



D7.2 “Guide of Good Practice”

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Editor:

Ellinogermaniki Agogi
Katerina Riviou

Authors-Contributors:

ELLINOGERMANIKI AGOGI	CTI
Katerina Riviou	Giorgos Asimakopoulos
BMBF	UB
Marion Obermüller, Monika Moises	Silvia Alcaraz-Domínguez, Mario Barajas
NHL University of Applied Sciences	ADPIOS
Wouter Vollenbroek, Sjoerd de Vries,	Serge Ravet
Nico van Loo	
ULS	
Alan Bruce	

Artwork:

Michalis Antonopoulos

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Introduction

The TRANSit Guide of Good Practice sets out the necessary guidelines and recommendations for the development of teacher training programmes on key competence acquisition of teachers and students. The guide describes the developed pedagogical approach, the web based platforms used to deliver educational programs, recommended educational practice and possible future directions for this TRANSit approach. A primary aim underpinning the development of this guide is that it is informative, systematic, practically useful and directly applicable for school teachers and school ICT staff.

1.1 Scope of the document

The TRANSit Guide of Good Practice briefly presents the project, its implementation, and its main outcomes, as well as discusses benefits and recommendations for the further application, improvement and integration of the project results in training policies and practices. Its aim is to be a full, systematic, practically useful and directly applicable guide for school teachers who are willing to follow the proposed training programme. Its compilation will be the result of the collaborative effort of teachers, pedagogical experts and trainers. It is anticipated that having such a resource will encourage and motivate school personnel to persist with training programs and further integrate technology into their teaching practice.

1.2 Structure

Chapter 1: Gives an overview of this document, providing its scope, and its structure.

Chapter 2: presents shortly the initial concepts and state of the art review in the theme of competence based learning, the teachers needs analysis performed in TRANSit, the aims of the TRANSit project, as well as the ways that the project will try to meet the documented teachers' needs.

Chapter 3: describes the TRANSit Competency Framework for Teachers designed based on literature review of existing standards. Moreover, the TRANSit Training Process and the TRANSit training modules are presented. For each Module there is a description of the aims and objectives followed by the sub-module titles contained in it. Competency criteria are specified and associated with the sub-module to help the teacher to target a specific competency stage.

Chapter 4: In this chapter the TRANSit teacher training platform & ePortfolio tool are presented, with instructions for use, as well as two cases for creating and sharing your competence based learning educational

resources with use of the Authoring Tools. Moreover the links to the TRANSit multilingual communities on ODS Portal and the dedicated workspace on Octopus are presented, so that users can search the available CBL resources created by participants in TRANSit implementation activities or create their own.

Chapter 5: presents indicative implementation activities in partner countries that could act as example for further implementation and trainings on competence based learning (CBL).

Chapter 6: presents the validation and evaluation framework, tools deployed, results as well as the conclusions reached regarding project outcomes.

Chapter 7: presents the affiliation, selected dissemination channels, as well as future steps.

Appendix A: presents indicative user-generated content that can serve as use cases for interested education stakeholders around the theme of competence based learning.

Appendix B: presents indicative evaluation tools deployed.

Initial Concepts

In the context of the Agenda for New Skills and Jobs (European Commission, 2010), recent forecasts of future skills' needs anticipate an increase in jobs requiring high- or medium-level qualifications. However, such qualifications need to be accompanied by key competences that equip young people to work in intercultural, multilingual and rapidly changing circumstances and to contribute to creativity and innovation. The concept of key competences originated with the adoption of the Lisbon Strategy in 2000 and it resulted in the European Reference Framework (2006). Key competences in the EU framework are those that 'all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment'. The development of key competences should include both subject-based and transversal competences that will motivate and equip students for further learning. The key competence acquisition (KCA) by every young person is one of the long term objectives of the updated strategic framework for European cooperation (ET2020, 2009). Most of the EU Member States are formulating and at least beginning to implement policies that move their school systems from being predominantly input led and subject-oriented towards curricula which include competences, cross-curricular activities, active and individual learning, as well as a focus on learning outcomes. Yet, these developments do not necessarily result in signifi-

cant, widespread changes in practice – that is, in how schools actually organise and provide learning experiences for pupils.

2.1 TRANSversal key competences for lifelong learning

The transversal key competencies are a subset of the eight key competences identified in the European Reference Framework (2006). The competences are:

1. Communication in the mother tongue;
2. Communication in foreign languages;
3. Mathematical competence and basic competences in science and technology;
4. Digital competence;
5. Learning to learn;
6. Social and civic competences;
7. Sense of initiative and entrepreneurship;
8. Cultural awareness and expression

The key competences are all considered equally important, because each can contribute to a successful life in a knowledge society. Many of the competences overlap and interlock: aspects essential to one domain will support competence in another. Competence in the fundamental basic skills of language, literacy, numeracy and in information and communication technologies (ICT) is an

essential foundation for learning, and learning to learn supports all learning activities. There are a number of themes applied throughout the Reference Framework: critical thinking, creativity, initiative, problem-solving, risk assessment, decision-taking, and constructive management of feelings, play a role in all eight key competences (European Commission, 2008).

2.2 Teachers Needs

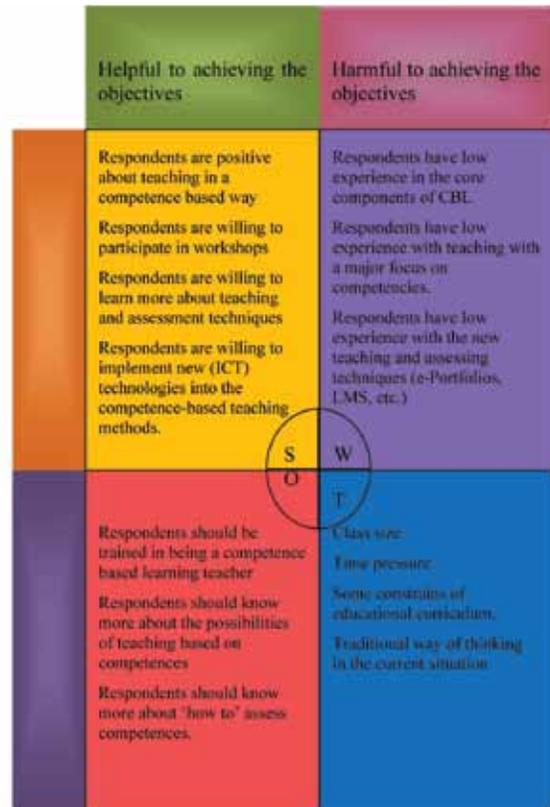
As mentioned before the policy developments do not necessarily result in significant, widespread changes in daily teaching practice. The difficulty is in all cases translating these policies into practice. The challenge of supporting such initiatives, harnessing that innovation and bridging the gap between policy and practice on a wide scale is an issue. One of the core problems for the effective implementation of the above policies is the lack of initial education and training, as well as systematic support of teachers that could equip them with the skills and competences necessary to deliver KCA effectively. In fact the situation is even worse for teachers at secondary education since their training has not prepared them for the most part for holistic methods and cross-curricular teaching, although primary teachers may have more expertise in multidisciplinary approaches (Cluster Key Competences-Curriculum Reform Peer Learning Activity "Fostering Cross-curricular Key Competences for Creativity and Innovation, 2008). Moreover, we have to keep in mind that teachers need support in their everyday practice (training, institutional support, specific examples/good practice) and that they probably face difficulties in translating the policy into practice, especially when they don't have the proper underpinnings. New policies and practices must be therefore researched, developed and implemented to meet changing EU needs.

2.1.1. User Needs Analysis Goals and Methodology

The goal of the needs analysis was to identify user training needs in terms of educational theories, models and frameworks, ICT tools and other learning design processes that may prove useful to teachers. To identify the training needs of the teaching staff in Europe, we used a mixed study design, based on four different techniques.

All countries requested target users to fill in a questionnaire. Results of the questionnaire were interpreted quantitatively through software and qualitatively by means of a SWOT analysis. Following the SWOT analysis derived from questionnaire survey and workshop discussions is presented. A systematic analysis of the results from the questionnaire survey and workshops resulted in the strengths, weaknesses, opportunities and threats. The main Strengths, Weaknesses, Opportunities and Threats (SWOT) of training workshops are depicted.

As a general conclusion, educational staff is willing to undertake a CBL initiative and will be capable of this if they are properly informed and educated, but limited experience in CBL along with existing educational system constraints (such as limited resources and centralized traditional approaches) jeopardize this perspective.



2.1.2. Findings from the needs analysis

The D2.1 Needs Analysis Report highlights the training needs of the project's target groups. The Analysis of User Needs Report shows that teachers are generally open and positive towards enhancing the competencies of their students. They are interested in courses and workshops that can help them expand their knowledge about how to teach key competencies and how to assess the possible acquired competencies. The majority of participants never or almost never used rubrics, peer assessment, role play, e-Portfolios and simulation as tools to measure the knowledge and skills of the students. The paper and pencil tests and the computer assignments are still the most commonly used assessment methodologies. Other needs identified include practical assignments to good practices to self-assessment and interaction with peer teachers and social networking opportunities.

The majority of the respondents mentioned practical assignments, demonstrations of tools and instruments and examples of good practices as the activities/methods that are most needed. Just a small part of the respondents points one-to-one discussions as an important need

for the training workshops. The respondents expect that they can achieve objectives such as increasing opportunities for professional development, introducing real-life assignments and more attracting teaching approaches in the class room and to enhance students' learning opportunities. The general picture that emerges is that the respondents expect a lot of the workshops, but that the most important need is to learn more about the way they can teach and assess the key competencies.

Many of the needs are common to all countries, but indeed there are some differentiations between the partner countries.

- Only three out of twenty seven identified needs are required by only less than 50% of the participating countries.
- Five out of twenty seven identified needs are required by only the 50% of the participating countries.
- Nineteen out of twenty seven identified needs are required by more than the 50% of participating countries.

Identified needs	GR	NL	IR	SP	FR	AU
Themes applied throughout competences: critical thinking, initiative, problem solving, risk assessment, decision taking, and constructive management of feelings.	√	√	√	√	√	√
Teaching methods fostering competence based learning (project based, action learning, problem oriented learning, narrative approach)	√	√	√	√		√
Learning theories on competence based learning and teaching (e.g. constructivism)	√	√			√	
Societal and anthropological views underlying the concept of competence based learning.			√			
Assessment in relation to specific tools for assessing competences	√	√	√	√		√
Assessment in relation to approaches and objectives related to competences assessment.	√	√	√	√	√	√
Need to learn more on school curricula in relation to characteristics of competence based curricula (features of competence	√	√	√	√		

Identified needs	GR	NL	IR	SP	FR	AU
based school and learning environments						
Need for professional development of teachers in relation to the creation of a work and learning environment for teachers to allow them to develop competence based teaching skills	√	√	√	√	√	√
Need for professional development of teachers in relation to the promotion of competence based teaching among teaching staff	√		√	√	√	
Need for professional development of teachers in relation to acquiring the necessary teaching skills for competence base teaching	√	√	√	√	√	
Need for professional development of teachers in relation to the required teachers' skills in competence based teaching.	√	√	√		√	√
Need for the following activities in the training workshops: one to one discussions	√		√	√		
Need for the following activities in the training workshops: small group discussions	√		√	√		
Need for the following activities in the training workshops: interactions with peer teachers/social networking opportunities	√	√	√			√
Need for the following activities in the training workshops: lectures/expert inputs	√	√	√			
Need for the following activities in the training workshops: assessment by peers/community	√		√			
Need for the following activities in the training workshops: self-assessment	√	√	√			
Need for the following activities in the training workshops: self-study	√		√			
Need for the following activities in the training workshops: practical assignments	√	√	√	√		√
Need for the following activities in the training workshops: demonstration of tools and instruments	√	√	√	√		√
Need for the following activities in the training workshops: examples of good practices	√	√	√	√	√	√

2.3 State of the Art

The key findings from the State of the Art Report (TRANSIt Deliverable D2.2) include the following:

- Hardware and software availability are slowly but constantly increasing and improving.
- Competency-based learning and teaching are not broadly adopted in the countries that participated in the research. Austria and Spain adopted the competence model, while the Netherlands and Ireland base their educational structure on skills and knowledge, formulated in goals.
- 50% of students almost never use digital resources and learning materials. Digital resources such as exercise software, online tests and quizzes, data-logging tools, computer simulations, etc. are still

rarely used by students during lessons.

- The use of e-Portfolios is significantly undeveloped. E-Portfolio (electronic portfolio) is a collection of electronic evidence assembled and managed by a user, usually on the web.
- A willingness to adopt a competence-based approach is evident. Assistance to make this a reality will be required.

It will be necessary to take the differences in availability of resources and approaches to teaching and learning in the different countries, into consideration when developing TRANSIt training.

Regarding Competence based education the main findings are the following per country.

Country	State-of-the-Art
Greece	In Greece a legislative change took place in order for a CBL approach to be introduced. This introduction is performed by different pilot curricula for competence driven education, based on the National Life Long Learning Strategies.
Netherlands	A CBL-approach in primary and secondary education in the Netherlands is not formally defined. Dutch education is characterized by the focus on knowledge and skills, such as math and vocational qualifications.
Ireland	Ireland does not call educational approaches as competence based learning, but define skills to be acquired by students. Irish government has introduced a key skills framework at secondary level, early childhood and is now planning implementation at primary level also.
Spain	Student competences are strongly supported by a law that aims to increase the educational system's quality. This law presents the curriculum development and assessment of all educational levels and modalities.
France	The France Ministry of Education has defined different key competences that should be acquired by the students during their school carrier.
Austria	The Austrian national policy regarding competence based education is presented in the 'Buldingsstandard', that deal with certain core components. The key competences defined by the European Commission were implemented in the Austrian policy.

Regarding Key competences acquisition the main findings are the following per partner country.

Country	State-of-the-Art
Greece	Greece has no national policy concerning the acquisition of key competences.
Netherlands	The Netherlands has no national policy concerning the acquisition of key competences. Key competencies are interwoven in the current general education.
Ireland	Key competences from the European Framework are referred as key skills in Ireland. These key skills are central to teaching and learning across the curriculum at all levels.
Spain	Basic competences are defined that have strong similarities with those set in the European Reference Framework: linguistic communication, mathematic competence, competence in knowledge and interaction with the physical world, digital and information processing competence, social and citizenship competence, culture and artistic competence, learning to learn, and personal autonomy and initiative.
France	In France a framework for developing the curriculum for primary and lower secondary education is defined by the Common Core of Knowledge and Skills. The competences they identified are: command of the French language, proficiency in a modern foreign language, the key elements of mathematics, scientific culture and technology, mastery of ordinary information and communication skills, humanist culture, social and civic skills and autonomy and initiative.
Austria	Austrian students gain, consolidate and continuously develop the eight key competences within an integrated and holistic process.

2.4 The TRANSit Project

The aim of the TRANSit (TRANSversal Key Competences for lifelong learning: Training teachers in competence based education) project is to have a positive impact on the development of students' key competencies through building teachers' capacity on competence oriented education. To achieve this, a pilot teachers' training methodology will be developed on the didactics and e-assessment of key transversal competences. The methods of the project are founded on a holistic view of students learning, personal and social development, going beyond subject boundaries and finding application in a wide spectrum of curriculum subjects. The TRANSit approach will contribute to the development of creativity, adaptation torapidly changing circumstances, intercultural and multilingual competences, social development, "learning to learn" competence and an improved perception of one's own capacity to solve problems. The project aims to add its contribution towards improvement of the quality of competence education by addressing:

1. Teachers' awareness of key competences;
2. Teachers' professional skills regarding the didactics and e-assessment of the key competences with the use of e-Portfolios, supporting them to bring European and national policies into practice;
3. Students' acquisition of key competences and underlying skills of critical thinking, problem solving.
4. The impact of the training material will be assessed by authentic assessment methods analysing qualitative dimensions, such as the behavioural change of teachers towards the importance of competence acquisition by their students and qualitative and quantitative characteristics of user-generated content uploaded in the e-portfolios and the digital communities created for teachers support.

2.5 How TRANSit corresponds to Teachers Needs

According to the needs identified, the training framework will include training on the methodological approaches on how teachers can effectively teach while simultaneously enhancing students' competences. The

training framework includes references to case studies and examples of good practice collected from previous initiatives and projects on how teachers can design activities that promote the enhancement of competences. Additional modules aiming to operationalize innovative approaches will be developed and tested in the framework of the project. The modular approach of the training methodology will allow (in parallel with the systematic mapping of needs) the localisation of the approach in the implementation countries.

The TRANSit project will provide a pilot teachers training methodology on the didactics and e-assessment of key transversal competences. In this course we have defined the criteria from which it will be possible for a teacher to know how competent they are in didactics and e-assessment of transversal key competences (using rubrics). The result of the pilot has the potential for adoption by interested stakeholders promoting educational change.

The project methods are founded on a holistic view of students' learning, and their personal and social development. The approach is designed to go beyond subject boundaries and find application in a wide spectrum of curriculum subjects such as social sciences and history, arts and cultural education, languages, and environmental education.

The TRANSit approach contributes to the development of teachers' ability to enhance students' transversal key competences. Moreover, the proposed approach promotes the Transversal Key Competency Acquisition (TKCA) by all, irrespective of student's personal and social backgrounds. The TRANSit training programme will focus on the 5 of the Key Competencies known as the Transversal Key Competencies. These are:

1. Digital competence
2. Learning to learn
3. Social and civic competences
4. Sense of initiative and entrepreneurship
5. Cultural awareness and expression.

The course is inspired by constructivist methodologies. This means teachers taking the course or course mod-

ules will be carrying out their teaching duties but also creating and using e-Portfolios as part of their learning process. This feature is uniquely supported by the tools and features of the TRANSit learning environment. Constructivism views learning as a process in which the learner constructs knowledge based on their past experiences. The teacher only acts as a facilitator who encourages students to explore within a given framework. Learners may collaborate with others to organize their ideas and learn from each other to construct their own knowledge (Brader-Araje & Jones 2002).

In addition, teachers will have access to the Open Discovery Space (ODS) portal to access and publish learning resources created in the course of the TRANSit course. ODS project (Open Discovery Space: A socially-powered and multilingual open learning infrastructure to boost the adoption of eLearning resources) (www.opendiscoveryspace.eu) aims to demonstrate ways to involve school communities in innovative teaching and learning practices through the effective use of eLearning resources and ICT.

The TRANSit approach

3.1 The TRANSit Competency Framework for Teachers

The TRANSit course comprises three stages of competency with each stage identifying standards in the use of skills, knowledge and attitudes/values to different degrees. It is designed so that each stage requiring more complex standards of attainment. The work and activities of teachers at any given time will help them identify the competence stage they are at. This helps to describe teachers work in a continuum of practice. Teachers at any stage in their career may operate in different stages or parts of all stages. As teachers become familiar with the competency standards in each stage they may opt for Continual Professional Development if they feel it necessary to address a specific competency need.

Certain dimensions of a teacher's work are common to all the stages of competency. These dimensions are:

1. Facilitating Student Learning
2. Assessing and Reporting Student Learning Outcomes
3. Engaging in Continuing Professional Development
4. Establishing Partnerships and Collaborations

Each dimension describes the generic characteristics of teachers' work that are central to their professional effectiveness. Within these dimensions are indicators of effective practice which are competency-related professional actions. These indicators provide examples of the professional behaviours likely to be demonstrated by teachers who have attained a particular competency standard.

Each competency standard is a statement of the level of competency a teacher exhibits for that dimension. In the TRANSit training framework there is a qualitative scale for every competence. Each competence at a specific level consists of a set of sub-competences. The teacher must attain all sub-competences, so as to master a competence at a specific stage. Professional excellence in the context of competence-based learning involves teachers engaging in all dimensions. These correspond to the three stages identified below.

TRANSit Competency Framework for Teachers			
Dimension	Stages		
	Stage 1	Stage 2	Stage 3
Facilitating Student Learning	Engage students in purposeful and appropriate learning experiences	Cater for diverse student learning styles and needs through consistent application of a wide range of teaching strategies	Use exemplary teaching strategies and techniques that meet the needs of individual students, groups and/or classes of students in a highly responsive and inclusive manner
Assessing and Reporting Student Learning Outcomes	Monitor, assess, record and report student learning outcomes appropriately	Apply comprehensive systems of assessment and reporting strategies in relation to attainment of learning outcomes	Consistently use exemplary assessment and reporting strategies that are highly responsive and inclusive
Engaging in Continuing Professional Development	Reflect critically on professional experiences in order to enhance professional effectiveness	Contribute to the development of a learning community	Engage in a variety of professional learning activities that promote critical self-reflection and the development of a learning community
Establishing Partnerships and Collaborations	Establish partnerships with students, colleagues, parents and other caregivers	Support student learning through partnerships and teamwork with members of the school community and other school communities	Facilitate teamwork within the school community, nationally and internationally

Table 1 TRANSit Teacher Competency framework

As teachers become familiar with the competency standards in each stage they may opt for Continual Professional Development if they feel it necessary to address a specific competency need. The framework has three stages, with each stage requiring more complex standards of attainment.

Professional excellence involves teachers engaging in all dimensions. Dimensions 1 and 2 “Facilitating Student Learning” and “Assessing and Reporting Student Learning Outcomes” are critical in teaching practice and articulate effective interaction between teacher and student. Dimensions like “Engaging in Continuing Professional

Development”, and “Establishing Partnerships and Collaborations” describe the working environment that supports effective teaching (Western Australia - Department of Education, 2009).

3.2 The TRANSit Training Process

The TRANSit training process is structured as a competency development programme, from registration until final assessment with the optional delivery of an award system based on Open Badges. The following figure outlines the processes teachers will engage in when activating the course.

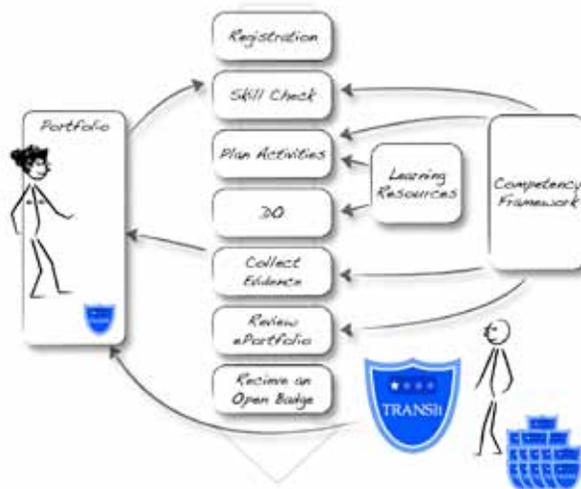


Figure 1 Training progression from registration to awards

Figure 1 illustrates the training progression from registration to awarding. The first time a teacher registers to participate in a module of the course and completes the registration the process begins with a skills check.

Skills Check: When a teacher is invited to perform a Skill Check, they complete a simple exercise where they will be presented with a checklist and will check the competencies they believe they already have. Example of the questions included in the skills check is as follows:

- What do you hope to gain from this training course?
- How do you feel about your competence to teach Transversal Key Competencies?
- What areas do you feel training is needed to teach the Transversal Key Competencies?
- How can these training needs be met in TRANSIT's online tools and training modules?
- When will you plan to take part in the training?
- How important is it to gain an Open Badge when you complete the training?

Teachers will then be invited to use the results of the skills check to build their first version of their e-Portfolio, by

providing evidence confirming their declared competencies. Teachers can use their own e-Portfolio or one provided by TRANSIT. If teachers feel they have no evidence of competencies at this stage they can add them in later. **Planning Activities:** The next step is the planning of the learning activities teachers will engage in. For this, teachers will refer to their skill-check again, but this time, to help them establish the competencies they would like to acquire.

Based on the competencies a teacher decides to acquire (e.g. "Engage students in purposeful and appropriate learning experiences") they will identify the type of evidence they will need to produce to demonstrate the competencies. As the training module is about supporting the acquisition of key competencies, teachers should take into account the European Key Competence Framework to define the type of product, processes, lesson plans etc. that will contribute to the:

- acquisition of key competencies by their learners;
- development of their own targeted competencies.

Teachers will be supported in this phase by the TRANSIT team, as well as with examples of products or artefacts they might want to use from their own resources and re-

search. There will be some 'mini-lessons' available also for teachers to use if necessary to support their learning activities.

Doing: In this step, a teacher might have decided to create a lesson plan to submit to other colleagues in their school. By keeping a journal of their activities, collecting information, writing narratives and reflections, they will develop valuable information to add to their ePortfolio for collation of evidence of their work.

Collating Evidence and Review: After completing the "Doing" phase the teacher will add as much evidence as they feel necessary in their e-Portfolio to reflect their newly attained competencies. The e-Portfolio is then submitted to a member of the TRANSit team for review. There may be some follow-up questions, and if the reviewer is satisfied, an Open Badge is issued to the teacher (optional).

As there are time limits set at the outset of the course, it is possible that some assignments might not be finalised on time. The main objective of this course is to get teachers to practice the competency-based (or outcome-based) learning approach. If teachers have demonstrated their ability to develop a competency-based approach in their teaching, they will receive an Open Badge recognising this competency. It is hoped that by participating in this course, which has been designed as competency-based activities and lessons, teachers will be likely to transfer this experience in their own working environment.

3.2.1 TRANSit learning outcomes

The TRANSit expected learning outcomes are the following and according to them the training modules have been designed:

1. Design

- 1.1. Derive Learning Objectives from a Key Competency Framework
- 1.2. Design a Learning Scenario/Programme for Acquisition of Key Competencies

- 1.3. Derive Assessment Plan from Learning Objectives
- 1.4. Plan Monitoring and Reporting

2. Prepare

- 2.1. Prepare Learning Environment for Acquisition of Key Competencies
- 2.2. Identify / Select / Adapt / Develop Learning Material and Technologies Supporting Relevant Practice for Acquisition of Key Competencies
- 2.3. Identify / Select / Adapt / Set-up Technologies Enhancing Learning and Assessment

3. Run

- 3.1. Run a Learning Scenario/Programme for Acquisition of Key Competencies
- 3.2. Use Digital Technologies to Support Learning and Assessment
- 3.3. Monitor and Assess Learning to Inform Further Learning

4. Review

- 4.1. Review an Educational Scenario/Programme for Acquisition of Key Competencies

3.2.2 Cross-referencing TRANSit Learning Outcomes and TRANSit Competency Framework

A purposeful and appropriate learning experience must be linked to a competency framework. The TRANSit training approach incorporates this philosophy. The following table demonstrates the integration of the Learning Outcomes of the TRANSit training programme (left column) with the TRANSit Competency Framework Dimensions (top row). This table gives an indication of the general competencies learners will be developing while progressing through the TRANSit programme. The numbers in the cells refer to the stages of competency (Table 1) that can be attained in each dimension.

Competency Framework / Learning Outcomes	Facilitating Student Learning	Assessing and Reporting Student Learning Outcomes	Engaging in Continuing Professional Development	Establishing Partnerships and Collaboration
Design				
Derive Learning Objectives from a Key Competency Framework	1			
Design a Learning Sequence/Scenario/Programme for Acquisition of Key Competencies	1, 2, 3			2, 3
Derive Assessment Plan from Learning Objectives		1, 2, 3		2, 3
Plan Monitoring and Reporting		1, 2, 3		
Prepare				
Prepare Learning Environment for Acquisition of Key Competencies	1, 2, 3			2, 3
Identify / Select / Adapt / Develop Learning Material Supporting Relevant Practice for Acquisition of Key Competencies	1, 2, 3			2, 3
Identify / Select / Adapt / Set-up Technologies Enhancing Learning and Assessment	1, 2, 3			2, 3
Run				
Run a Learning Sequence/Scenario/Programme for Acquisition of Key Competencies	1, 2, 3			2, 3
Use Digital Technologies to Support Learning and Assessment	1, 2, 3			
Monitor and Assess Learning to Inform Further Learning		1, 2, 3		2, 3
Review				
Review a Learning Sequence/Scenario/Programme for Acquisition of Key Competencies			1, 2, 3	1,2,3

Table 2 Cross-reference table between TRANSit learning outcomes and competency framework (numbers refer to the competency Stages)

3.3 Training Methodology

The TRANSit training programme is an innovative approach to allow teachers to acquire the skills and competencies to teach their students the Transversal Key Competencies. This training course could be described as a journey of discovery using the constructivist approach. The teachers participating in the training will work and learn from the activities they carry out in their own classrooms. The work will involve:

- Creating lesson plans
- Creating Educational Scenarios
- Self-reflection
- Self-assessment.

The work can also include peer-to-peer assessment and working in collaborative groups, sharing ideas resources and best practices.

When participating in the course the teacher will recognise and utilize the competencies they already have and build on these to become aware of additional competencies and skills which they may wish to pursue and develop. The training course is designed in a roadmap style where teachers can pick a competency stage (in a course module or sub-module) of their choice. Having completed it they can then move onto the next stage.

As in all innovative training courses (and particularly this one where the national curricula in each participating

country are different) ideally the teacher should decide how best to introduce the Transversal Key Competencies to facilitate the teaching of the national curriculum. There will be exemplars and best practice materials to help the teacher in this task. The modules contain broad tasks, described as outcomes, which reflect competence acquisition, which each teacher could deliver in their classrooms. Included will be guidelines of best practice, resources and reading materials necessary to support the teacher developing and delivering the material. All this material will be available on the TRANSit portal through ODS and from the resources which teachers contribute as they carry out their training.

3.4 Cycles of implementation-Timetable

TRANSit training programme is spanned into two imple-

mentation phases. The first training cycle is scheduled for the period September 2013 – January 2014 and the second training cycle for the period March 2014 – September 2014. Additionally, three 5days teachers training courses (summer/winter school) took place open for participations from teachers all around Europe. The implementation of the training program includes extended cycles of school centred work. Teachers will continuously give feedback to the academic team about their experiences gained in the classroom. This will not only increase the motivation of the teachers, and give weight to their practical experiences, but also provide the necessary cross-links between theory and practice. Upon suggestions of the teachers, the project team performed the necessary adjustments to the training approach.



Figure 2 Development of TRANSit training framework

3.5 The Design of the Training Curriculum (face to face workshops)

It was decided that the training material should comprise of both generic content, providing high level information relevant to all partner countries, and local content and examples that are only of interest to particular countries. The training material will therefore comprise of theoretical material to introduce topics and concepts and practical material to bring the theory to life – with a particular

weighting on the latter.

The above training requirements were then further divided into six (6) distinct areas of commonality that would each form key parts of the three (3) hours of seminar based training. The duration of the training was adapted according to the findings of the Needs Analysis Report. The training sessions are the following ones:

1. **Introduction and overview of the course and the TRANSit Project (30 minutes):** This would com-

prise an introductory section to the training objectives, means, and the philosophy of the TRANSit Project.

2. **Approaches to competence based learning (CBL) teaching: principles, ideas (20 minutes):** This section will try to promote the competence based approach to teachers by demonstrating the benefits regarding the increase of student interest and motivation, as well as the enhancement of students' competences and 21st century skills (critical thinking, communication, collaboration).
3. **Learning Design Use Cases (30 minutes):** This would comprise an introductory section to Searching, Retrieving, Authoring, Uploading and Annotating Content with the presentation of the concepts of Learning Resources, Repositories & Metadata, Learning Activities, Learning Courses/Lesson Plans/ Programmes and relevant Web 2.0 Technologies.
4. **Assessment/Awarding Framework (30 minutes):** This would outline how holistic, authentic assessment can be used for evaluating students' acquired competences, such as e-portfolio assessment, rubrics, peer & self-assessment, Open Badges.
5. **Practical training on creating a CBL scenario (50 minutes):** A detailed demonstration would be provided on searching and using learning objects in the classroom following a competence based learning approach. Furthermore, the annotation process using social tags in order to assess the scenario and in order it to be reused will be demonstrated.
6. **Closing Session (20 minutes):** This would provide an opportunity to remind attendees of the more important aspects of the training and the benefits, of applying competence based approaches.

3.6 The TRANSit Training Modules

For competency based teaching and learning to be effective it must:

- List Competencies to be developed
- Include a level of acceptable performance
- Describe the Context in which this will happen
- Include Key Teaching Procedures such as:
 - Generate interest and teaching approach
 - Presentation of Subject Matter

- Application
- Evaluation and Assessment

The following represents the layout of the content of the online modules available on the TRANSit portal page. Three stages of competency are listed for many of the sub-modules. These stages are linked with the Open Badges which are optionally offered for participation in the course.

For each Module there is a description of the aims and objectives of the module followed by the sub-module titles contained in it. The Tutorials associated with the Module are listed for reference.

Each sub-module lists information on the learning activities and a description of the context and success criteria outcomes associated with completing it. Competency criteria are specified and associated with the sub-module to help the teacher to target a specific competency stage. Any pre-requisite necessary before a sub-module is commenced are also shown. This is very important for teachers to identify where to begin their journey on the roadmap. Also listed with each sub-module are resources for further studying; documents, articles, videos, podcasts or examples of best practice.

Teachers are encouraged to add resources as they participate in the course particularly in the stage 2 and stage 3 competencies. Other resources will also be available which could include documents relating specifically to the Key Competences, the portal, or other technical information which the teacher may need regarding e-portfolio management and creation. Finally, examples of evidence which the TRANSit tutors are seeking for the purposes of awarding badges are mentioned.

The TRANSit modules are:

- Module 1: Design Learning
- Module 2: Prepare Learning
- Module 3: Run Learning
- Module 4: Review Learning

3.6.1 Module 1. Design Learning / Learning Design Description:

At the first stage of the voyage of discovery the teacher will derive learning objectives from the Key Competency Framework. The teacher will use an online journal throughout the modules as part of the development of

their e-portfolio. The journal will list the chosen Key Competencies the teachers wants to teach and it will contain a description of how it will be linked to the national curriculum and associated subjects.

Module 1 contains four sub-modules. It aims to build competency in designing learning plans for teaching Transversal Key Competences, deriving assessment, monitoring and reporting.

The sub-modules in this module are:

- 1.1 Derive Learning Objectives from the Key Competency Framework
- 1.2 Design a Learning Sequence/Scenario/Programme for Acquisition of Key Competencies
- 1.3 Derive Assessment Plan from Learning Objectives
- 1.4 Plan Monitoring and Reporting

During this module, the dimensions that will be in evidence are: Facilitating Student Learning, Assessing and Reporting Student Learning Outcomes and Establishing Partnerships and Collaborations.

Selecting your stage of Competency

Three stages of competency are listed for many of the sub-modules. These stages are linked with the open badge awards which are offered for participation in the course. Teachers taking each sub-module decide which competency stage is most appropriate to their individual circumstances and learning environment. For example, initially teachers may commence Stage 1 competency for each sub-module and complete a later stage based on their experience and the learning from the first stage. Some teachers may attempt stage 3 in the first instance.

Tutorials/Resources

Recommended tutorials in MS PowerPoint format and other documents are available to assist in completing the work of the sub-modules. Additional reading and refer-

ence material associated with each sub-module are available, if required. It is estimated that the minimum amount of time required to complete module 1 is 2 - 3 hours. This will depend on the complexity of the work and the experience and competence level of the teacher.

The following MS PowerPoint presentations are recommended to support Module 1.

1. What are the Transversal Key Competencies
2. Transversal Key Competency Criteria Breakdown
3. The Assessment of Key competencies in Schools
4. Design Competency based Training using Bloom
5. Teaching Approaches Planning for Instruction

The following documents are available for reference for Module 1:

1. Document describing the Transversal Key Competencies
2. Templates for lesson plans and educational scenarios (e.g. project based learning, storyline approach, inquiry-based learning, Guided discovery, Action learning, Problem based learning, Co-operative learning available online also on ODS Portal, Glossary of teaching approaches, <http://portal.opendiscoveryspace.eu/tr-activity/22-glossary-teaching-approaches-669764>)

Sub-Module 1.1 Derive learning objectives from the Transversal Key competences or from the national curriculum guidelines for use in the classroom

In completing this module the teacher will identify the key competencies to be taught and include them in the lesson plan design and his online journal. The teacher will define the context in which the competencies will be developed, taking into consideration how the competency acquisition by the students will be monitored.

Specific Objective	1.1. Derive Learning Objectives from Key Competency Framework or from your National Curriculum
Context	You need to develop learning objectives to support the learning and assessment of student competencies
Main Outcome(s)	Criterion-based Learning Objectives
Pre-requisite(s)	none
Success Criteria	<ul style="list-style-type: none"> • At least 1 different criterion-based objectives • With clearly expressed success criteria • Well defined context to support learners' performance/activities
Activities	<ul style="list-style-type: none"> • Identify the key competencies you want students to develop from a Key Competency Framework • Define the context in which the competencies will be developed
	<ul style="list-style-type: none"> • Define how you will measure whether or not the acquisition of a competency is successful (criteria definition)
Links and Supporting References:	<p>What is a competency framework?: http://participatoryartslearning.wordpress.com/the-framework/what-is-a-competency-framework/</p> <p>Developing a Competency Framework: http://www.mindtools.com/pages/article/newISS_91.htm</p> <p>The European framework for key competences: http://ec.europa.eu/education/lifelong-learning-policy/key_en.htm</p> <p>KeyCoNet 2012 Literature Review: Key competence development in school Education in Europe: http://keyconet.eun.org/c/document_library/get_file?uuid=3aa9009c-cb63-494f-81fe-024fde000111&groupId=11028</p> <p>Derive Learning Objectives from a Key Competency Framework</p>
Example evidence of	<ul style="list-style-type: none"> • Written objectives • Feedback from TRANSIt tutor • Feedback from peers or colleagues • Reflections from your journal on the process of writing objectives

Sub-Module 1.2 Design a Lesson Plan/Scenario/Programme for Acquisition of Key Competencies

Three stages of competency acquisition are available to the teacher taking this module. The dimensions focused on are:

- Facilitating Student Learning and
- Establishing Partnerships and Collaboration.

General Objective	1.2 Design a Learning Sequence/Scenario/Programme for Acquisition of Key Competencies		
	Stage 1	Stage 2	Stage 3
Specific Objective	Design a Lesson Plan/Learning Sequence for Acquisition of Key competences in your classroom	Design a <u>Cross-Curricular Learning Scenario</u> for Acquisition of Key Skills	Design an <u>integrated Learning Programme</u> for Acquisition of Key Skills at Institutional Level
Context	You want to develop a sequence to teach key skills in your classroom	You want to integrate the development of key skills across two or more courses or disciplines suitable for diverse learning styles and with a consistent application of a wide range of teaching strategies	You want to make the acquisition of key competences an integral component of the institution's learning strategy across all teaching
Main Outcome(s)	A lesson plan	A cross-curricular learning scenario	An integrated learning programme
Pre-requisite(s)	1.1. Derive Learning Objectives from a Key Competency Framework 1.3 Derive Assessment Plan from Learning objectives	Stage 1 competencies	Stage 2 competencies
Success Criteria	One Lesson Plan <ul style="list-style-type: none"> • Covering at least 1 Competence from Transversal key competency framework • Clearly describing the learning outcomes • Identifying the skills, knowledge and values required to achieve the learning outcomes • Exploiting naturally occurring opportunities in regular (disciplinary) teaching • Reviewed and accepted by the TRANSIt tutor and/or at least 2 peers operating at the same or higher stage 	One Cross-Curricular Learning Plan covering more than 1 courses or disciplines <ul style="list-style-type: none"> • Reviewed and accepted by the TRANSIt tutor and or at least 2 peers operating at the same or greater stage 	One integrated Institutional Learning and Assessment Programme <ul style="list-style-type: none"> • covering <ul style="list-style-type: none"> ○ the whole institution ○ all Key Competencies • Reviewed and accepted by the TRANSIt tutor and or at least 2 peers operating at the same stage

Activities	<ul style="list-style-type: none"> Identify the key competencies you want to develop from a Key Competency Framework Derive Learning Objectives Derive Assessment Methods Define the relevant practice necessary to support the essence of the learning objective Derive <i>knowledge and understanding</i> required to achieve mastery of key competencies Design a Lesson Plan with a clear and transparent Assessment strategy Get feedback from peers 	<ul style="list-style-type: none"> ibid Establish Learning and Assessment strategy across disciplines/classes Develop relevant practice across disciplines 	<ul style="list-style-type: none"> Ibid Develop an integrated learning programme
Resources	<p>ODS Toolbox, Glossary of teaching approaches, http://portal.opendiscoveryspace.eu/tr-activity/22-glossary-teaching-approaches-669764 (of particular interest are the approaches: project based learning, storyline approach, inquiry-based learning, Guided discovery, Action learning, Problem based learning, Co-operative learning)</p> <p>Let seniors teach sense of initiative and entrepreneurship through innovative multimedia storytelling approaches: http://letsenterprise.eu/images/newsletter/REGNO%20UNITO/LET'SNewsletter2%20UK.pdf</p>		
	<p>Raising Cultural Awareness: http://www.misd.net/bilingual/CulturalEtiquette.pdf</p> <p>Acquiring Key Competences through Heritage Education (Manual):http://the-aqueduct.eu/download/Aqueduct-Manual_EN.pdf</p> <p>How Does Project-Based Learning Work? Seven Essentials for Project-Based Learning: http://www.edutopia.org/project-based-learning-guide-implementation</p> <p>Badges (MozillaWiki): https://wiki.mozilla.org/Badges</p> <p>Educators Hail Launch of Make Badges—New Web Tool for Creating Digital Badges; http://www.digitaljournal.com/pr/1483276</p>		
Example of evidence	<ul style="list-style-type: none"> Lesson plan feedback from a TRANSIt tutor Feedback from peers or colleagues Reflections from your journal 	<ul style="list-style-type: none"> Learning Scenario Feedback from a TRANSIt tutor Feedback from peers or colleagues Reflections from your journal and the journals of the other authors of the Learning Scenario 	
Remarks on the assessment process	<p>If the participants are from different institutions, the integration plan can refer to a fictitious institution (simulation)</p>		

Module 1.3 Derive Assessment Plan from Learning Objectives

Three stages of competency acquisition are available to the teacher taking the module.

General Objective	1.3 Derive Assessment Plan from Learning Objectives		
	Stage 1	Stage 2	Stage 3
Specific Objective	Derive Assessment Plan from Learning Objectives	Derive Cross-Curricular Assessment Plan from Learning Objectives	Derive Integrated Assessment Plan from Learning Objectives
Context	You want to develop an Assessment Plan from Learning Objectives to recognise the key competencies acquired during the learning sequence or in another context (recognition of prior learning and experience)	You want to develop with colleagues and/or members <u>of the own and/or other school communities</u> a Cross-Curricular Assessment Plan from Learning Objectives	You want to develop an Integrated Assessment Plan at institutional level from Learning Objectives <u>which includes teamwork with the school community, nationally and internationally.</u>
Main Outcome(s)	Assessment Plan	Cross-Curricular Assessment Plan	Integrated Assessment Plan
Pre-requisite(s)	1.1. Derive Learning Objectives from a Key Competency Framework	Stage 1 competencies	Stage 2 competencies
Success Criteria	<p>One assessment plan</p> <ul style="list-style-type: none"> Using at least 2 different assessment strategies[F1], one of them being learner-centred (e.g. self- or peer-assessment) Encouraging the recognition of prior learning and experience Covering at least 3 different key competencies Reviewed and accepted by the TRANSIt tutor and or at least 2 peers 	<p>One Cross-Curricular Assessment Plan covering at least</p> <ul style="list-style-type: none"> 2 courses or disciplines 4 Key Competencies Reviewed and accepted by the TRANSIt tutor and or at least 2 peers 	<p>One Integrated Assessment Plan, covering:</p> <ul style="list-style-type: none"> the whole institution all Key Competencies Reviewed and accepted by the TRANSIt tutor and or at least 2 peers
Activities	<ul style="list-style-type: none"> Using Criterion-Based Learning Objectives, explore possible assessment strategies Define the activities during which learners will produce the evidence required to know whether or not the criteria have been met Select the most relevant assessment strategies in relation to your learning context, e.i.it is about Key Competencies 	<ul style="list-style-type: none"> Using Criterion-Based Learning Objectives, explore possible cross-curricular assessment strategies Define the activities during which learners will produce the evidence required to know whether or not the criteria have been met 	<ul style="list-style-type: none"> ibid

<p>Resources</p>	<p>Competency-based learning (Wikipedia): http://en.wikipedia.org/wiki/Competency-based_learning</p> <p>Implementing Competency-Based Learning: http://blog.ecollege.com/WordPress/?p=21</p> <p>Recognition of prior learning (Wikipedia): http://en.wikipedia.org/wiki/Recognition_of_prior_learning</p> <p>Recognition of Prior Learning (Asset Project): http://www.assetproject.info/learner_methodologies/before/recognition.htm</p> <p>Self and peer assessment: http://sydney.edu.au/education_social_work/groupwork/docs/SelfPeerAssessment.pdf</p> <p>Why should I use peer assessment?: https://www.reading.ac.uk/engageinassessment/peer-and-self-assessment/peer-assessment/eia-why-use-peer-assessment.aspx</p> <p>Peer and self-assessment: http://www.teachingexpertise.com/articles/peer-and-self-assessment-2867</p> <p>Using Peer Assessment to Develop Skills and Capabilities (USDLA Journal): http://www.usdla.org/html/journal/JAN03_Issue/article04.html</p> <p>Assessment for, as and of Learning (Australian Curriculum): http://syllabus.bos.nsw.edu.au/support-materials/assessment-for-as-and-of-learning/</p> <p>Assessment for Learning: http://www.assessmentforlearning.edu.au/default.asp</p> <p><i>Implementing ePortfolios for the Assessment of General Education Competencies (International Journal of ePortfolio):</i> http://www.theiejep.com/pdf/IJEP62.pdf</p> <p>How to use ePortfolios to Support the Assessment of Competencies? Jafari, Ali, and Catherine Kaufman. Handbook of Research on ePortfolios. Ali Jafari & Catherine Kaufman. IGI Global, 2006.</p> <p><i>Torrance, Harry, and John Pryor. Investigating Formative Assessment: Teaching, Learning and Assessment in the Classroom. Taylor & Francis, Inc., 7625 Empire Dr., Florence, KY 41042 (hardback: ISBN-0-335-19735-3, \$85; paperback: ISBN-0-335-19734-5, \$28.95), 1998.</i></p> <p>Black, Paul et al. Assessment for Learning-Putting it into practice. Open University Press, 2003.</p> <p><i>Voorhees, Richard A. "Competency - Based Learning Models: A Necessary Future." New Directions for Institutional Research 2001.110 (2001): 5-13.</i></p> <p><i>Stefani, Lorraine A.J. "Peer, self and tutor assessment: relative reliabilities." Studies in Higher Education 19.1 (1994): 69-75.</i></p> <p><i>Stiggins, Richard J. "Assessment crisis: The absence of assessment for learning." Phi Delta Kappan 83.10 (2002): 758-765.</i></p> <p><i>Hanrahan, Stephanie J, and Geoff Isaacs. "Assessing Self-and Peer-assessment: the students' views." Higher education research and development 20.1 (2001): 53-70.</i></p> <p>Greenberg, Gary. "The digital convergence: extending the portfolio model." EDUCAUSE review 39.4 (2004): 28-37.</p>	
<p>Example of evidence</p>	<ul style="list-style-type: none"> • Assessment Plan • Feedback from TRANSit tutor • Feedback from peers or colleagues • Reflections from your journal on the process of writing an Assessment Plan 	

Sub-Module 1.4: Plan Monitoring and Reporting

Three stages of competency acquisition are available to the teacher taking the module. All 3 stages in this module are concerned with Assessing and Reporting Student Learning Outcomes.

General Objective	1.4. Plan Monitoring and Reporting		
	Stage 1	Stage 2	Stage 3
Specific Objective	Plan Monitoring and Reporting in your classroom	Plan Monitoring and Reporting Across Classrooms and/or Disciplines	Plan Monitoring and Reporting at Institutional Level
Context	You need to monitor learning achievements in your classroom and need to report to your institution	You need to monitor learning achievements in a cross-curricular programme	You need to define an institutional strategy to monitor learning achievements in relation to key competencies
Main Outcome(s)	A monitoring plan	A cross-curricular monitoring plan	An integrated monitoring plan
Pre-requisite(s)	1.1 Derive Learning Objectives from a Key Competency Framework 1.3 Derive Assessment Plan from Learning Objectives	Stage 1 competencies	Stage 2 competencies
Success Criteria	<p>One Monitoring and Reporting Plan describing:</p> <ul style="list-style-type: none"> oData collection methods oHow the data collected is being exploited o Reporting methods <p>• Reviewed and accepted by the TRANSit tutor and or at least 2 peers</p>	<p>One Cross-Curricular Monitoring and Reporting Plan describing:</p> <ul style="list-style-type: none"> O Data collection methods oHow the data collected is being exploited oReporting methods <p>• Reviewed and accepted by the TRANSit tutor and or at least 2 peers operating at the same or greater stage</p>	<p>One Institutional Monitoring and Reporting Plan describing:</p> <ul style="list-style-type: none"> oData collection methods oHow the data collected is being exploited oReporting methods oIntegration in the Quality Assurance policy <p>• Reviewed and accepted by the TRANSit tutor and or at least 2 peers operating at the same stage</p>

Activities	<ul style="list-style-type: none"> Identify the events and sources of data that can be used to monitor learning Define collection methods and monitoring processes Define reporting process 	<ul style="list-style-type: none"> Identify the events and sources of data that can be used to monitor learning Define collection methods and monitoring processes Define reporting process 	<ul style="list-style-type: none"> Identify the events and sources of data that can be used to monitor learning Define collection methods and monitoring processes Define reporting process
Resources	<p>Monitoring Student Learning in the Classroom: http://educationnorthwest.org/webfm_send/541</p> <p>Between the Ideal and the Real World of Teaching: http://fcit.usf.edu/assessment/classroom/st0032november97.pdf</p> <p>Accommodating All Children in the Early Childhood Classroom: http://cefk.ohs.acf.hhs.gov/hsle/ta-system/teaching/Disabilities/program%20planning/accessibility/accommodatingall.htm</p> <p>Guidelines for project assessment</p>		
Example of evidence	<ul style="list-style-type: none"> Monitoring plan (at different stages) Feedback from a TRANSIt tutor Feedback from peers or colleagues Reflections from your journal 	<ul style="list-style-type: none"> Ibid 	<ul style="list-style-type: none"> Ibid

3.6.2 Module 2. Prepare Learning Description

Having completed the first stage of the voyage of discovery the next stage is to prepare the learning material. This module is made up of three sub-modules all of which help Prepare a Learning Environment for Acquisition of Key Competencies. Its focus is on the areas of facilitating student learning and establishing partnerships and collaborations.

The sub-modules are:

- 2.1 Prepare the Learning Environment for Acquisition of Key Competencies
- 2.2 Identify / Select / Adapt / Develop Learning Material and Technologies Supporting Relevant Practice for Acquisition of Key Competencies
- 2.3 Identify / Select / Adapt / Set-up Technologies Enhancing Learning and Assessment

Choosing your stage of Competency

Three stages of competency are listed for the sub-modules. These stages are link with the open badge awards

which are offered for participation in the course Teachers taking each sub-module decide which competency stage is most appropriate to their individual circumstances and may for example only work in stage 1 competency for each sub-module on a first run through and may return later and complete another stage given the experience gained in the first attempt. Alternatively teachers may attempt stage 3 in all cases where possible.

Tutorials

The following resources may be accessed from the Open Discovery Space Training Academies <http://portal.opendiscoveryospace.eu/training-academies>

1. Introduction to ICT and WWW for educational uses <http://portal.opendiscoveryospace.eu/tr-activity/introduction-ict-and-www-educational-uses-210>
2. Strategies for searching information online, online resources and repositories <http://portal.opendiscoveryospace.eu/tr-activity/strategies-searching-information-online-online-resources-and-repositories-212>

3. Introduction to the concept of learning objects
4. Popular social tools and scenarios for their use in the classroom
5. Designing a web community for collaborative authoring of open educational resources

Sub-Module 2.1 Prepare Learning Environment for Acquisition of Key Competencies

This module is made up of three sub modules all of which help Prepare a Learning Environment for Acquisition of Key Competencies. Its focus is on Dimensions 1 and 4 Facilitating student learning and Establishing partnerships and collaborations. At this stage the trainee will have designed an Integrated Learning and Assessment Strategy for Acquisition of Key Competencies.

General Objective	2.1 Prepare Learning Environment for Acquisition of Key Competencies		
	Stage 1	Stage 2	Stage 3
Specific Objective	Prepare the Learning Environment for your Classroom	Prepare Cross-Curricular Learning Environment	Prepare an integrated Learning Environment in an Institution
Context	The competencies you will be teaching, how they will be assessed as well as the required knowledge and understanding have been defined. You need to define the resources supporting the learning process, such as learning material, reference material and technologies.	You need to develop a cross-curricular learning environment for the acquisition of key competencies.	You need to develop an institutional learning environment for the acquisition of key competencies.
Main Outcome(s)	A learning environment supporting a <i>learning plan</i>	A learning environment supporting the <i>cross-curricular learning scenario</i>	A learning environment supporting an <i>integrated learning programme</i>
Pre-requisite(s)	1. Design an Integrated Learning and Assessment	Stage 1 competencies	Stage 2 competencies
	Strategy for Acquisition of Key Competencies 2.1 Identify / Select / Adapt / Develop Learning Material Supporting Relevant Practice for Acquisition of Key Competencies Identify / Select / Adapt / Set-up Technologies Enhancing Learning and Assessment		

Success Criteria	<p>An operational learning environment comprising</p> <ul style="list-style-type: none"> o Learning resources o Learning technologies <ul style="list-style-type: none"> • There is a clear relationship between the learning resources and the acquisition of key competencies • With a view for the learners and a view for the teacher (notes, recommendations, etc.) 	<ul style="list-style-type: none"> • A cross-curricular learning environment 	<ul style="list-style-type: none"> • An institutional learning environment
Activities	<p>Define the resources supporting the learning process, such as learning material, reference material and technologies. Consideration must be given to the resources and technologies available to teacher, students and school. Activities include:</p> <ul style="list-style-type: none"> • Searching and collating resources online • Identifying the technologies and tools best suited to utilize the resource • Search learning repositories • Search the web 	Ibid	Ibid
Resources	<ul style="list-style-type: none"> • Entries from participants 		
Example of evidence	<ul style="list-style-type: none"> • Personal ePortfolio 		

Sub-Module 2.2. Identify / Select / Adapt / Develop Learning Material Supporting Relevant Practice for Acquisition of Key Competencies

General Objective 2.2. Identify / Select / Adapt / Develop Learning Material Supporting Relevant Practice for Acquisition of Key Competencies

General Objective	2.2. Identify / Select / Adapt / Develop Learning Material Supporting Relevant Practice for Acquisition of Key Competencies		
	Stage 1	Stage 2	Stage 3
Specific Objective	Identify / Select / Adapt / Develop Learning Material Supporting Relevant Practice for Acquisition of Key Competencies	Identify / Select / Adapt / Develop Learning Material Supporting Relevant Practice for Acquisition of Key Competencies in a <u>Cross-Curricular Learning Environment</u>	Identify / Select / Adapt / Develop Learning Material Supporting Relevant Practice for Acquisition of Key Competencies in a <u>School/ Institution</u>
Context	You have a learning plan [F1] and you need to select / adapt / develop relevant resources to support the acquisition of Key Competencies		
Main Outcome(s)	An integrated set of learning resources: lessons, online references, assignments, simulations, games, etc. with a view for the learners and a view for the teacher (notes, recommendations, etc.).	An integrated and <u>shared</u> set of learning resources with a view for the learners and a view for the teacher	An integrated, updatable, institutional set of learning resources with a view for the learners and a view for the teacher
Pre-requisite(s)	none	Stage 1 competencies	Stage 2 competencies
Success Criteria	Learning resources <ul style="list-style-type: none"> o covering at least 2 key competencies 	Learning resources covering <ul style="list-style-type: none"> o at least 5 key competencies o one of them is adapted from an existing resource 	Learning resources covering <ul style="list-style-type: none"> o 8 key competencies
Activities	<ul style="list-style-type: none"> • Search learning resources repositories • Search the web • Ask sources and feedback from experts and colleagues 	<ul style="list-style-type: none"> • Prepare a synthetic view for learners and teaching staff 	
	<ul style="list-style-type: none"> • Prepare a synthetic view for learners and self 		
Resources	Resources provided by participants		
Example of evidence	List of learning resources in the ePortfolio		

Sub-Module 2.3 Identify / Select / Adapt / Set-up Technologies Enhancing Learning and Assessment

General Objective	2.3. Identify / Select / Adapt / Set-up Technologies Enhancing Learning and Assessment		
	Stage 1	Stage 2	Stage 3
Specific Objective	Identify and Select Technologies Enhancing Learning and Assessment for your Classroom	Identify, Select, Adapt and Set-up Technologies Enhancing Learning and Assessment for a cross-curricular learning programme	Identify / Select / Adapt / Set-up Technologies Enhancing Learning and Assessment for an Institution
Context	You have defined the competencies you will be teaching and how they will be assessed. You now need to define the technologies supporting the learning and assessment process, such as equipment (e.g. tablets, mobile phones) software (e.g. ePortfolios).		
Main Outcome(s)	A technology enhanced learning environment	A technology enhanced learning environment	An institutional ICT plan
Pre-requisite(s)	none	Stage 1 competencies	Stage 2 competencies
Success Criteria	A relevant selection of digital technologies <ul style="list-style-type: none"> o one of them to support learners with building an ePortfolio • reviewed and accepted by the TRANSIt tutor and or at least 2 peers 		
Readings/vic wing	Effective Assessment in a Digital Age: http://www.jisc.ac.uk/media/documents/programmes/elearning/digiassass_eada.pdf Technology-enhanced assessment: http://www.jisc.ac.uk/whatwedo/programmes/elearning/assessment.aspx e-Portfolios - An overview: http://www.jisc.ac.uk/whatwedo/programmes/elearning/eportfolios.aspx 'Effective Practice with e-Portfolios' (JISC publication): http://www.jisc.ac.uk/whatwedo/programmes/elearning/eportfolios/effectivepracticeeportfolios.aspx Tools for 21st century learning: http://www.jisc.ac.uk/news/e-portfolio-tools-for-21st-century-learning-09-sep-2008 How can we use ePortfolios to help students reflect upon and improve their learning?: http://www.slideshare.net/dcambrid/how-can-we-use-eportfolios-to-help-students-reflect-upon-and-improve-their-learning Spanish resources: ePortfolio and competences (CAT): https://e-portfoli.wikispaces.com/		

3.6.3 Module 3. Run Learning

Description

The module involves running a lessons or scenarios by teachers to teach the Transversal Key Competencies. It will also focus on the use of digital technologies to support learning and assessment in the classroom. The process of monitoring and assessing learning to inform further learning in a learning scenario is also tackled.

There are 3 sub-modules:

- 3.1 Run a Lesson Plan/Learning Scenario/Programme for Acquisition of Key Competencies
- 3.2 Use Digital Technologies to Support Learning and Assessment

3.1 Run a Learning Scenario/Programme for Acquisition of Key Competencies

3.3 Monitor and Assess Learning to Inform Further Learning

Choosing your stage of Competency

Three stages of competency are listed for the sub-modules. These stages are link with the open badge awards which are offered for participation in the course Teachers taking each sub-module decide which competency stage is most appropriate to their individual circumstances and may for example only work in stage 1 competency for each sub-module on a first run through and may return later and complete another stage given the experience gained in the first attempt. Alternatively teachers may attempt stage 3 in all cases where possible.

General Objective	3.1 Run a Lesson Plan/Learning Scenario/Programme for Acquisition of Key Competencies		
	Stage 1	Stage 2	Stage 3
Specific Objective	Run a Lesson Plan for Acquisition of Key Competencies	Run a cross-curriculum Scenario for Acquisition of Key Competencies	Run an Integrated Learning Programme for Acquisition of Key Competencies within the School/Institution
Context	You are running a learning sequence for the acquisition of Key Competencies based on a <i>learning plan</i> . For that, you will call for the support of <i>learning technologies</i> , to support, monitor and assess learning key competencies.	You are running a cross-curriculum learning scenario for the acquisition of Key Competencies. For that, you will call for the support of <i>learning technologies</i> , to support, monitor and assess learning key competencies.	You are running an Integrated learning programme for the acquisition of Key Competencies.
Pre-requisite(s)	Use Digital Technologies to Support Learning and Assessment (Teach, Monitor, Assess, Provide Feedback) Monitor and Assess Learning to Inform Further Learning		

Success Criteria	During the running of the learning sequence, you: <ul style="list-style-type: none"> • Provide support and guidance to learners • Monitor learning progress • Provide Informed feedback 		
Activities	Activities include running a learning scenario for the acquisition of Key Competencies based on a learning plan. Use learning technologies, to support, monitor and assess learning key competencies. This could include a single class or cross-curricular approaches or instruction wide activities.		
Readings/viewing	<p>To improve student learning through technology: http://www.calvertnet.k12.md.us/departments/dit/documents/fulltechplan.pdf</p> <p>Integrating Technology with Student-Centered Learning: http://www.nmefoundation.org/getmedia/befa9751-d8ad-47e9-949d-bd649f7c0044/integrating</p> <p>Critical Issue: Using Technology to Improve Student Achievement: http://www.ncrel.org/sdrs/areas/issues/methods/technlgy/te800.htm</p> <p>Developing Lessons with Technology: http://www.pearsonhighered.com/assets/hip/us/hip_us_pearsonhighered/samplechapter/0136101259.pdf</p> <p>What is e-learning? (Webopedia): http://www.webopedia.com/TERM/E/e_learning.html</p> <p>Transforming Assessment: http://www.transformingassessment.com/</p> <p>Classroom Technology Explained: eAssessment (YouTube Video): http://www.youtube.com/watch?v=bxXITkDqnnA</p>		

3.2 Use Digital Technologies to Support Learning and Assessment

General Objective	3.2 Use Digital Technologies to Support Learning and Assessment		
	Stage 1	Stage 2	Stage 3
Specific Objective	Use Digital Technologies to Support Learning and Assessment in the classroom	Use Digital Technologies to Support Learning and Assessment in a <u>cross-curricular programme</u>	Use Digital Technologies to Support Learning and Assessment at <u>institutional level</u>
Context	You want to use digital technologies to support the implementation of a learning sequence	You want to use digital technologies to support the implementation of a cross-curricular learning sequence	You want to use digital technologies to support the implementation of an integrated learning programme

Main Outcome(s)	Classroom Digital Technology Plan	Cross-curricular Digital Technology Plan	Institutional Digital Technology Plan
Pre-requisite(s)	None	None	None
Success Criteria	Digital technologies are used to: <ul style="list-style-type: none"> Collect Evidence to Monitor learning Support individual learners Assess key competencies 	Ibid, in the context of a cross-curricular programme	
Activities	This module involves using digital technologies to support learning and assessment in the classroom.	.	
Resources	Competency-based Learning (1/3), What is Competency-Based Learning?: https://dl.dropboxusercontent.com/u/52732975/CBL.1.pdf ; https://dl.dropboxusercontent.com/u/52732975/CBL.1.mov Competency-based Learning (2/3), What is the place of assessment?: https://dl.dropboxusercontent.com/u/52732975/CBL.2.pdf ; https://dl.dropboxusercontent.com/u/52732975/CBL.2.mov Competency-based Learning (3/3), How do we assess competencies?: https://dl.dropboxusercontent.com/u/52732975/CBL.3.pdf ; https://dl.dropboxusercontent.com/u/52732975/CBL.3.mov Integrating Technology with Student-Centered Learning (Nellie Mae Education Foundation): http://www.nmefoundation.org/getmedia/befa9751-d8ad-47e9-949d-bd6497c0044/integrating		

3.3 Monitor and Assess Learning to Inform Further Learning

General Objective	3.3 Monitor and Assess Learning to Inform Further Learning		
	Stage 1	Stage 2	Stage 3
Specific Objective	Monitor and Assess Learning to Inform Further Learning in a Learning Sequence	Monitor and Assess Learning to Inform Further Learning in a Cross-Curricular Programme	Monitor and Assess Learning to Inform Further Learning at Institutional Level
Context	You need to monitor and Assess Learning to Inform Further Learning in the classroom		You need to implement a quality assurance strategy to monitor learning, assess the outcomes and inform future practice and strategy

Main Outcome(s)	<ul style="list-style-type: none"> • Analysis of monitoring data • Assessment decisions regarding learners' acquisition of key competencies • Open Badges delivered • Revised Learning Sequence 	<ul style="list-style-type: none"> • Analysis of monitoring data • Assessment decisions regarding learners' acquisition of key competencies • Open Badges delivered • Revised cross-curricular Learning Programme 	
Pre-requisite(s)	None		
Success Criteria	<ul style="list-style-type: none"> • Learners successfully achieving the demonstration of key skills at the end of the learning sequence • Sufficient quantity and range of data is being collected to monitor and assess learning • review of the monitoring and assessment process by at least 2 peers and/or one TRANSIt tutor 		
Activities	<ul style="list-style-type: none"> • Collect evidence to monitor learning • Review evidence and take action accordingly • Provide informed and supportive feedback to learners • Celebrate learning achievements (e.g. by providing Open Badges to the participants) • Inform peers and management 		
Resources:	<p>Critical Issue: Using Technology to Improve Student Achievement: http://www.ncrel.org/sdrs/areas/issues/methods/technology/te800.htm</p> <p>Transforming Assessment Rethinking assessment in a participatory digital world - Assessment 2.0: http://www.transformingassessment.com/</p> <p>Classroom Technology Explained: e-Assessment (Youtube Video): http://www.youtube.com/watch?v=bxXITkDqnnA</p> <p>What is an e-Portfolio? (Regis University): http://academic.regis.edu/LAAP/eportfolio/basics_what.htm</p> <p>What is an ePortfolio? (Clemson University): http://www.clemson.edu/academics/programs/eportfolio/about</p> <p>Electronic portfolio (Wikipedia): http://en.wikipedia.org/wiki/Electronic_portfolio</p> <p>What is an ePortfolio? University of Derby (YouTube): http://www.youtube.com/watch?v=YZsfvBqBrcY</p> <p>How to Build Better ePortfolios: http://www.guide2digitallearning.com/tools_technologies/how_build_better_eportfolios</p> <p>Introducing Open Badges: a new online standard to recognize and verify learning: http://openbadges.org/</p> <p>A Short Story About Open Badges (video): http://www.youtube.com/watch?v=Xc4xDbNbl6Y#t=10</p> <p>Getting started issuing Open Badges: http://openbadges.org/issue/</p>		

	<p>Developing Lessons with Technology: http://www.pearsonhighered.com/assets/hip/us/hip_us_pearsonhighered/samplechapter/0136101259.pdf</p> <p>Spanish resource:</p> <p>Good practice (Primary education): Competence based-learning activity around a sportsman (CAT) http://bloes.xtec.cat/gransrellinars1213/files/2013/03/KILIAN-JORNET-2-baixa-resoluci%C3%B3-Modalitat-compatibilitat.pdf</p>		
Example of evidence	<ul style="list-style-type: none"> • Reflections • Artefacts • ePortfolio excerpts • Feedback from learners on their learning experience 	<ul style="list-style-type: none"> • Ibid 	Ibid

3.6.4 Module 4. Review Learning

4.1 Review a Learning Scenario/Programme for Acquisition of Key Competencies

Description

Review a Learning scenario for Acquisition of Key Competencies. This module involves the teacher reviewing their own performance and that of the learners. It will involve noting and report your findings and plan further action. This will involve a sharing of findings and discoveries with colleges other learners on the course or at an intuition wide basis. There is one module in this course.

General Objective	4.1 Review a Learning Sequence/Scenario/Programme for Acquisition of Key Competencies		
	Stage 1	Stage 2	Stage 3
Specific Objective	Review a Lesson Plan for Acquisition of Key Competencies	Review a Learning Scenario for Acquisition of Key Competencies	Review a Learning Programme for Acquisition of Key Competencies
Context	After running a lesson plan for the acquisition of Key Competencies, you need to review your own performance and that of the learners, report your findings and plan further action	After running with colleagues a learning scenario for the acquisition of Key Competencies, you need to review your performance, share your findings with your colleagues and plan further action	Based on the collection of data from colleagues, review the institutional strategy, report findings and plan further action
Main Outcome(s)	<ul style="list-style-type: none"> • Review of the lesson plan • Revised professional development plan 	<ul style="list-style-type: none"> • Review of the cross-curricular learning scenario • Recommendations for improvement • Revised professional development plan 	<ul style="list-style-type: none"> • Review of the institutional learning programme • Recommendations for a revised institutional strategy for the teaching of Key Competencies

Main Outcome(s)	<ul style="list-style-type: none"> • Review of the lesson plan • Revised professional development plan 	<ul style="list-style-type: none"> • Review of the cross-curricular learning scenario • Recommendations for improvement • Revised professional development plan 	<ul style="list-style-type: none"> • Review of the institutional learning programme • Recommendations for a revised institutional strategy for the teaching of Key Competencies
Pre-requisite(s)	None		
Success Criteria	<ul style="list-style-type: none"> • Recommendations for improving professional practice in relation to the acquisition and assessment of key competencies • Revised professional development plan • Feedback from at least 2 peers on the recommendations and revised plan 	<ul style="list-style-type: none"> • Recommendations for improving professional practice and the cross-curricular learning scenario 	<ul style="list-style-type: none"> • Recommendations for improving professional practice and the institutional learning scenario
Activities	<ul style="list-style-type: none"> • Reflect on professional experience in relation to running a learning sequence on key competencies • Report findings and get feedback from peers • Plan further professional development 	<ul style="list-style-type: none"> • Ibid as Stage 1 	<ul style="list-style-type: none"> • Ibid as Stage 1
Resources	<p>Review Strategies: http://www.mindtools.com/pages/article/newISS_05.htm</p> <p>Discovery Learning for the 21st Century: What is it and how does it compare to traditional learning in effectiveness in the 21st Century? (Joyce A. Castronova): http://teach.valdosta.edu/are/litreviews/vol1no1/castronova_litr.pdf</p> <p>Elements of Effective e-Learning Design: http://www.irrodl.org/index.php/irrodl/article/view/217/300</p>		
Example of evidence	<ul style="list-style-type: none"> • Data collected during monitoring, e.g. example of things that went well and not so well, feedback from learners, etc. • Revised lesson plan, learning scenario • Revised continuing professional development plan 		

The TRANSit implementation (technical tools)

In this chapter the TRANSit teacher training platform & ePortfolio tool are presented, with instructions for use, as well as two cases for creating and sharing your competence based learning educational resources with use of the ODS and Octopus Authoring Tool. Moreover the links to the TRANSit multilingual communities on ODS Portal and the dedicated workspace on Octopus are presented, so that users can search the available CBL resources created by participants in TRANSit implementation activities or create their own.

4.1 TRANSit teacher training platform & ePortfolio tool

The entry point for the TRANSit teacher training platform is the TRANSit portal which is accessible at the link <http://transit.cti.gr/moodle/>

The TRANSit portal is meant to serve as a web based software platform for training modules and training content developed by the TRANSit project. It aims at covering needs regarding optimal teacher training on KCA issues and serving as the teacher's community infrastructure. The TRANSit portal is based on open source off the shelf software components that are integrated in order to provide a seamless user experience. The two major portal building blocks are Moodle which is uti-

lized as the teacher training platform, and Mahara which serves as the platform that can be used by the involved teachers' students as an e-portfolio showcase.

Moodle and Mahara are integrated with each other and behave as a single portal infrastructure, as users enjoy a seamless experience when switching between the two platforms. Single Sign On, a shared look and feel along with similar navigation logic for both tools ensure that users do not feel a transition between software tools. Moodle is utilized as the portal's learning environment where teachers interact to produce, evaluate and understand knowledge content via sharing artefacts in the specific context. Mahara is used as the portal's e-portfolio environment. Teachers take a dual role, as they are direct e-portfolio users on one hand, but also serve as mentors that foster students to utilize the e-portfolio TRANSit module. School teachers use the TRANSit e-portfolio module in order to provide e-portfolio functionality to their students.

Login

Users gain access to the TRANSit portal through a login process. This is necessary so that a personalized experience is achieved for each user and in order to reduce spam. Guest login is available.

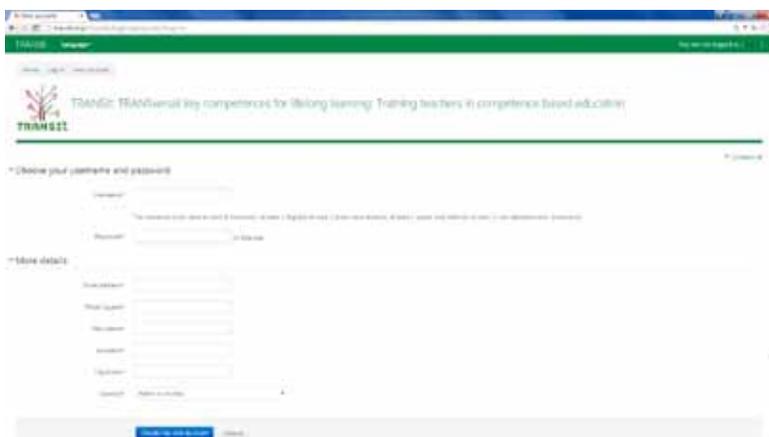


Figure 5 Self-registration sign up page

Languages

The portal supports a superset of all partner country languages regarding user interface and uploaded content. Language packs allow trouble free expansion to other languages if required. Automatic language detection is available, based on the user's browser language setting. One specific language can be selected as default. This setting is overridden by the user's browser setting. A user can change the displayed language. This setting also overrides the portal default language.

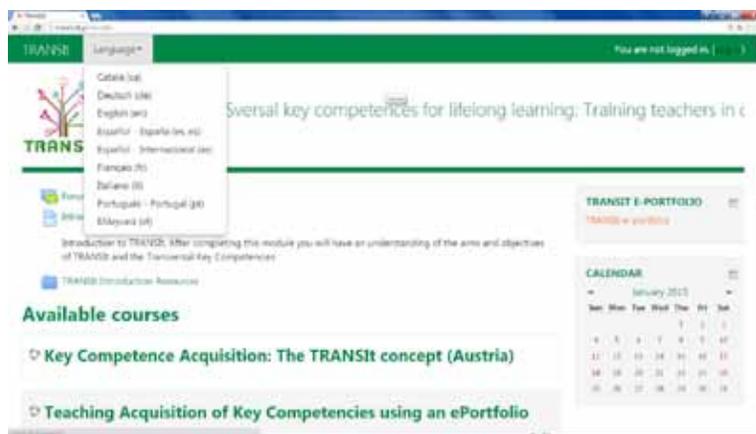


Figure 6 Available languages

Users, roles and permissions

The TRANSit learning environment follows a different role/permission scheme compared to the e-portfolio module, in order to meet different user role needs as the prior is aimed at teachers learning and the latter at student displaying and social networking.

Moodle: user roles

Regarding the learning environment, a role is a set of permissions that apply to it vertically. Roles are assigned to users in specific contexts. The combination of roles and context define what a user can and cannot do. Contexts form a hierarchy. Any role with a specific permission for one context inherits this permission to lower level contexts. Roles are defined and edited by the portal administrator, who can assign capabilities to roles. Users on a Moodle platform are always assigned one or more roles – again, just like in a real learning environment. Depending on one's role, one has certain privileges or permis-

sions and is allowed to do (and see) more or fewer things on the platform and within a particular course – or has more duties.

The top role in Moodle is called “administrator role”. The person with this role can also install additional modules or plug-ins.

Users granted the “teacher role” have full editing rights for their courses and are in full control of the students enrolled in your course.

Learners are assigned the “student role”. “Student role users cannot create or edit Moodle activities or items, and cannot access items hidden by a teacher. Also they do not have access to course reports or statistics.

Mahara: user roles

The top role in Mahara is called “site administrator”. The person with this role can also install additional modules or plug-ins, create new users and generally execute almost any task on the e-portfolio module.

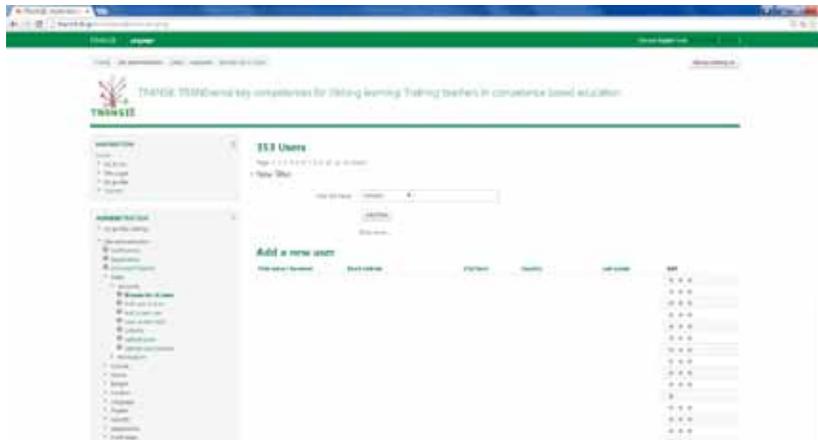


Figure 7 Mahara user administration page

Learners are assigned the user role. They can use the e-portfolio functionality to showcase their artifacts, communicate and connect with other users, join groups etc.

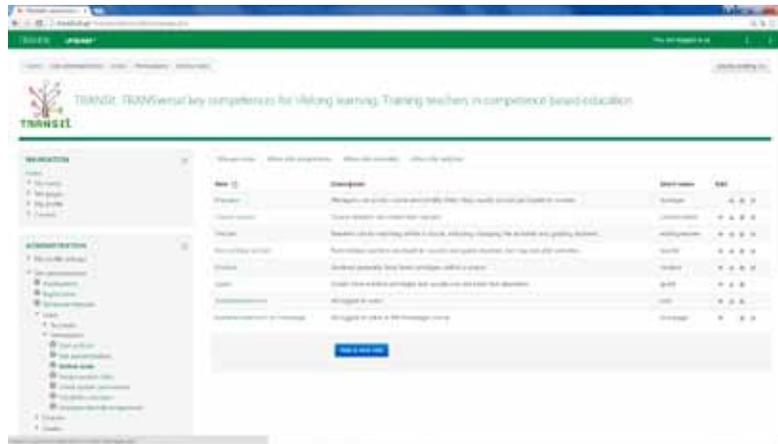


Figure 8 Role creation and permission administration page

Content

The TRANSit portal is capable of hosting a variety of content formats that are utilized to support teacher training by being added to courses. Content files can be presented as individual items or bundled in folders. Available file formats include pictures, documents, spreadsheets, audio/video files, folders, IMS formatted material, external URLs, html files etc. Permissions regarding access to content are derived from role/context combination.

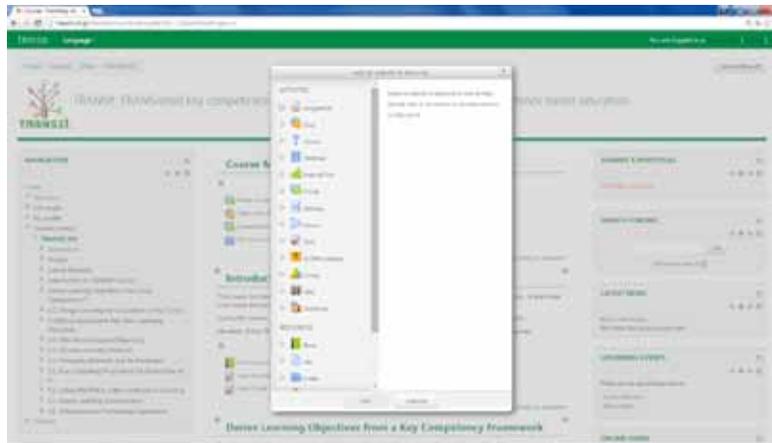


Figure 9 Available upload content types

Courses

Courses serve as repositories for specific thematic areas. Essentially it is an area where a teacher places learning materials and activities such as assignments and quizzes for students to complete. Each course has a main page that is managed by the teacher. Various course layouts are available such as weekly format, topics format and social format.

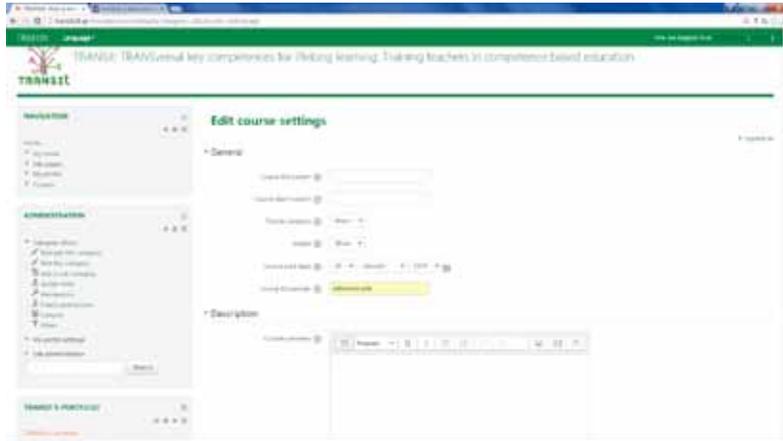


Figure 10 Add new course page

Students can be enrolled manually by the teacher, automatically by the administrator, or they can be allowed to enroll themselves.

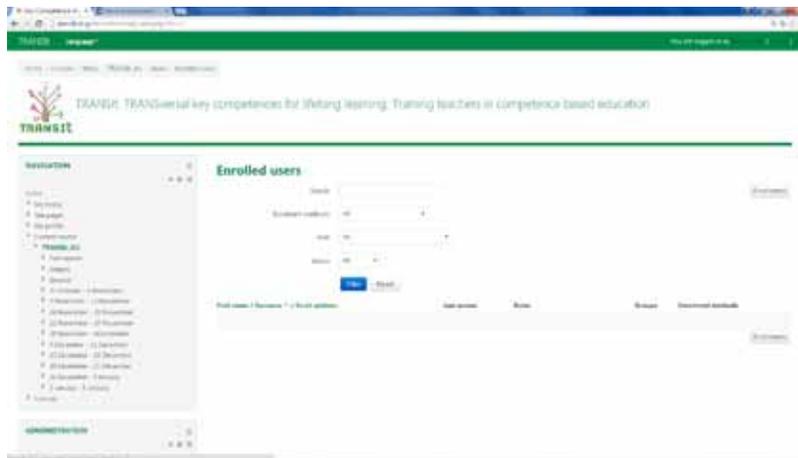


Figure 11 Enrolling users to a course

Courses are organized in categories, which can be added/deleted/edited/moved. Users enroll to course categories. Course categories can be nested because sub-categories are supported. For each course various attributes are editable such as a full and short name, course category, start/end dates, description, summary etc.

Workshop

Workshop displays similar functionality as activities, introducing peer assessment options. After submission there are two grades for a student: their own work and their peer assessments of other students' work. The submissions are assessed using a structured assessment form made by the course teacher and which facilitates multi-criteria assessment. Each participant gets

two grades, one regarding how well they did on their assignment and another regarding how well they assessed their peers.

Badges

TRANSit offers badge functionality in a way totally compatible with Mozilla Open Badges. Badges created in the TRANSit portal can be displayed on the user's portal profile or can be published to their Open Badges backpack. There are two kinds of badges: TRANSit badges which are available portal-wide and are related to TRANSit wide activities such as finishing a set of courses and, course badges which are offered to users enrolled to a course and are related to achievements accomplished inside a course.

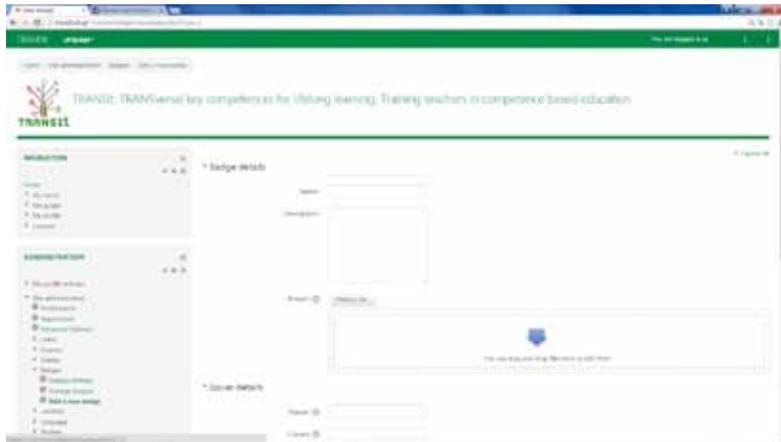


Figure 12 Badge creation page

Badges can be issued automatically upon an event (i.e. course completion, completion of a course set, assignment completion etc) or manually by a user that has been granted a badge issuing role. Badges can be set to expire after a specific expiration date set by the badge author. If the email address a user has for TRANSit is the same as their Open Badges email address, then they will be automatically connected and may choose to disconnect if they wish. If the email address a user has for TRANSit is not the same, then they can add the email address which will connect them to their backpack. They can then choose to "push" to their backpack badges which they have earned on TRANSit.

e-portfolio functionality

With the TRANSit ePortfolio users can record evidence of lifelong learning – such as essays, artwork or other such things they produce that can be stored digitally. Such things are called artefacts. Each user can control which items and what information (aka artefacts) within their portfolio other users see. To facilitate this access control, all ar-

tefacts shown to other users need to be arranged into one area, which is called a page. Each user can have as many pages as they like, each with a different number of artefacts, intended purpose and audience. Audience or the people a user wishes to give access to your page, can be added as individuals or as a member of a group. It can even be made publicly available. A single page or a collection of pages can make up a user's portfolio. Unless artefacts are placed in a page, they are not visible to anybody but the user they belong to. Users can use files that they uploaded or journal entries they wrote in as many pages as they wish without any need for multiple artefact copies. For example each user could create a page for friends and family that includes holiday photos and a personal journal, a page for a tutor which includes assessments and reflective learning journal or,

a page to showcase best pieces of work and résumé for potential employers. Each TRANSit user can create portfolio pages, create collections to bundle portfolio pages, share pages and / or collections, export their portfolio, give feedback on artefacts and pages or view their tag cloud and change tags.

Social networking

Groups

Groups can be used for collaboration among users as they offer the possibilities to discuss topics in fora, create and edit pages and collections together, share files and pages and submit pages for assessment / feedback. Groups can be created by every user, staff or administrators only.

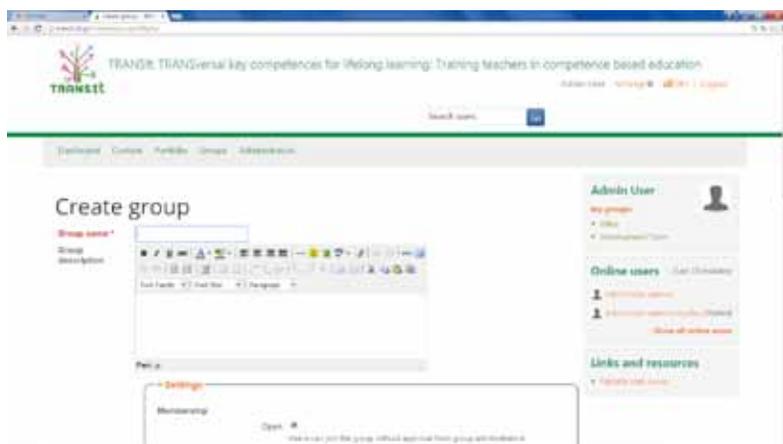


Figure 13 Group creation page

Friends

A user's friends are a special group of users. A user can share portfolio pages or collections easily with them and get in touch with them quickly by going to this page. They differ from a regular group in that they do not have discussion forums, pages or shared files. If a user wishes to have access to those with their friends they have to create a regular group for them. A user can request other users' friendship by going to their profile page and click the Request friendship link or, go to the Find friends page and search for potential friends there.

petence based education: TRANSit @ the Vilnius Winter School 2014, <http://portal.opendiscoveryspace.eu/el/community/training-teachers-competence-based-educationtransit-vilnius-winter->

- school-2014-568584
- 2014 Summer School, <http://portal.opendiscoveryspace.eu/el/community/ods-summer-school-2014-673531>

Figure 15 depicts the network of multilingual TRANSit Communities on ODS portal on the theme of competence based learning.

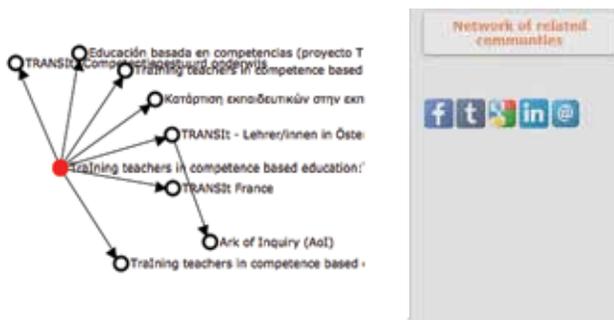


Figure 15 TRANSit multilingual communities & sub-communities on Open Discovery Space portal regarding competence development

The user can have access to the Learning Resources developed by members of a Community, as well as the ability to upload his own educational content, lesson plans or learning scenarios promoting KCA. Login to the ODS portal, visit one of the above TRANSit communities search the available resources or create and share your own resources.



There are three options in the menu “Search Educational Resources of the Community” by selecting the filter Type “Educational content”, “Lesson Plans” and “Learning Scenarios”. Each one of these options will lead you to a new page that includes all content created into this Community by all members and also provides you the possibility to create your new content.

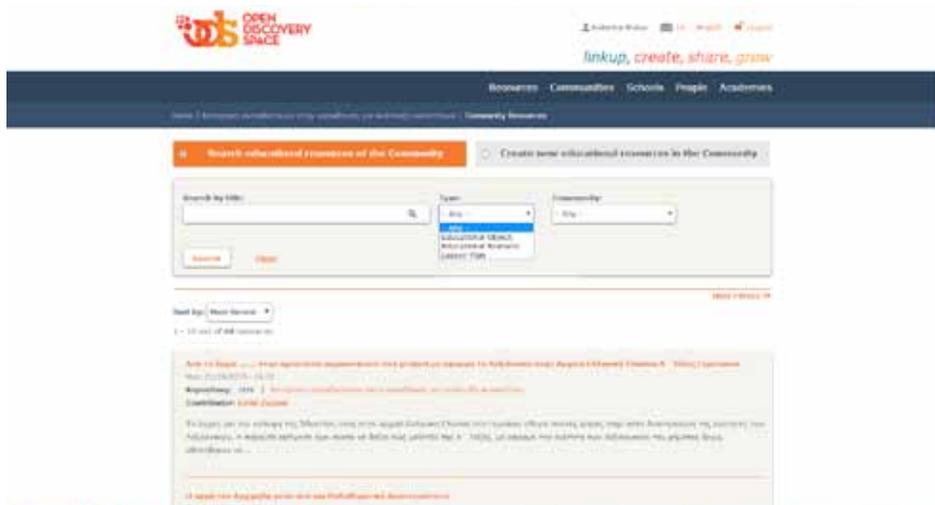


Figure 16 Searching for educational resources meeting criteria that the user specifies in the forms

The user can also share/create three types of resources; Educational Objects/resources, Lesson Plans or Educational Scenarios.

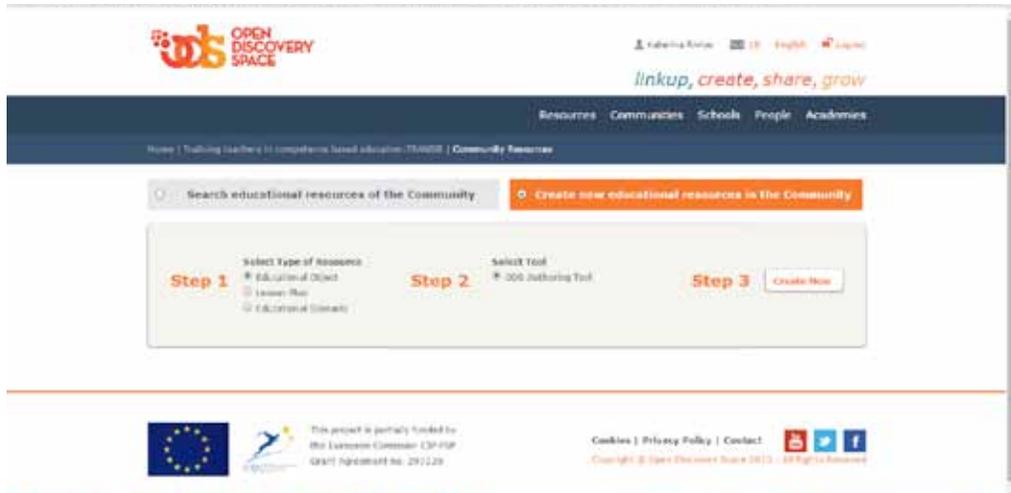


Figure 17 Creating new educational resources in the community

 Educational Content	<p>Educational resources are typical digital materials, such as video and audio lectures (podcasts), references and readings, workbooks and textbooks, multimedia animations, simulations and demonstrations.</p>
 Lesson Plans	<p>Lesson Plans provide teachers with guidelines for conducting a lesson and contain information on educational resources and tools that should be used, as well as educational objectives, teaching methods and assessment. Lesson plans can be (re) used by the same teacher, as well as by other teachers.</p>
 Learning Scenarios	<p>The learning scenarios are of more extended duration than lesson plans and they are not necessarily intended to be used inside the classroom.</p>

Figure 18 Different types of resources and definitions

Create Educational Content



Figure 19 Creating/uploading an educational object

Upload your own lesson plans and/or educational scenarios

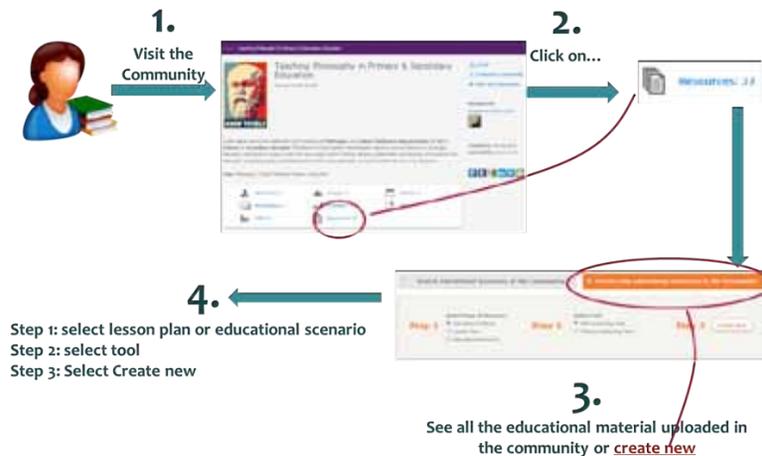


Figure 20 Creating/uploading lesson plans and/or educational scenarios

These are the three steps for uploading lesson plans and/or educational scenarios.
Below these steps are analysed.

- Step 1** Define the scenario / lesson plan
Set the languages, the title, the description and all the main information that describes your scenario and its use
- Step 2** Relate it to a specific domain
Indicate the domain / thematic area where our resource is referenced to (e.g. Science, ICT, etc.)
- Step 3** Create
Upload or edit the phases and activities of your scenario / lesson plan

Figure 21 Uploading resources in three steps

Step 1. Define your scenario / lesson plan

... select the language(s) of your resource

... set the title of the resource in each selected language

... define the author(s)

... provide the description

... for which age is your resource applied?

... provide the keywords that describe the resource

... select the educational objectives of your scenario / lesson plan and describe shortly how these are achieved

11

Step 2 Relate your resource to a specific domain

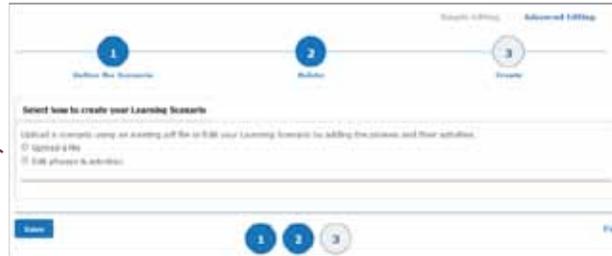
... define as many domains and levels you need

11

Step 3 Create the content of your scenario / lesson plan

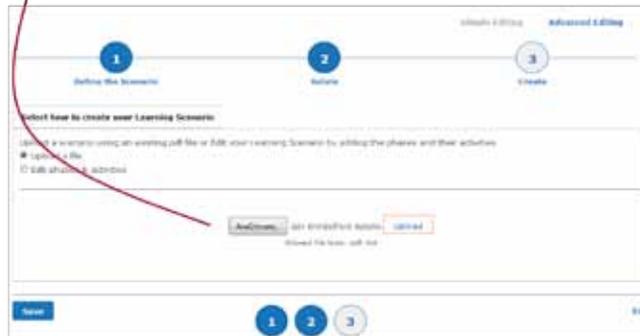
There are two ways of creating the CBL scenario/lesson plan, either by uploading a pdf file or by editing each phase and activity of the scenario individually.

Decide and select the way you want to create the scenario / lesson plan. Uploading a file or editing each phase and activity individually?



Step 3 Create the content of your scenario / lesson plan by...uploading a file

Select a file from your computer and upload it here



Step 3 Create the content of your scenario / lesson plan by...editing the phases & activities

Choose one of the available templates ...before decide, preview the available templates. Some of the options are:

ODS generic template:	choose this to create a lesson plan using a blank template
Your templates:	choose this to create a lesson plan based on a template that you created

In this case you can have a look at the templates suggested for promoting competence based learning, thus project based learning, storyline approach, inquiry-based learning, Guided discovery, Action learning, Problem based learning, Co-operative learning which are also available on the ODS Glossary of teaching approaches <http://portal.opendiscovery.space.eu/tr-activity/22-glossary-teaching-approaches-669764>

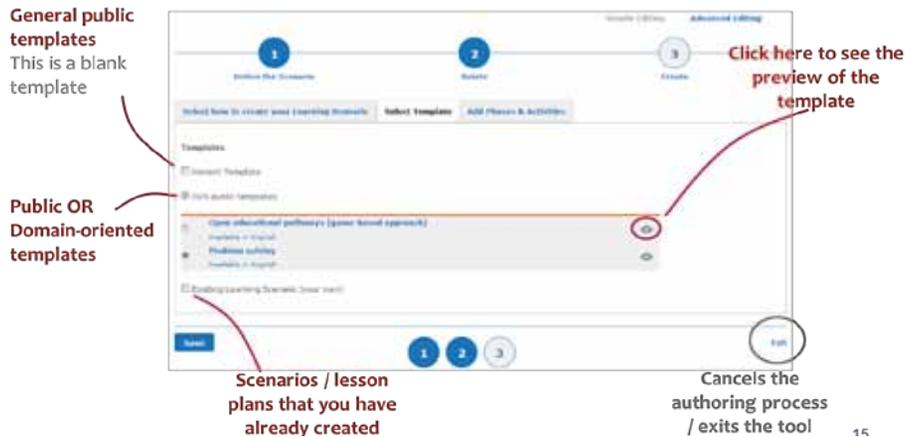


Figure 22 Viewing the available templates

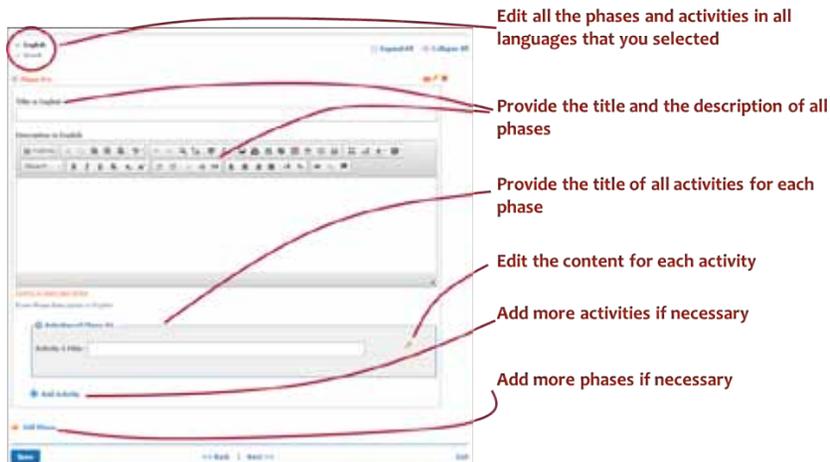


Figure 23 Phases and activities editing

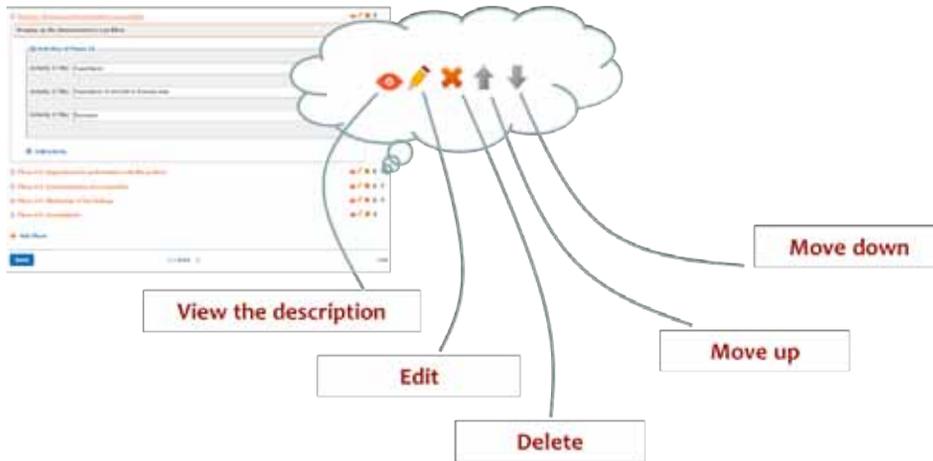
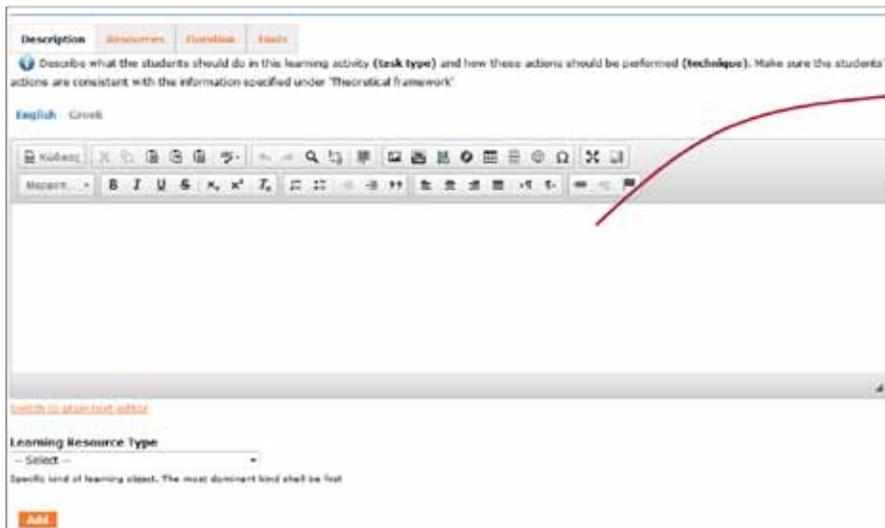
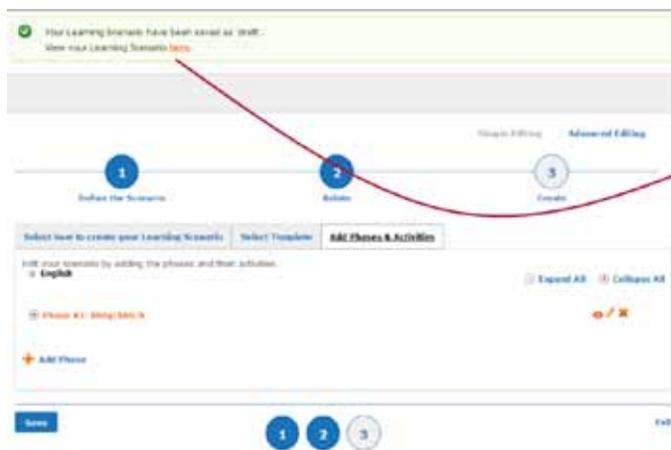


Figure 24 Activities editing



Describe the activity in all languages that you selected

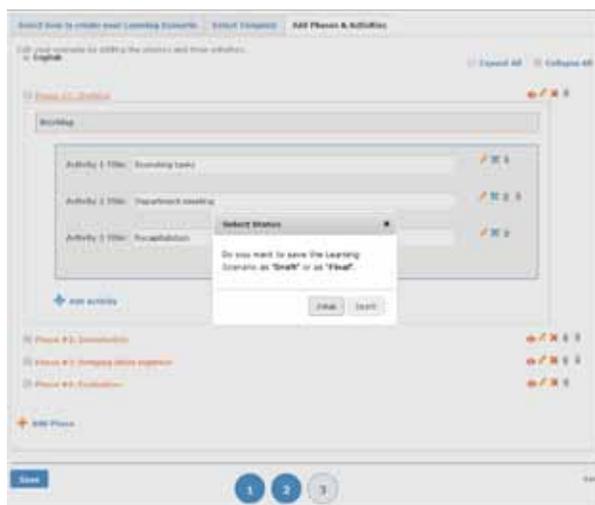
Figure 25 Describing the activity



Have you saved your scenario / lesson plan?

You can view it and further process it from here

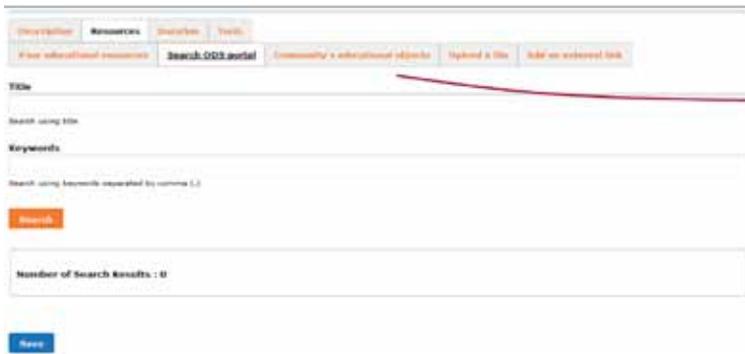
Figure 26 Saving and viewing your scenario/lesson plan



Save the scenario / lesson plan in final or draft version.

*** only the "final" resources are accessible from the rest visitors / members of the community. The "draft" resources are only available through your profile

Figure 27 Saving your scenario/lesson plan (final, draft version)



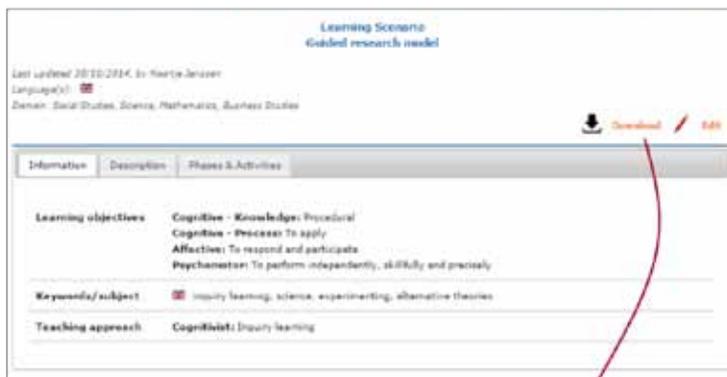
Attach educational resources by selecting one or more of the available options

Figure 28 Attaching educational resources to your scenario/lesson plan

You can attach resources to your scenario/lesson plan with a number of options; created by you (by uploading them if you haven't done it already), or search the ODS portal using key words, search the community for resources, or add external resources adding them as files or via using the URLs.

Download educational resources

View here all the content, material and description of the scenario / lesson plan



Download your scenario /lesson plan here in pdf file and in all languages

Figure 29 Downloading your scenario/lesson plan (in pdf file)

4.3 Learning Design Use Cases: Demonstration of designing a CBL Lesson Plan/Learning Scenario with use of the Octopus Authoring Tool

Octopus is a web-based tool for authoring learning scenarios, aligned on ODS portal and has been used in some of the TRANSit implementation activities. Here we will present how to use it in order to author CBL Learning Scenarios. The workspace "Training teachers in competence based education" has been created on Octopus and can be accessed <http://learn.ced.tuc.gr/octopus1/home/>

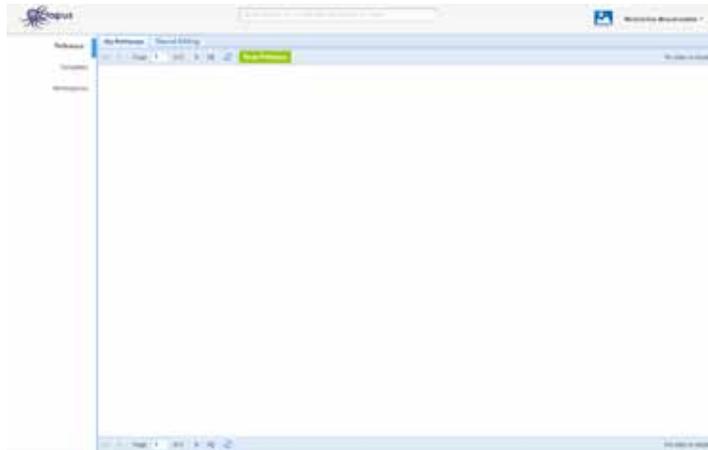
1. Sign-in, login and account settings

To access the tool, go to: <http://learn.ced.tuc.gr/octopus>. The following screenshot depicts the initial page of the tool:



Assuming you have no account in the tool, the first thing to do is to click the 'CREATE AN ACCOUNT' button on the top right of the page. A pop-up form shows up so that you could provide the necessary information for the creation of the account. Type all necessary information and click the 'Create Account!' button when you finish.

After clicking the 'Create Account!' button your account is created and your inventory of pathways is presented, which is empty at this point as shown in the following screenshot. Templates and Workspaces are empty as well.



Before exploring how you could start creating your own content in the tool, let us see how you could inspect and change your account details. Click on your name at the top-right of the Octopus page. A pop-up menu shows up. Click on the 'Account Options' item as shown in the next screenshot.

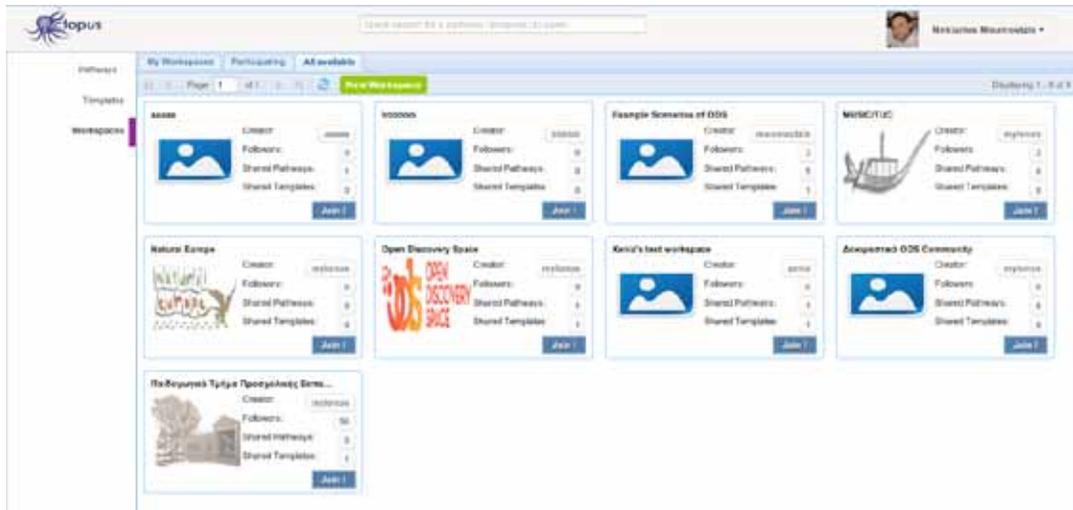


2. Creating a pathway using a template

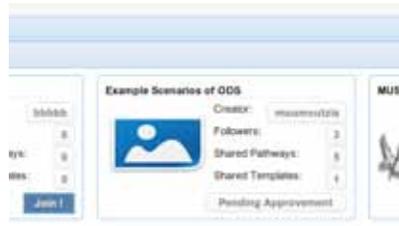
You are now ready to create your first pathway. In Octopus terminology, a pathway stands for a pedagogical scenario or a lesson plan that prescribes how to teach a certain topic. We will see that a pathway consists of a number of learning activities that are supported by resources. Resources refer to digital content that is to be used by students during the implementation of the pathway.

2.1 Join a workspace

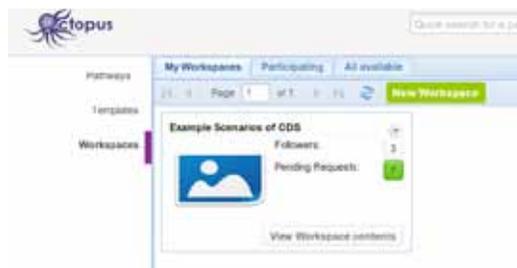
As you have already seen in the previous section, when your account is created, your inventory of pathways is empty. One way to start creating your pathways is to join a workspace where you could find some ready-made pathways that you may modify to suit your needs. You could also find templates to use as a starting point for the creation of your pathways. Templates are essentially generic structures that contain guidance to develop your own pathway in a way that it conforms to some pedagogical approach or best practice.



So, let us see how you could join a workspace and use one of its templates to create your first scenario. Select the 'Workspaces' option on the vertical menu on the left of the Octopus main page. Then, select the tab 'All available'. You will see all the workspaces in which you could send a join request, as shown in the screenshot above. Now click the 'Join!' button.



What has happened is that Octopus has sent a notification to the owner of the workspace, i.e. the user that has created it, that a new user, you, is requesting to join the workspace. The owner of the workspace can approve or reject your request.



In the screenshot on the left you can see what is happening on the owner's side. When he/she browses his/her workspaces, he/she can see that there are pending requests in the 'Example Scenarios of ODS' workspace. The number of pending requests is marked with green color.

The owner can click on this number and see a list of the pending requests from which he/she could approve or reject each one of the requests. You could see how the list of pending requests is presented in the screenshot on the right. The pending requests are shown in tabular form. Each row corresponds to one request and the owner of the workspace can accept or reject it by clicking on the corresponding button.

Let us now go back to your own account. After the owner of the workspace has approved your request, you are now offered with the option to 'View Workspace contents' as shown below. Click that button.



You are now able to see the Pathways shared through the workspace "Training teachers in competence based education" as shown below.



Click on the tab 'Templates'. You can have a look at the available templates for fostering competences adapted for TRANSit purposes (Project based learning, Guided research, Guided educational pathway, The 5e Instructional Model).



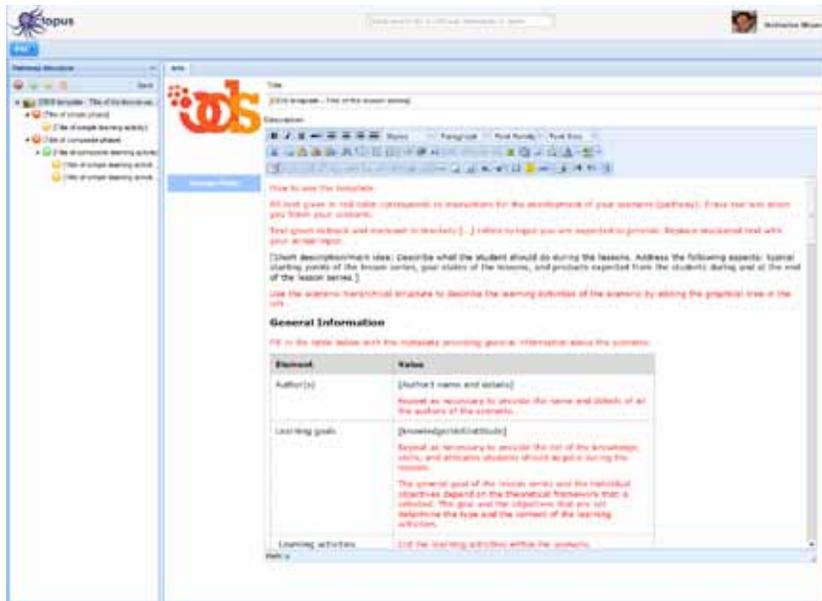
2.2 Creating a new pathway from an existing template

You are now able to see the available templates in the 'Example Scenarios of ODS' workspace. There is only one template available, which is essentially based on the actual template that the ODS project has elaborated to enable the creation of scenarios in a general way that could accommodate any pedagogical approach. Let us use this template to develop a new scenario. We will use the material for the scenario presented in Annex B entitled 'The Design Challenge'. Of course, you are free to work out your own scenario when following this guide.

To start creating the new pathway using the ODS template, click on the small button marked with a small arrowhead pointing downwards, on the right of the template title, to show the pop-up menu depicted in the screenshot below. Select the 'Use this Template' item on the pop-up menu.

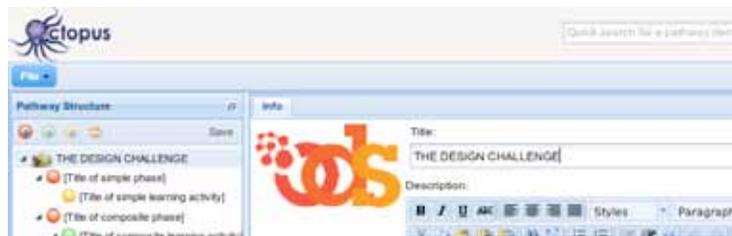


A new pathway is created and the page for editing this new pathway is presented as shown in the screenshot below. On the left side of the page you can see a graphical representation of the hierarchical structure of the pathway (its phases, depicted as red-bulleted items, its composite activities depicted as green-bulleted items and its learning activities depicted as yellow-bulleted items). On the 'info' pane on the middle of the page you can see the title and the description of the selected item in the hierarchy on the left. You are now able to edit this information presented on the 'info' pane.

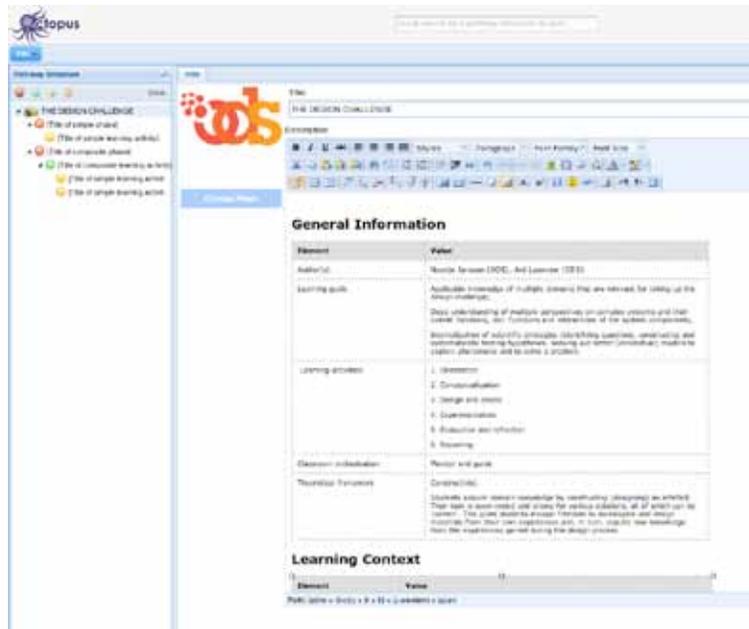


2.3 Editing the new pathway

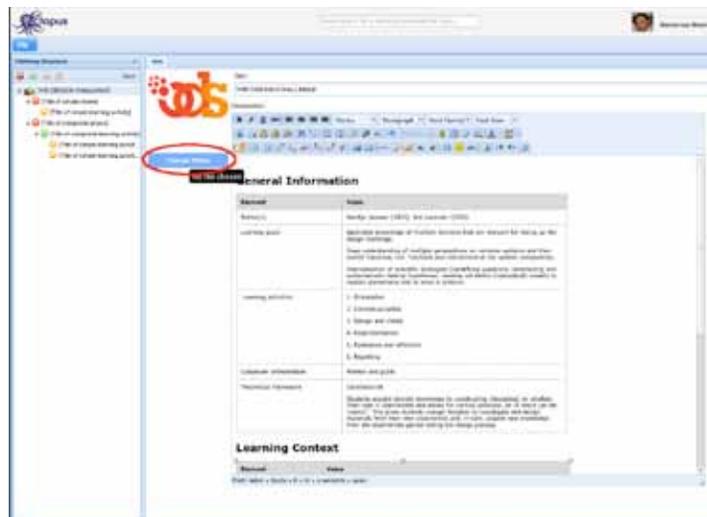
To start with, let us change the title of the new pathway. Be sure that the item representing the whole pathway is selected on the tree view on the left. Then, click on the Title field and change the title to "THE DESIGN CHALLENGE". Notice that the tree view on the left changes to show the new pathway title.



Now, go on to change the description under the title field. The description field supports a simple WYSIWYG editor that allows you to create tables, format the text you enter, change the paragraph justification, and create bulleted or numbered lists and many more. In the following screenshot you can see how the description has been changed to present general information and the learning context within which THE DESIGN CHALLENGE SCENARIO is to be implemented.



Let us see now how you could change the icon of the pathway. To do this, you first have to click on the 'Change Photo' button as shown in the screenshot below:



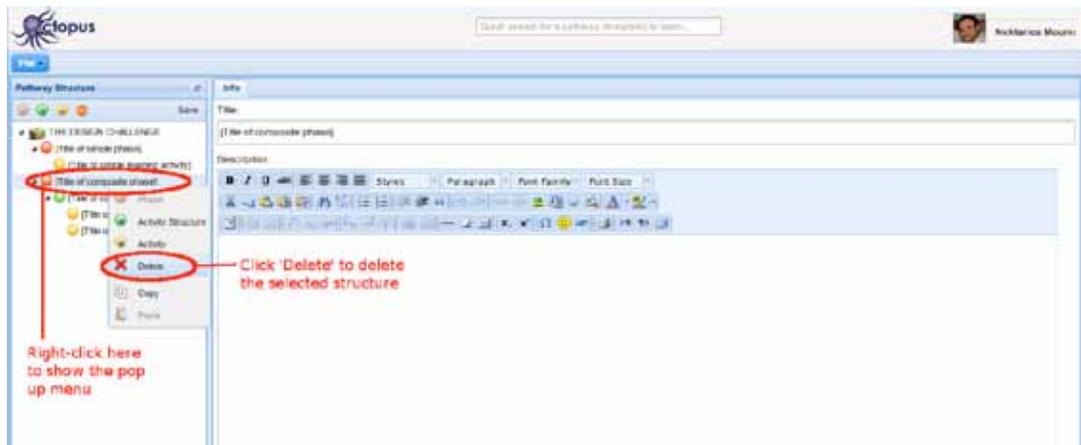
Then, a file dialogue opens (see next screenshot) so that you could browse on your local drive and locate an image to be used as your pathway's icon. Select the desired image and click 'Open'. After selecting the image you want; you can see it in your pathway as shown below. You can change it again whenever you want.

2.4 Editing the learning activities of a pathway

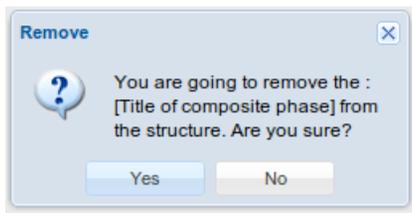
Having finished with the information that refer to the new pathway as a whole, we are now ready to describe how the pathway is to be implemented in terms of the specific learning activities to be done by students. Our example scenario consists of six learning activities as described in Annex B of this document:

1. Orientation
2. Conceptualization
3. Design and create
4. Experimentation
5. Evaluation and reflection
6. Reporting

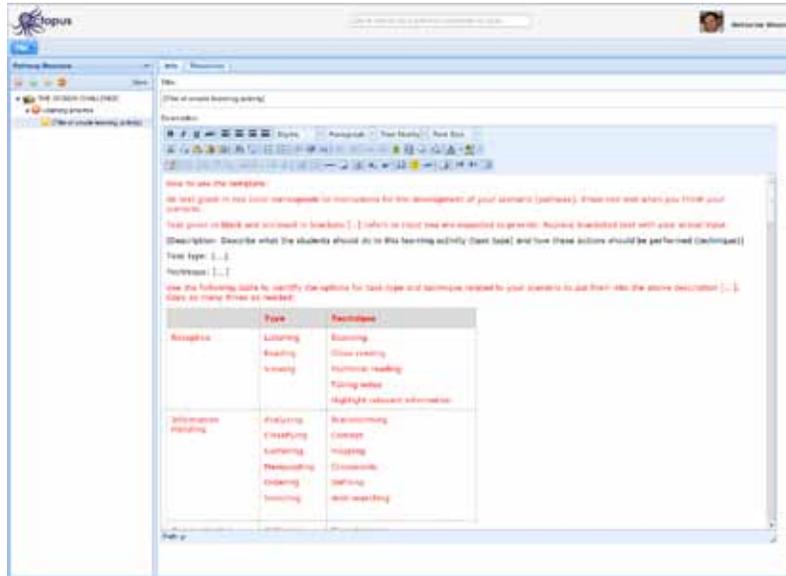
All these activities are simple activities without further structure underneath. Consequently, we would first delete the structures offered by the ODS template that are intended for the description of composite activities. This is shown in the screenshot below: First right-click on the phase that contains the composite activity (green-bulleted item) and then select 'Delete' in the pop-up menu.



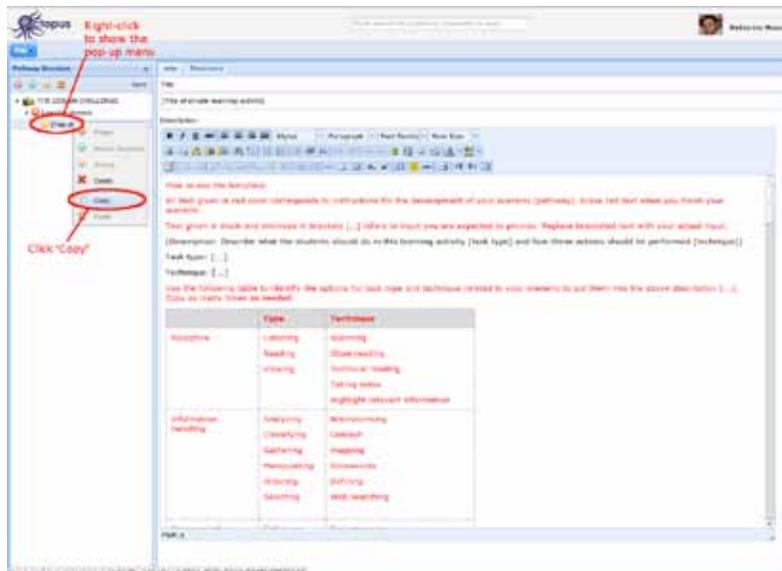
Click yes in the confirmation dialog box that appears next:



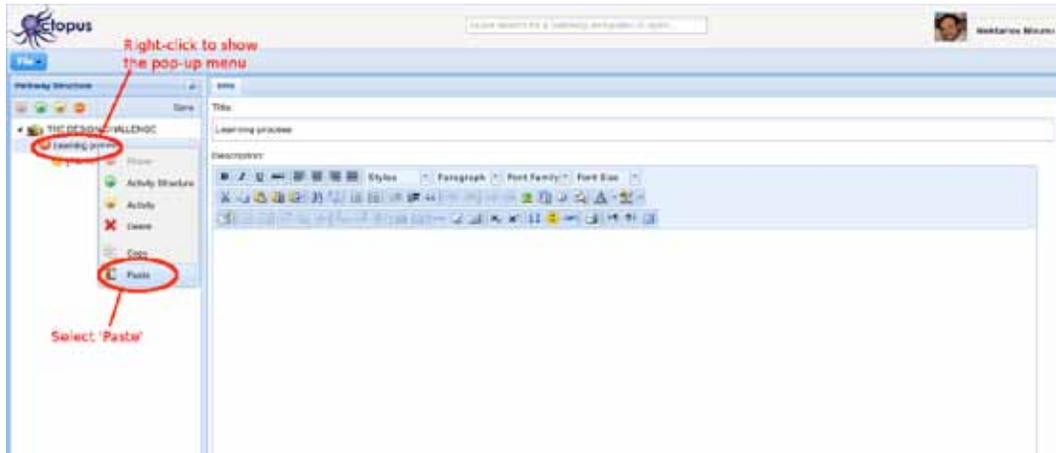
You should see a structure like the one depicted in the following screenshot:



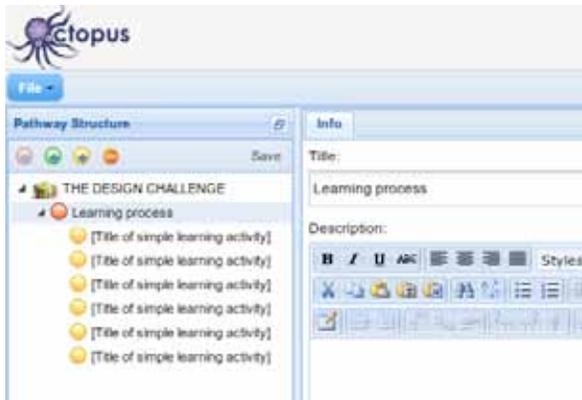
Now we are ready to create the six learning activities in our scenario. To facilitate our work we would first copy the one learning activity of the scenario so that we have six learning activities and then start editing each one of them. To copy a learning activity, you right-click on it on the tree view on the left and you select 'Copy' in the pop-up menu.



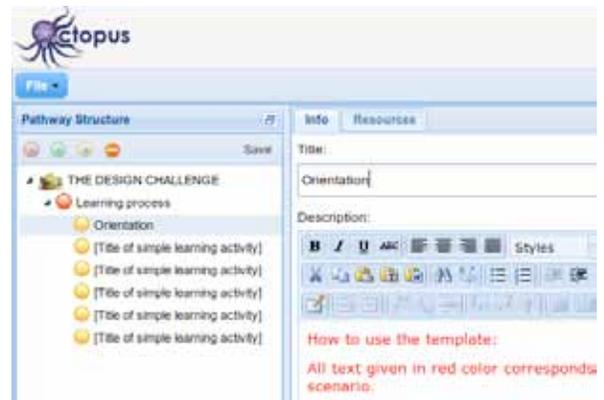
Then you could right-click wherever you want to paste it and select the 'Paste' option on the pop-up menu as shown in the next screenshot.



After repeating five times the above copy-paste process, you will have a structure like the one depicted in the following screenshot:



Now, you could start editing one-by-one the learning activities. First you enter the title of the first learning activity (Orientation):



Then, you provide a description for this learning activity as shown in the following screenshot:

The screenshot shows the Topus software interface for configuring a learning activity. The left sidebar displays a tree view with 'Introduction' selected. The main workspace shows the activity configuration details:

Title: Introduction

Description: The activity begins with a video review. First the teacher presents the video project by presenting the teacher and students will engage in. If the teacher is, for instance, to create a 3D model, students will work on the modeling a group, which will be used to learn for the learning activity about computer-aided design (CAD) using a 3D modeling software. The video introduces the different modeling tools in their 3D modeling software, including extrude, along curves, sweep, revolve, extrude through holes and holes, loft, and fillet for operations and Boolean models.

Task type: (Learning) Technique (Practical work)

Task type: (Learning) Technique (Practical work)

Task type: (Learning) Technique (Practical work)

Element	Value
Learning objectives	Students understand what a system should be to create an object in their design.
Duration & time	100:00
Task	Hardware: Video Lecturer Software: Top, along, with a video review, Introduction software
Resources	None
Evaluation	100:00

You continue with the second learning activity (Conceptualization):

The screenshot shows the Topus software interface for configuring a learning activity. The left sidebar displays a tree view with 'Conceptualization' selected. The main workspace shows the activity configuration details:

Title: Conceptualization

Description: Here the students will try to identify the different designs involved in the mission. For example, what is CAD, how is it generated, what form of activities of the teacher will address it? What is modeling, and what is the relation between modeling and CAD? The students will try to link the different elements and concepts together and construct a conceptual model that they can participate. Students will learn how to create their conceptual models in the context of the system.

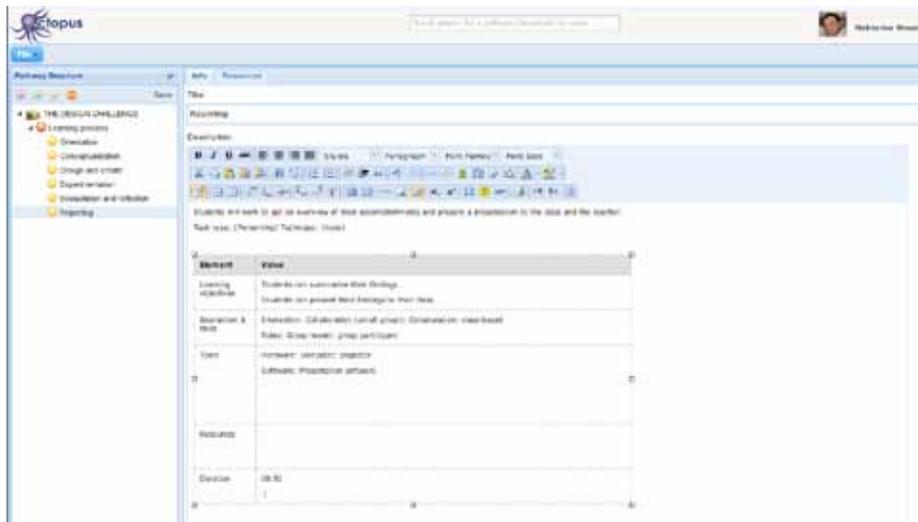
Task type: (Learning) Technique (Practical work)

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Task type: (Learning) Technique (Practical work)

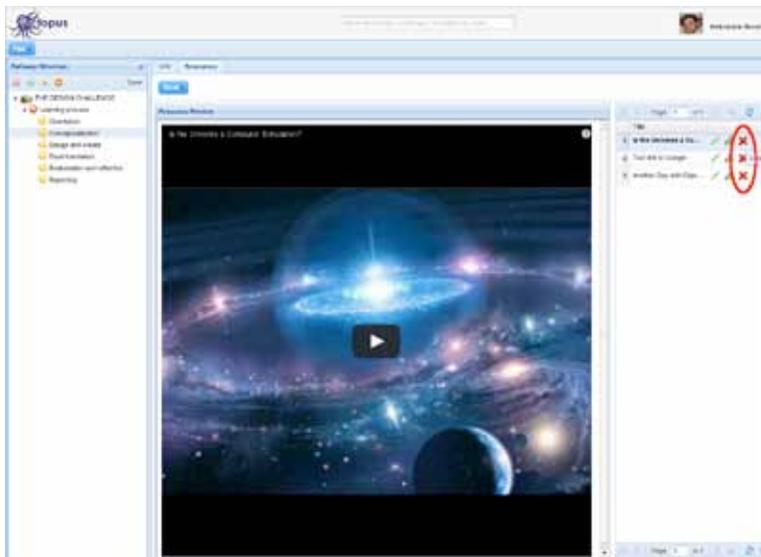
Element	Value
Learning objectives	Students understand different design variables and how they are related.
Duration & time	Students get into to understand relationships
Task	Hardware: Collaborative - email group Software: Group design, group participation
Resources	Hardware: Computer Software: Modeling software, mind mapping software
Evaluation	Application, tool
Evaluation	100:00

You continue with the rest of the learning activities and finally you have all six learning activities:

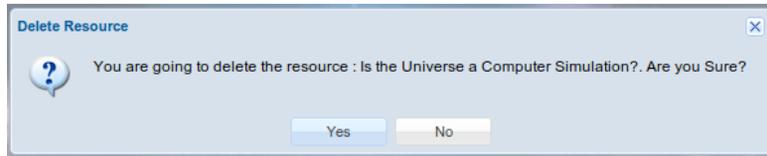


2.5 Enriching learning activities with resources

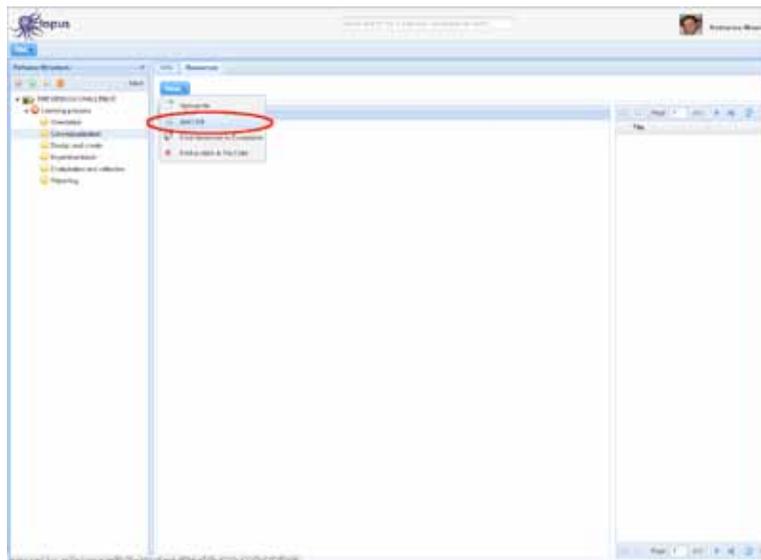
Now, it's time to see how you could enrich the learning activities of your scenario with resources, i.e. digital content that could be used during their implementation by the students. Let us assume that you want to enrich the second learning activity with a new resource. Select the learning activity by clicking on its node in the tree view on the left. Then select the 'Resources' tab on the main page pane. Initially you could see a list of resources that have been defined in the template, as examples. Delete them one-by-one by clicking on the red X's.



Each time, you have to confirm you delete action by clicking 'Yes' on the corresponding dialogue box:



After deleting all the irrelevant resources, press the 'New' blue button and select the 'Add Link' option in the menu that shows up. We assume here that the resource that we will attach to the "Conceptualization" learning activity is a web page. In case you want to upload a file from your local drive or find digital content from external sources (European, YouTube), you just have to select the corresponding options in the menu.



Assuming that you selected to add a link, the next dialogue box prompts you to provide the link that points to the resource you want to add in the learning activity:



Give the link and click 'OK'. A new dialogue box shows up so that you could provide more information about the resource like its title, the time needed for students to consume the resource and a textual description:

After you finish editing this information, click 'Save'. You are able now to see that the new resource has been added in the list of the resources for the selected learning activity. Furthermore, a preview of the resource is shown in the main pane of the page. Following the same process, you could enrich your pathway with all the resources that are necessary for the implementation of each one of its learning activities. In the following sections we will see that it is also possible to enrich with resources pathways that are created by other Octopus users. Finally, you may share your own pathways within a Workspace and enable other users to enrich them with resources.

3. Reusing parts of a pathway

Octopus supports drag-and-drop reorganization and reuse of activities and activity structures. Within a pathway you could drag the node to be moved and drop it at the point you want to paste it. You could also copy/paste nodes within a pathway. This can be done with the pop-up menu shown when right-clicking on a node.

To reuse nodes from other pathways (or templates) you have to open the "Copy structure" pane, find the scenario containing the structure to be copied and then drag-and-drop it to the desired location or copy/paste it. This process is demonstrated in the following screenshots:

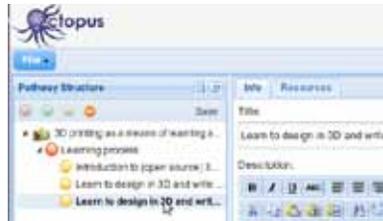


3.1 Copy/paste within the same scenario

To copy an activity, you first right-click on it and the pop-up menu shows up. Then select the menu item "Copy". Then we right-click on the node where we want to paste the copied activity and select "Paste" in the pop up menu.



The structure is copied in the new position:



3.2 Drag & drop within the same scenario

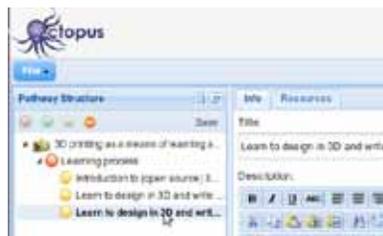
First we select a learning activity within a pathway and start dragging it.



Then we drop it to the desired location:

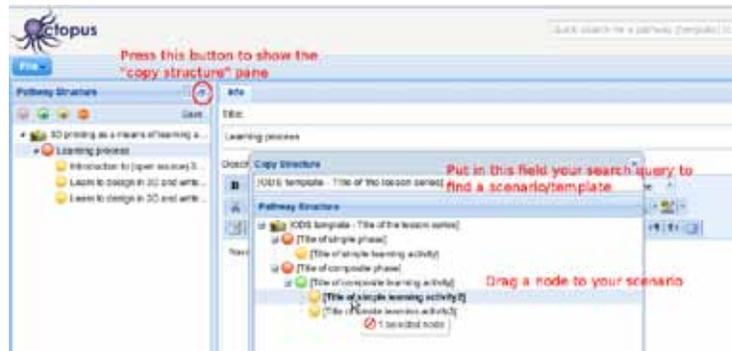


The new structure of the pathway contains the activity moved to the new position:

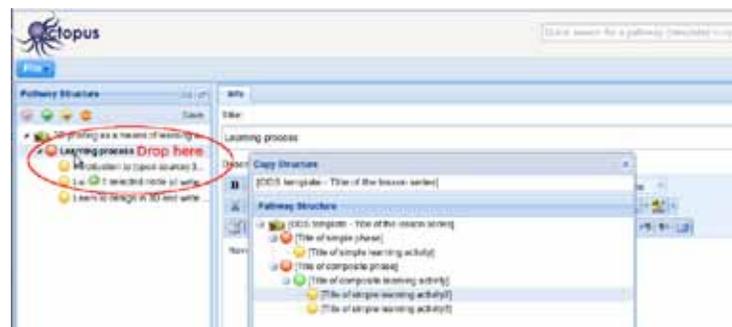


3.3 Reusing activities and activity structures from other scenarios / templates

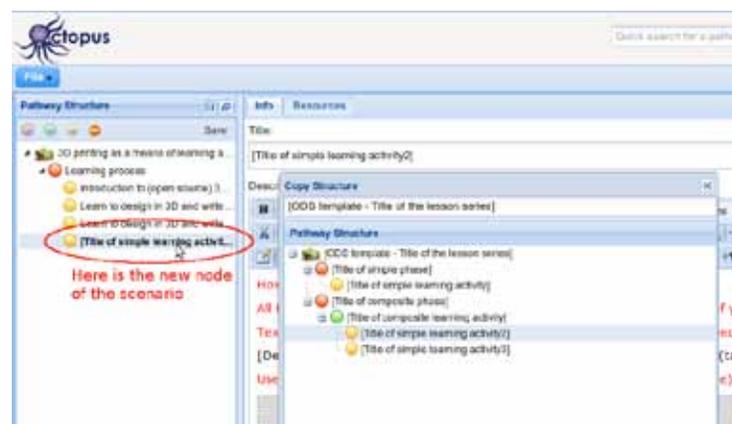
Finally, let us see how structures from other pathways/templates could be reused in the scenario that we are editing: First open the "Copy Structure" pane, find a scenario/template to copy from and then select the structure to drag to the initial pathway:



Drop at the node of your scenario where the structure should be placed.



Finally, the new node is shown in your pathway:



3.4 Copy/paste parts of another pathway

Use the “Copy structure” pane to copy a node and paste it in the pathway you are editing just like you paste structure from the same pathway (see description of copy 4. Access rights to scenarios /paste within the same pathway).

4. Creation and management of workspaces

As already presented, a workspace in Octopus offers a way of sharing pathways and templates among a group of users, the members of the workspace. All Octopus users are able to join other workspaces or even create and manage their own workspaces. Workspaces are distinguished into public and private ones. Public workspaces are visible to all Octopus users so that they can send a join request. Private workspaces are visible only to their members. The only way to join a private workspace is through the workspace owner which is able to add and remove members to the workspace. As soon as the owner of the workspace adds a user to it, the user is able to see the workspace and its contents through the Workspace view of his/her personal page. Let us see now in more detail how you could create a workspace and how you could manage its members and contents.

4.1 Creation of a workspace

Let us assume that you have created a number of pathways that you want to share with other users through a workspace. The following screenshot depicts your Pathway view with four pathways already created.



The first thing you have to do to create the new workspace is go to the Workspaces view by clicking on the corresponding item in the views' list on the left of your personal page. Then, click the 'New Workspace' button as shown in the screenshot below.



After clicking the 'New Workspace' button, a dialogue box shows up and prompts you to provide the necessary information in order to create the new workspace. In the screenshot below you may see this dialogue box filled with information including the new workspace name, its description and icon. Let us assume that in this workspace you want to share pedagogical scenarios and lesson plans that refer to Open Discovery Space pilot activities in Greece. A workspace could be 'Open' to any user to view its contents and request to join, or 'Private', i.e. accessible only by its creator. The default option is 'Open' which is the option we want in our example so that every user is able to join.

Workspace Name:
ODS Pilots in Greece

Description:
This workspace gathers scenarios and lesson plans that refer to ODS pilot activities in Greece.

Privacy
 Open
Anyone can see the group and may access it after request.
 Private
Only Creator may access it.

Change Profile

Click 'Save changes' to save and then 'Close'

Save changes
Close

After you provide all the necessary information, click 'Save changes' to store the information for the new workspace and then 'Close' to close the dialogue box. The workspace has been created and you can see it represented as a box within your workspace under the 'My Workspaces' tab of the Workspaces view of your personal page as depicted below.

Etopus

Quick search for a pathway (template) to join...

Nektarios Koumoutzis

My Messages Participating All activities

Page 1 of 1

New Workspace

Showing 1 of 1

Workspaces

ODS Pilots in Greece

Followers: 0

Pending Requests: 0

Shared Pathways: 0

Shared Templates: 0

View Workspace contents

4.2. Approve requests of users to join your workspace

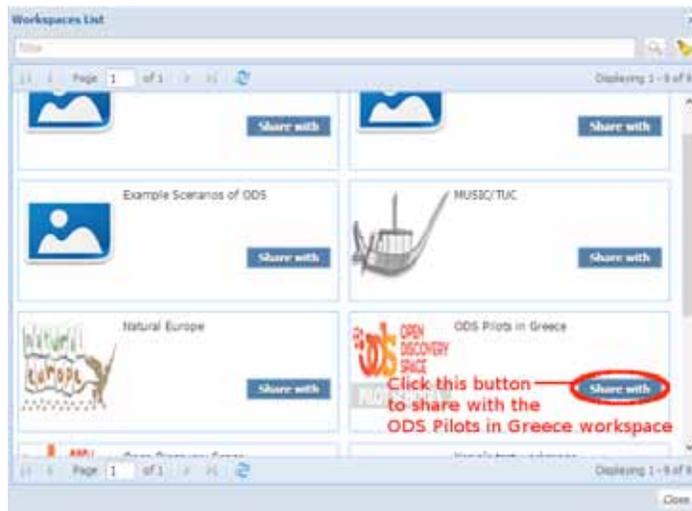
Being an 'Open' your newly created workspace is visible to all users so that they can request to join it. After sending a request to join, you are, as the creator of the workspace, able to review the pending requests and approve or reject them. For a description of this process please refer to section 2.1 of this user guide. In that section we have guided you through the process of requesting to join a workspace in order to be able to use a template for creating your first pathway. We have seen how the creator of that workspace was able to review and approve your request. Now, having created your own workspace, you are the one who manages the join requests of other users.

4.3. Adding/Browsing templates and pathways to a workspace

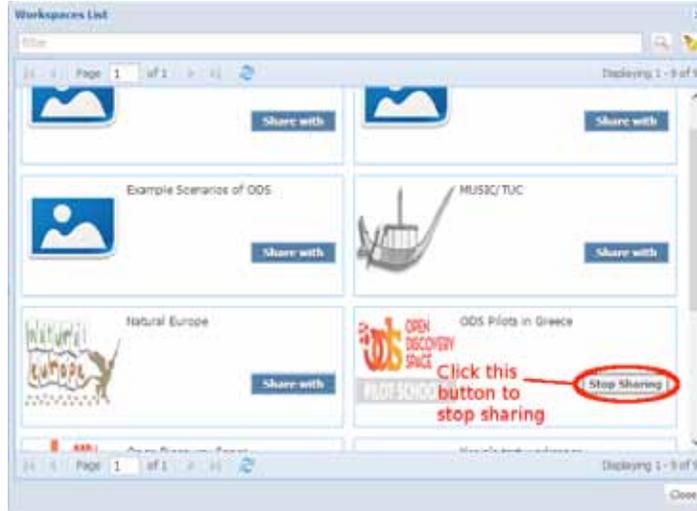
Let us see now how you could share your pathways within the new workspace you have created. Switch to the Pathways view in your personal page as shown below. Using the drop down menu of a pathway you may select to share it with a workspace (see below).



You may select one or more workspaces with which to share your pathway as shown below. In the dialog box you can see a list of the workspaces. Click on the 'Share with' button to share the selected pathway with a specific workspace.



As soon as you select a workspace to share your pathway the corresponding 'Share with' button changes to 'Stop sharing' to offer to you the capability to stop sharing the pathway in that workspace, if you want:



Follow the previous steps for all the pathways that you want to share through the new workspace. After you finish, go back to the Workspaces view of your personal page and click on the 'View Workspace contents' button that corresponds to the new workspace as shown below:

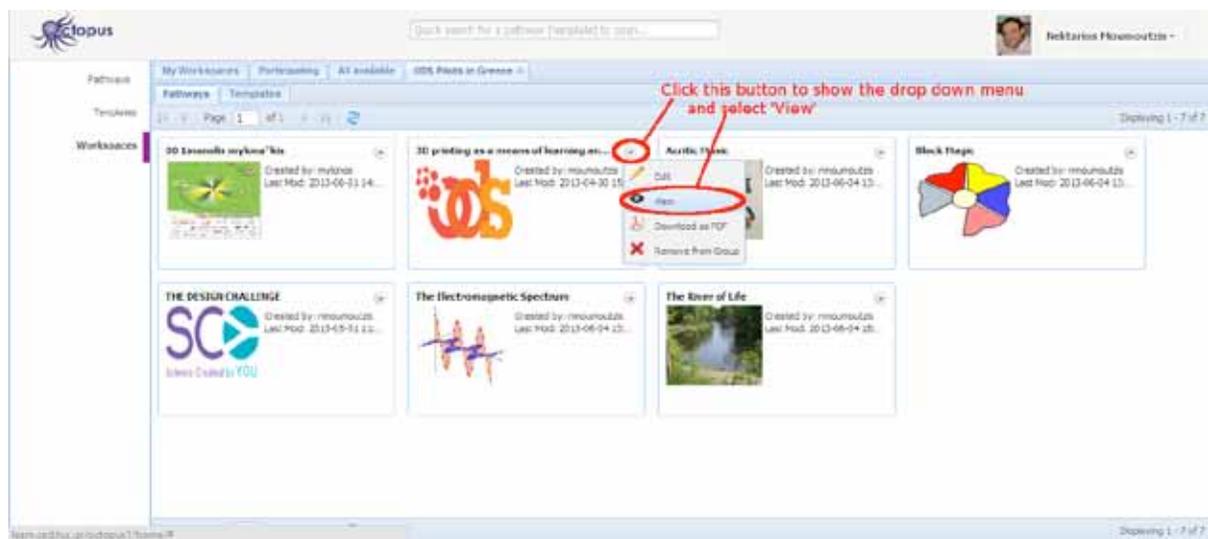


As soon as you click that button, a new tab is created within the Workspace view that represents the new workspace and the pathways shared through this workspace is shown. If you share templates as well, you may see them at the 'Templates' tab. The process is exactly the same as it is for Pathways; the only difference is that you have to go the Templates view of your personal page to find the templates that you want to share.



5. Exploiting workspaces to share pathways and enable other users to enrich them with resources

Through workspaces, it is possible to share pathways with other users so that non-owners of pathways are able to view them and enrich them with resources attached to their learning activities. When accessing a workspace, a user is able to select a pathway to view as shown in the screenshot below:



By selecting to view a shared pathway, you are able to see its contents without changing them. You may, however, enrich the learning activities of the viewed pathway with additional resources. Let us see how. The screenshot below shows how the previously selected pathway is presented in view mode.

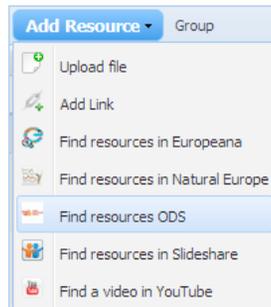
The screenshot shows the Topos interface with a pathway titled "3D printing as a means of learning and communication". The pathway structure on the left includes "Learning process", "Introduction to Open source 3D", "Learn to design in 3D and write in...", and "test34". The main content area features a logo for "3D printing" and a text description of a research project. Below this is a "General Information" section with a table:

Element	Value
Author(s)	Vassilis Karamanis Vassilis Karas
Learning goals	Knowledge The students should be able to grasp the concept of 3D design using simplified software and the basics of 3D printing. Skills The students should be able to: <ul style="list-style-type: none"> Explore the research procedures themselves Perform research efforts that are tailored specifically as a structured

To start enriching its learning activities with additional resources, first select the activity you want to enrich and then go to the 'Resources' tab of this activity and press the 'Add Resource' button as shown in the screenshot below.

This screenshot shows the 'Resources' tab for the 'Introduction to Open source 3D' activity. Red annotations highlight the 'Resources' tab in the pathway structure and the 'Add Resource' button in the top right. The main content area displays a page titled "P2P Lab Projects" from the P2P foundation. The page content includes a notice that the page has been deleted and a list of contributors. The right sidebar shows a list of resources, including "P2P Lab", "News", and "Wiki".

As soon as you click this button a drop down menu shows up with a list of the various options you have: You may upload a file from your local storage, add a link in the web of find a resource in various repositories and external content sites such as Europeana, Natural Europe repository, ODS repository, SlideShare or YouTube. Let us assume that you want to find a resource from the ODS repository. Click on 'Find resources ODS'.



A pop up dialogue box shows up where you can give your search keywords and the results that satisfy them are presented. Browse on the list of the resources shown and click the 'Add resource' button to add the desired resource(s) in the learning activity you are working on. When you finish, click the 'Close' button.



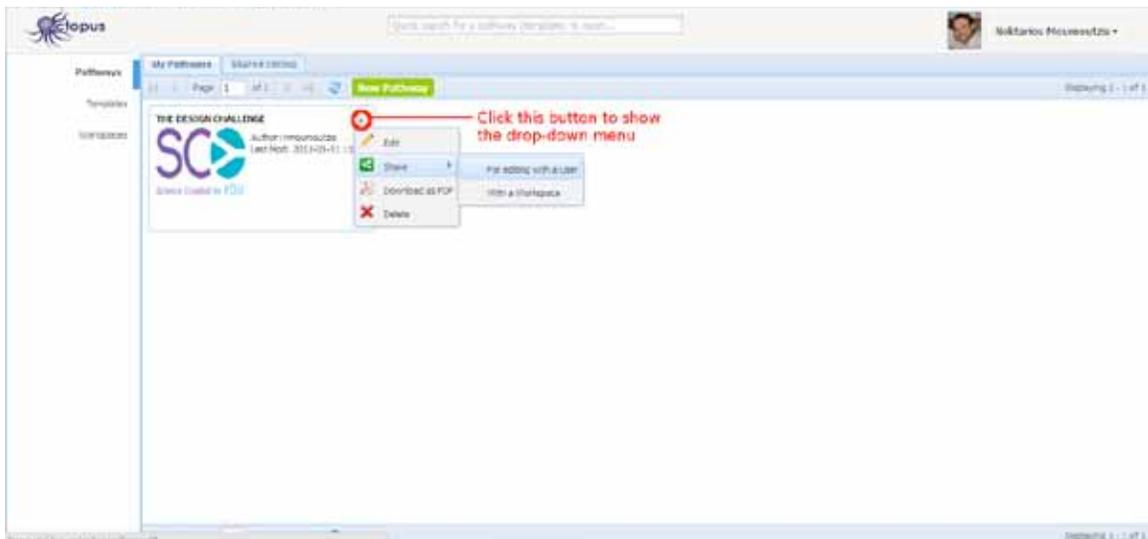
Now you should be able to see the new resource listed within the selected learning activity. To view the resource in the central view pane, click on its title.



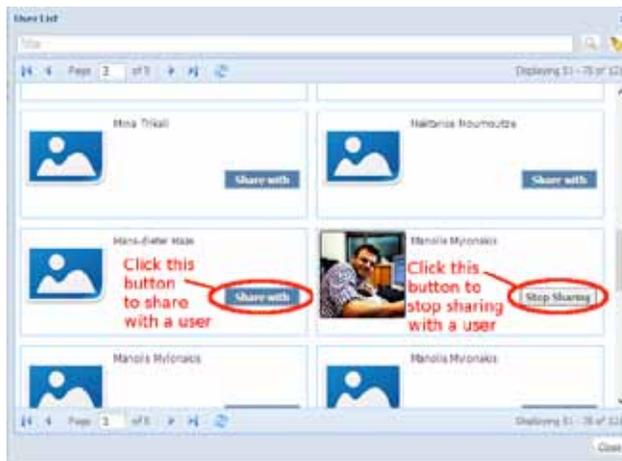
You may proceed this way to add more resources or select another learning activity to enrich.

6. Shared editing of pathways

Sharing pathways through workspaces enables other users to view and enrich them with resources. There are cases, however, when you want to collaborate with other users to edit a specific pathway. In such a case, you are able to select the users that you want to have editing access to your pathways. First you go to your Personal Page using the drop down menu available through the button at the upper right part of Octopus labeled with your name. In your personal page you could browse your pathways, your templates and your workspaces. The pathways view is selected when you go to your personal page. Identify the pathway you want to share and click on the small circular button showing a downward arrowhead. A drop down menu is shown as depicted in the following screenshot.



A pop-up window shows up (see screenshot on the right) where you may browse through the set of users. To share the pathway with a specific user, just click on 'Share with' button inside the box representing the user. As soon you click on this button, the user is able to edit your pathway. The button changes to 'Stop sharing'. In case you want to terminate sharing of your pathway with another user, you just click on the 'Stop sharing' button inside the box representing that user.



The list of pathways that have been shared for editing with you are shown in your Personal Page, at the Pathways view under the table 'Shared Editing' next to the 'My Pathways' tab.

Exemplary Practice

Practice that typifies high quality learning is provided for instructors and teachers to act as a guide. This practice serves for teachers and instructors to follow in their own professionalism as well as acting as a template for the development of further scenarios and frameworks.

5.1 Framework

The training framework contains self-contained learning modules. These could be used in the form of a:

- A. Online course, where trainee uses them independently in their own space
- B. Face to face workshop/course
- C. Blended learning course

A eLearning Online Courses
To use existing training platforms and digital communities on the theme of CBL

B Face to face workshops
1. Teachers, head teachers, teacher trainers (different schools, colleagues-same school)
2. teachers and pupils

- C Blended learning course
Combining online resources with face to face workshops

It is possible to use the pre-existing online course, but also teachers or ICT staff could also select specific learning modules and design their own training. The organisation of the training is up to the schools teachers or ICT administration staff, which would like to learn the specific topic by themselves or teach it to other teachers or ICT staff.

5.2 Phases of Implementation Activities

With an aim to evaluate the produced e-learning content and the Project's training portal lot training sessions have been organised and outcomes have been assessed. More specifically, the following activities have been implemented according with the timeframe set: a) implement and evaluate the first round of training activities with the participants (Phase A). b) implement and evaluate the second round of training activities with the participants (Phase B) and c) organise validation events in each country.

Timeframe	Implementation/validation activity
September – December 2014	Validation Pilot Trials – Phase A
February – June 2014	Training activities – Phase B
July – September 2014	Validation Activities/Events – Phase C
September– November 2014	Validation Final Phase

Figure 30 *Timetable of implementation and validation activities*

During the first phase of the project activities, a first group of teachers was involved in a series of training activities (conventional seminars and on-line training sessions). The piloting included School-centered work (optionally) when teachers had the chance to implement teaching activities and suggested strategies in their own classrooms. In this way it was possible to investigate the initial impact of the TRANSit-provided training in real life/school contexts. After collecting feedback, the training approach was revisited. Then, a second group of teachers (a larger scale than Phase A in most cases) will attend a second cycle of training activities. To further validate the project's approach and maximise the potential uptake and impact in each country, a series of national validation events have been implemented. Moreover, teacher contests have been implemented and teachers will have the chance to attend summer schools with no cost and get rewarded for their work, since teachers who are already implementing innovative practices are potential change agents.

Overall 154 teachers participated at the first round of implementation activities (only t to the face to face events), met the project aims, training framework and methodology, used the pilot TRANSit modules, the TRANSit virtual environment with its aligned tools (Mahara), and the respective communities created on ODS Portal. Overall 274 teachers and 21 students participated at the second phase of the training in the face to face workshops using the TRANSit modules, portal and the respective communities created on ODS Portal. Except from the participants in the face to face workshops there has been a considerable amount of stakeholders that has been reached through and participated only in online activities. This has been possible with the creation and support of online communities, as well as the up-

loading of the training materials online and the conduction of online training activities (webinars). Moreover, a considerable number of participants has been involved in the three international activities, such as the 5 days summer and winter courses.

5.3 Implementation Examples

Here some examples of the activities implemented in partner countries are presented that could act as examples for further implementation activities. The modules and training materials used have been localized in order to fit the particular context and needs. All materials used as well as the resources created by participants are available online.

Activities implemented in the context of pilots in Greece In the case of Greece the programme has been designed following a blended learning approach, including work on the TRANSit virtual learning environment supported with face-to-face training workshops, on line webinars and school implementation. An additional workshop was organised in Crete in collaboration with the regional educational policy makers. More specifically some of implemented activities:

- Webinar: "Team formation, evaluation and ICT integration in project based learning". The first webinar acted as an introductory session prior to the face to face workshops. Participants had the possibility to pose questions while attending the webinar and comment. The webinar recording has currently around 1,500 Views also an indicator about its high relevance to teachers from Greece.
- Webinar: "I will facilitate a project this year, what do I need to know about it?", https://www.youtube.com/watch?v=LGD_AtBXnxM.

- Workshop 1: “Design of cross-curricular activities with an aim to foster competences”
- Webinar: “Authentic evaluation: Use of ePortfolio tools in projects”, <https://www.youtube.com/watch?v=UhfJAYOx7Xc>
- Workshop 2: “e-portfolio use in project based learning”

Further aim has been the creation of an online community of interested education stakeholders that would have the chance to exchange teaching practices and educational materials focused on competence based learning in a dedicated community on ODS portal, therefore such a community has been developed on ODS.

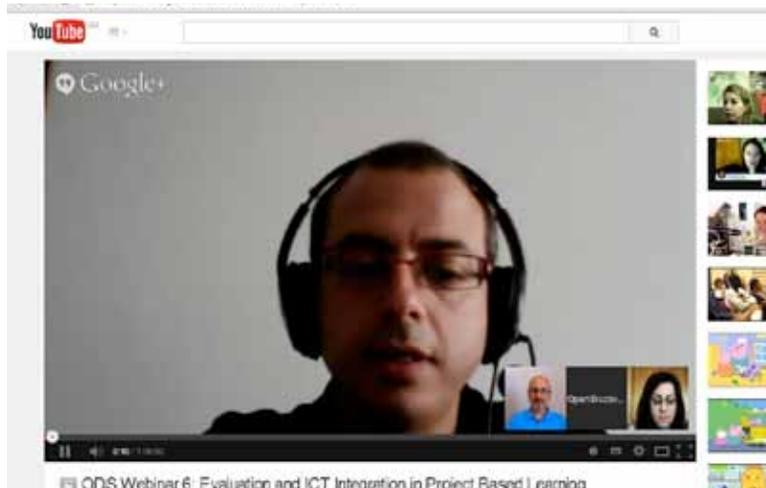


Figure 31. Webinar “Evaluation and ICT integration in project based learning” recording on YouTube (<https://www.youtube.com/watch?v=cqzesbcq4f8>), ~1500 views

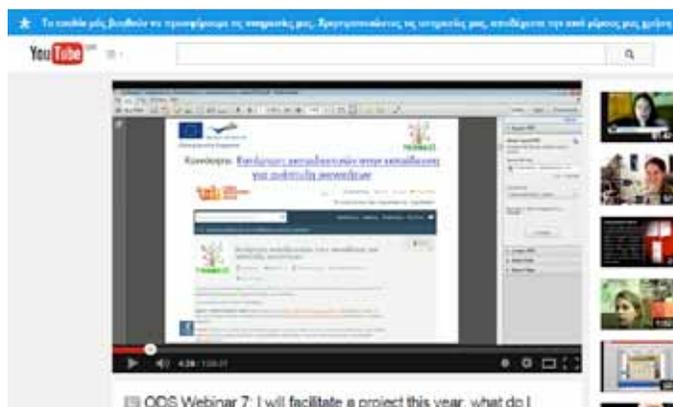


Figure 32. Webinar “I will facilitate a project this year, what do I need to know about it?” recording on YouTube (https://www.youtube.com/watch?v=LGD_AtBXnxM), ~900 views

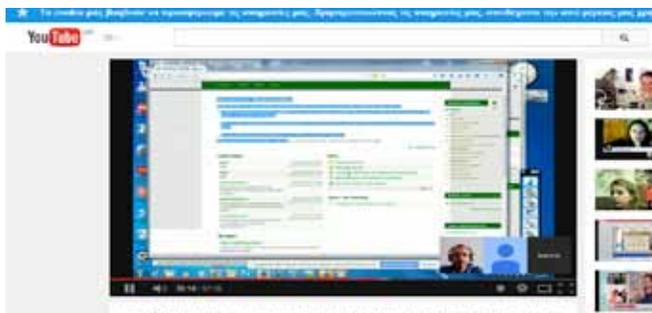


Figure 33. Webinar “Authentic evaluation: Use of ePortfolio tools in projects?” recording on YouTube (<https://www.youtube.com/watch?v=UhfJAYOx7Xc>)

Here follows indicative description of activities implemented during face to face **workshops organised**.

Aims:

- Presenting the TRANSit project (aims, milestones of the project)
- Presenting some Best Practices produced by participants in previous pilots and discussing strategies to plan and assess competence based interdisciplinary activities
- Introducing the TRANSit Greek Community on ODS
- Presenting the status of development of the TRANSit training environment (Moodle- Mahara integration) <http://transit.cti.gr/moodle/>,
- Collecting feedback and input from participants.

Procedure

As a starting point, each participant has been invited to come to the course with an idea, or maybe an example of existing practice, called ‘initial ideas’. These ideas have been uploaded as Educational Objects <http://portal.opendiscoveryspace.eu/el/educational-objects/1167>. These ideas related somehow to using cross-curricular approaches fostering competences in learning and education. During the workshop they had the chance to work individually and/or in small teams in order to upload their learning scenarios. Educational scenarios were based on an adaptation of the ODS project-based template with emphasis on fostering & assessment of students’ competences, as well as developed from scratch

(with use of the Generic Template). Scenarios are cross-curricular and competence based most of which apply to Social Sciences, Philosophy, History (moreover regional one), Arts and a combination of other subject fields such as ICT & Biology.

TRANSit promotes the use of authentic means of assessment. Mahara has been chosen as ePortfolio tool, as it has been included in the Level B “Teachers’ Training in the Use and the Exploitation of ICT in the Educational Teaching Process” offered by the Ministry of Education in Greece. Mahara has been used in two levels in the context of the pilot training (for teacher training & in-classroom use by trainees with their students). More specifically: after a short demonstration participants used the credentials created by the TRANSit team beforehand in order to login on TRANSit Mahara <http://transit.cti.gr/mahara/> and created/ updated their profile uploading files, and uploading on their journal. Then they had the chance to create groups, invite friends & become members of groups. After trainees created pages, as well as a collection and experienced the Social functionalities of the tool sharing pages & collections, comment and accept comments by others (Figure 35). The example (case studies) of B-level ICT training (Ministry of Education) regarding the e-portfolios use has been presented and discussed with the participants. Finally, discussion between participants took place on how Mahara could be exploited in projects/cross-curricular activities in their classroom with their students.

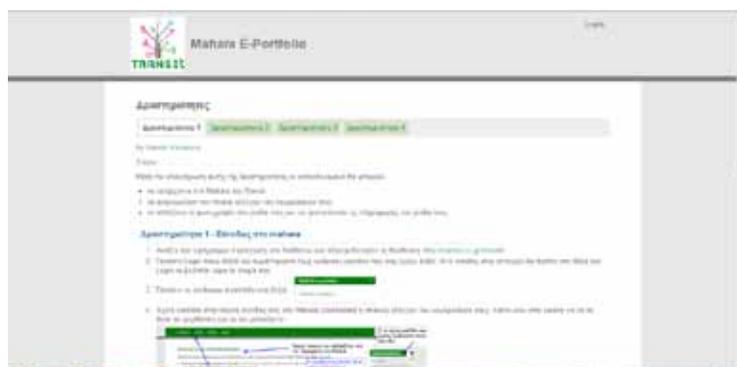


Figure 34 Screenshot from the TRANSit Mahara Activities covered in the workshop
(<http://transit.cti.gr/mahara/view/view.php?id=108>)

<i>Activity</i>	<i>Description</i>	<i>Duration (min)</i>
Introduction - Presentation	Mahara- What is it? – Basic Features - Navigation	15'
Activity 1	Mahara Dashboard Profile - Profile pictures 5' demo, 15' trainees update their profile upload files, and upload on their journal	20'
Activity 2	Groups, Invite Friends, accept friends 5' tutoring, 25' trainees create groups, invite friends & become members of groups	35'
Break		15'
Activity 3	Portfolio – Page creation - demo 5', 20' trainees create 3 pages	25'
Activity 4	Portfolio – Creating a collection 5' demo - 20' trainees create a collection	20'
Activity 5	(Social functionalities) pages & collections sharing, messages , comments 5' demo, 20' trainees share a page, comment and accept comments by others	25'
Break		15'
Presentation	e-portfolios Use: the example of B-level ICT training (Ministry of Education)	15'
Discussion	Mahara exploitation in projects - Discussion	30'

Figure 35 Workshop Agenda 'e-portfolio use in project based learning'



Figure 36 Teachers engaged in a guided discussion during the final face-to-face session

TRANSit course in Spain

The TRANSit course in Spain aimed to increase teachers' knowledge, skills and attitudes in fostering the transversal competencies of their students. It was organised in four parts as stated below.

1st session (25th of April 2014)

The first session of the TRANSit training at the University of Barcelona took place on Friday, 25th of April 2014 from 18:00 to 20:00h. The session started with an introduction to TRANSit goals, consortium, and the training framework.

Then, we presented the proposed training approach, i.e. how to foster student transversal key competencies using inquiry-based learning. One of the challenges that have been mentioned for the change towards a competency-based model of teaching and learning in Spain is the relation between competencies and traditional school subjects. There are transversal competencies that can be directly associated with the traditional subjects: linguistic competency and mathematical competency, for instance. Other competencies can be related to several school subjects. For instance, cultural and artistic competency is related to history, but also to music. Last, there are a set of transversal competencies which can't be associated to any subject, i.e. sense of initiative and entrepreneurship, learning to learn and digital competency. They have been called metadisciplinary and it

has been argued that fostering them is especially challenging (Zabala, 2011).

Inquiry-based learning is a suitable methodology to foster the so called metadisciplinary transversal competencies. In an inquiry-based learning activity, students carry out a research in order to answer to a testable question with support from the teacher. Along this process, students work often in a cooperative way and using ICT tools. An inquiry-based learning scenario fosters "sense of initiative and entrepreneurship" competency because it is a student-driven learning process in which the teacher adopts a secondary goal. Besides, students must take a responsibility in a cooperative group. Moreover, inquiry means learning from mistakes since the teacher shouldn't give the right answer. Inquiry also requires that students practice skills that are usually associated to "learning to learn" competency such as memory, attention, concentration, and understanding. Finally, the use of ICT tools in the process of planning, performing and analysing an experiment enables fostering digital competency.

For this reason, the learning approach promoted in Spain for implementation and validation of the TRANSit four training modules in Spain is inquiry-based learning. After the presentation, participants engaged in ice-breaking activities. After that, the TRANSit tutor demonstrated the TRANSit Moodle environment for Spain called "Curs TRANSit and it can be accessed in the following URL: <http://transit.cti.gr/moodle/course/view.php?id=8>.



Figure 37 Demonstrating the TRANSit web portal environment during the training in Spain

The TRANSit tutor explained that in order to enhance their knowledge, skills and attitudes in Facilitating student learning and assessing and reporting student learning outcomes, teachers would have to complete the following activities:

1. Derive learning objectives from a key competency framework or from your national curriculum
2. Design a learning sequence/scenario/programme for acquisition of key competencies and necessary learning materials
3. Run a learning sequence/scenario/programme for acquisition of key competencies using digital technologies to support learning and assessment (optional)
4. Review a learning sequence/scenario/programme for acquisition of key competencies

Following the evidence-based assessment method, each activity included a description, the success criteria, a space for the teacher to write comments and the possibility to attach files, i.e. the evidence of learning (see figure below).

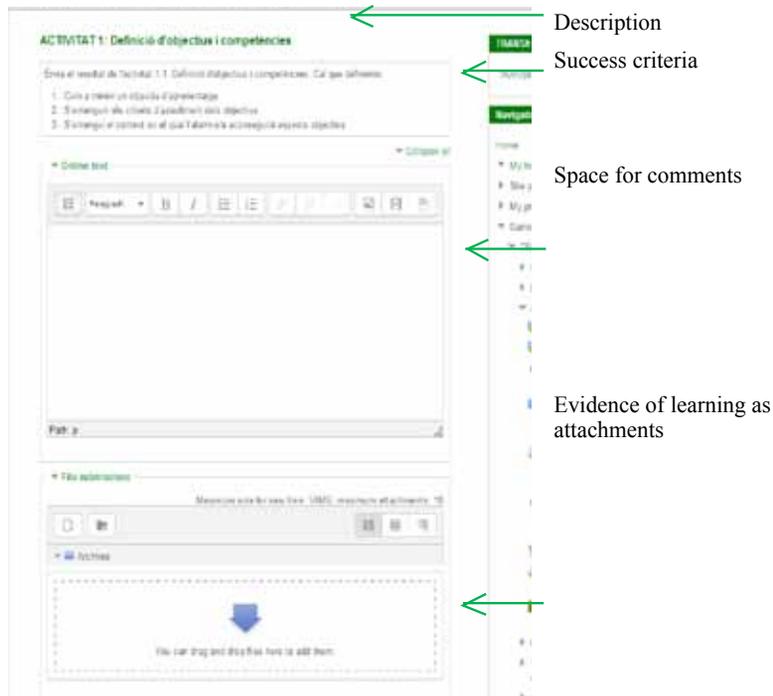


Figure 38 Components of learning activities in the TRANSit web portal environment for Spain

We mapped the learning activities to teacher competencies as stated in the cross-reference table from TRANSit Training framework:

- Student learning facilitator (for completing activities 1, 2 and 3)
- Student learning assessor and reporter (for completing activities 1, 2 and 3)
- Engaged in continuing professional development (for completing activity 4)

Teachers were told that by performing the learning activities successfully they would earn a digital badge with the name of the competency. We issued the digital badges with Moodle badge manager. As shown in figure below, each badge has success criteria, thus it can be awarded automatically after completing the necessary activities.

Facilitador o facilitadora aprenentatge

This badge is currently available to users, and its criteria are locked. [Disable access](#)

[Overview](#) [Edit details](#) [Criteria](#) [Message](#) [Recipients \(10\)](#)

This badge is awarded when..
Users are awarded this badge when they complete ANY of the listed requirements.

Activity completion

ALL of the following activities are completed:

- "Workshop - ACTIVITAT 2: Seqüència didàctica amb recursos i avaluació"
- "Workshop - ACTIVITAT 3.1 (opcional): Pràctica a l'aula"
- "Assign - ACTIVITAT 1: Definició d'objectius i competències"

Manual issue by role

This badge has to be awarded by a user with the following role:

- Teacher

Figure 39. "Student learning facilitator" badge from the TRANSit web portal in Spain

2nd session (26th of April 2014)

One day after the first session, i.e. on Saturday, 26th of April 2014 teachers took part in the second session of the course. It lasted from 9:30 to 13:30h. The session started with a presentation and analysis of good practice examples. Afterwards, teachers engaged in a brainstorming activity in small groups. They sketched competency-based learning scenarios with simple objects provided by us such as balloons, strings and plastic bottles, among others. After that, participants started to think about their own learning sequences, scenarios or programmes fostering student competencies. They completed activity 1: "Defining learning objectives and competencies" in the TRANSit web portal environment for Spain.



Figure 40. Brainstorming competency-based learning scenarios with simple objects

Online training (from 27th of April to 9th of May 2014)

The TRANSit training in Spain included an online period which lasted for two weeks. During this time, teachers completed activity 2: “Designing a learning scenario fostering transversal competencies with the necessary resources”. In parallel, teachers wishing to do so could implement their learning scenarios in the classroom. Teachers who implemented their scenarios in the classroom could complete activity 3 “Run a learning sequence/scenario/programme for key competency acquisition” in the TRANSit web portal environment. Once they submitted their learning scenarios, teachers were assigned two learning scenarios from two peers, which they had to review. The review was performed with a rubric and a text field in which they could provide comments and improvement suggestions, as shown in figure 5. To that goal, we set up a workshop module. This enabled teachers to submit files (activity 2) but also allowed the TRANSit tutor to assign reviewers to submissions (activity 4).

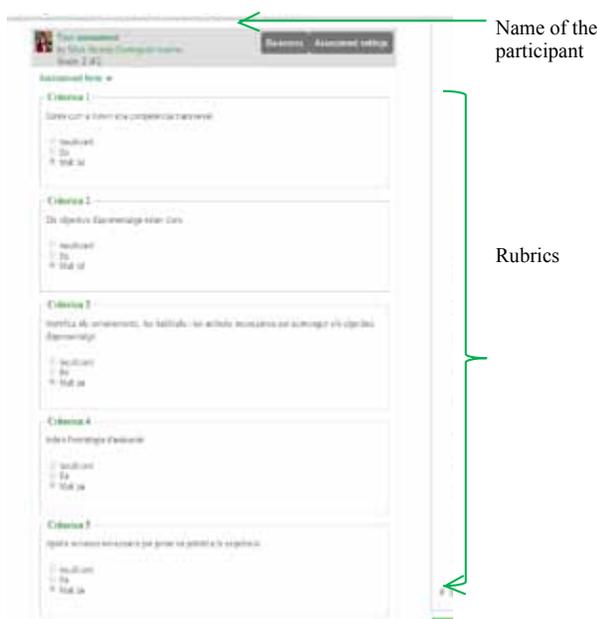


Figure 41. Rubrics for peer-assessment in the TRANSit web portal environment for Spain

3rd session (10th of May 2014)

The final session of the TRANSit course in Spain took place on Saturday, 10th of May 2014 from 9:30 to 13:30h, thus lasting for four hours. The main goal of the session was to foster an exchange and reflection about the learning scenarios designed and implemented. Besides, the TRANSit tutor presented teacher communities and contests that may contribute to teachers' continuing professional development. We presented the TRANSit contest and the Open Discovery Space portal, as well as National and Regional repositories of educational resources.



Figure 42. Presenting educational repositories and the TRANSit contest to teachers

Finally, with the purpose to evaluate the course, teachers completed the skill check in the TRANSit web portal environment, they filled in the evaluation questionnaires and they engaged in a guided discussion.



Figure 43. Teachers engaged in a guided discussion during the final face-to-face session

International activity: TRANSit Summer School 2013

Below one of the international activities implemented in the course of the project is presented, thus the TRANSit Summer School 2013. During the TRANSit Summer School 2013, that took place in Crete, Greece; June 30 – July 5, 2013, 72 teachers had the chance to interact with their colleagues from all around Europe, exchange experiences on teaching practices and approaches, have an extensive training to competence based learning, game based approaches, social networking tools, and learn how to use learning resources and repositories. With their participation they gained knowledge, skills and experiences in designing cross-curricular competence based scenarios, searching resources, uploading them in TRANSit community space, and assessing competences with ICT tools.



Figure 44. First Summer School's website (<http://transit.ea.gr/>)



Figure 45. Summer School's programme (<http://transit.ea.gr/content/programme>)

The teachers that participated from different European countries (Austria, Ireland, Netherlands, Greece, Romania, Spain, Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Lithuania, Poland, Portugal, Slovenia, Sweden, Turkey) used and tried the consortium developed material – modules. In the Summer School there were a lot of presentations and activities related to CBL. The description of the activities/workshops that took place, as well as the presentations delivered during the Summer School are available in the Activities area of the TRANSit summer school community ‘Training teachers in competence based education: TRANSit @ the Crete Summer School 2013’: <http://portal.opendiscoveryspace.eu/el/activities/1167>

Participants worked individually and/or in small teams and 22 scenarios were uploaded in the TRANSit workspace of Octopus Authoring Tool, and are available in the Learning Scenarios area of the community: <http://portal.opendiscoveryspace.eu/el/educational-scenarios/1167> Scenarios are cross-curricular and competence based most of which apply to Social Sciences, Arts & a combination of other subject fields such as Mathematics & ICT.

Here follows the description of the TRANSit closing Conference “European/national initiatives to foster competency-based teaching and learning”. Apart from the keynote speeches and panel discussion 5 five parallel 2-hours workshops based on the most important project outcomes and associated activities have been implemented.

TRANSit 2014 Conference “European/national initiatives to foster competency-based teaching and learning”

200 Teachers of all subjects and levels, educational professionals, policy makers attended the TRANSit Conference entitled: “European/national initiatives to foster competency-based teaching and learning Conference”, hosted by TRANSit & the Open Discovery Space European initiatives. The event took place in Ellinogermaniki Agogi in Attica Greece, on Friday October 31st 2014. Talks on a range of relevant issues, such as European/national E-Learning Policies & initiatives to foster competency-based teaching and learning, the role of e-learning in the Opening up Education agenda, the development of multilingual educational social media and what ODS can offer to a school, by selected speakers involving representatives from the Greek Ministry of Education, and the academic field were followed by presentations of innovative teaching practices with an aim to foster key competence acquisition, involving e-learning sources, as well as five parallel 2-hours workshops based on the most important project outcomes and associated activities/projects; thus being a chance for their validation. The workshop themes:

1. Designing and Evaluating Educational Activities fostering Competences (using electronic resources and being member of the dedicated ODS community)
2. Inquiry-Based Learning to foster students’ transversal key competences and digital badges
3. Open Badges
4. Fostering the acquisition of key competences with project-based & inquiry based learning activities
5. Project based learning/ cross-curricular projects

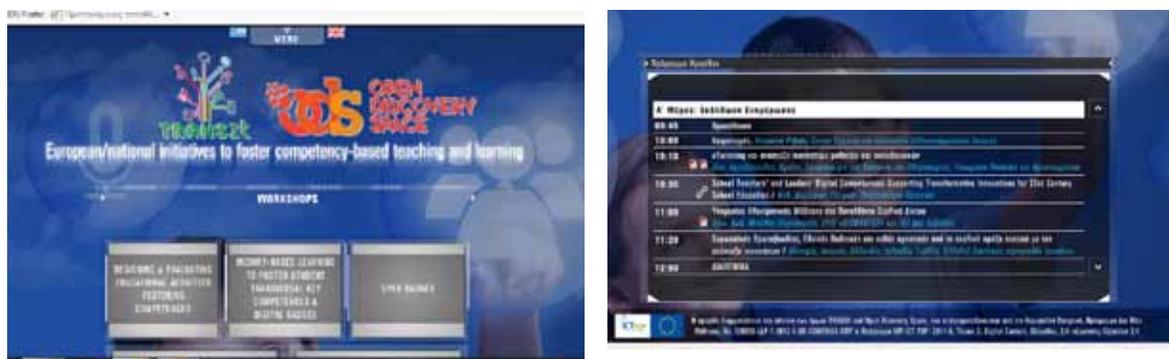


Figure 46. TRANSit Conference website (<http://www.transit-project.eu/conference/>) developed in two languages (EL, EN) – Proceedings, presentations delivered available online

The programme/agenda can be accessed at http://ea.gr/transit/TRANSit_Conference_Agenda_EN.pdf. All presentations delivered are available online on the Conference website. During the panel discussion, as well as during the workshops participants had the chance to discuss and give their feedback regarding TRANSit outcomes and rationale. Moreover, evaluation feedback has been collected from the participants through guidelines sent to them via email. Participants have been found to be satisfied by all aspects of the event, organisational as well as regarding the actual content presented.



Figure 47. TRANSit Conference Proceedings (EN version)

The TRANSit Validation and Evaluation

This section reports on the validation and evaluation results that were derived during the two phases of TRANSit implementation activities. Within this framework, evaluation has been designed with the goal to assess the activities from the scope of: a) effectivity and b) usefulness.

Underpinning the evaluation strategy for the TRANSit project are two Key Performance Results, which have been determined to assess the success of TRANSit implementation:

- **Effectiveness:** refers to the profit that stakeholders obtain from participation, i.e. the growth of teachers' competencies in terms of knowledge, skills and attitudes has been monitored
- **Usefulness:** is concerned with the satisfaction by stakeholders about the training framework, in terms of:
 - Training design: including the learning activities, readings/viewings, resources.
 - Assessment system: regarding the e-Portfolio and the digital badges

- Learning processes: assessing the interactions among teachers and with TRANSit tutors

These indicators have led to the use of a combination of quantitative and qualitative data collection instruments described in the following subsections.

6.1 Evaluation tools

6.1.1 Quantitative tools

Questionnaire for TRANSit participants

A questionnaire for TRANSit participants was developed on the basis of existing evaluation tools for online teacher training available: <https://docs.google.com/forms/d/1jFEsauAhZyUcYZr4OEgBfhfDdbYxZJod1KQPGK2B85I/viewform>. The questionnaire is divided in three parts. The first part is based on the "COLLES preferred and actual form" (Taylor & Maor, 2000), which was initially developed to assess postgraduate distance education for teachers. It measures the difference between what teachers prefer and their actual experience. As an example, the questionnaire for TRANSit participants includes statements such as:

Item	Statement	1	2	3	4	5
1	I prefer that	My learning focuses on issues that interest me				
2	I found that					

Statements are grouped into six scales:

1. Relevance: How relevant is on-line learning to participants' professional practices?
2. Reflection: Does on-line learning stimulate participants' critical reflective thinking?
3. Interactivity: To what extent do participants engage on-line in rich educational dialogue?
4. Interpretation: Do participants and tutors make good sense of each other's on-line communications?
5. Tutor Support: How well do tutors enable participants to participate in on-line learning?
6. Peer Support: Is sensitive and encouraging support provided online by fellow participants?

Each scale contains four items. In each item, participants grade what they prefer and what they have experienced by means of a five-point Likert-type response scale: Almost Never (1), Seldom (2), Sometimes (3), Often (4), Almost Always (5).

The second part of the questionnaire focuses on the e-portfolio. Previous studies have shown correlations between learning motivation and e-portfolio satisfaction (Huang et al, 2011). In particular, Jun et al. (2007) has

developed a survey to assess an e-portfolio-based Professional Development programme for teachers. The following sections have been selected and adapted for the purposes of TRANSit:

- Teachers' overall perception/personal value about the e-portfolio
- Teachers' Perception about using the e-portfolio enhancing the evaluation process

Those partners who have issued digital badges for participants have assessed their effect with the third section of the questionnaire. Items have been adapted from badges surveys from Abramovich et al. (2013) and Santos et al. (2013).

Event satisfaction form

The organisational aspects of face-to-face events such as training workshops have been assessed with the event satisfaction form. The form has been administered to participants, by each partner, after the training activity. In some countries it has been administered printed, whereas other partners have delivered it online using the following URL: <https://docs.google.com/forms/d/1BnNXf5zFL8P1mi7nA3J3b6COMOsoc7znKQX08mI8ScE/viewform>

TRANSit event satisfaction form

Introduction:
Thank you for making part in this survey that will measure your satisfaction about the event you have participated in. This questionnaire is for a quick analysis of its outcomes. Please return the form using your e-mail name.

Read attention:
TRANSit 2016 is funded by the Commission for Lifelong Learning. Training teachers in competences based methodology is a European program which aims to enhance the teachers' knowledge, understanding and skills in contemporary issues related to providing learning outcomes through teaching of transversal competences for practice (intercultural, team work, innovation and citizenship) and assessment by using digital tools.

Introduction:

Profile:

Primary school teacher
 Secondary school teacher
 Primary school principal
 Secondary school principal
 Teacher trainer
 No specific teacher
 Curriculum developer
 Other: _____

Years of experience: _____

Year 2017:
Please indicate if, if you did not attend the workshop, please leave it as a different option.

Yes
 No

Comments: _____

Figure 48: Screenshot of the TRANSit event satisfaction form online (EN version)

Statistics from platform

Partners examine the TRANSit web portal environment in order to understand to what extent teachers have used the learning resources and the e-portfolio tool and in which way.

6.1.2 Qualitative tools

E-portfolio assessment

It consists of an analysis of the products of teachers' learning, i.e. learning scenarios, programmes, lesson plans, etc. It provides insight about the impact of TRANSit in terms of teacher competencies that have been fostered with the training activities. For the evaluation the Cross-reference table between TRANSit learning outcomes/modules and the competency framework has been deployed.

Interview/focus group guide for participants

Qualitative data on teachers' experience with TRANSit has been collected with the interview guide. It assesses kind of new knowledge and skills participants have developed on using the key competency framework. Besides, it evaluated whether the training meets participants' expectations, in terms of content, structure, materials, e-portfolio and badges and social networking tools. Finally, it asks teachers for improvement sugges-

tions and opinions about the interview itself.

Following qualitative research recommendations (Baker et al, 2012), 10% of participants from each country have been interviewed or have participated in a guided discussion after the training activity.

Interview guide for TRANSit tutors

After implementing a training activity, TRANSit workshop leaders and/or training tutors have been interviewed or have participated in a focus group in order to reflect on the strengths and weaknesses of the TRANSit training framework based on their first-person experience.

6.2 Results

What follows is an analysis of the evaluation indicators for the project, i.e. effectiveness and usefulness of the training.

6.2.1 Effectiveness on teacher competencies

The acquisition of the four teacher competencies by the TRANSit training participants has been assessed with selected evaluation instruments. The skill check enabled teachers to self-report on their level of each competency, once at the beginning and then at the end of their involvement in the training activities. Further, the learn-

ing artefacts uploaded to the TRANSit web portal environment such as learning scenarios, assessment plans, resources, etc. have been compared with the success criteria stated in the training framework design, following the e-portfolio assessment method. Finally, the interviews and the focus groups were useful to collect teachers' reflections on each TRANSit teacher competency. Subsections below summarise the effectiveness of the training for each teacher competency.

Facilitating student learning

According to the TRANSit training framework, the competency to facilitate student learning refers to teachers' skills to engage students in purposeful and appropriate learning experiences. Results show that on average, 50% of the teachers have increased their competency in facilitating student learning between the start and the end of their participation in the TRANSit implementation. These findings can be complemented with an external assessment of the learning artefacts produced by teachers during the training, i.e. learning scenarios, lesson plans, educational resources, etc.

Design a learning sequence/scenario/programme for acquisition of key competencies

The learning scenarios designed by teachers demonstrate teachers' ability to take the transversal key competencies of the students into account when planning a learning scenario. In other words, all the learning scenarios comply with the success criteria, i.e. they include at least one different criterion-based objective, clearly expressed success criteria and a well-defined context to support learners' performance/activities. As an example, one teacher defined the following learning objectives in the learning scenario that she developed in the Spanish implementation phase B:

- Formulate and answer questions using search strategies and analyse the results
- Explain data in order to express and communicate content
- Reflect on learning to become aware of learning progress
- Analyse and critically consider human interven-

tion in nature in order to behave more responsibly

The artifacts also demonstrate that participants in the TRANSit training have made use of the local competency frameworks for students. The key competency frameworks used have been the AISTEAR programme from Ireland (<http://www.earlychildhoodireland.ie/quality-in-practice/siolta-aistear/aistear-and-curriculum/>); the regional documents on the competency-based development of the curriculum in Catalonia (<http://www20.gencat.cat/portal/site/ensenyament/menuitem.e79d96e9bc498691c65d3082b0c0e1a0/?vgnnextoid=bd4ff2701e3c310VgnVCM2000009b0c1e0aRCRD>); and the National competency grids for teachers (<http://kokids.medien-infobox.at/materialen.html>) from Austria. In particular, during the workshops implemented in Austria, teachers were very engaged to discuss diverse possibilities to design student based activities that foster diverse key competences such as "linguistic competency", "digital competency", and "learning to learn" (researches, group work, group presentations, feedback, guided interviews) by using the national competence grids.

The TRANSit training framework also states that another success criterion for a competency-based learning scenario is that it tackles more than one student competency. In Spain, teachers designed cross-curricular learning scenarios tackling 4 or more transversal key competencies. As one teacher states during the focus group:

"I aim to foster linguistic competency by giving feedback about spelling errors in the essays of my students, even if we are studying history".

Most of the learning scenarios evaluated include learning outcomes as well as the skills, knowledge and values required to achieve them. As an example, a primary school teacher proposed a scenario starting from an accident which took place at school. A landslide had swept away part of the school yard, and she planned a learning scenario to learn about this phenomenon depending on variables such as the materials in the ground, the inclination and the level of humidity.

Teachers have applied one of the characteristics of competency-based learning scenarios, i.e. taking advantage of students' curiosity towards a topic. As one teacher puts it:

“Last week, a student asked me why beans were attached to the pod. I have decided that in this course, I will design a learning scenario to help my students to answer to that question”.

Prepare a learning sequence/scenario/programme for acquisition of key competencies

One of the skills included in the competency to facilitate student learning is teachers' ability to prepare a learning scenario with relevant learning resources. Review of the learning scenarios shows that the majority of teachers have included relevant learning material supporting their learning scenarios. The main material provided is data collection sheets, which have been either adapted from existing ones or made from scratch.

Furthermore, teachers have selected technologies enhancing learning and assessment. Some of the technologies present in the learning scenarios are:

- E-portfolios
- Edmodo social network for education (<https://www.edmodo.com/>)
- Digital badges
- Text processor and spreadsheets
- Presentation software: Power Point, Prezi (<http://prezi.com/>)
- Portal for learning history at the museum (www.habsbuger.net)
- Using films for learning (www.bildungsmedien.tv)
- RSS feeds

Run a learning sequence/scenario/programme for acquisition of key competencies

As part of TRANSit training, a selected number of teachers tested the learning activities planned in their own classrooms, and they gave feedback about them in a face-to-face workshop and in the online training environment. By doing so, teachers have practiced the ability to run a learning scenario for key competency

acquisition. The evidence provided and teachers' own reflections demonstrate that they provided support and guidance to learners and they monitored the learning process. As an example, a teacher reports:

“I was surprised about how my students engaged in the learning activities of my learning scenario. They understood their tasks very well and they performed them in a very autonomous way. Students spent time looking for information, but this was not because the task was difficult but because they were interested in the topic. They made quick progress with the ICT tools and they used them in a very responsible way.”

Assessing and reporting student learning outcomes

Teachers' competency to assess and report student learning outcomes is concerned with the capability to apply authentic learning assessment techniques such as rubrics, self and peer student assessment. The skill check shows that, on average, almost 50% of the teachers have increased this competency between the beginning and the end of their participation in the TRANSit training. In particular, most teachers have made progress in the item “Consistently use exemplary assessment and reporting strategies that are highly responsive and inclusive”. This competency is fostered in TRANSit modules 1 (design) and 3 (run) a learning scenario, sequence or programme for key competency acquisition. For this reason, we compare the success criteria for these modules against the materials produced by teachers.

Design a learning sequence/scenario/programme for acquisition of key competencies

All learning scenarios from the Spanish teachers, except for one, use at least 2 different assessment strategies, one of them being learner centred. Peer assessment is used in the majority of learning scenarios, whereas self-assessment is deployed in more than half of the scenarios. This shows that some teachers have planned to use the two assessment strategies.

In Ireland, all teachers indicated that rubrics were an excellent way to introduce competency objectives to the class. The rubrics state the assessment criteria as rows and the levels as columns. Either the teacher, a peer or the own student decide in what level the student is of

each criterion in the rubric. Teachers have designed rubrics for the majority of the learning scenarios.

In Austria, most participants agreed that it is not easy to assess the success of one activity and some teachers showed how they work with competence self-reflection/self-assessment and reflection schemes supported by the National learning management platform LMS (<http://lms.at>) not only for one activity or one project but with competence schemes for one semester or one school year.

All teachers in Ireland felt that documenting their progress and that of their students would help them deliver teaching and learning experience. Similarly, the majority of the learning scenarios designed by Spanish teachers include a strategy to plan monitoring and reporting student learning. Mainly, they plan to examine products from the learning activities such as presentations, e-portfolios, documents and classroom participation. One teacher mentions the classroom diary as an instrument to monitor learning and two teachers plan taking pictures of the sessions as documentation (see figure below).

Run a learning sequence/scenario/programme for acquisition of key competencies

During the course of the training it turned out that some participants already foster key competences in diverse manners but they are not aware of the importance of planning and structuring the activities in accordance with national competency grids and frameworks. Therefore, the assessment of their CBL activities turned out to be more or less disregarded. The presentation of national competency frameworks by the TRANSit trainer and the individual examples of more experienced colleagues gave useful input for these participants.

Engaging in continuing professional development

The skill check shows that 25% of teachers self-report an increase in the competency to engage in continuing professional development after participating in TRANSit training phase B. In one of the focus groups, a teacher stated:

"If I had to design another competency-based

learning scenario, I would design it in a different way because now (after TRANSit) I feel really trained".

Another teacher states that "In order to make a real change, I should reflect on what I have learnt in this course and put it into practice. Usually, this is the greatest challenge for me".

More specifically, TRANSit module 4 (review) was designed to increase teachers' competency in engaging in continuing professional development. In the majority of the case studies which have been evaluated, there were teachers who were more familiar than others with competency-based teaching. As an example, in Austria the experienced teachers shared their findings concerning assessment and monitoring with other colleagues, and initiated strategies for future actions and further professional development.

However, one of the main activities from the module was to review a learning scenario for key competency acquisition. As an example, Spanish teachers reviewed the learning scenarios from two other teachers and they made recommendations. The recommendations show that teachers are capable of identifying the weaknesses of competency-based learning scenarios from their peers, and they provide useful improvement suggestions. For instance, one teacher analysed a learning scenario which engaged students in data collection and analysis. The teacher who reviewed this scenario recommends using digital tools to process such data, thus "Embedding the digital and the mathematical competency in the learning scenario".

Establishing partnerships and collaborations

Results of the skill check show that several participants from TRANSit implementation phase B report an increase in their capability to establish partnerships and collaborations. This competency is fostered in all TRANSit modules, i.e. 1 (design), 2 (prepare), 3 (run) and 4 (review) a learning scenario, sequence or programme for acquisition of key competencies.

By examining the learning scenarios and the resources uploaded by teachers to their e-portfolios, we can see evidence that some teachers have a slight command

of this competence. As an example, a Spanish teacher plans to organise a visit with the students to a museum and in this way to put the topic being studied in the scenario in a wider context. One teacher includes in her learning scenario an activity in which students write an article in the school magazine explaining the results of their project. Other teachers involve the parents in the learning activities. As one teacher puts it:

“The father of one of my students is very interested in history. This has motivated me to design, plan and run a learning scenario in which my students inquiry about the features of society in different historical periods, as well as reflecting about how we have changed from the prehistorical age until nowadays”.

Further, Irish teachers would like to work in collaboration with other teachers in a project-based learning scenario to develop his collaboration skills and focus on developing his skill implementing Key Competencies. If a system like e-portfolios and peer to peer collaboration existed where teachers could share and discuss online, it would

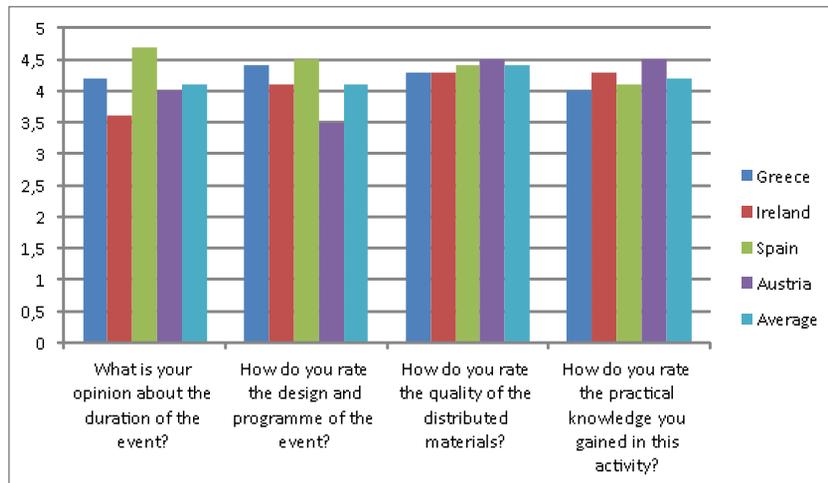
be a great benefit because everything is so new.

6.2.2 Usefulness of the training

The TRANSit training phase B has also been assessed from the scope of usefulness. This indicator evaluates to what extent the training design, the assessment system and the learning processes satisfy teachers’ needs and expectations. The instruments deployed to collect data on this indicator have been the event satisfaction questionnaire, the questionnaire for TRANSit participants and the interview/focus group guide. Results are summarised below.

Training design

By means of the event satisfaction form, participants expressed their opinion about different aspects from the training design on a scale from 1 [very bad] to 5 [excellent]. Results show that generally, the learning activities meet the expectations of the participants, as summarised in the graph below.



The graph shows that teachers were satisfied to a great extent with the TRANSit training design and programme, with an average of 4.1 out of 5. The most satisfied are Spanish teachers, with an average of 4.5 out of 5, whereas the result for Austria is 3.5 out of 5. Considering the qualitative data collected in interviews, Irish teachers state that the training modules (design, plan, run and review a learning scenario) “Reflect accurately the activities included in their professional practice”.

According to the graph, teachers are generally satisfied with the training materials provided. At the end of the training, most teachers showed an interest in staying involved in TRANSit, in staying registered in the TRANSit web portal environment “with the purpose to download the learning materials” and “to examine in more detail the learning scenarios from my colleagues and learn from them”.

Another positive result is that teachers appreciate the practical knowledge gained, as shown by an average of 4.2 out of 5. The learning approaches promoted were new for most participants and they are generally regarded as interesting methodologies. Participants have learnt how to apply them in the classroom, as stated in the guided discussion. More specifically, the good practice examples used in Austria and in Spain have been well received by the teachers. Most of them signaled that they would take up the idea and adapt the examples to the specific needs of their own students.

As an example, a primary education teacher from Ireland felt that the TRANSit training modules suited the curriculum she taught and the secondary teacher felt

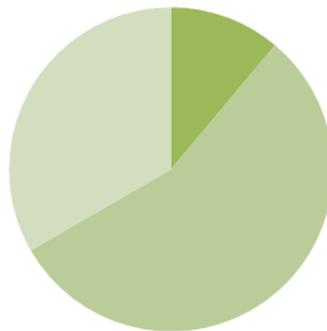
that in Transition Year which a year free form examination preparation between the two examinations cycles in secondary level in Ireland was particularly suited to developing key competencies with his students. The following is a quotation from the participating teacher in Ireland:

“I know what the EU Competencies are now and feel the TRANSit course helped me see how I can implement these competencies in my lessons. I found the course offered me flexibility to experiment and further develop my own teaching skills.”

Assessment approaches

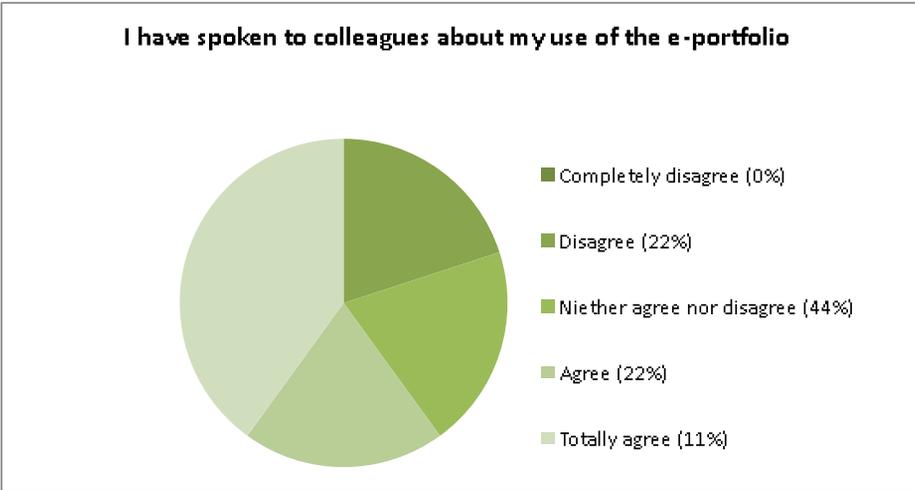
Participants’ opinion about the deployment of the e-portfolio assessment method in phase B has been gathered by means of 7 items from the questionnaire for TRANSit participants. Teachers graded each item on a scale between 1 (completely disagree) and 5 (totally agree). Table below shows the average for all countries. As an example we examine selected items from implementation in Spain:

I would recommend to my fellow teachers that they use the e-portfolio to demonstrate fulfillment of regional or national Teacher Quality Standards

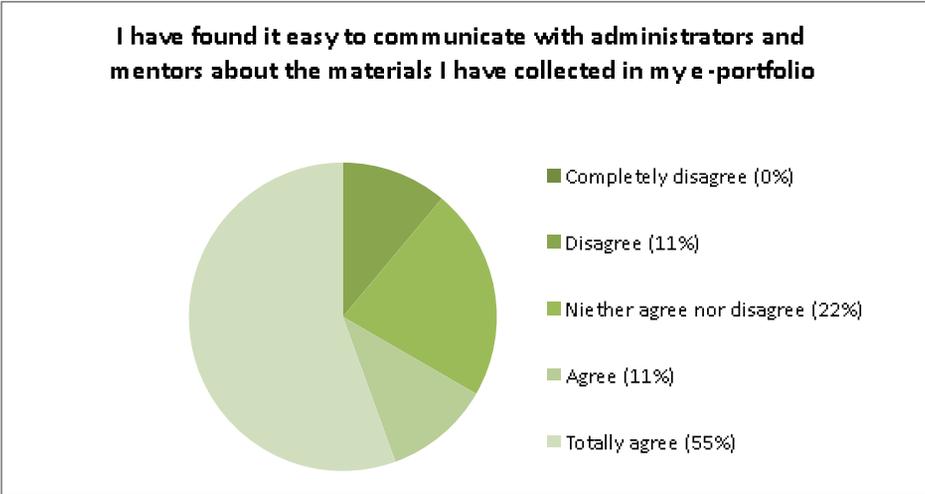


- Completely disagree (0%)
- Disagree (0%)
- Neither agree nor disagree (11%)
- Agree (55%)
- Totally agree (33%)

Results show that 88% participants agree (55%) or totally agree (33%) with the statement "I would recommend to my fellow teachers that they use the e-portfolio to demonstrate fulfilment of regional or national Teacher Quality Standards". This suggests that the e-portfolio is seen as a suitable tool that should be used beyond TRANSit.

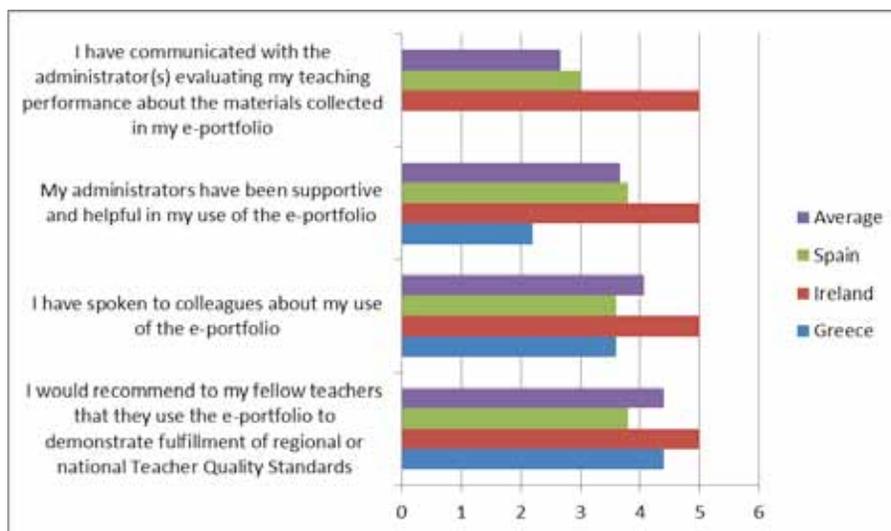


The graph above shows the percentage of answers regarding teachers who have spoken to their colleagues about the use of the e-portfolio in TRANSit. Results show that one third, i.e. 33% have done so.



More than half of the participants (55%) totally agree and 11% agree that it has been easy to communicate with administrators and with the TRANSit tutor about the e-portfolio.

More details of these percentages are provided in the appendixes, which also include a comparison between participants' opinion on the e-portfolio by country.



The item obtaining the highest satisfaction refers the fact of recommending fellow teachers to use the e-portfolio to demonstrate their professional competencies, with an average of 4.4 out of 5. Consistently, on average teachers agree with the fact that they have talked about the e-portfolio with their colleagues. As one of the participants in Ireland reports:

“I completed the course and added material to the e-portfolio section in line with the course modules. I found the e-portfolio to be effective in my work and it turned out to be helpful in my planning and implementation”.

The satisfaction about this assessment method goes beyond teachers' own learning, and teachers are also willing to use it with students. As one teacher puts it:

“I used the e-portfolio tool for self-reflection and professional development for myself. I am confi-

dent in their use now and I will consider the possibility of introducing them to my students next year”.

In contrast, one of the lowest scores is given to the communication with the tutors about the materials collected in the e-portfolio.

Selected TRANSit training activities included digital badges to represent teacher competencies. In other words, teachers who achieved the learning goals of the training modules leading to enhance a given competency could earn badges with the name of the competency, i.e. “Student learning facilitator”, “Assessor and reporter of student learning”, “Engaged in continuing professional development” and “Partnerships and collaboration establisher”. Teacher attitudes towards digital badges as part of the assessment of TRANSit training have been gathered with questionnaire for TRANSit participants. Results are summarised in table below.

Item	Average
I understand why I earned all my badges	4.4
I wanted to earn more badges	3.4
Badges have contributed to my engagement in the training	3.1

The lowest score is obtained in the item “Badges have contributed to my engagement in the training”, thus not confirming that digital badges could motivate teachers to keep learning. However, results show that we managed to convey appropriately the meaning of digital badges and how to earn them, as shown by an average of 4.4 out of 5. On average, teachers want to earn more badges (average of 3.4 out of 5).

In contrast, the use of e-Portfolios and Open Badges that were demonstrated to Austrian teachers did not seem to bring additional value. Some teachers work with Mahara e-portfolio or Moodle with their own students in a satisfying way but they would not use it for their own training purposes. Teachers in Austria are not familiar with Open Badges and this could be the reason why they do not see additional benefit in this tool. In fact, some teachers mentioned that especially Open Badges are ahead of time and will maybe be interesting in the future.

Learning processes

Teachers participating in the TRANSIt training activities engaged in a series of learning processes in the online environment, as well as with interactions with the tutor and with their peers. Items 1 to 48 of the evaluation tool “Questionnaire for TRANSIt participants” assessed their satisfaction with these processes.

As shown in the appendix, results show that the implementation activities that have matched better teachers’ preferences have taken place in Ireland. In other words, the difference between teachers’ preferred and actual experience is zero in almost all the items in the questionnaire. The second most successful workshops in terms of learning processes have taken place in the Netherlands, where the greatest difference between teachers’ preferences and their actual experience is 0.4, i.e. very close to zero. Nevertheless, the activities in Spain and Greece generally match teachers’ preferences as shown by mismatch below 0.8 points. In Greece, participants experience in TRANSIt regarding the item “I explain my ideas

to other teachers” is 1.4 points far from their usual preferences. This suggests that in TRANSIt, they were more prompted to share their ideas with their peers more than what they are used to. Another way to examine the data is by dimensions. Overall, the most satisfactory are reflection, interactivity and peer support. This shows that the interaction among fellow teachers was felt as useful and productive for most participants. Outcomes from the focus groups help to understand these findings. Participants in Spain agreed that face-to-face sessions were “very useful” because they could comment and ask questions about the learning scenarios of their peers and vice versa. One teacher puts it:

“I have learnt to design scenarios fostering the competencies of my students, not so much while designing my own scenario but mostly as a result of the exchange with the other teachers involved in the course”.

Interactions among participating teachers are appreciated also in Austria and in Ireland. Most teachers like to work with colleagues and regard it as a great benefit to have the opportunity to share and exchange competency-based learning and teaching experiences. As an example, an animating exchange took place among creators of the discussed project-based or/and cross-curricular learning activities in one of the face-to-face workshops in Austria. Participants seriously discussed on the guided questions and new ideas and helpful input was exchanged among teachers and teacher trainers.

In contrast, there are greater mismatches between teachers’ preferences and actual experience regarding interpretation. The mismatch in some countries reaches 0.7 points. However, this is still a low number, which is a positive result. This indicator refers to teachers understanding of the messages from their peers and to the sense made by the teacher and the tutor of each other’s messages during the training.

6.3 Quantitative Indicators (analytics data, web analysis)

In the following section Quantitative indicators about the use of the TRANSit Community and sub-communities on ODS portal in the training and implementation activities are presented.

These data are extremely useful for reaching conclusions about the usefulness, efficiency and actual deployment of the provided facilities to participants. The tools providing analytics data developed by the portal developers has been used with the use of specific queries.

Indicators for TRANSit Greek Community on ODS portal

The TRANSit Greek Community on ODS portal has almost 700 members. Figure 49 presents the progress in registration of new users in the TRANSit Greek Community in the period May – 10th September 2014. Although the summer break there is a constant increase in the number of members as an outcome of the implementation events organized (face to face training events, newsletters circulated). Nearly a 370% increase in registrations took place highly connected with these top-down professional development activities.

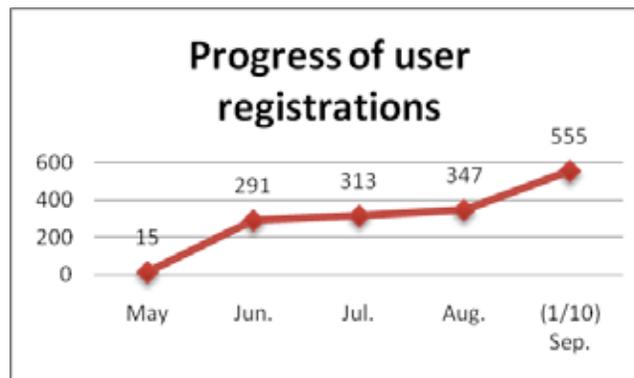


Figure 49. Progress in registration of new users in TRANSit Greek Community (May – 10th September 2014)



Figure 50. Total visits (Greek TRANSit Community)

The TRANSit community is a public one, allowing access to its resources to all Open Discovery Space members. There are over 10,704 page views over the period mid-June - mid September 2014. As it is clearly evident from Figure 50, there is a considerable increase in interest in the Community, as the number of page visits demonstrates, especially during June and September, a period that the workshops webinar, as well as the circulation of newsletters took place. We can notice peak numbers (e.g. 1,200 views on 16/06). The dates of the implementation, as well as the dissemination events are marked with asterisks in these graphs.

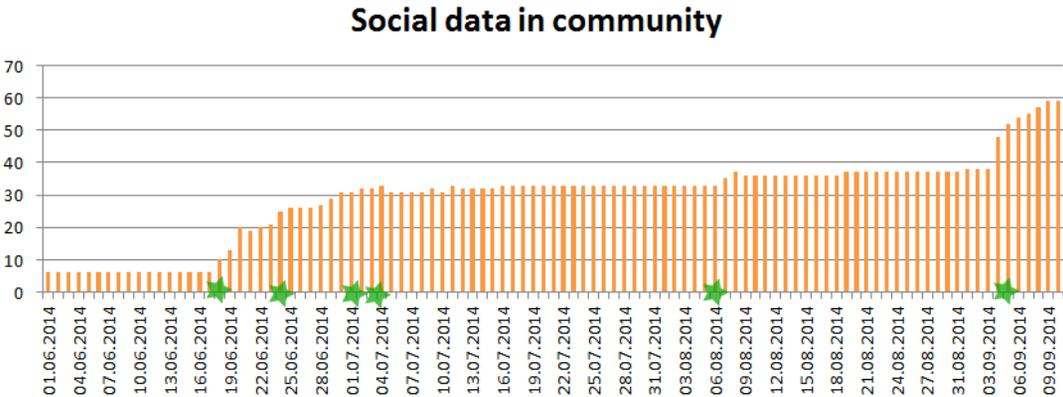


Figure 51. Social data in Greek TRANSit Community

Figure 51 presents the use of Social Data (Comments, Bookmarks, Followed Users, Followed, Shares & Followers) the period that the main implementation events took place (mid June-mid September 2014). Again it is evident that there is a considerable online activity around the dates that the implementation events took place.

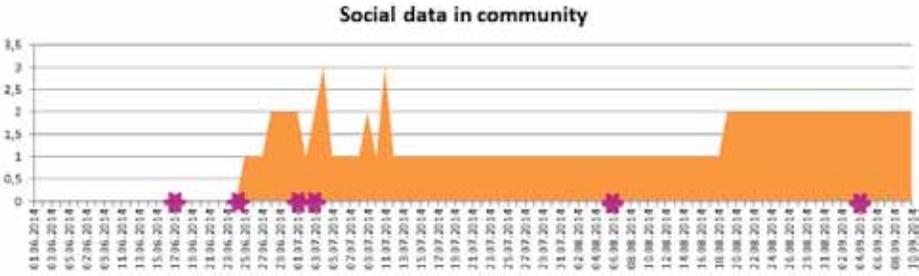


Figure 52. Social data on the resources of the Community (e.g. tags, bookmarks, comments etc.)

Figure 52 presents the impact of the events in the social tagging (Comments, Bookmarks, Followed Users, Followed, Shares & Followers) of the educational resources created and shared by members of the TRANSit Greek Community.

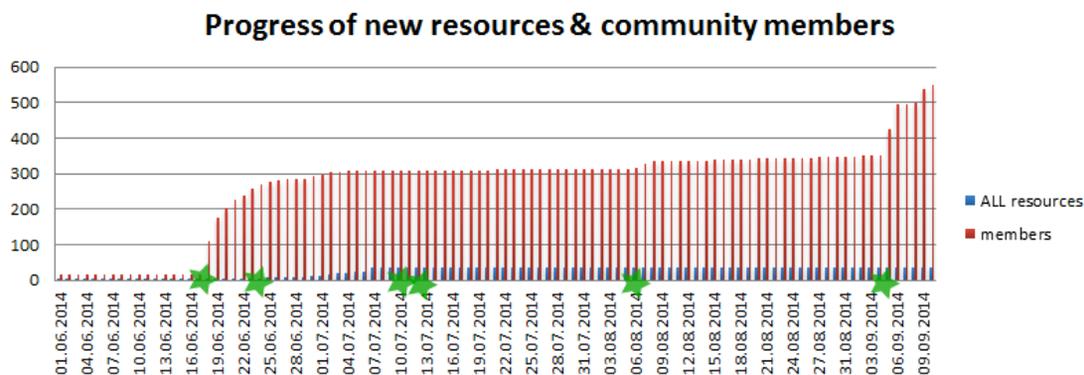


Figure 53. Total resources and members (Greek Community)

In Figure 53 we can see the TRANSit Community members' contributions on ODS portal, thus their engagement. These findings are aligned with White (2012) that most of website users (as high as 80%) who log onto a site are "lurkers" – they will take an occasional look at a website but will not participate in it; the participants, also called "posters" or "contributors" are in the minority. One of the challenges is therefore fostering such a culture to participants in sharing their educational resources and deploying the proper tools in order to engage them.

In Figure 54 we can see the impact of the Contest organised among the Greek Community in the number of views of the educational resources created and shared by trainees/participants.

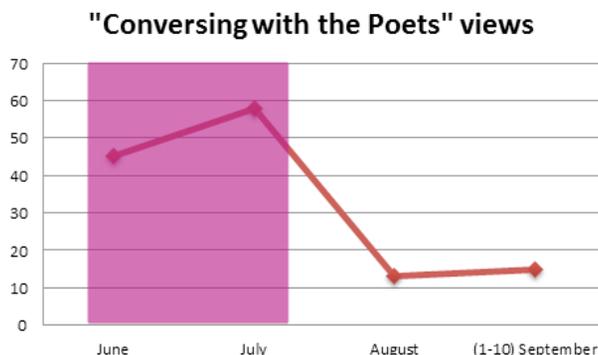


Figure 54. Contest winner scenario views (contest period 01/06-09/07)

Regarding the Contest winner scenario views (Figure 54) the biggest percentage of views is during the contest period, there is a drop during the period that schools are closed (summer break), but the encouraging element is that early September with the school year opening the rate is increasing again. Secondly, the submitted learning scenarios publicly available through the community can act as demonstrators for the rest of the community members, as well as for training purposes as best cases of user generated resources/scenarios. Therefore the conduction of the contest had a dual effect in the community.

Indicators for TRANSit Community and sub-communities on ODS portal

The TRANSit Community (EN) (parent community), as well as the sub-communities demonstrate the following indicators regarding the progress of new users registration, the total number of visits, the number of educational resources and the social data in the community (tags, bookmarks, comments, followers, etc.) in the following graphs the dates of the events taking place for the support of the Greek community are again marked with an asterisk.

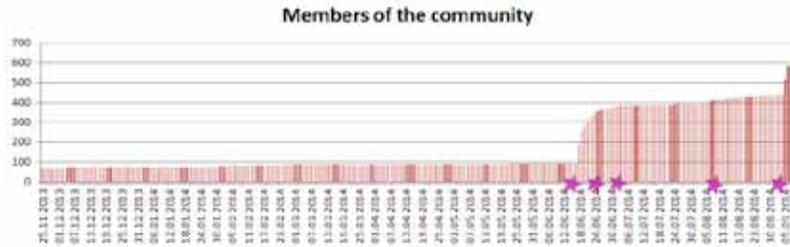


Figure 55. TRANSit Community & sub-communities members



Figure 56. Total visits (TRANSit Community & sub-communities)

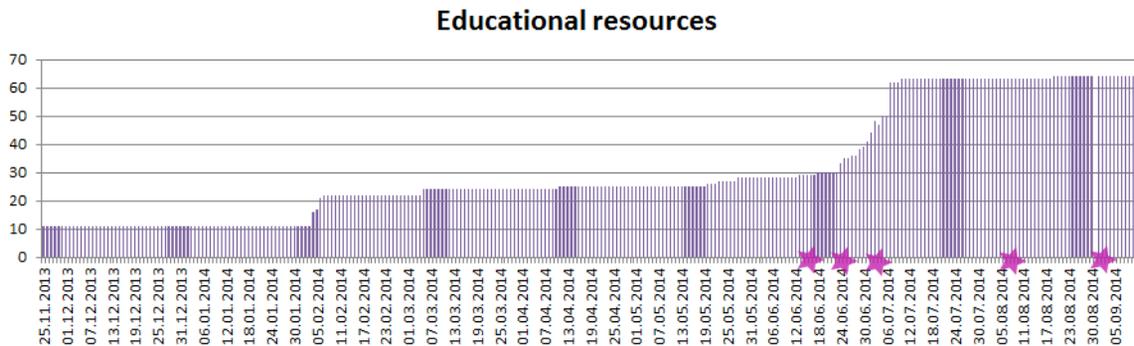


Figure 57. Number of educational resources (TRANSit Community & sub-communities)

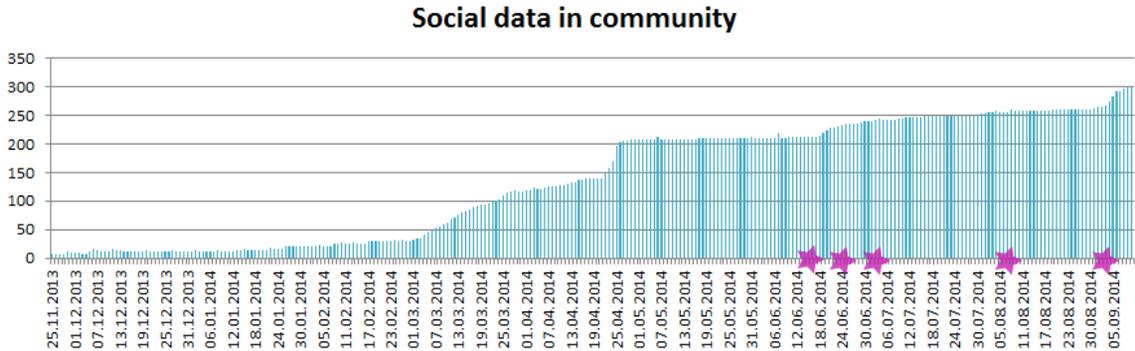


Figure 58. Social data in TRANSit Community & sub-communities

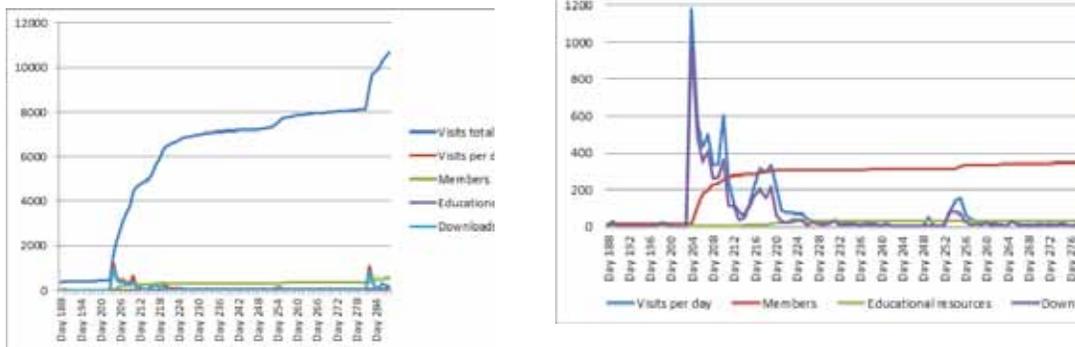


Figure 59. Indicators for Greek Community (left), all communities (right) (mid June – mid September 2014)

Figure 59 presents the total indicators for the Greek and the total of the TRANSit communities (right). As we can notice the indicators of the communities in total follow the progress of the Greek community, associated with the events taking place for its support. In any case we can notice that the activity is centred around the dates that the events took place, as well as that there is a difference between the rates of resources development vs their views/download.

Table 3 presents the number of page views, the average session duration, the number and rate of revisits of the Greek Community, as well as TRANSit Communities in total, based on Google analytics data. Regarding the revisit rate it is quite high (44%).

Table 3. Community Views (Greek Community and total results by all TRANSit Communities)

Page	Page views	Average Session Duration	Revisits	Rate
TRANSit Greek Community	8429	111,35	3728	44%
Total (Parent and sub-communities)	9364	98,59 ~2 minutes	4099	44%

Apart from the log files data in order to survey the impact of the training delivery and methodology had to participants and in order to record the attitude of teachers regarding the usage of eLearning resources an online questionnaire has been designed and administered.

Skills Check/Monitoring Competence Development

When teachers register in the portal they have the opportunity to monitor competence development by completing or updating their individual competence profile, based on the self-assessment tool created by CERTH following the UNESCO ICT Competency Framework for Teachers (2011). The framework comprises of three developmental levels: technological literacy, knowledge development, and knowledge creation. As shown in table 4 each level incorporates the same six aspects.

Table 4. UNESCO ICT Competency Framework for Teachers

	COMPETENCY LEVEL		
	Technological literacy	Knowledge deepening	Knowledge creation
Understanding ICT in education	Policy awareness	Policy understanding	Policy innovation
Curriculum and assessment	Basic knowledge	Knowledge application	Knowledge society skills
Pedagogy	Integrate technology	Complex problem solving	Self-management
ICT	Basic tools	Complex tools	Pervasive tools
Organization and administration	Standard classroom	Collaborative groups	Learning organizations
Teacher professional learning	Digital literacy	Manage and guide	Teacher as model learner

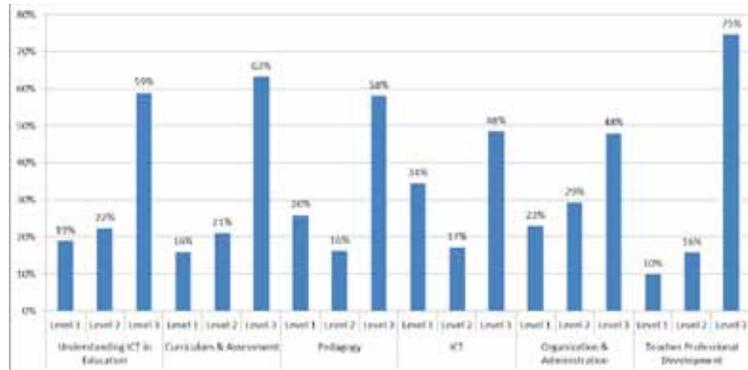


Figure 60. TRANSit Community members' competence profile (as completed during registration process)

According with the self-assessment tool teachers feel particularly confident (3rd level) in the aspect of Teacher Professional Development (75%) and the lowest scores are on ICT and organisation and administration themes.

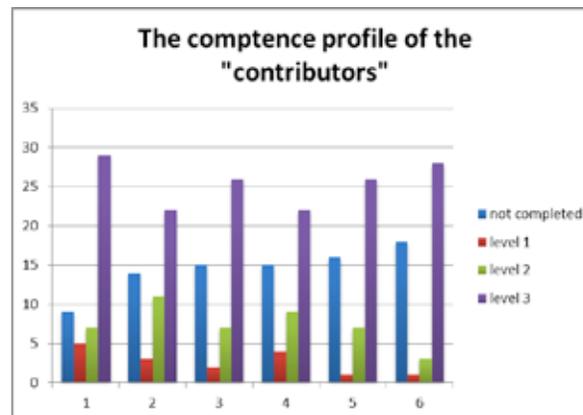


Figure 6 1. The competence profile level of TRANSit Greek community contributors (as completed during registration)

Figure 6 1 depicts the distribution in the three levels on all six aspects of the competence profile among the teachers/contributors on the community. Although, there is a significant number not having completed their profiles (self-assessed) we can see that most of the contributors feel that are competent having self-assessed their competences on Level 3. This is of importance regarding the profile of users that contribute the most in the online communities; they feel confident about their competences.

The following figures depict data from the analytics tool of ODS portal regarding the progress of the competence profile of members of the TRANSit Greek Community regarding the 6 aspects of the UNESCO ICT Competency Framework for Teachers. In all cases we can observe the positive development in teachers' competence profile in the three competency levels.

Κατάρτιση - competence



Figure 62. Understanding ICT in education- Progress of members Competence Profile in the three competency levels

TL.2 Basic Knowledge: 10 users

KD.2 Knowledge Application: 13 users

KC.2 Knowledge Society Skills: 57 users

Κατάρτιση - competence

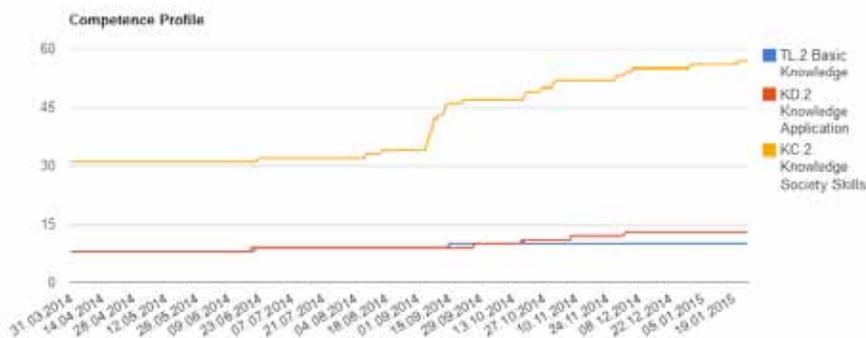


Figure 63 - Curriculum and assessment - Progress of members Competence Profile in the three competency levels

TL.3 Integrate Technology: 24 users

KD.3 Complex Problem Solving: 7 users

KC.3 Self-Management: 47 users

Κατάρτιση - competence

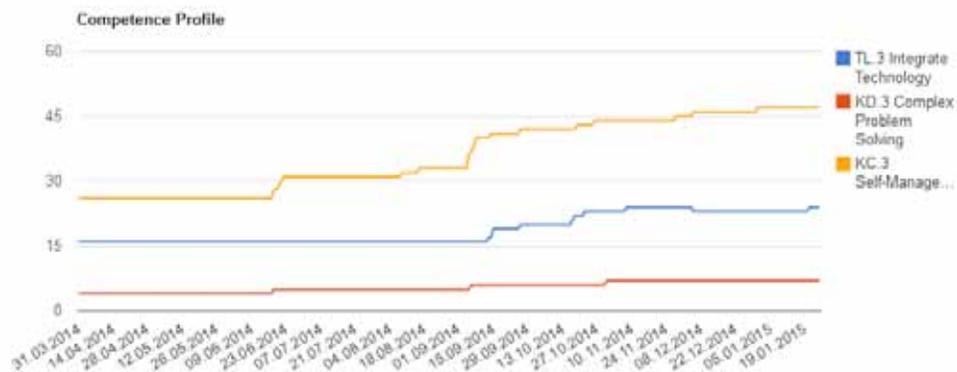


Figure 64 Pedagogy - Progress of members Competence Profile in the three competency levels

TL.4 Basic Tools: 23 users

KD.4 Complex Tools: 16 users

KC.4 Pervasive Technology: 32 users

Κατάρτιση - competence

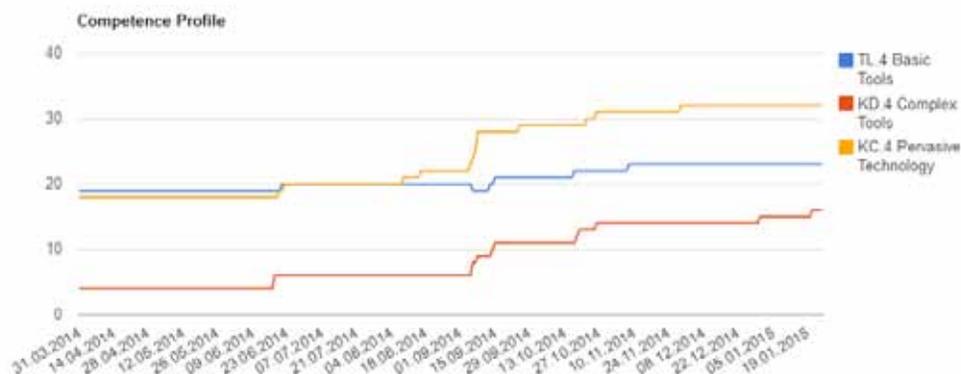


Figure 65 - ICT - Progress of members Competence Profile in the three competency levels

TL.5 Standard Classroom: 13 users
 KD.5 Collaborative Groups: 20 users
 KC.5 Learning Organizations: 31 users

Κατάρτιση - competence

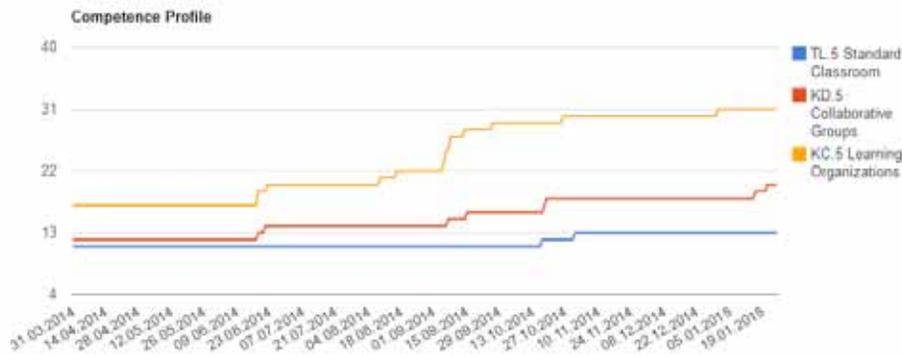


Figure 66 - Organization and administration, Progress of members Competence Profile in the three competency levels

TL.6 Digital Literacy: 11 users
 KD.6 Manage and Guide: 10 users
 KC.6 Teacher as Model Learner: 52 users

Κατάρτιση - competence

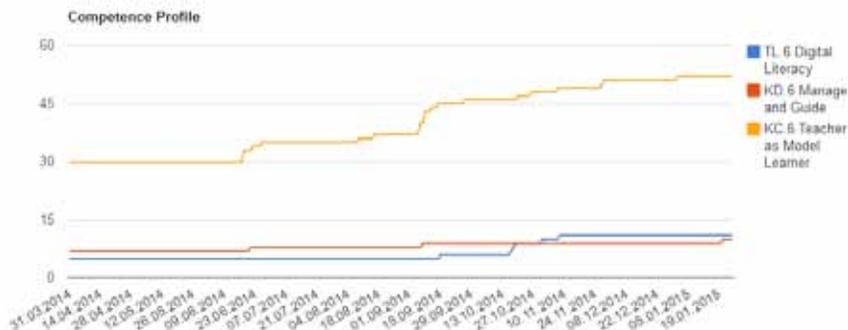


Figure 67 - Teacher professional learning, Progress of members Competence Profile in the three competency levels

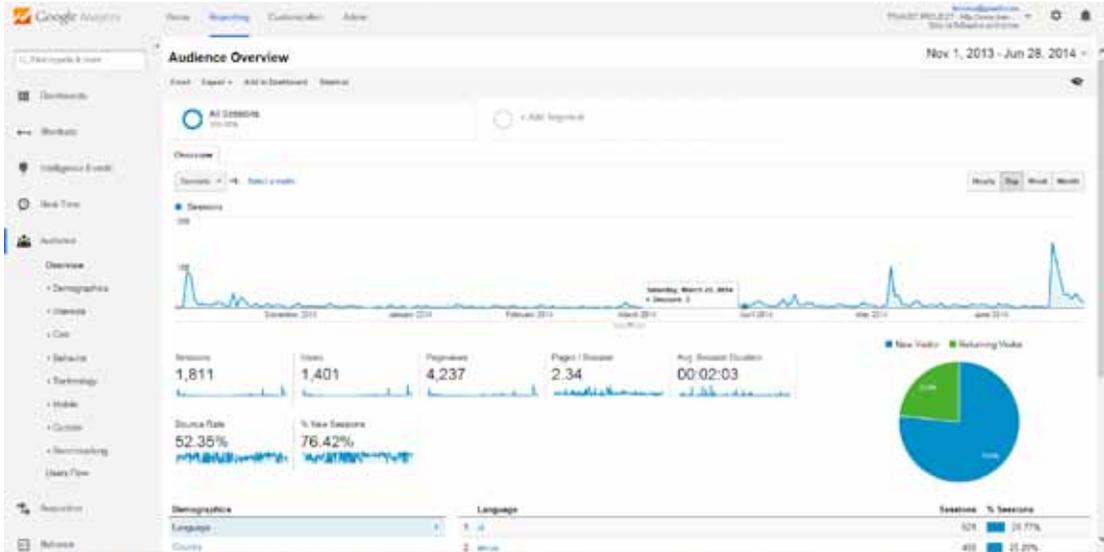


Figure 68 Number of views on Project website (phase a)

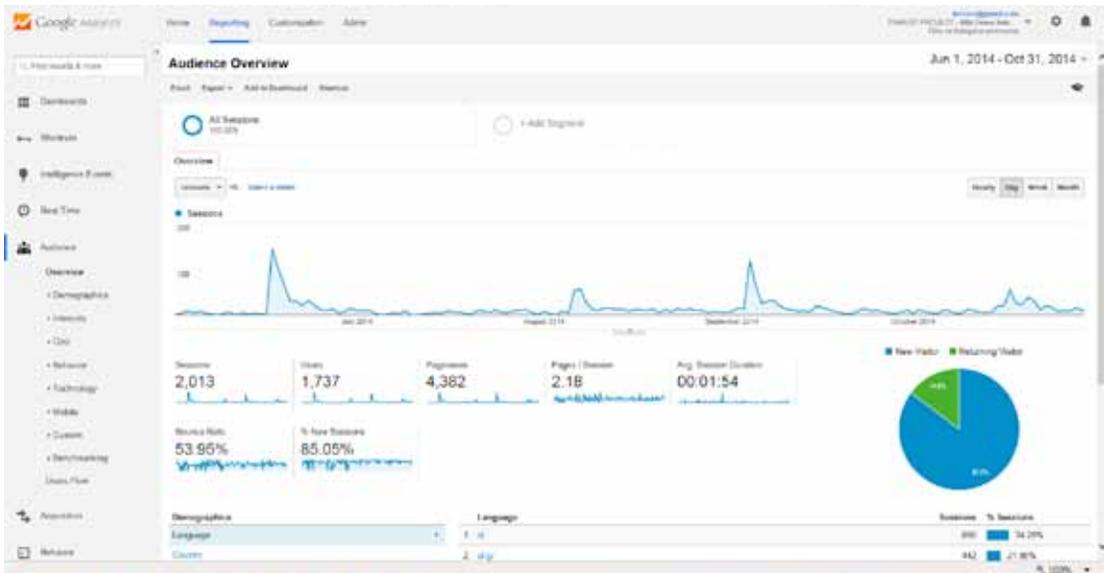


Figure 69. Number of views on Project website (phase B)

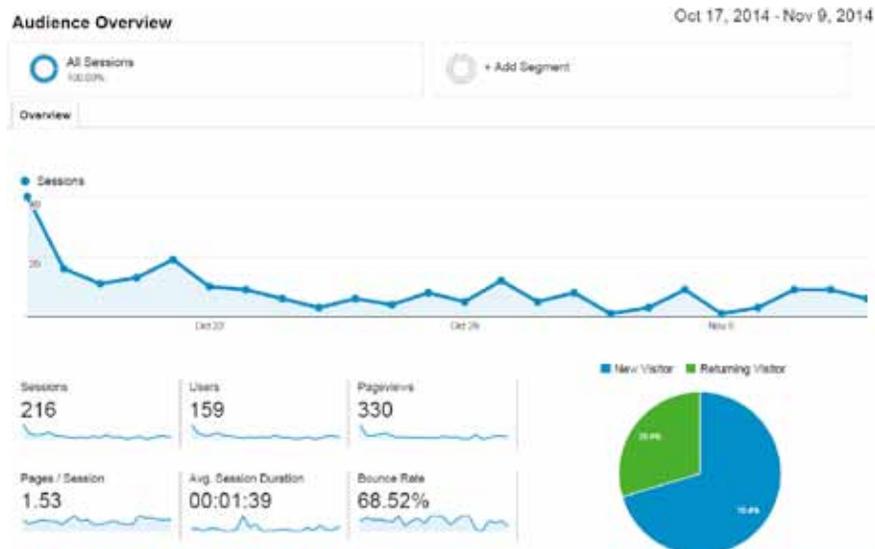


Figure 70. Number of views on Project Conference website (mid October – beginning of November 2014)

6.4 Conclusions

Along the evaluation process of TRANSit, more than 400 participants from different consortium countries have provided feedback on the implementation activities.

Effectiveness

Generally, findings from the evaluation of the TRANSit training activities in different cultural settings enable to conclude that they were effective with regards to raising teachers' awareness in fostering student key competences. Participants of all online training activities and face-to-face supporting workshops stated that the input was useful and affects the individual stage of knowledge and teaching approach in a very positive way.

Most of the answers to the questionnaire for TRANSit participants as well as the interviewed teachers state that participating in the project helped them to learn about teaching approaches promoting the competencies of their students and that they are willing to apply the knowledge and skills acquired in their professional practice. As shown by the learning scenarios produced by teachers participating in TRANSit, the implementa-

tion has achieved a great success in supporting teachers to design, plan, run and review competency-based learning scenarios that demonstrate their skills in **facilitating student learning and assessing and reporting student learning outcomes**.

Therefore, it can be said that the TRANSit training modules constitute an effective resource to practice and assess didactics and assessment of student competencies in a European context. In particular, it was found that the training modules supported teachers with different levels of teaching experience, background, interests and previous experience in competency-based learning. The change in teachers' skills has been found both in phases A and B of the training, although it has been more explicit in phase B.

Usefulness

The questionnaire for TRANSit participants has shown that there is proximity between teachers' preferences for learning and what they actually experienced in the evaluated activities from all countries. The most successful aspects were the interactions with their peers

and with the TRANSIt tutor. Indeed, participants in some countries expressed that sometimes other teachers are more able to provide them useful feedback on a lesson plan, rather than an expert or a tutor.

Participants from all countries appreciate the relevance and the added value of the TRANSIt training modules in the context of a growing interest and policy-making towards competency-based learning. In particular, teachers highlight that the learning resources and materials available in the TRANSIt web portal environment can be helpful in the process of designing and implementing cross-curricular learning scenarios that tackle student competencies in a structured way. The correlation between the positive opinion that participants have regarding the materials and the training design and programme of most workshops gives reasons to believe that the blended approach to training teachers suits their learning style. Best practice examples are the most useful learning resource according to most teachers. In some countries, participants expressed their interest in staying registered in the portal after the implementation activity finished, in order to take advantage of the learning resources available. Participants agree with the key point of an evidence-based assessment system for the training activities, especially in implementation phase B. The e-portfolio assessment method looks appropriate for most teachers, even as a general tool that any professional development activity for teachers should include, except for those from Austria. The majority did not consider digital badges as an additional benefit. However, it has been proven that teachers have very little knowledge about open badges for education.

Future Direction/ Implementation

7.1 Affiliations

TRANSIt aims at developing a community of practice that will aid the sustainability of project results in the long term. During the project implementation cycle a network of affiliated end user organizations that follow closely project activities is formed. This European-wide network of interested organizations and individuals are to be regularly informed about project developments, invited to share results and to participate in project events. The schools attending the workshops that take place at project start form the core of this affiliated organizations network. The network of affiliated organizations will expand during dissemination activities. This network will operate as a community that will continue to use and enhance project outcomes after project completion thus serving project sustainability.

The partner affiliation program is developed in a way in order to ensure maxima impact, targeting various communities and organizations for the creation of a European-wide network. The affiliation program of TRANSIt is not just a scientific awareness of the innovative results derived within the project, but has a broader target group of interested organisations/individuals, such as professionals, organizations providing educational services and public bodies related to education. The methodology adopted for the design of the affiliation program follows the concept that is described in the following Figure. For each potential target group, a specialized set of awareness programs is listed. The design of the affiliation program takes as input its objectives, the target groups and the potential awareness

programs for the target groups.

Along with extended outcome lifetime, consortium participants especially from Austria and Greece will continue to support the TRANSIt community as the training framework is in line with their mission and activities. All established social communities during the project implementation cycle will be maintained, providing infrastructure for information exchange and sharing regarding competence based learning and e-assessment.

7.2 Networking and clustering activities

7.2.1 Connection with other projects, repositories, networks

Open Discovery Space: A socially-powered and multilingual open learning infrastructure to boost the adoption of eLearning resources

ODS addresses various challenges that face the eLearning environment in the European context. The interface has been designed with students, teachers, parents and policy makers in mind. ODS will fulfill three principal objectives. Firstly, it will empower stakeholders through a single, integrated access point for eLearning resources from dispersed educational repositories. Secondly,



it engages stakeholders in the production of meaningful educational activities by using a social-network style multilingual portal, offering eLearning resources as well as services for the production of educational activities. Thirdly, it will assess the impact of the new educational activities, which could serve as a prototype to be adopted by stakeholders in school education.

KeyCoNet

KeyCoNet is a European Policy Network on the Implementation of Key Competence Development (KCD) in School Education. TRANSit is one of KeyCoNet case studies.

KEYS “Key Methodology to Successful Competence Based Learning”

The KEYS project aims at the valorisation and dissemination of outcomes of successful projects and initiatives addressing acquisition of key competences and therefore this linkage is of utmost importance. TRANSit was represented in the KEYS Conference 2014.

PEEP

PEEP (Policy for Educator Evidence in Portfolios) has as aim the development of a policy for ePortfolio career-tracking for educators

School Networks

eTwinning

eTwinning is a Network of European partner schools. It offers

online tools to find each other, meet virtually, exchange ideas and practice examples, team up in Groups, learn together in Learning Events and engage in online-based projects. TRANSit was represented at the first Greek eTwinning Conference and a Webinar was held in the context of the eTwinning Seminar 2014 presenting the TRANSit approach (<http://vimeo.com/95351402>)

Virtuelle Schule (VIS:AT)

The subject oriented portals makes digital learning materials, learning scenarios by subject freely available to the Austrian teachers community. It aims to encourage transdisciplinarity teaching and is a networking tool for teachers.

Networks of Experts

EUROPORTFOLIO (European Network of ePortfolio Experts & Practitioners)

Europortfolio is a not-for profit association being developed with the support of European Commission as a central part of EPNET project, dedicated to exploring how ePortfolios and ePortfolio related technologies and practices can help empower individuals, organisations and wider society. Europortfolio provides a network for those doing ePortfolio and related work across Europe; to build the use of e-portfolios across communities, and to provide opportunities for future partnership working.





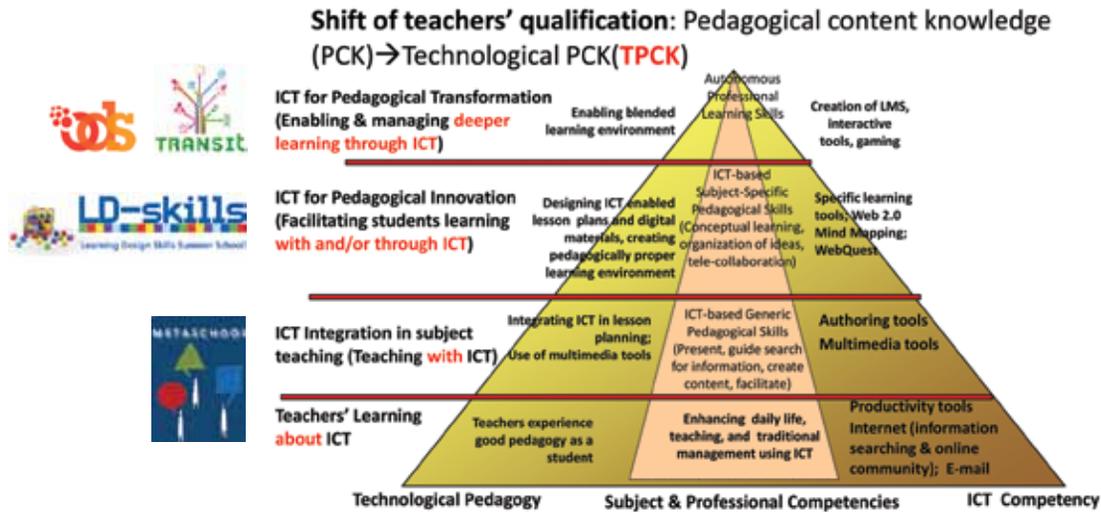
Figure 73. TRANSit Poster (http://www.transit-project.eu/sites/default/files/TRANSIT_POSTER.pdf)



Figure 74. TRANSit promotion on social media

7.4 Future steps

Based on the sets of competencies identified by UNESCO ICT Competence Framework (3) levels of teachers' competence are defined. By organising these competencies into three hierarchical levels, a coarse categorization is made that can help decide which e-learning resources, pedagogies, and assessment methods are (most) appropriate for, and should therefore be made available to, different groups of teachers. The figure below is presenting this progress through the years and the Comenius projects that Ellinogermaniki Agogi has been coordinating.



METASCHOOL training framework (2009-2011) focused on teachers skills ICT and teaching with ICT, LD-skills training framework (2011-2012) focused on ICT for pedagogical innovation TRANSit on fostering students competences (2012 – 2014) and ODS training framework (2012-2014) will include the design and implementation of training programmes of METASCHOOL, LD-skills and TRANSit on the methodological approaches on how teachers can integrate eLearning resources available on the web with core academic content in lesson plans and increase student participation in classroom activities through the use of ICT for pedagogical transformation. It should be noted here that all the TRANSit products are available in the project's web site and web portal and will be available for at least five years after the end of the project funding period with responsibility of the project coordinator and with the contribution of the whole consortium. Apart from this TRANSit modules will be made available from the ODS Teacher Training Academies, in addition to the thematic communities that have been developed in the context of the project, where teachers can exchange their resources with an aim to foster students competences as well as the experience from classroom implementations.

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Appendix A: Use Cases/ User generated CBL resources

All training materials used during the pilots, the five days courses (TRANSIt summer and winter schools), as well as the user-generated content, that can serve as use cases for interested education stakeholders around the theme of competence based learning can be accessed through the portal (<http://transit.cti.gr/moodle/>), as well as the TRANSIt English community (<http://portal.opendiscoveryspace.eu/community/training-teachers-competence-based-educationtransit-73929>) and multilingual sub-communities on ODS Portal.

The following table lists indicative user generated learning scenarios covering a variety of subject areas and Transversal Key Competences, created by participants in TRANSIt training activities.

Title	Teacher Competency	Curriculum Area(s)	Transversal Competences	Students Age
Children's Rights	<ul style="list-style-type: none"> Facilitating Student Learning Assessing and Reporting Student Learning Outcomes 	<ul style="list-style-type: none"> Social Sciences ICT Art and design Language and Literature 	<ul style="list-style-type: none"> Communication in the mother tongue Digital competence Learning to learn Social and civic competences Sense of initiative and entrepreneurship Cultural awareness and expression 	8-12 years old

Dealing with Diversity	<ul style="list-style-type: none"> Facilitating Student Learning Assessing and Reporting Student Learning Outcomes 	<ul style="list-style-type: none"> Social Studies ICT Literacy Religious Studies 	<ul style="list-style-type: none"> Social and civic competences Cultural awareness and expression 	Various Ages
Electric guitar "A musical instrument made by students"	<ul style="list-style-type: none"> Facilitating Student Learning Assessing and Reporting Student Learning Outcomes 	<ul style="list-style-type: none"> Science Music (as part of Arts) Mathematics ICT History 	<ul style="list-style-type: none"> Mathematical competence and basic competences in science and 	16 – 18 years old
			<ul style="list-style-type: none"> technology Digital competence Learning to learn Cultural awareness and expression 	
Making Bridges	<ul style="list-style-type: none"> Facilitating Student Learning Assessing and Reporting Student Learning Outcomes 	<ul style="list-style-type: none"> Science ICT 	<ul style="list-style-type: none"> Mathematical competence and basic competences in science and technology Digital competence Learning to learn Sense of initiative and entrepreneurship 	15 years old
3d printing of a minoic vase	<ul style="list-style-type: none"> Facilitating Student Learning Assessing and Reporting Student Learning Outcomes 	<ul style="list-style-type: none"> History, Maths, ICT, Design and Technology Linkage with the National Greek curriculum is provided 	<ul style="list-style-type: none"> Mathematical competence and basic competences in science and technology; Digital competence; Learning to learn; Sense of initiative and entrepreneurship; Cultural awareness and expression 	Can be adapted for use in all grades



Figure 75. Workspace “Training teachers in competence based education” on Octopus Tool and the available CBL Pathways

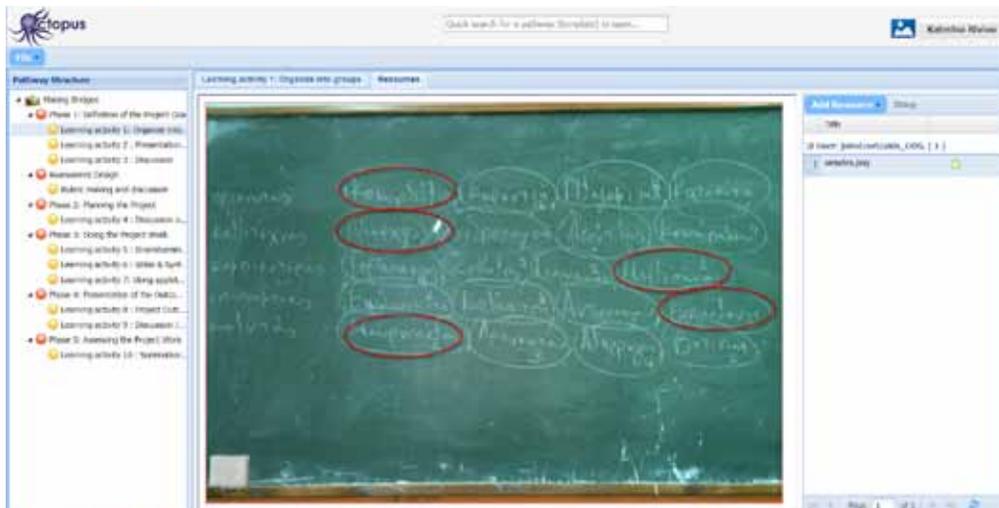
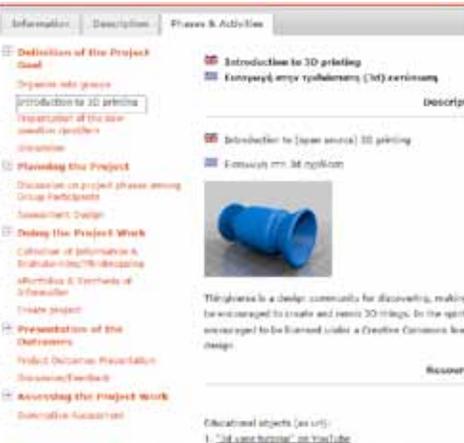


Figure 76 Competence based learning scenario “Making Bridges” uploaded on Octopus Authoring/Learning Design Tool



- Ίππαρα Γ' Δημοτικού, Βιβλίο μαθητή, Ενότητα 9: Ο Μινωικός Πολιτισμός, στ. 3 Η τέχνη των Μινωτών (σελ. 127)
- Ίππαρα Γ' Δημοτικού, Τετράδιο Εργασίας (σελ. 56)
- Μαθηματικά 2^{ης} Δημοτικού, Ομαστική Ενότητα 3, Λόγος-Αναλογία

Η σχεδίαση θα γίνει με χρήση λογισμικού 3d σχεδίασης (π.χ. Tinkercad, 123D Make της Autodesk, Onshape, Sketchup) & με τη χρήση 3d printer.

Η εργασία μπορεί να συνδυαστεί με εκπαιδευτικές επικοινωνίες:

- στα πλαίσια της Κινησού,
- στα Αγγλωβιγγικά Μινωικά Μουσεία,
- στα Μουσεία Αγίας



Figure 77 Example of cross-curricular CBL scenario “3d printing of a minoic vase” - Connection with the National Curriculum, eResources used (also from the National Aggregator/Harvester “Photodentro”), [http://portal.opendiscovery.space.eu/el/scenarios-view/FWq\\$2F\\$2F\\$g3aA1Ep5NAYqEPUfw\\$3D\\$3D\\$](http://portal.opendiscovery.space.eu/el/scenarios-view/FWq$2F$2F$g3aA1Ep5NAYqEPUfw$3D$3D$)

Appendix B: Evaluation tools deployed

Event satisfaction form

“Event title”
(Place, dd/mm/yyyy, hh:mm)

Introduction

Thank you for taking part in this survey that will express your opinion about the event you have participated in.

The questionnaire has a total number of 10 questions.

Please return the form upon your departure.

Short overview

TRANSit (TRANSversal key competences for Lifelong Learning: Training teachers in competence-based education) is a European project which aims to enhancing teachers' awareness, knowledge and skills on competence-based education creating learning contexts where teachers of Comenius programmes can practice competence-based didactics and assessment by using digital tools.

Previous experience

Profession _____

Years of experience _____

Considerations on the event

Please rate the following questions, using the scale from 1 [very bad] to 5 [excellent]:

Question	Answer
1. What is your opinion about the duration of the event?	1 2 3 4 5
2. How do you rate the overall organization?	1 2 3 4 5
3. How do you rate the design and program of the event?	1 2 3 4 5
4. How do you rate the venue?	1 2 3 4 5
5. How do you rate the quality of the distributed materials?	1 2 3 4 5
6. How do you rate the practical knowledge you gained from this workshop?	1 2 3 4 5
7. Please rate the trainer feedback on your questions.	1 2 3 4 5
8. Was the trainer effective in teaching?	1 2 3 4 5
9. How did the event meet your expectations?	1 2 3 4 5
10. What is your overall assessment of the event?	1 2 3 4 5

Please provide any comments on the points above and/or suggestions for the event:

TRANSit questionnaire

COLLES Preferred and Actual survey																																																																														
<p>The purpose of this questionnaire is to help us understand how well the online delivery of this module enabled you to learn.</p> <p>Each one of the 24 statements below asks about (a) your <i>preferred</i> (or ideal) experience, and (b) your <i>actual</i> experience in this unit. Please choose the answer that best represents your opinion, i.e. Almost Never (1), Seldom (2), Sometimes (3), Often (4), Almost Always (5).</p> <p>There are no 'right' or 'wrong' answers; we are interested only in your opinion. Please be assured that your responses will be treated with a high degree of confidentiality, and will not affect your assessment.</p> <p>Your carefully considered responses will help us improve the way this unit is presented online in the future.</p> <p>Thank you very much for your kind assistance.</p>																																																																														
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Interaction																																																																														

In this module...			1	2	3	4	5
1	I prefer	I explain my ideas to other students					
	I found that						
2	I prefer	I ask other students to explain their ideas					
	I found that						
3	I prefer	other students ask me to explain my ideas					
	I found that						
4	I prefer	other students respond to my ideas					
	I found that						

Making sense

In this module...			1	2	3	4	5
1	I prefer	I make good sense of other students' messages					
	I found that						
2	I prefer	other students make good sense of my messages.					
	I found that						
3	I prefer	I make good sense of the tutor's messages					
	I found that						
4	I prefer	the tutor makes good sense of my messages					
	I found that						

Tutor support

In this module...			1	2	3	4	5
1	I prefer	the tutor stimulates my thinking.					
	I found that						
2	I prefer	the tutor encourages me to participate.					
	I found that						
3	I prefer	the tutor models good discourse.					
	I found that						
4	I prefer	the tutor models critical self-reflection					
	I found that						

Peer support

In this module...			1	2	3	4	5
1	I prefer	other students encourage my participation.					
	I found that						
2	I prefer	other students praise my contribution					
	I found that						
3	I prefer	other students value my contribution					
	I found that						
4	I prefer	other students empathise with my struggle to learn.					
	I found that						

ePortfolio assessment

Teachers' overall perception/personal value about ePortfolio

Item	1	2	3	4	5
1 I would recommend to my fellow teachers that they use the ePortfolio to demonstrate fulfillment of regional or national Teacher Quality Standards					
2 I have spoken to colleagues about my use of the ePortfolio					

Teachers' Perception about using ePortfolio enhancing the evaluation process

Item	1	2	3	4	5
1 My administrators have been supportive and helpful in my use of the ePortfolio					
2 I have communicated with the administrator(s) evaluating my teaching performance about the materials collected in my ePortfolio					
3 I have found it easy to communicate with administrators and mentors about the materials I have collected in my ePortfolio					
4 I have made decisions about and sometimes made changes in the materials I have collected in my ePortfolio based on conversations with administrators and mentors.					
5 I have placed materials in my ePortfolio under new or different standards based on conversations with administrators or mentors.					

Badges

Item	1	2	3	4	5
1 I understand why I earned all my badges					
2 I wanted to earn more badges					
3 I think that badges have contributed to feeling more engaged with my learning					

Do you have any other comments?

How long has it taken you to fill in this questionnaire?

- Less than 5 minutes
- 5-10 minutes
- More than 10 minutes

User ID: _____

Thank you for your collaboration!

Questions used for interviews and focus group discussions

Awareness of transversal key competences

1. What kind of new knowledge regarding how transversal key competences affect your current practices have you developed during the training?

Professional skills and knowledge on didactics of transversal key competences

2. What kind of new knowledge and skills on didactics of transversal key competences have you developed during the training?
3. What are your feelings after the training about using the key competences framework for planning learning activities?
4. Has the training enhanced your skills on planning, structuring and sequencing a cross-curricular programme?

Professional skills and knowledge in e-assessment of transversal key competences

5. What kind of new knowledge and skills on strategies for assessing transversal key competences have you developed during the training?
6. What are your feelings after the training about assessing transversal key competence achievement of your students through ICT tools?

Project impact

7. Will you use the tools/methods/learning from this training in your future courses or other activities?
8. Do you have any other comments or remarks?

Interview guide for participants

Interview
Date and time
Place, country
Interviewer Name
Interviewed ID: Age Profession Gender
<p>What kind of new knowledge and skills have you developed in this training on...</p> <ul style="list-style-type: none"> • Using the key competences framework for designing learning activities • Preparing educational activities aimed at students' acquisition of competences • Running educational activities aimed at students' acquisition of competences • Reviewing educational activities aimed at students' acquisition of competences <p><i>Note to interviewer:</i> Choose the questions depending on the module that the teacher has participated in.</p> <p>Has the training met your expectations, in terms of...</p> <ul style="list-style-type: none"> • Content: learning activities • Structure • Materials • ePortfolio and badges • Social networking tools <p>If not, do you have any suggestions for improvement?</p> <p>Other comments or remarks</p>

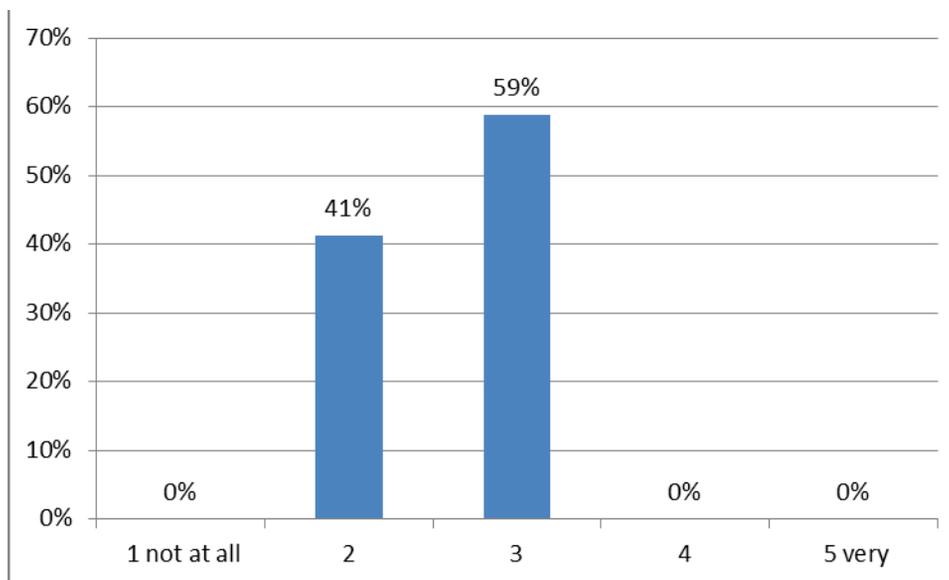
Online validation questionnaire (use of digital resources)

This questionnaire has been designed specifically for the implementation activities in Greece in order to measure the impact of participation in TRANSit training activities participants' attitude about the use of eLearning resources, potential future exploitation of the community sharing resources functionalities, comments about the specific training activity and preference about future ones). It's available online at <https://docs.google.com/forms/d/12muL10QnH95fXdXSqED5DN2N1FaRzBk8KPay-hBJNUE/viewform>

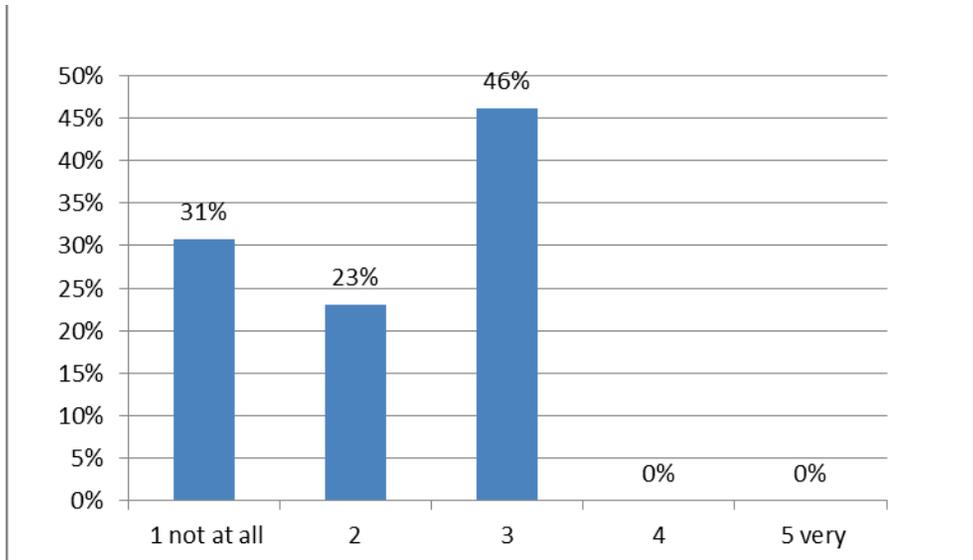
Future actions					
To what degree do you think you would need more support on the themes of the seminar?	Not at all				Very much
To what degree would you be willing to participate in a seminar with much more hours (12-18) that would be implemented in the near future?	Not at all				Very much
How many hours do you think would be necessary for such a course?	6 hours	10	15	21	24 hours
Would you prefer such a course to be:	Face to face	distance only	blended (25% face to face and 75% distance)		
In case it was a MOOC like course how would you like to be evaluated	no evaluation	evaluation (with project assignment)	evaluation through face to face examination		
Use of digital content/libraries					
How often do you use digital content?	never				very often
In which degree do you design your own learning scenarios?	never				very often
In what degree do you intend to visit the ODS portal & the TRANSIt community (http://portal.opendiscovery.space.eu/el/educational-scenarios/184334)... in order to access leaning resources?	never				very often
...in order to adapt one of the scenarios (e.g. for use in a different grade than the one that was initially designed for)?	never				very often
....in order to upload your own resources/scenario?	never				very often
in order to create your own digital community?	never				very often

in order to search for resources based on your needs?	never				very often
...in order to contact with colleagues?	never				very often
...in order to collaborate with colleagues so as to jointly design resources?	never				very often
...in order to exchange attitudes/views regarding the outcomes of CBL activities on your students?	never				very often
Would you recommend the use of digital libraries (like ODS) to others, e.g. teachers, administrators?	Yes	No			

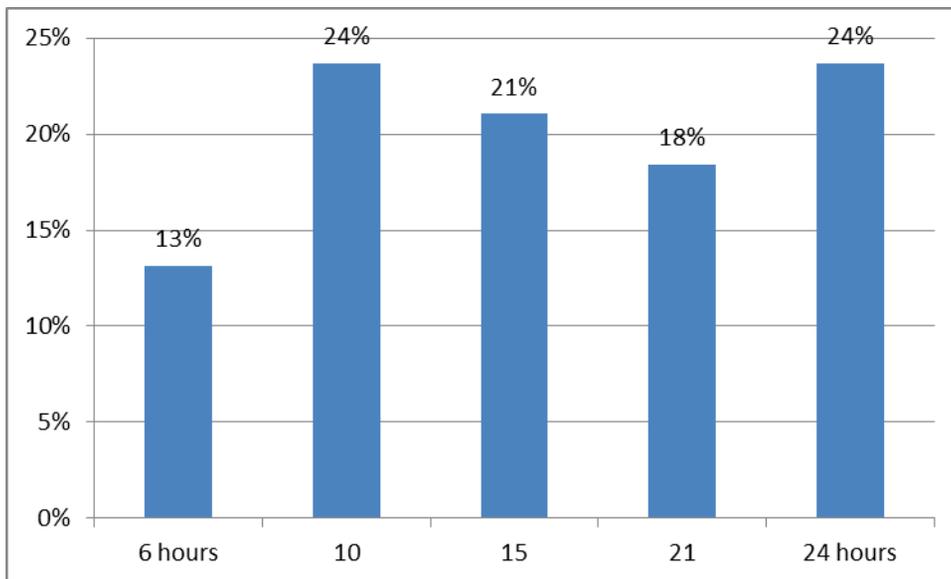
Results from the online validation questionnaire



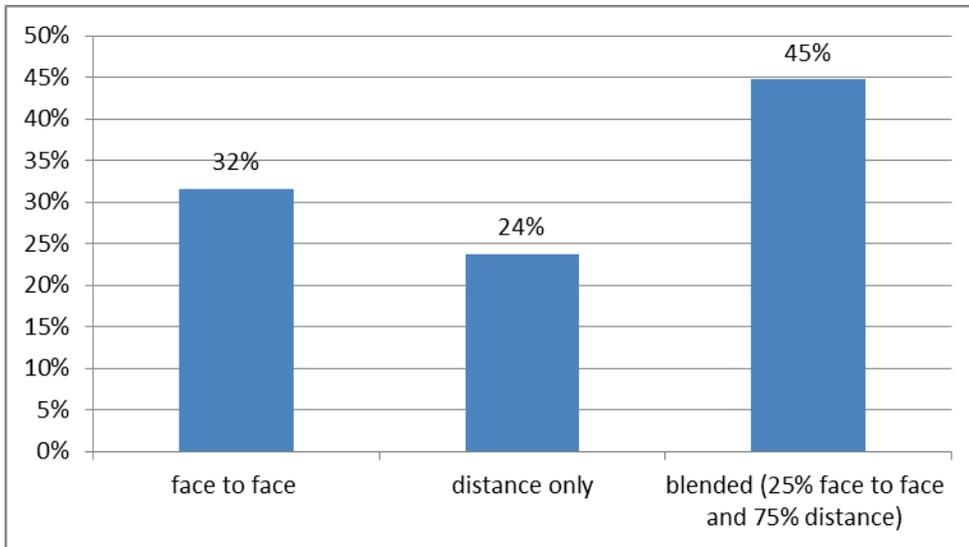
Future actions: To what degree do you think you would need more support on the themes of the seminar?



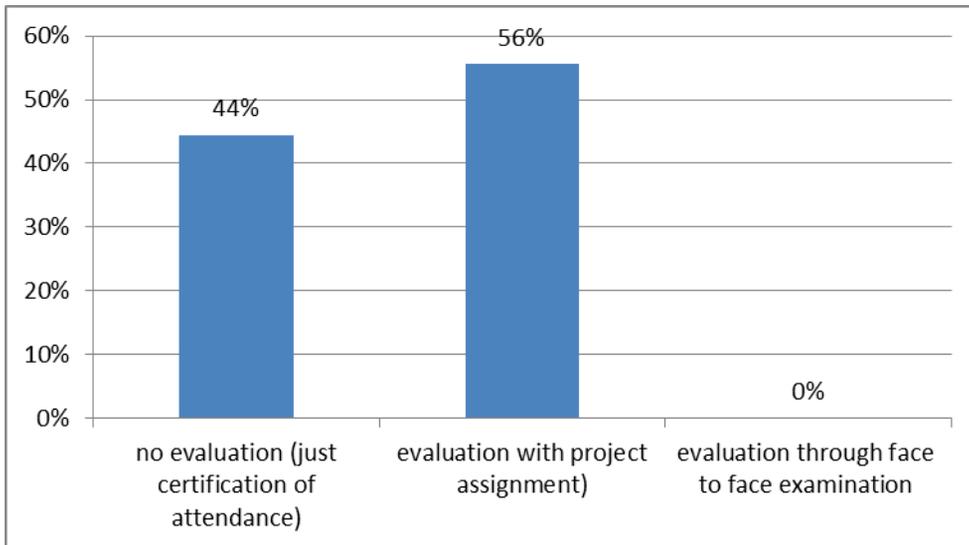
To what degree would you be willing to participate in a seminar with much more hours (12-18) that would be implemented in the near future?



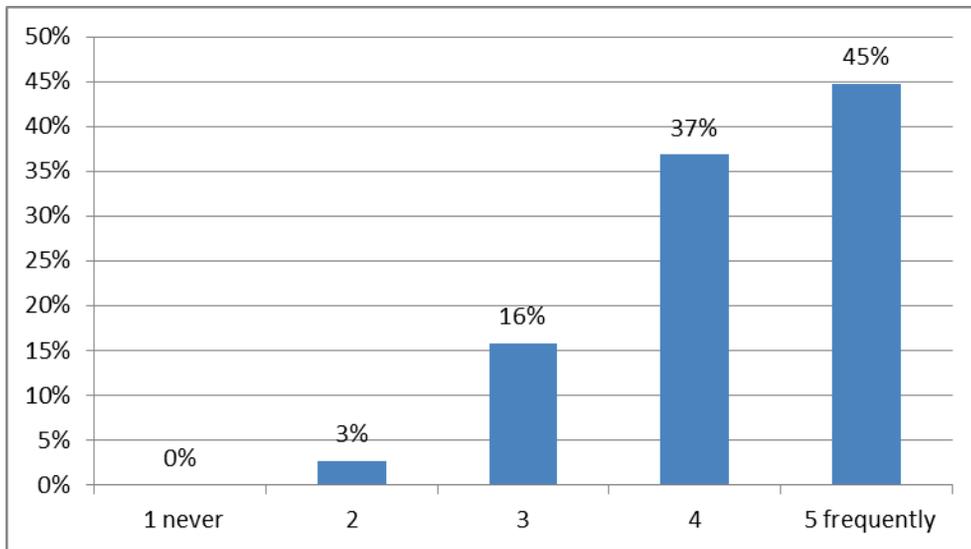
How many hours do you think would be necessary for such a seminar/course?



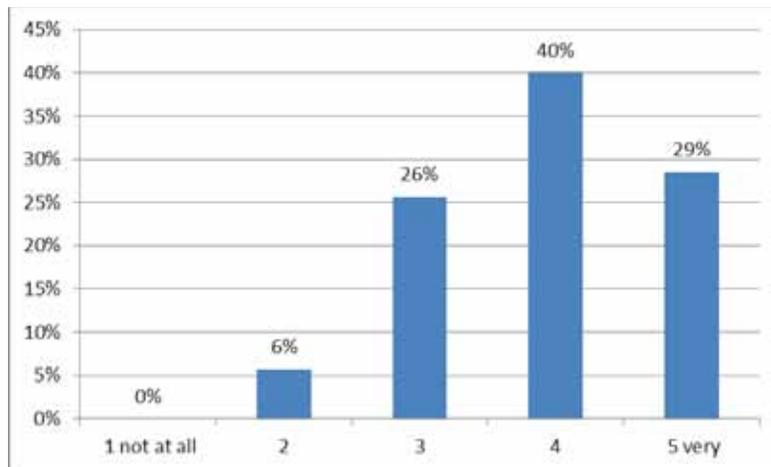
Would you prefer such a course to be...



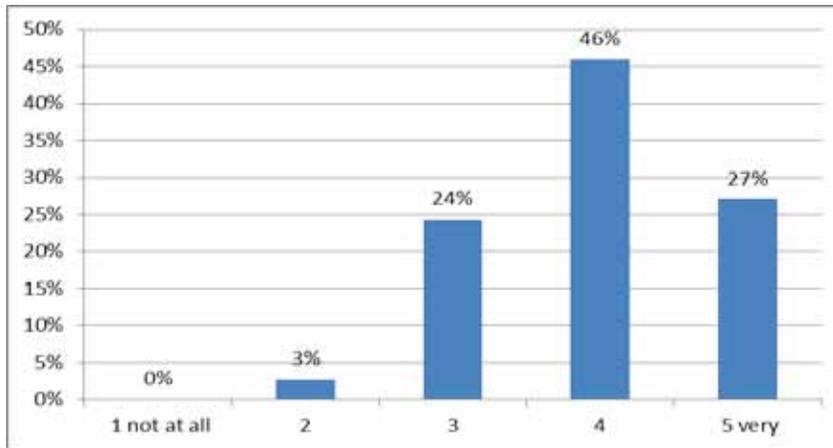
In case it was an online course (MOOC like) would you like to be evaluated...



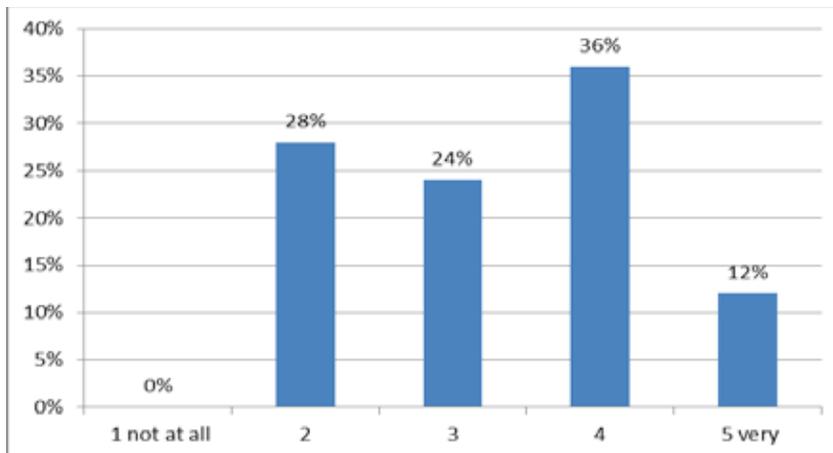
How often do you use digital content?



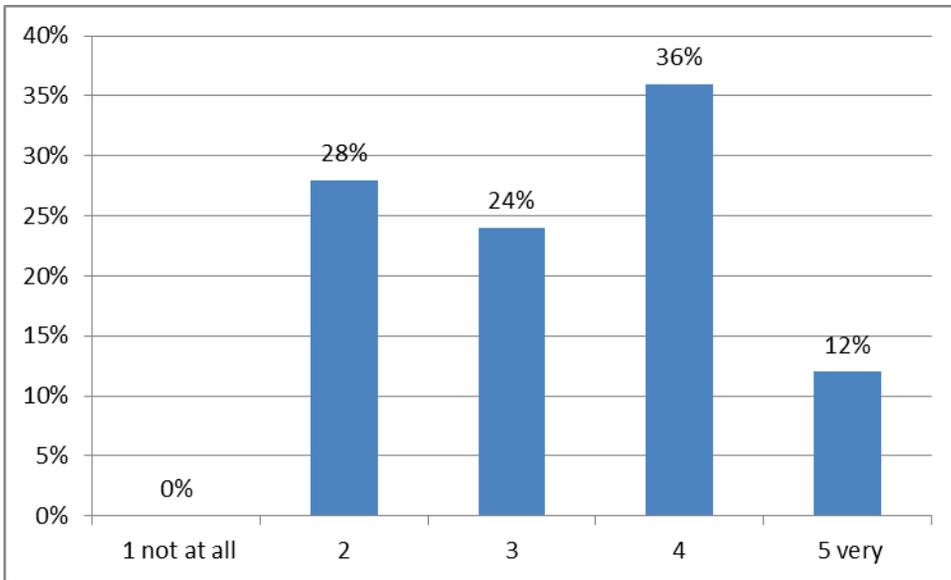
In which degree do you design your own learning scenarios?



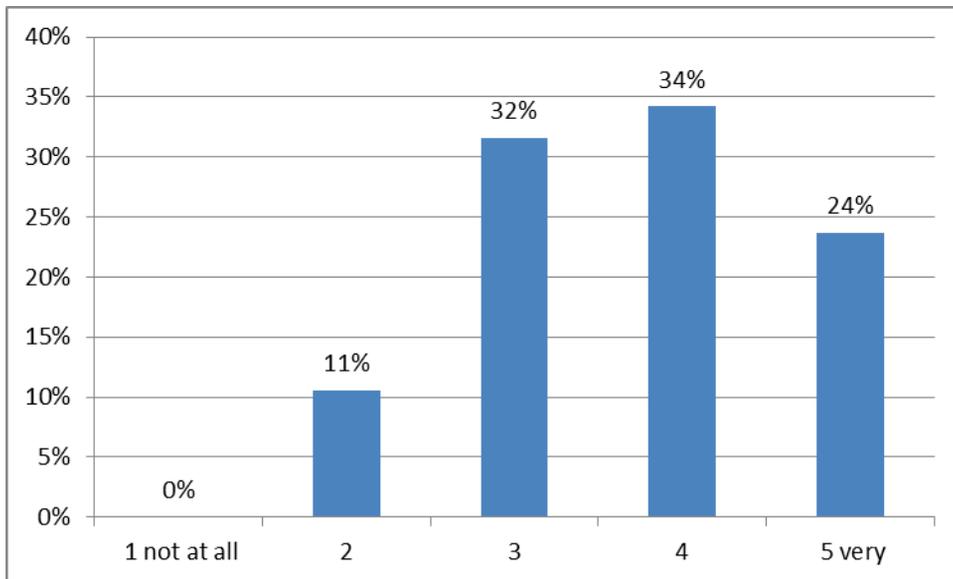
In what degree do you intend to visit the ODS portal & the TRANSit community (<http://portal.opendiscoveryspace.eu/el/educational-scenarios/184334>)... in order to access leaning resources?



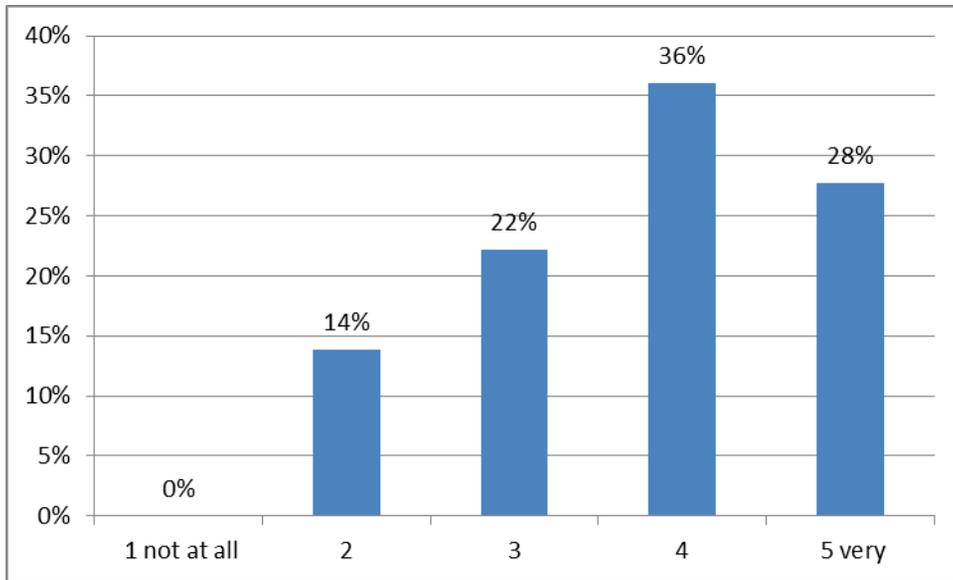
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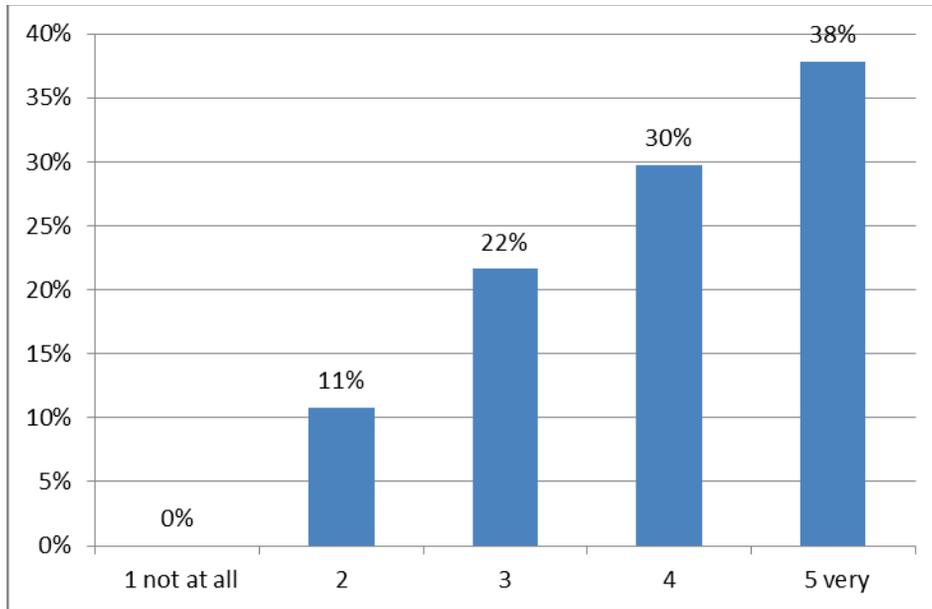
In what degree do you intend to visit the ODS portal & the TRANSit community...in order to upload your own resources/scenario?



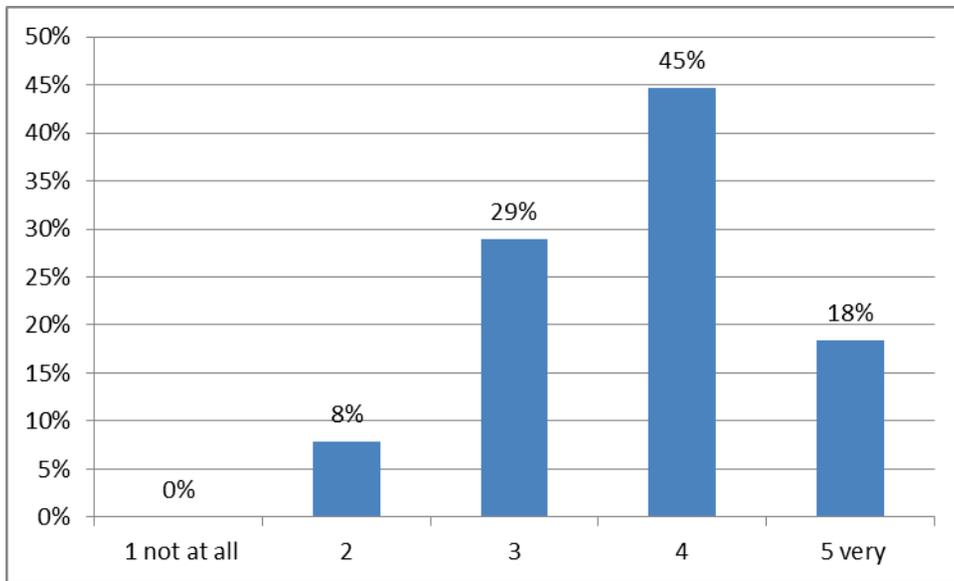
In what degree do you intend to visit the ODS portal & the TRANSit community...in order to create your own digital community?



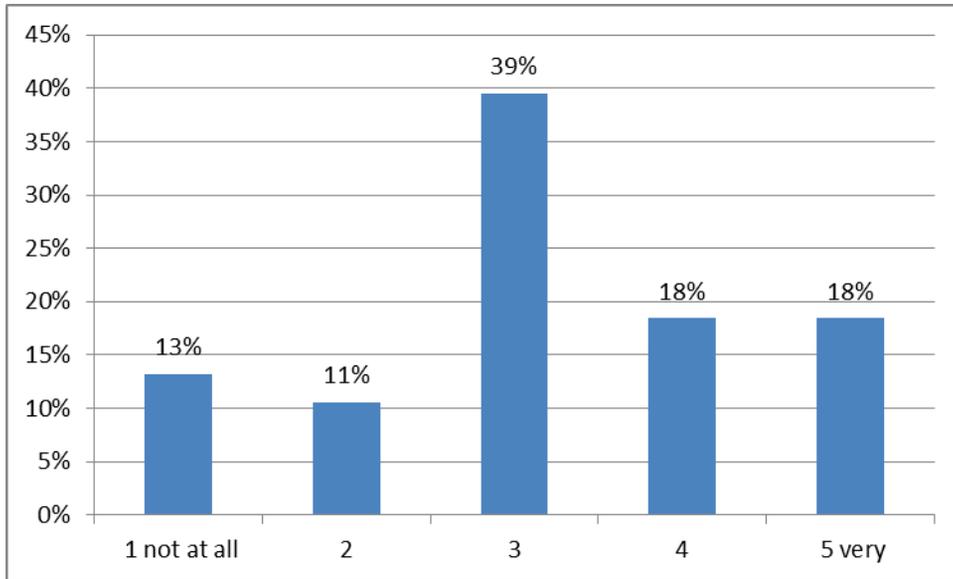
In what degree do you intend to visit the ODS portal & the TRANSit community...in order to search for resources based on your needs?



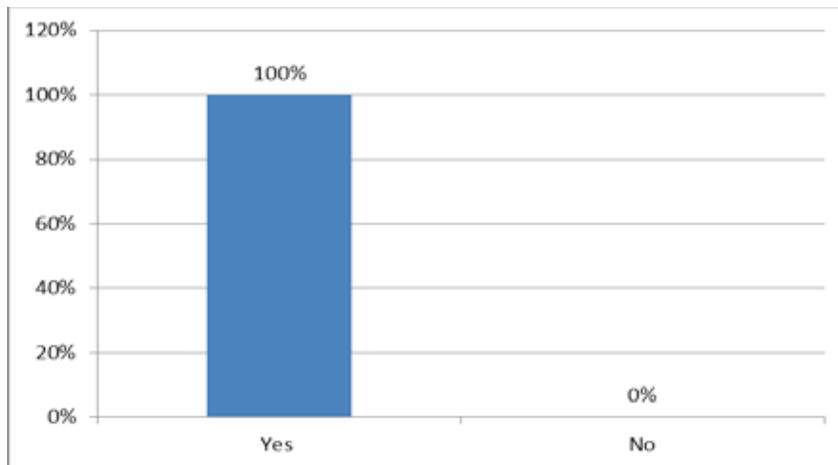
In what degree do you intend to visit the ODS portal & the TRANSit community... in order to contact with colleagues?



In what degree do you intend to visit the ODS portal & the TRANSit community...in order to collaborate with colleagues so as to jointly design resources?



In what degree do you intend to visit the ODS portal & the TRANSit community...in order to exchange attitudes/ views regarding the outcomes of CBL activities on your students?



Would you recommend the use of digital libraries (like ODS) to colleagues?



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