

ET-struct

ET-LearnTrain

Draft Technical Part



Partners



-  The European Office, Vienna Board of Education (AT)
-  Vienna Business Agency (AT)
-  Ministry of Education, Science and Culture Mecklenburg-Vorpommern, Schwerin (DE)
-  Training and Education Centre of Trade and Industry, Schwerin (DE)
-  The City of Hranice (CZ)
-  The Secondary Technical School Hranice (CZ)
-  The Statuary City of Karvina (CZ)
-  The University of Economy in Bydgoszcz (PL)
-  Lower Silesian Vocational Information and Teachers Training Centre in Wałbrzych (PL)
-  Regional Development Agency of Gorenjska BSC (Business support centre Ltd) Kranj (SI)
-  Institution for Adult Education Kočevje (SI)
-  Development and Education Centre Novo mesto (SI)
-  CNA Modena - National Confederation of Crafts and Small and Medium-Sized Enterprises, Modena (IT)
-  Agency of Vocational Training, Modena Formazione (IT)
-  Region of Veneto, Department of Labour, Venice (IT)
-  ENAIP VENETO Regional Agency of Vocational Training, Padua (IT)
-  Association of Students-Economists of Zakarpattya (ASEZ) (UA)



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DEVELOPMENT FUND

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Acknowledgement



1. Introduction to the CENTRAL EUROPE project *ET-struct*

ET-struct - EconomicEducational Territorial-Structure

... connecting educational-training systems to regional economies for regional stability and growth ...

No one could have foreseen in 2000 and 2001 at the time when the EU formulated its Lisbon and Gothenburg goals that there would be a global financial and economic crisis starting in 2008 that would change many of these ambitious transnational goals and cause widespread uncertainty, especially in the daily lives of European citizens who see their jobs, lives and security under threat.

As new ambitious transnational goals have been formulated and presented (e.g. EU 2020, http://ec.europa.eu/eu2020/index_en.htm) who can predict what will happen in the future?

One thing is certain: regional economies must be in a position to cope with the pressures. They have to be able to react to and predict changing conditions, and they must be able to educate, train and retrain their workforces to meet the challenges.

Individual citizens have to be supported so that they can contribute to their own individual economic security, as well as to the security of the region and in a wider context to a united Europe.

The CENTRAL EUROPE supported project *ET-struct* aims at supporting regional stability and growth. How?

1. *ET-struct* will bring together three of the major players that influence regions in permanent management structures: regional politics; regional economy; regional education-training.
2. *ET-struct* will compile a dynamic inventory of skills and competences needed for CENTRAL EUROPE (*new-skills-for-new-jobs*)
3. *ET-struct* will develop and pilot on-site and online learning systems to educate, train and retrain regional workforces.



The motto of ET-struct is:

... connecting educational-training systems to regional economies for regional stability and growth ...

Until the end of 2012, 16 partners from 6 EU CENTRAL EUROPE countries, plus a partner from the West-Ukraine will work together towards *regional stability and growth ...*:

- Lead Partner: European Office, Vienna Board of Education (AT)
- Partner 2: Vienna Business Agency (AT)
- Partner 3: Ministry of Education, Science and Culture Mecklenburg-Vorpommern, Schwerin (DE)
- Partner 4: Training and Education Centre of Trade and Industry, Schwerin (DE)
- Partner 5: City of Hranice (CZ)
- Partner 6: Secondary Technical School Hranice (CZ)
- Partner 7: Statutory City of Karviná (CZ)
- Partner 8: The University of Economy in Bydgoszcz (PL)
- Partner 9: Lower Silesian Vocational Information and Teachers Training Centre in Walbrzych (PL)
- Partner 10: BSC - Business Support Centre Ltd Kranj, Regional development agency of Gorenjska region (SI)
- Partner 11: Institute for Adult Education Kocevje (SI)
- Partner 12: Development and Education Centre Novo mesto (SI)
- Partner 13: Modena Formazione (IT)
- Partner 14: CNA Modena - National Confederation of Crafts and Small and Medium-Sized Enterprises, Modena (IT)
- Partner 15: Region of Veneto, Department of Labour (IT)
- Partner 16: ENAIP Veneto Regional Agency of Vocational Training (IT)
- Partner 17: Association of Student-Economists of Zakarpattya (UA)

The project is implemented through the CENTRAL EUROPE Programme co-financed by the ERDF.

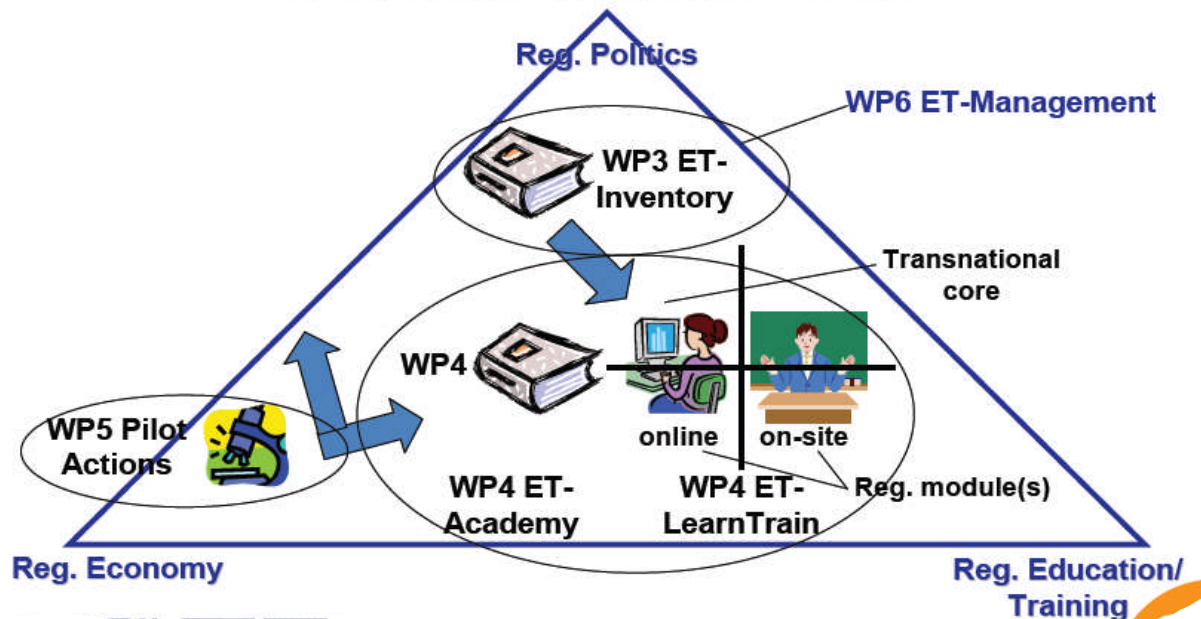
ET-struct consists of 6 Work Packages (WP):

- WP1: Project management and coordination
- WP2: Communication, knowledge management and dissemination
- WP3: ET-Inventory (thematic WP)
- WP4: ET-Academy and ET-LearnTrain (thematic WP)
- WP5: ET-Pilot Actions (thematic WP)
- WP6: ET-Strategy & Action and ET-Management (thematic WP).



2. The relationship between the ET-struct thematic Work Packages 3, 4, 5 and 6 and their outputs during the project lifetime

ET-struct Project Architecture 2010 - 2012



ET-struct Project Architecture 2010 – 2012

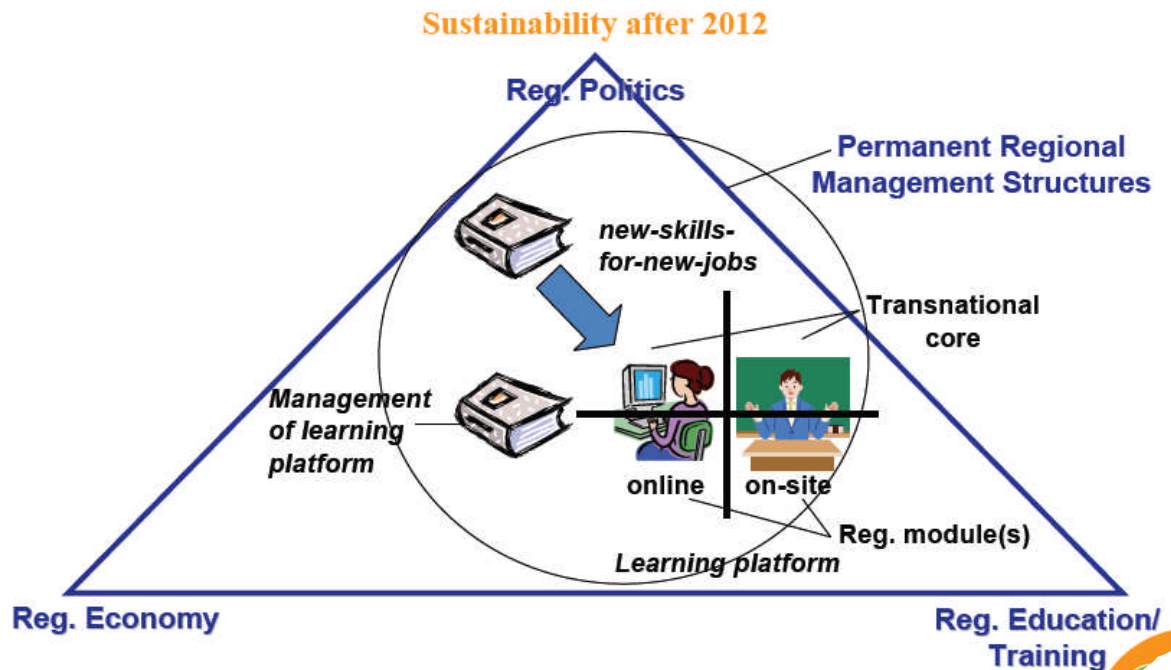
During the project lifetime (2010 – 2012) ET-struct will work to achieve the following:

- **Work Package 3** – “ET-Inventory” a transnational inventory which will document the legal framework, statistical data, economic trends, the regional education/training demands and the regional education/training offer in the ET-struct regions. The inventory will predict which new skills will be needed for the changing demands of the regional economies in the ET-struct regions. **The “ET-Inventory” is available as downloadable pdf file at www.etstruct.et / Publications.**

- **Work Package 4** – based on “ET-Inventory” a trial learning platform - “ET-LearnTrain” (Transnational Tool)– was developed and implemented which offers online and on-site training for regional workforces in the *ET-struct* regions.
- This trial learning platform has two parts:
 - o (1) a transnational core of **online-learning/training** modules for all the *ET-struct* regions (these modules were written in the *ET-struct* project language - English),
 - o (2) regional**blended-learning/training** modules (online and on-site) (written in the national language of the regional project partner (i.e. either DE, or CZ, or IT, or PL, or SI, or UA) with a summary of the module(s) in the *ET-struct* project language – English. These regional learning/training modules were based on the regional demand for *new-skills-for-new-jobs*. Technically, the online modules were accessed on the *ET-struct* homepage www.etstruct.eu , and/or on any other project-related homepage(s). The on-site modules were taught at any project-related regional education/training institution.
- A Management Handbook - “ET-Academy” (the present document) (Transnational Tool) – was compiled to document the development, the pedagogy, the methodology, the piloting and the proposed sustainability of the Integrated Content Management System (ICMS) (“ET-LearnTrain”) after project completion.
- **Work Package 5** – two different types of pilot actions tested
 - o 1) in Work Package 4: Pilot Action Type 1 - the effectiveness of the two transnational tools: the trial learning platform (“ET-LearnTrain”) and the Management Handbook (“ET-Academy”) as well as
 - o (2) in Work Package 6: Pilot Action Type 2 - the strategy to set up permanent regional management structures – the joint transnational strategy and action plan (“ET-Strategy & Action”).
- **Work Package 6** – “ET-Management” the development and implementation of permanent regional management structures which link regional politics to the regional economy (i.e. regional education/training demand) and to the regional education/training offer in the *ET-struct* regions.



3. The sustainability of the project outputs after the project lifetime



After the project lifetime (i.e. in 2013 and afterwards), the project will have set up permanent regional management structures which will link regional politics to the regional economy (i.e. regional education/training demand) and to the regional education/training offer in the *former ET-struct* regions.

Exact details of the stakeholders involved and how these permanent management structures will to be set up, managed, maintained and sustained will be delineated in the Joint Policy Guidelines and Action Plan "ET-Strategy & Action", and in the concept for "ET-Management" which will be developed in Work Package 6.

Within these permanent regional management structures there will be mechanisms to predict the changing demands of regional economies (*new-skills-for-new-jobs*).

Based on these predictions there will be ongoing updates of the *trial* learning platforms (*online* and *on-site*) in the *former ET-struct* regions and of the management needed to maintain the *trial* regional learning platforms which were set up during the project lifetime.

4. The process of implementing “ET-LearnTrain” in the ET-struct partner regions

The purpose of this chapter:

- To describe the different types of users
- To describe the learning platform
- To present the set-up procedure for the learning platform
- To test and verify the learning platform

4.1 The users

The purpose of this subchapter is to provide definitions of the different types of users involved in the ET-struct project. The stakeholders are generally the same as in any other learning process.

The learning platform enables the inclusion of different types of users:

- **Students** or **pupils** or **participants** in general are **consumers** of the transnational and regional modules developed within the ET-struct project. Their role is to use the learning material and contribute to the student aspects of the developed learning material. The learning platform must enable registration of participants as well as open access to the learning material. The activities of the participants needs to be traced at two levels: a) at the level of access to different contents and b) at the level of performance of individual participants. For specific needs (for example language specific) teachers must be offered the possibility to create groups of participants.
- **Module creators** are responsible for the content of the transnational and regional modules. Their role is to develop, compile, gather, select, design, adapt the learning materials, and to upload the content to the learning platform. The learning platform must enable instant deployment of the learning material, and also the possibility for deployment by the teacher or site administrator.
- **Teachers** are responsible for the learning process by providing the right content to the right consumers. Most often, the role of the teacher is also content development. In on-line courses, the teacher monitors the performance of the participants of the module. Sometimes in blended learning interaction between participants and teacher is planned. In this case, teachers must be trained to use the tools of the learning platform.
- **Administrators** are responsible to support all of the above types of users and ensure the efficient operation of the learning platform. Sometimes the administrators are involved in the planning process to determine the requirements of the learning platform (selection of the learning platform, CPU performance, disk quotas, backup plans etc.)



4.2 The learning platform

The purpose of this subchapter is to provide insight into the structure of the learning platform and the operation mode.

There are several layers of the learning platform:

- Hardware
- Software
- Communication layer

The table below depicts the structure and the interaction between layers:

Layer	Characteristics
Hardware	Low performance hardware is usually sufficient. High hardware performance is required when there is: a large number of concurrent users, the delivered learning contents requires CPU/graphic intensive processing or causes high network traffic.
Software	<p>The choice of the operating system is non-significant. Generally, all major operating systems are sufficient to support the learning environment.</p> <p>The core learning platform uses the resources of the operating system. The most important parts of the core learning platform are:</p> <ul style="list-style-type: none"> - Web server - Database server - LMS (Learning Management System) <p>Besides these parts, the authoring tools are a special and usually independent part. Authoring tools are used to develop learning content. However often LMS itself contains pre-build blocks for learning content development. The web server functions: a) accept the requests from clients (browsers on pc's, laptops, tablets, phones), b) process these requests by accessing the files/programmes and c) deliver the results of processing in html form to the clients. LMS consists of executable programmes which perform the tasks such as reading the files, sending requests to the databases (reading, writing, deleting) and capturing the results of file/database operations. Database server functions a) list the requests sent by LMS and b) returns the results of database request to LMS.</p>

Communication layer	The platform must be connected to the internet. Wired connections (copper, optic fibre) are preferred since the offered bandwidth is much higher than in a wireless environment.
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Possible operation modes:

- The project partners own the hardware, software and communication layer. Plus: autonomy to dedicate the resources, most flexible way of testing and managing. Minus: costs of ownership, requires own or hired personnel, which can hardly be utilised in the *ET-struct* project.
- The project partners host on ISP (Internet Service Provider) hardware, software and communication layer. Plus: no cost of ownership only a fee, often backup and security measures are included in the ISP package. Minus: less flexibility in configuration and testing; some adjustments are prohibited by ISP, some significant limitations can be imposed by ISP (i.e. disk space, CPU, and bandwidth).
- The project partners rent virtual host. Plus: no cost of ownership only a fee, often backup and security measures are included in ISP package, more flexibility than in hosting mode. Minus: higher costs of renting than in hosting mode, some adjustments are prohibited by ISP, some significant limitations can be imposed by ISP (i.e. disk space, CPU, and bandwidth).
- The project partners buy a service in the cloud. Plus: no cost of ownership only a fee, often backup and security measures are included in package, administration of the learning platform is minimised, flexible way of resource change. Minus: higher costs of renting than in hosting/virtual host mode, sometimes the legal issues regarding the protection of personal data is involved.

4.3 The set-up procedure for the learning platform

The purpose of this subchapter is:

- To demonstrate an example of the set-up procedure of the learning platform
- To show an example of the creation of users and their privileges
- To show an example of content creation within the LMS and in an authoring tool

The selected mode of operation for these examples is web hosting. The operating system is Debian, LMS is Moodle 1.9 and database server is MySQL. The selected authoring tool is eXeLearning 1.04.

4.3.1 An example of the set-up procedure for the learning platform

1. Register the domain
2. Buy a hosting package



3. Install Moodle and configure it

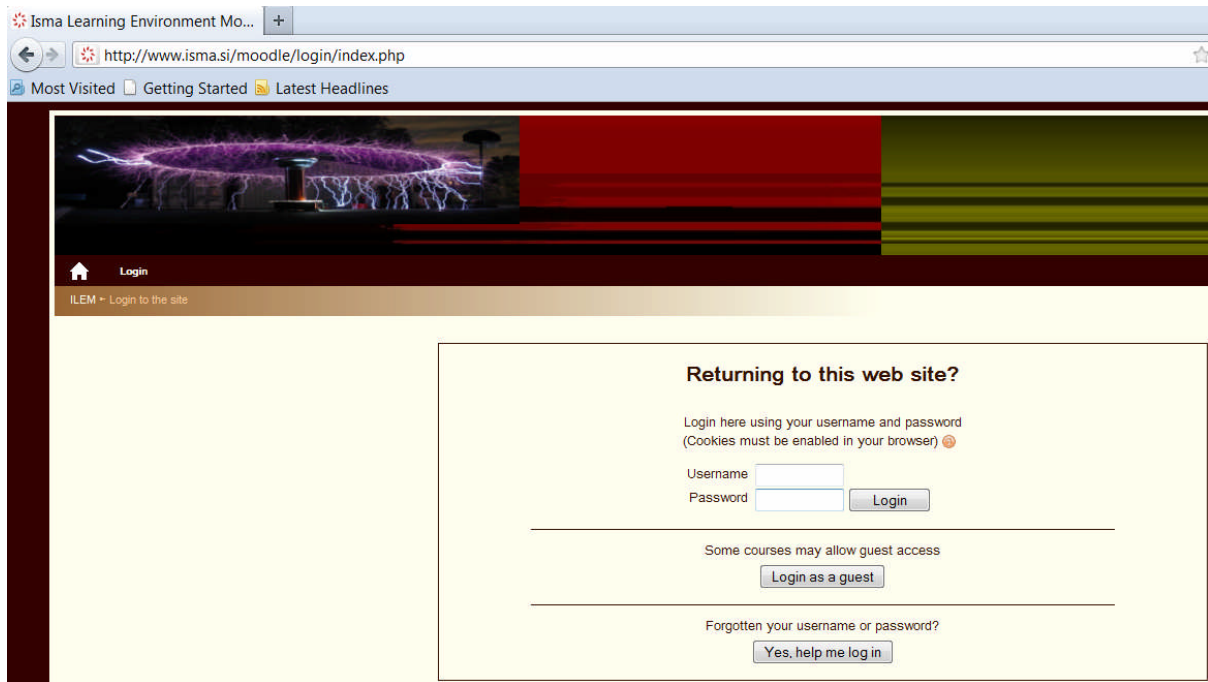
There are several domain registrars. Select a reliable and trustworthy one.

The characteristics of the selected hosting are:

- Disk storage 15 GB
- Monthly network traffic 300 GB
- Number of MySQL databases 40
- Subdomains 15

The moodle installation is described in detail on [http://docs.moodle.org/20/en/Installing Moodle](http://docs.moodle.org/20/en/Installing_Moodle) .

Screenshot: After the configuration of the web site is operational but without any content and users (except one administrator).



4.3.2 An example of the creation of users and their privileges

In the *ET-struct* project, the course developers and teachers are initially created in bulk. The required form of input data is csv in format with the following columns:

1	country	city	department	description	firstname	email	phone1	phone2	lastname	username	password
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Initially, 70 users were created. Moodle provides also other ways of user creation:

- by users themselves in the process of registration. This option was not used at the beginning of the *ET-struct* project to help the members of the teams to easily start the content development.
- site administrator manually creates users. In the case of the *ET-struct* project, several new team members joined later and their accounts were created manually.

Users are assigned privileges on the site and within Moodle. The screenshots below depicts the initial roles in Moodle (site basis) and roles within the modules (module basis).

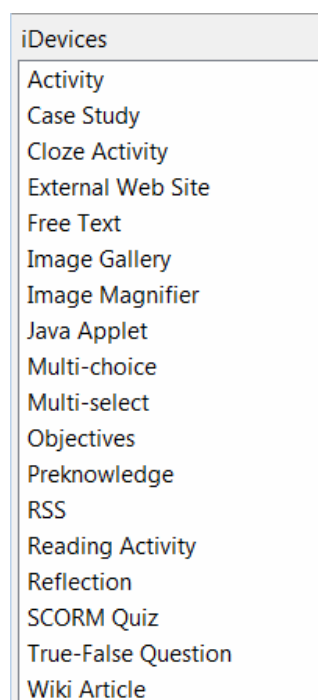
Roles		
Name	Description	Short name
Administrator	Administrators can usually do anything on the site, in all courses.	admin
Course creator	Course creators can create new courses.	coursecreator
Teacher	Teachers can do anything within a course, including changing the activities and grading students.	editingteacher
Non-editing teacher	Non-editing teachers can teach in courses and grade students, but may not alter activities.	teacher
Student	Students generally have fewer privileges within a course.	student
Guest	Guests have minimal privileges and usually can not enter text anywhere.	guest
Authenticated user	All logged in users.	user

Assign roles in Course: My business organisation			
Roles	Description	Users	
Administrator	Administrators can usually do anything on the site, in all courses.	0	
Course creator	Course creators can create new courses.	0	
Teacher	Teachers can do anything within a course, including changing the activities and grading students.	0	
Non-editing teacher	Non-editing teachers can teach in courses and grade students, but may not alter activities.	0	
Student	Students generally have fewer privileges within a course.	5	Ma Sir Ba An Ma
Guest	Guests have minimal privileges and usually can not enter text anywhere.	0	

4.3.3 An example of content creation within the LMS and with an authoring tool

Moodle has several building blocks for content development. These blocks are generally resources and activities.

The authoring tool eXeLearning (http://wikieducator.org/Online_manual or <http://exelearning.org/wiki>) uses the concept of iDevices, which are again resources and activities. The list of preinstalled iDevices in eXeLearning is depicted in the following screenshot.



The screenshot below depicts an example of the page where LMS content capabilities and eXeLearning SCORM are combined.

TOPIC OUTLINE

- News forum
- Upload PP10WEB.zip
- Upload PP10SCORM.zip

- 1 **Health and Care occupations**
 - Health and care SCORM
- 2 Evaluation questionnaire
 - COLLES
- 3 Report - 26th July 2011
 - Report - Module upload

All sections are designed with Moodle. When the user clicks on Health and Care SCORM the following content appears:

Now the user is in the SCORM module developed with the eXeLearning authoring tool.

4.4 Testing and verifying the learning platform

As of August 2011, there were 75 users, 2 with administrator privileges and 74 with student privileges at site level. For specific courses, teacher privileges were assigned to users based on the requests of the project partners.

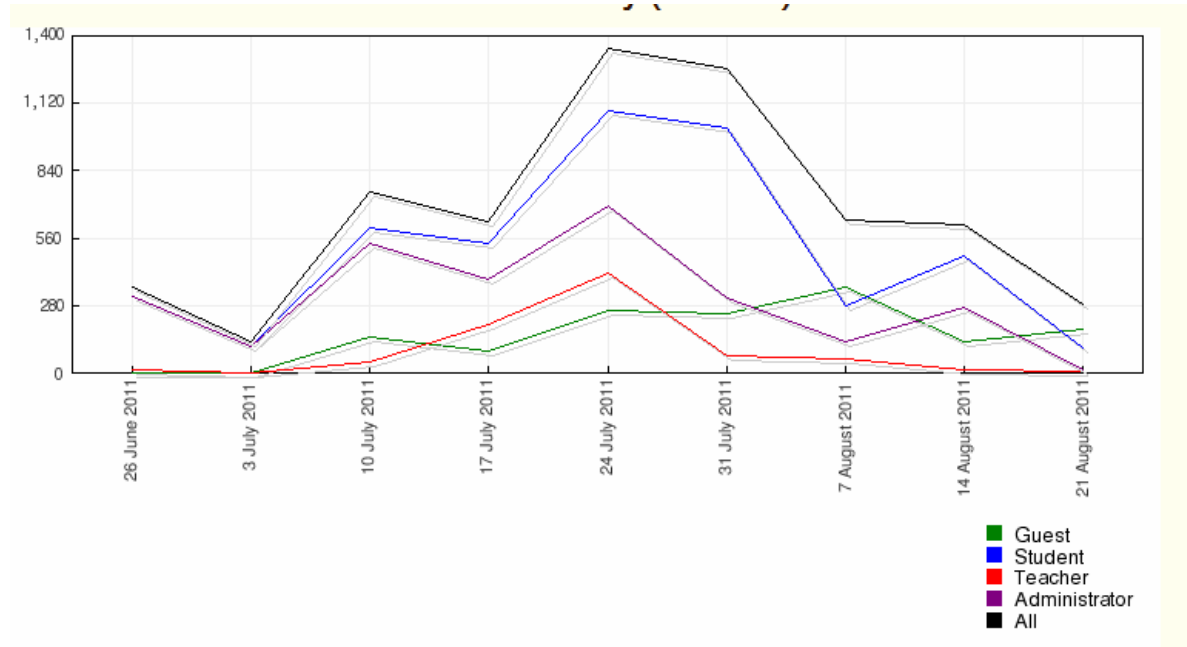
Roles	Description	Users
Administrator	Administrators can usually do anything on the site, in all courses.	2
Course creator	Course creators can create new courses.	0
Teacher	Teachers can do anything within a course, including changing the activities and grading students.	0
Non-editing teacher	Non-editing teachers can teach in courses and grade students, but may not alter activities.	0
Student	Students generally have fewer privileges within a course.	74
Guest	Guests have minimal privileges and usually can not enter text anywhere.	0

The content of the ET-LearnTrain learning platform is divided into transnational and regional modules:

Transnational modules	Regional modules
<p>Courses</p> <ul style="list-style-type: none"> Predisposition test Starting up my own business My business idea My business organisation Marketing my business Financing my business The EU and my business Renewable sources of energy Health and care Information and communication technology Agro-foods Tourism 	<p>Courses</p> <ul style="list-style-type: none"> Transcultural Communication in the Health Sector Vocational Orientation Entrepreneurship with focus on regional needs Technical Training Modern Information Technologies Social skills for the labour market ICT in Health Social Entrepreneurship and Intercultural Communication Business Planning: from theory to praxis Valorisation of the Veneto typical local products Company Development Plan



Statistics of user access is depicted in the following graph (26 June 2011 to 21 August 2011). This graph is evidence that the learning platform actually operates and that majority of accesses are administrators, teachers and students for testing purposes. Guest category is Google Web Crowler.



ACKNOWLEDGEMENT



This handbook has been implemented by **BSC Business support centre ltd, Kranj (SI)** in the framework of the *ET-struct* project and with the direct inputs of all the project partners.

It is intended to serve as a basic knowledge management tool for the implementation of a learning platform similar to the *ET-struct* learning platform ET-LearnTrain.

It has also been published for public information (official project website: www.etstruct.eu)

