

# Conceptual framework of the learning environment

The OPEN SoundS project promotes a meaningful example of transferability in systems of different forms of access and building of knowledge informally developed on the Internet by its young users.

The Open Sounds background is that of creative collaboration on the Internet in different countries for the creation of music or complex multimedia projects. It considers the world of Virtual Studio Recording for professionals and advanced sharing asset systems for management on the Internet. Also considered are projects of knowledge archives or knowledge management systems created by the contribution of users and experts of all over the world.

Open SoundS thinks and looks at *now and present phenomenon of remote interaction as a widespread working usual practice*.

The current landscape of the use of portals for remote collaboration, as demonstrated by the results of research, is extremely diversified for size and type of services offered. Indeed, there are reality quite distinct and very dissimilar, which preserve as common elements the presence of a constant and gradual expansion of the entire sector.

Through the research activity was completed the analysis and evaluation of:

- the most important sectorial web portals existing in general on the Net, then focusing the analysis to those directed to the learning environment of the partners of the project;
- the **compatibility of most inovactive practices** developed inside them with the formal education system and, of course, the **assessment of their effective possibility to be integrated in the phase of re-planning and re-organization of the MODEM platform** to the transfer purposes.

The proposals processed to this purpose by the partners of the project have been shared and deeply discussed during the II<sup>o</sup> meeting of the project organized in Padova and during the seminar, organized by the University of Padova, dedicated "to the consideration on the survey results and on the sociological and technological main aspects of the re-organization of the MODEM platform to the transfer purposes.

The most significant results of these considerations are presented in the next pages, where it will be outlined, consistently with the survey results, the **conceptual framework that will direct on the pedagogical and technological level the re-planning and the development** of the:

- **collaboration platform of OPENSOUND S dedicated to the musical creation inside the virtual and transnational work team**
- **building shared practices of the knowledge and of the competence in the music field feaseble by the european students network builded through the project**
- support tools both for the platform use and for the acquisition of technical and more general compences, in relation to the learning environments on the Net and to the particular communication modalities of these environments

- framework of the learning aims that will direct the evaluation process of the experimentation results in terms of knowledge, skills and competences acquirable by means of practices realized inside it

# 1 Web portals to remote collaboration

The main phenomenon to understand the proportion of development on the Internet is to reflect on its features developing a better vision of its use by Communities and about OPEN SoundS, by musicians that cooperate online share projects.

Some of the features of the Networks:

- they are not only connections
- contents, on the contrary of the Internet technical typology are not rigidly determined by its inventors
- the Internet forces to learn how to use it
- Internet does not exist without using it

Networks are

- Interactive
- In progress
- Collaborative

Networks without streams of knowledge that pass through do not have sense. Knowledge enters on the Internet has two main relevant features:

- to replace operations to woks
- to replace representations with new knowledge production

In other words, on the Internet **knowledge is dynamical, interactive, in progress and collaborative as Networks offering hospitality.**

Interconnecting knowledge operates only on the Internet. It exists because the Internet exists. Some knowledge exists and can be used/spread/modified by others (in the community of open source software for example or in that of musicians). Knowledge has the dynamic framework of a biological organism that adapts itself to the environment (the Internet) that feeds, sustains and welcomes it but forces it to endless adjustments to survive.

Everywhere the interconnecting networks and knowledge force us to sustain as authors/consumers of Knowledge, an interrupted identity game (building of our knowledge as "to know who I am" and "to know what I have") and a permanent interface with a machine that brings to knowledge that I do not have. This game gets through the borders between machine and man, between the semantic and binary code. The interfacing process with machine explains the overall organization of our society (a machine for definition)

Knowledge cross many translations (between different media, electrical signals, binary codes, semantic syntaxes and programme codes, auditory and visual perceptions, emotion and rationality). We are active and passive producers of technologies we use and of contents that they carry. We have to underline the result of this change:

- In communication knowledge is used on the Internet
- Networks carry knowledge everywhere

Nowadays we have at disposal multimedia technologies that are not neutral to express us.

As technologies of the word (that translated the rational thought and have been building for three millenniums the only approach to knowledge by man) those of image and sound shape the form of the thought and of the soul, and therefore the individual and its culture.

In the world people are reflecting on the impact these new and powerful means of expression have and will have, not only in their didactic use to transmit knowledge, but in general as a new way of thinking, organizing and placing it in environments where the thought acts.

The new kind of thinking, learning, creating, located in spaces with a reticular and virtual structure, mediated by computers and realized by the digital technologies, it is assuming the

medium itself as a specific place to build and realize not only a tool but to become an active place of thought and action (as once was only the word and the writing).

**In these environments the thought realizes, becomes culture in practices and handmade tools of the personal creativity.**

How is this innovative activity creative? Nowadays in exchanging web portals more frequently in use as [www.myvirtualband.com](http://www.myvirtualband.com), [www.icompositions.com](http://www.icompositions.com) and [www.ccmixer.org](http://www.ccmixer.org), <http://www.mi7.com>, exist tools to talk, exchange information, competences (social networking area), upload and download file (technical areas, database and tools) and informative areas, both technical and general (for visitors, the so called world outside the community).

This kind of spontaneous "organisms" created by communities have a double use: they are as harbours to reach where to exchange our own "goods" at the same level and on the other hand they are "shops" where learners meet to improve together and where a more experienced learner comes out to start leading the common work till the upper level of competence where someone else will take the leadership.

After a certain period of time the well-structured and "advanced" web portals start to have economical ambitions for sustaining the community and transforming themselves in companies or they have bought by companies. The survey carried out by the OPEN SoundS consortium has clarified these and other aspects of the phenomenon of web portals for remote collaboration.

Nowadays to explain the qualitative phenomenon on the Internet exist communities of major social networking as MySpace.com, with more than one million users in the world and 12 millions are members of the 3 millions of music groups that have their place the community within.

And there are niche communities, made by thousands of active members, and we put our attention on these, because they are the most suitable to the educational view of the OPEN SoundS project, with the aim to model their behaviours and to transfer them in our work environment.

## 2 Music and Social networking

Considering this world and the modern structures of the Internet that encourage asynchronous exchanges, now we can try to describe the OPEN SoundS Training Model as thought in the project to develop a remote collaborative learning environment and to supply to its users the necessary training tools effectively use it.

This double objective reflects naturally on the web portal framework, both in its public (informative and institutional) and operative phase (the area where will take place its shape and where the resources will be at disposal of users of the web portal should use them to produce Remote Transnational Projects).

The Learning Area Model described both in its contents and technology as it follows is the most important outcome of the project.

The Base level will be used to create joint and several learning groups, the Advanced level will be dedicated to sharing activities of materials and knowledge in the Transnational Learning Community.

For both these levels will be created appropriate support tools coherent with the learning processes proposed and, more in general, with the use of the collaborative environments existing on the Internet.

What is the novelty and functionality of this structure? It is in its reflection of the "new world" that the Internet and its behaviours set up.

It is useful to remember that the world of new technologies has its own logic and symbolic representation versus the alphabetic (books) and mass media (cinema, TV).

According to Manovich the new media the logic of database (paradigm) prevails on narrations (syntagm) reversing the consolidated relationship in the natural language and sequential writing.

In texts words are in line in sequential chains that have sense hiding the paradigmatic side (the major database of words where have merged represented by the dictionary of a certain language) in new mass media that (links, videos, audio, photos, icons, buttons, objects and their behaviours) is always there in front of us in the screen and the sequences of links/actions done by us – the so called "surf the Internet" – create the narration (it means what the surfing produces as for example to collect data, new contacts, play or cultural experiences)

As in the major database we extract words we need to tell/write our ideas, in the major archive of the Internet, or from the restricted database at our disposal in OPENS SoundS we can extract and collect what we need to create projects to share on the Internet.

Samples, loops, music and other people's experiences will be used as a database, on the logic of the Internet, to build up our projects/speeches to send in the exchange area and to have/press some replies, in the shape of sonorous integration, qualitative improvement, refuse, verbal or written suggestions to change/improve our project in Open Code and to make it public/private, mine/ours, in a Community that learns and improves at the same time.

In the Learning Area, the Virtual Studio Community **will be given the access to two aspects of learning, that of technologies of the field (music) and that of communicative technologies (the Internet and the remote collaboration)**, aiming from the beginning, in the logic of the OPEN SoundS project to integrate the two competences.

On the educational plan the consequences can be identified at two levels of innovation: conceptual one and operative one.

### **Conceptual innovation**

Besides the logic-deductive-linear thought that has shown in the alphabet and in its tool during the centuries in press technology, writing merges in the digital network world as a logical-

associative-reticular, symbolical and analogical-imaginative thought that has been associated with the primitive thought (Levi Strauss and Leroy Gourhan) or to the pathologic and visionary thought (Jung, Guenon)

On the Internet knowledge and its multimedia connotations introduce the paradigm being complex and multi dimension and as a logic consequence it produces the destruction of consolidated centralities by traditions introducing the a-centrism and/or the multicentrism. This causes a crisis of hierarchy knowledge (science and art, cultured and worldly knowledge etc.) and comes alongside a simultaneous opening to the contamination of knowledge, transversal codes and usual practices.

On this changing world the main streams of reflection can be found in cognitive and constructivism schools besides schools of communication sociology that go back to McLuhan as those of De Kerkhove, Castelletts and Levy. We can not underestimate other supports and other ways of thinking as:

- ▣ complex and multi dimension knowledge (Morin, Varela, Prigogine);
- ▣ Knowledge as a choice between word and silence between prospectives always different (Wittgenstein);
- ▣ virtual and sensory realities (recovery of the body as a cognitive machine; technologies of "mind-body"; deep knowledge)
- ▣ integration between analogical and digital languages;
- ▣ Multiple and distributive knowledge and learning conception (Oslon, Gardner, Cole, Bruner)

All these perspectives anticipate, create and/or reflect on the impact of machines, of logic automatic processes, on the various, new, executive and communicative creative methodologies linked to technology and to the most recent digital and of the Internet, evaluating the cognitive, pedagogical, play and functional aspects.

New technologies are changing certainly the concept of knowledge and literacy. What does it mean to boys in training literacy to media?

The (new) literacy involves to be able to and to have skills for:

- ▣ living in our time being surrounded by media
- ▣ communicating fluently using old and new media, comparing, choosing and evaluating texts, images, sounds and videos
- ▣ understanding and screening the meaning of multimedia messages that form our environment
- ▣ understanding and managing the difference between virtual and real, fiction and reality, communication and advertising

### **Operative innovation**

It means to be able to develop creative contents to cross Networks and new social environments that have been formed within (virtual communities).

The mass media literacy lets to develop creative contents using new media to be able to:

- Analyse the representation and meaning of contents in the multimedia context.
- Produce and give out contents linked to the Internet multimedia reality.
- Increase own social participation by media and competence (aware and motivated information).

It remains to underline the role that new media provide being innovative means (they have produced and produce new kinds of jobs, thought and organisation) and develop ones (new professional groups are trained by the Internet and technologies that innovate, change and improve what exists)

Typical examples are the open source in all its aspects, communities that play and produce games and technologies linked to them, the musical field of self production and online independent recording companies too.

It is necessary to underline and to point other aspects that make these innovations particularly meaningful for their consequences on the training and educational plan linked to the conceptual and operative innovation produced by practices on the Internet in music and/or creative environment.

In this direction the most interesting results merged by the analysis of the practices developed in music web portals analysed in the survey and that we intend to point out as follows:

- learning is always in progress
- team works and communities are born and always in progress
- the creative element is essential in the process
- team works and sharing project can be defined only belonging to a content, a theme, an interest or a problem linked to music
- The learning environment supports and promotes collaboration
- Motivation always prevails on technology
- Motivation is interpreted and managed by authors around the idea of quality product
- Improvement of the individual and of its competences in a team work is realized mainly by a criteria of skills to support creativity and quality
- Build competence and knowledge based on skills to develop creative projects
- Communication leads to build constant meeting
- Resources to use are its own and supplied by all participants

### 3. The environment to build

The most important objective of OPEN SoundS is to develop a remote collaborative learning environment and to supply to its users the necessary training tools to use it effectively.

This objective is achieved in the project by combining two parallel phases:

- the technical content plan – reorganizing, starting from an existing model and from the study of similar environments present on the Net, a Remote Collaboration area where to develop sharing music productions even though not in the same place.
- the cultural content plan – the creation of learning environments to support the acquisition of technical competences, specifically regarding creative environments and software for music production and the more general competences linked to the network learning environments and to the communication modalities of these environments.

The working and project environment developed by OPEN Sounds will therefore be a virtual environment dedicated to the remotely and creative expression and at the same time to build transnational community of peers that through the creation of common musical productions, develop constructive and larger learning processes.

The environment we are going to build will have:

- a collaborative and remote learning environment developed according to the educational needs of the students
- a technological model that supports the pedagogical framework of the learning environment (choice of typologies of suitable platforms, media and formats to support specific trends on the educational and training plan)
- l'individuazione degli obiettivi formativi e delle competenze che si ritiene possano essere perseguiti dai ragazzi mediante le pratiche sviluppate in tali ambienti
- Individuation of the learning objectives and competencies that we believe to be pursued by the students through the practices developed in these environments.

Reflection on the virtual environment to achieve has therefore been developed integrating technological level and pedagogical one, towards a use of technology in school and training system that includes:

- a) variety and complexity of creative actions achievable in team of working and project common geographically dislocated;
- b) knowledge of the new psychological profiles and new value-maps that guide choices, attitudes and social practices, virtual and real, of the people;
- c) the construction of virtual learning environments supported by technology that allows its constant reconfiguration in relation to each new acquisition, in technological and communication terms.

### 3.1 The learning environment

In the model platform planned by OPEN SoundS, the learning environment will be essentially **participated** and **led to planning**.

A) It must be participated it means to maximize the participation, intended as a chance to students to express motivation, passion to do. The condition of motivation, their emotional involvement in experience is a necessary condition so that the work and project team that are born having as aim that to realize share music products that can be in progress and develop. Because reason to participate as a central element of the process must not be discouraged but improved, the learning environment should have some relevant features:

- participation in each activity will be natural.
- Creative/music products as the core of the project should be commonly shared.
- Interaction forms will be different (so many different languages) (lyrics, audio, ideo etc.) to realize in different communication environments (different project areas but also chats, forums, blogs etc.).
- Different contributions will be guaranteed at a minimum standard competence and importance to guarantee constant and growing interest for a sharing activity.
- Production and legitimacy of creative productions realized must be constantly shared.

In this learning environment the role asked to teachers, tutors, educators and any other intermediary or people that make an easy access to the platform planned to be used in an educational and training environment as in self learning paths is that to:

- Express a sensitive and moderate leadership
- Develop suitable helping competences
- live and increase the emotional experience elements that are the key for the active share to projects realized in a virtual team work
- guarantee the acknowledge of learning styles regarding different project groups
- provide to promote and sustain activities

B) Another important element of the learning environment realized by OPEN SoundS is aimed at planning. An environment where building knowledge processes are led to the integration of languages, interdisciplinary feature and planning

Every working and project path will lead to different potential users of the platform:

- to know how to elaborate projects open to the sharing of different people
- to know and respect the implicit rules of sharing to transnational group projects
- to create an original production network where every single output is the integrant part of a communication-sharing-collaboration-use circuit directly connected with all the other outputs and with all participants to the cooperative exchange.

It is important to point out that, to be part of a team work, in this context it is necessary to have **technical competence** because passion and voluntariness is not enough. The **competence level possessed**, in fact, are the factor, more then others, that **establishes the possibility to be part of a group** to develop a specific project (access barrier).

To lead knowledge to planning, the environment we are going to build will considerate the above mentioned trends leading harmoniously the training team work to knowledge-objective evaluating base knowledge and competence to be sure that spontaneous trends are based on vocations, spontaneity and participation can be outlined and in progress.

Another fundamental element to lead planning will be provided by the choice **to put at disposal a working environment characterized by technological solutions coherent with the planning above mentioned**.

These technologies are aimed to put together people that share a project and want to realize it by means of collaborative, transparent and open working processes, using technologies born and developed by communities that live and animate the Net to this aim.

## **3.2 Technological environment**

Building the platform framework the main element has been the choice and definition of the sustainable technological model that can support both technical functionality and pedagogical framework.

The consequence on the environment to plan has been led by the analysis of the most important web portals of the field that are on the Internet. Comparing the collected data has given useful information to diversify and articulate, being based on processes and possible activities, the organization of different working areas, tools to support, forms and interaction modalities.

The technological environment planned on completion of the transfer and experimentation phases of the OPEN Sounds project is described in the document "Conceptual Framework II. Technological environment" (here enclosed) and developed by Brighton-art , Nuvole e CSC.

This document presents the platform framework to exchange and produce music in remote and technological appliances to its support.

In particular, the "Conceptual Framework II. Technological environment" presents:

- the platform framework, the various project areas, the production activity typology planned within: Project Area and Tools area;
- description of the organization of the various project areas and the production typology communication activities and support to the sustainable training;
- description of the main technical requisites of web appliances to develop to support the environment

## 4. Learning outcomes

The general aim of OPEN SoundS is to reorganize and transfer to the education system a virtual learning environment to supply to its young users suitable tools to develop music production activities on the Internet by team works in different countries to benefit on the training and educational plan.

The project, through a highly innovative and creative practice in fact wants to be a means to stimulate and support for:

- A) the development of key competencies for initial and continuing training;
- B) a more concrete possibility of transition into the labor market.

All this through the development and management conscious of practices and creative processes mediated by the use of digital music technologies and network within a learning environment specifically designed for this purpose.

Consistently with the objectives of the project, therefore, an aspect, no less significant and complex has been the integration by the technological model and pedagogical framework linked to a define framework of training objectives and competences really achieved really achieved by young people in training by the use of planned remote collaboration environment.

It should be emphasized that the designed environment will promote learning processes and construction of activities that impact on the possible innovation of teaching processes in formal systems. And that these processes, in their turn, aim to achieve specific educational goals and skills by young people in training

The framework of **results expected by the students as users of the environment is, therefore, a central part of a more general conceptual framework proposed** and, beyond to guide the aims of the project, has determined the structure, form, content and functioning of actions and products to be developed.

This framework was defined starting and in compliance with **the descriptors that define the European Qualifications Framework (EQF) and the respective 8 levels<sup>1</sup> of qualification** in which is divided (Recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning- of April 23<sup>rd</sup>, 2008-)

More in particular in the definition and construction of the framework:

- a. have been identified a number of learning outcomes, related to use of an environment dedicated to the music production in transnational virtual team, such as the OPEN SoundS platform
- b. the learning identified were formulated in a form consistent with the descriptors of achievements and abilities associated with qualifications / academic titles that, in the European Qualifications Framework, represent the end of each cycle
- c. the framework of learning has been articulated in line with all eight levels, provided by the framework, since, in the testing phase in addition to students present in the second cycle of education and vocational training system (target elective), will also be involved f students present in the first cycle and the Conservatives in order to test and verify the entire vertical chain of musical training and the educational potential of the use of collaborative learning as OPEN Sounds platform

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<sup>1</sup> In the European Qualifications Framework are previewed 8 levels and for each of them is defined by a set of descriptors indicating the learning outcomes relevant to qualifications at the learning outcomes relevant to qualifications at that level in any system of qualifications

## Learning outcomes<sup>2</sup>

### FRAMEWOK OF THE **KNOWLEDGE , SKILLS AND COMPETENCES** MUSIC AND TECHNOLOGY RELATED

<b>KNOWLEDGE<sup>3</sup></b>	<b>SKILLS<sup>4</sup></b>	<b>COMPETENCES<sup>5</sup></b>
<p>In the context of EQF, knowledge is described as theoretical and/or factual.</p>	<p>In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).</p>	<p>In the context of EQF, competence is described in terms of responsibility and autonomy</p>
<ul style="list-style-type: none"> <li>▫ Know the new languages and new codes of the music, information and communication world, on the Internet</li> <li>▫ Know the tools for the cooperative team work</li> <li>▫ Know the use of the network process</li> <li>▫ Know the procedures and tools for the creation shared of music by digital technologies</li> <li>▫ Develop of contextualized, integrated and useful musical knowledge,</li> </ul>	<ul style="list-style-type: none"> <li>▫ Ability to ménage new information and communication languages and codes on the Internet</li> <li>▫ Ability to use with autonomy tools and collaborative environments on the net</li> <li>▫ ability to use procedures and tools for music creation and sharing by digital technologies</li> <li>▫ ability to search, understand, select, manipulate and create data and information</li> <li>▫ Ability to use personal aesthetics, expressive</li> </ul>	<ul style="list-style-type: none"> <li>▫ Work, study , project with some autonomy</li> <li>▫ take responsibility for completion of tasks in work or study</li> <li>▫ adapt own behaviour to circumstances in solving problems</li> <li>▫ develop a project with some autonomy</li> <li>▫ manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts</li> <li>▫ Show the skill to lead its own learning and understand the learning processes</li> </ul>

<sup>2</sup> **“learning outcomes”** means statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence;

<sup>3</sup> **“knowledge”** means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework, knowledge is described as theoretical and/or factual;

<sup>4</sup> **“skills”** means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments);

<sup>5</sup> **“competence”** means the proven ability to use knowledge, skills and personal, social and/ or methodological abilities, in work or study situations and in professional and personal development. In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy

<ul style="list-style-type: none"> <li>▫ Access, recognition and valorisation of own curiosity, critical attention, interest to studies and carried out projects</li> <li>▫ Know the relevance of the development of the creative skill</li> <li>▫ Know the value of communication, cooperation and negotiation</li> <li>▫ Access to collaborative learning processes that valorise the diversity of points of view and approaches</li> <li>▫ • Knowledge of processes / learning environments welcoming, motivating and able to strengthen interests and develop vocations</li> <li>▫ Know the importance of diversity, understanding, membership and multiculturalism</li> </ul>	<p style="text-align: center;">and creative skills</p> <ul style="list-style-type: none"> <li>▫ Ability to create and give a real contribution to a shared project development</li> <li>▫ Ability to integrate accepted knowledge in an informal environment with knowledge learnt in formal contexts</li> <li>▫ Ability to analyze and suggest solutions to solve problems</li> <li>▫ Knowledge of personal learning strategies activated in different situations in the proper way</li> <li>▫ Ability to interact in a critical, positive and constructive way with other people</li> <li>▫ Ability of Self analysis and self evaluation</li> <li>▫ Ability to Communicate, cooperate and negotiate</li> <li>▫ Ability to manage the change and complexity</li> <li>▫ Ability to express a personal vision of the world showing understanding and respect for diversity</li> </ul>	<ul style="list-style-type: none"> <li>▫ review and develop performance of self and others</li> <li>▫ manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts</li> <li>▫ take responsibility for managing professional and creative development of individuals and groups</li> <li>▫ manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches</li> <li>▫ Develop strategic approaches applying specialist knowledge and creative responses</li> <li>▫ take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams</li> <li>▫ demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research</li> <li>▫ Dimostrare di conoscere l'importanza della diversità, della comprensione dell'appartenenza e della multiculturalità</li> <li>▫ Demonstrate knowledge of the importance of diversity, understanding, membership, and multiculturality</li> </ul>
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### ***Compatibility with the Framework for Qualifications of the European Higher Education Area***

The Framework for Qualifications of the European Higher Education Area provides descriptors for cycles. Each cycle descriptor offers a generic statement of typical expectations of achievements and abilities associated with qualifications that represent the end of that cycle

- The descriptor for the higher education short cycle (within or linked to the first cycle), developed by the Joint Quality Initiative as part of the Bologna process, corresponds to the learning outcomes for EQF level 5.
- The descriptor for the first cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 6.
- The descriptor for the second cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 7.
- The descriptor for the third cycle in the Framework for Qualifications of the European Higher Education Area agreed by the ministers responsible for higher education at their meeting in Bergen in May 2005 in the framework of the Bologna process corresponds to the learning outcomes for EQF level 8.