/he carry on the assessment of their performances. She/he should facilitate the collaboration and learning activities. The tutor will o follow the learning process of participants, keep contact with the participants and with the instructor; o give advice regarding learning methods; o organise and help project work; o suggest further web-materials if needed, but o evaluate the assignments. o create an evaluation report for the instructor at the end of the module.
10.3. LMS administrator	Responsible for the correct operation of the LMS. He helps to solve technical problems in networking and communication with an inspection of 8 hours per day.
10.4. Secretary	Responsible for administrative issues, like contracts (in Hungary it is obligatory for the provider in adult education), certificates, personal problems (postpones, dropout, etc.).

11. Human resource requirements of module realization

A list of the actors				
	Full name	Role	Title	Contact
11.1.	Dr. István Bessenyei Hartyányi	instructor	professor	
11.2.	Later assigned	tutor		
11.3.	Later assigned	tutor		
11.4.	Later assigned	tutor		
11.5.	Gábor Lajtos	Moodle administrator		gabor.lajtos@prompt.hu
11.6	Judit Mezei	Secretary		judit.mezei@prompt.hu

12. Delivery methods, supporting materials

Short description of the learning environment, handouts, guides supporting the learning activities	
12.1. LMS	As the learning environment of the module will serve the Moodle 1.9 Learning Managment System.
12.2. Tutor guide	Tutors will be provided with **Tenegen Tutor Guide** to define detailed list of their responsibilities, and help them with report template.
12.3. Study Guide	Participants will be served with **Tenegen Study Guide** to do the first step in the learning environment, help them to find content, to use the collaboration tools.
12.4. Content	All learning material, exact definition of assignments, tests, glossaries, feedbacks will be available in th LMS.

13. Equipments and materials required for module realization

Specifications of the technological background (SW/HW) both from the server and client side including the special built in modules, and connected modules.		
	Server side	Minimum requirements
13.1.	Minimum HW requirements of the Tenegen server	Disk space 160 MB (min) - requires more free space to store teaching materials; Memory: 256MB (min), 1GB (recommended) / more 1 GB / 50 users
13.2.	Minimum SW requirements of the Tenegen server	Web server software: Apache or IIS, MySQL database, PHP-Accelerator
	Client side	Minimum requirements
Every participants should have e-mail address and Internet access.		
13.3	Minimum HW requirements of the participants' workstation	1,8 GHz CPU, 512 MB RAM, 80 GB HDD, 48xCD-ROM, Broadband Internet connection
13.4	Minimum SW requirements of the participants' workstation	

14. Other conditions of module realization

References to any other documents which describe special conditions, requirements to the successful performance	
14.1 Unit descriptions	**Detailed description of the components** (learning outcomes, tools, descriptions of home work and collaboration methods etc.**) for each unit to clear the dependencies among the course elements – LOs, OCs, and assignments.** See the template in Annex 3.

14.2 TCF	**Tenegen Competency Framework** - ensures the integrity and coherency of the course. A collection of learning objectives and outcomes – structured by modules/units to see as the dependencies (redundancies) within the course.

15. Quality management

The methods and processes to evaluate the results during and at the and of the module. The aim of this tools to compare the original aims (what we intended) learning objectives with the realized product (what we get).	
15.1 Methods to collect data	1. Reviews of module, unit descriptions, syllabuses, learning elements. 2. Feedback for module evaluation to measure the satisfaction of the participants 3. Self assessment at the beginning and at the end of the module 4. The number of the dropout, evaluation reports by the instructor and the tutors 5. Statistics provided by the LMS (number of posts, activities, etc.)
15.2. The methods of validation	Validation report (before the start of the module) to summarize the results of the reviews (1).
15.3. The methods of verification	Verification report (at the and of the module) to elaborate the results coming from the collected data (2,3,4,5), and to formulate the suggestions for modifications.

3.5 Sharing Open Learning Objects – Module 5

Tenegen Module Description

1. Identification data

Basic data of the module

1.1	Course Title	Tenegen - Teaching the Net Generation
1.2	Module identifier	TC05
1.3	Module Title	**Sharing Open Learning Objects**
1.4	Identifier in other (national) systems	
1.5	Instructor/contact	Giovanni Fulantelli Pierfranco Ravotto
	E-mail	giovanni.fulantelli@itd.cnr.it pierfranco.ravotto@gmail.com
1.6	Web	
1.7.	Target group	

2. Rationale - Module description

Short summary for the potential participants to answer their question "Why I should take part this module?" It describes what kind of knowledge will be emphasized, what kind of competences will be developed by the module.
This module is based on the results of the SLOOP – *Sharing Learning Object in an Open Perspective* – project (Leonardo da Vinci Programme 2005, www.sloopproject.eu) which has promoted the sharing and the co-operative production of learning digital resources following the model of free/opensource software. This module will help the participants to understand the "open" philosophy/model which has been successfully adopted in the field of software development; to identify the state of the art concerning Learning Objects (LOs), LOs standards and LOs repositories; to describe the features of a specific model for learning object, called openLO; to discover the opportunities, for schools and teachers, of a sharing/co-operative approach in LOs production.

3. Learning objectives

Synonyms: aims, purposes, goals in general. The LOs express the intentions of the instructor, describe what he/she **want to achieve** within the module. They are clear concepts to express the direction of the module, they are descriptions of the most important competences the module will develop. **Broad statements that will include many subordinate competences.** All the applied tools (learning elements, course components, methods, coaching) applied to deliver the module, should promote the participants to achieve the LOs. The teaching effectiveness of the instructors' will be evaluated against the objectives given here. The description of module LOs should have a standard taxonomy within a course.	
3.1	To understand how the "open" philosophy/model, very common in the field of software development, can be effectively applied to the production of educational content
3.2	To know the concepts basic to the OpenLO model: Learning Object; standards; metadata; open licences
3.3	To reflect on the different implementations of the Learning Object concept, and assess the features of the OpenLO model against alternative models
3.4	To use a Learning Object Repository and a Learning Object Management System
3.5	To be able to provide elearning courses by using Learning Objects published in a Learning Management System
3.6	To reflect on the differences and similarities amongst Web 2.0 digital resource repositories and Learning Object Management Systems, in order to highlight benefits and drawbacks of different approaches
3.7	To evaluate the opportunities, for schools and teachers, of a sharing/collaborative approach to Learning Objects production

4. Learning outcomes

Learning Outcome (OC) is the fixed, measurable **result** of one or more events of teaching/learning. (OCs define "what we get" versus LOs which define "what we want"). To formulate the outcomes is suggested to use Bloom's Taxonomy (see Annex 2.).	
The participants will be able to	
4.1	explain why the learning materials are a critical point for traditional learning, online learning and blended learning
4.2	give a definition of Learning Object
4.3	list Learning Object characteristics;
4.4	give a definition of reusability, adaptability, interoperability, traceability;
4.5	give a definition of standard and identify different kinds of standards (de iure, de facto) for the Learning Object world;
4.6	illustrate SCORM aims and main features;
4.7	use basic SCORM terminology;
4.8	give a definition of meta-data;
4.9	illustrate LOM IEEE aims, its main features, and its similarities and differences with Web 2.0 tags;
4.10	describe free/open source software principles and some cases of success;
4.11	describe open content principles and some cases of success;

4. Learning outcomes

Learning Outcome (OC) is the fixed, measurable **result** of one or more events of teaching/learning. (OCs define "what we get" versus LOs which define "what we want"). To formulate the outcomes is suggested to use Bloom's Taxonomy (see Annex 2.).	
4.12	describe the aim of the CreativeCommons licences (CC) and illustrate different types of CC licences;
4.13	give a definition of open Learning Object (openLO);
4.14	illustrate the pedagogical, technical and legal requisites to make an openLO;
4.15	insert into a blog or an on-line course the embedded code of a digital resource
4.16	Search and download learning resources in FreeLOms
4.17	upload a learning resource into FreeLOms and fill in the metadata;
4.18	use FreeLOms to transform a PPT presentation into a SCORM LO;
4.19	modify a openLO in freeLOms;
4.20	build up a new Learning Object in FreeLOms using existing resources;
4.21	insert a SCORM LO in a Moodle course directly from FreeLOms;
4.22	save the backup of a Moodle course (without students data) into FreeLOms

5. Chapters

List the title of topics planned to deliver the knowledge and to develop competences connected with its weight within the module. (In each Tenegen module we planned 6-8 units).

	Title	Weight (%)
5.1	Using eLearning to enhance teaching and learning in schools: the learning materials, a critical point,	20
5.2	Reusability, adaptability, interoperability: the Learning Object model and the SCORM and LOM standards.	
5.3	The "open" model: free/opensource software and open content. The copyleft licences.	20
5.4	The openLO model: technical, pedagogical and legal aspects.	15
5.5	Learning Object Repositories: features and characteristics of the principal digital repositories.	20
5.6	The freeLOms: an environment where to share and produce LOs in a co-operative way.	25

6. Participants responsibilities

The list of activities/tests/projects/collaboration expected the participants to fulfill – and their weight within the module to be able to calculate the global performance level of the participant.		
6.1.	Collaborative definition and design of a Learning Object.	10%
6.2.	Production of a SCORM-compliant Learning Object	35%

6.3	Activity in collaboration (in discussion forums, in chats, communication with tutors e-mail, messages, through the FreeLOms platform) aimed at producing a learning resource	20%
6.4	Report about the potential of using Learning Objects and Web 2.0 collaborative site in an integrated way, including the potential translation methods between tag and metadata systems	20%
6.5.	Online test	15%

7. Assessment methodology

A clear explanation on the assessment process (methods and tools).		
7.1.	Methods	The assessment will be based on the evaluation of the assignments and the level reached in the online test. The activities and the assignments will be evaluated by the tutor.
7.2.	Certificate of Achievement	Tenegen certificate
7.3.	Threshold for success	<60%
7.4	Successfully completed	60%-80%
7.5	Excellently completed	>80%

8. Duration of module and expected working time

Estimated workload			
The module lasts for 4-6 weeks. The estimated working time needed to fulfil the requirements 6-8 hours per week, - including the collaboration time and preparing assignments. This may vary according the prior experiences and the individual learning path.			
8.1.	Duration	4-6	Weeks
8.2.	Estimated workload	6-8	hours/week

9. Prior knowledge/experiences - entry prerequisites

Lists of compulsory completed modules/ expected prior knowledge/competences to be successful	
9.1.	ICT basics and educational ICT tools
9.2.	e-learning basic concepts
9.3	Web 2.0 tools

10. Coaching

Correct definition of the roles and duties of the actors working together during the course	
Actor	Responsibilities

10. Coaching

Correct definition of the roles and duties of the actors working together during the course	
Actor	Responsibilities
10.1. Instructor	The learning activities will be supervised by one person as an Instructor. The instructor is the author of the module, she/he is responsible for the professional correctness and. She/he 4 gives professional support for the activities of the tutors; 5 supervises and evaluate all activities going on during the course; 6 create a summary report of the performance based on the tutors report and the feedback of participants.
10.2. Tutor	The learning activities will be supported by the tutors. **One tutor will guide the work of maximum 8 participants.** The tutor will help the participants to fulfill the individual tasks, she/he carry on the assessment of their performances. She/he should facilitate the collaboration and learning activities. The tutor 7 follow the learning process of participants, keep contact with the participants and with the instructor; 8 give advice regarding learning methods; 9 organise and help project work; 10 suggest further web-materials if needed, but 11 evaluate the assignments. 12 create an evaluation report for the instructor at the end of the module.
10.3. LMS administrator	Responsible for the correct operation of the LMS. He helps to solve technical problems in networking and communication with an inspection of 8 hours per day.
10.4. Secretary	Responsible for administrative issues, like contracts (in Hungary it is obligatory for the provider in adult education), certificates, personal problems (postpones, dropout, etc.).

11. Human resource requirements of module realization

A list of the actors				
	Full name	Role	Title	Contact
11.1.	Pierfranco Ravotto	Instructor	eLearning consultant	pierfranco.ravotto@gmail.com
11.2.	Giovanni Fulantelli	Instructor	eLearning Researcher	giovanni.fulantelli@itd.cnr.it
11.3.	István Kiss	tutor		
11.4.	Anikó Gelencsér	tutor		
11.5	Later assigned	tutor		
11.6.	Gàbor Lajtos	Moodle administrator		gabor.lajtos@prompt.hu
11.7	Judit Mezei	secretary		judit.mezei@prompt.hu

11.8	Later assigned	secretary		

12. Delivery methods, supporting materials

Short description of the learning environment, handouts, guides supporting the learning activities	
12.1. LMS	As the learning environment of the module will serve the Moodle 1.9 Learning Management System.
12.2. Tutor guide	Tutors will be provided with **Tenegen Tutor Guide** to define detailed list of their responsibilities, and help them with report template.
12.3. Study Guide	Participants will be served with **Tenegen Study Guide** to do the first step in the learning environment, help them to find content, to use the collaboration tools.
12.4. Content	All learning material, exact definition of assignments, tests, glossaries, feedbacks will be available in th LMS.

13. Equipments and materials required for module realization

Specifications of the technological background (SW/HW) both from the server and client side including the special built in modules, and connected modules.		
	Server side	Minimum requirements
13.1.	Minimum HW requirements of the Tenegen server	Disk space 160 MB (min) - requires more free space to store teaching materials; Memory: 256MB (min), 1GB (recommended) / more 1 GB / 50 users
13.2.	Minimum SW requirements of the Tenegen server	Web server software: Apache or IIS, MySQL database, PHP-Accelerator
13.3.		
13.4.		
	Client side	Minimum requirements
Every participants should have e-mail address and Internet access.		
	Minimum HW requirements of the participants' workstation	PC/laptop; internet access
	Minimum SW requirements of the participants' workstation	E-mail address; MS/Open Office

14. Other conditions of module realization

References to any other documents which describe special conditions, requirements to the successful performance	
14.1 Unit descriptions	**Detailed description of the components** (learning outcomes, tools, descriptions of home work and collaboration methods etc**.) for each unit to clear the dependencies among the course elements – LOs, OCs, and assignments.** See the template in Annex 3.
14.2 TCF	**Tenegen Competency Framework** - ensures the integrity and coherency of the course. A collection of learning objectives and outcomes – structured by modules/units to see as the dependencies (redundancies) within the course.

15. Quality management

The methods and processes to evaluate the results during and at the and of the module. The aim of this tools to compare the original aims (what we intended) learning objectives with the realized product (what we get).	
15.1 Methods to collect data	1. Reviews of module, unit descriptions, syllabussies, learning elements. 2. Feadback for module evaluation to measure the satisfaction of the participants 3. Self assessment at the beginning and at the end of the module 4. The number of the dropout, evaluation reports by the instructor and the tutors 5. Statistics provided by the LMS (number of posts, activities, etc.)
15.2. The methods of validation	Validation report (before the start of the module) to summarize the results of the reviews (1).
15.3. The methods of verification	Verification report (at the and of the module) to elaborate the results coming from the collected data (2,3,4,5), and to formulate the suggestions for modifications.

13 Glossary of terms

13.1 Tenegen terms

Learning Objective (LO)

Synonyms: aims, purposes, goals in general. The LOs express the intentions of the instructor, describe what he/she **want to achieve** within the module. They are clear concepts to express the direction of the module, they are descriptions of the most important competences the module will develop. **Broad statements that will include many subordinate competences.**

All the applied tools (learning elements, course components, methods, coaching) to deliver the module, should promote the participants to achieve the LOs.

The teaching effectiveness of the instructors' will be evaluated against the objectives given here.

Learning Outcome (OC)

Learning Outcome (OC) is the fixed, measurable **result** of one or more events of teaching/learning.

Learning outcomes are the competences planned to develop by the learning activities within one or more units. The OCs will be demonstrated by the students' assignments. (OCs define "what we get back from the students" versus LOs which define "what the instructor intended").

Between the LOs and OCs there is a one-to-many relationship, which means that to one objective belong several learning outcomes, connected to the units.

Learning element

Synonym: learning object. One piece of knowledge/information **created by the author for educational aim.** Digital learning element are delivered (stored) in standard digital formats (txt, jpg, htm, xml, etc.). The medium of delivery could be picture, text, audio, video, animation.

To access and search learning objects they should be described with metadata, which are arbitrary (artificially defined) descriptors, essential attributes. (The number and type of metadata will be defined by Tenegen Consortium in the phase of developing the repository according SLOOP concept.). The metadata gives the possibility to create a searchable, accessible relational database (RDB) for storing learning elements. According their pedagogical aims, the learning elements may be categorized as: explanation, concept, tasks, tests, problems, etc.

E-learning material: a coherent set of learning elements to deliver knowledge, to develop competences, to motivate, etc.

13.2 Bloom's Taxonomy

http://oct.sfsu.edu/design/outcomes/index.html

"Within the cognitive domain, Bloom's Taxonomy defines six levels, from the simplest behavior to the most complex. When describing behaviors, take a look at the list of measurable words in the charts below:"

Bloom's Taxonomy

Level 1: Information or knowledge

Show that you know:

Cite	Identify	Name	Recognize	State
Count	Indicate	Point	Record	Tabulate
Define	Label	Quote	Relate	Tell
Describe	List	Read	Repeat	Trace
Draw	Locate	Recite	Select	Write

Level 2: Comprehension

Show that you understand:

Associate	Convert	Estimate	Illustrate	Report
Classify	Describe	Expand	Interpolate	Restate
Compare	Differentiate	Explain	Interpret	Review
Compute	Discuss	Express	Locate	Summarize
Contrast	Distinguish	Extrapolate	Predict	Translate

Level 3: Application

Show that you can use what you have learned:

Apply	Demonstrate	Interpolate	Practice	Schedule
Calculate	Dramatize	Interpret	Predict	Sketch
Choose Procedures	Employ	Locate	Relate	Solve
Collect Information	Examine	Operate	Report	Translate
Complete	Find Solutions	Order	Restate	Use
Construct	Illustrate	Perform	Review	Utilize

Level 4: Analysis

Show that you perceive and can pick out the most important points the material / presentation:

Analyze	Criticize	Diagram	Generalize	Organize
Appraise	Debate	Differentiate	Infer	Question
Conclude	Detect	Distinguish	Inspect	Separate
Contract	Determine	Experiment	Inventory	Summarize

Level 5: Synthesis

Show that you can combine concepts to create an original thought or idea:

Arrange	Construct	Formulate	Manage	Prescribe
Assemble	Create	Generalize	Organize	Produce
Collect	Design	Integrate	Plan	Propose
Compile	Detect	Invent	Prepare	Specify
Compose	Develop			

Bloom's Taxonomy

Level 6: Evaluation

Show that you can judge and evaluate ideas, information, procedures and solutions:

Appraise	Contrast	Develop	Measure	Revise
Assess	Criteria	Estimate	Rank	Score
Choose	Critique	Evaluate	Rate	Select
Compare	Decide	Grade	Recommend	Test
Conclude	Determine	Judge		

Words to avoid

Avoid using these words and phrases when writing objectives:

Appreciate	Grasp the significance of			Learn
Be comfortable with	Have faith in			Recognize
Believe	Internalize			Understand
Enjoy	Know			

14 Bibliography

1. Example for describing LOs

"The educational objectives are to have trained: all graduates for careers in industry or technical entrepreneurship within the computer engineering field"

http://abet.eecs.ucf.edu/

2. eLearning Competency Framework for Teachers and Trainers

www.eife-l.org/publications/competencies/ttframework

3. UNESCO's ICT Competency Framework for Teachers.

http://cst.unesco-ci.org/sites/projects/cst/The%20Standards/ICT-CST-Competency%20Standards%20Modules.pdf

4. LOs and OCs

http://www.mjc.edu/slo/No-Nonsense_Materials/AboutSLOs_faculty_new.ppt

