Training teachers in competence based education – the TRANSIt case

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Purpose and Content

- Project description (objectives, target groups)
- Competence definition; Competence learning
- **Teaching approaches** fostering competences
- Processes and **strategies** of designing a competence based learning (CBL) scenario
- Hands-on **examples of scenarios**
- Outcomes/upcoming events
The project website
www.transit-project.eu
Motivation

• Key competence acquisition (KCA) is one of the long term objectives of the updated strategic framework for European cooperation (Official Journal of the European Union, 2009).

• The concept of key competence originated with the adoption of the Lisbon Strategy in 2000 and it resulted in the European Reference Framework (European Commission, 2006).

• Key competences in the EU framework are those that ‘all individuals need for personal fulfillment and development, active citizenship, social inclusion and employment’.
Motivation

- Most of the EU Member States are beginning to implement policies that move their school systems from being predominantly subject-oriented towards curricula which include competences.

- Yet, these developments do not necessarily result in significant, widespread changes in practice: the difficulty is translating these policies into practice.
### Professional development recently undertaken by teachers, by type and intensity

*Participation rates and average number of days for each type of professional development reported to be undertaken by lower secondary education teachers in the 12 months prior to the survey*

<table>
<thead>
<tr>
<th>Professional Development Activity</th>
<th>Percentage of Teachers Participated</th>
<th>Average Number of Days of Participation among Those Who Participated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courses/workshops</td>
<td>71%</td>
<td>8</td>
</tr>
<tr>
<td>Education conferences or seminars where teachers and/or researchers present their research results and discuss educational issues</td>
<td>44%</td>
<td>4</td>
</tr>
<tr>
<td>Observation visits to other schools</td>
<td>19%</td>
<td>3</td>
</tr>
<tr>
<td>In-service training courses in business premises, public organisations or non-governmental organisations</td>
<td>14%</td>
<td>7</td>
</tr>
<tr>
<td>Observation visits to business premises, public organisations or non-governmental organisations</td>
<td>13%</td>
<td>3</td>
</tr>
<tr>
<td>Participation in a network of teachers formed specifically for the professional development of teachers</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>Individual or collaborative research on a topic of interest to the teacher</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td>Mentoring and/or peer observation and coaching, as part of a formal school arrangement</td>
<td>29%</td>
<td></td>
</tr>
<tr>
<td>Qualification programme (e.g., a degree programme)</td>
<td>18%</td>
<td></td>
</tr>
</tbody>
</table>

Items are ranked in descending order for each block, based on the percentage of teachers who report having participated in professional development activities in the 12 months prior to the survey.


StatLink: [http://dx.doi.org/10.1787/888933041554](http://dx.doi.org/10.1787/888933041554)
Main Objectives

• to help teachers acquire and reinforce such skills and knowledge so that they can design **cross-curricular** activities that support the key competencies acquisition (**KCA**) of their students.

• to support teachers in the process of **assessing competences** with the use of authentic means (rubrics, eportfolios).

• to **raise the awareness** of the **administrative** staff of schools in order to support teachers in bridging the gap between policy and practice (e.g. curricular reforms in order to support cross-curricular competence driven activities).

• It is also aimed at **teachers’ collaboration** with colleagues, in order ultimately to become innovation leaders in their institutions.
Key competences

1. Communication in 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; and
8. Cultural awareness and expression

*Key competences for Lifelong Learning, European Reference Framework, 2006*
Target groups

- Educational Initiatives
- Educational experts
- European teacher networks
- in-service teachers
- pre-service teachers
- Policy makers
- Teacher trainers

- Teacher training initiatives
- Teacher/School networks
- Pedagogical Universities
- Ministries of Education
- Curriculum developers
- Pedagogical Universities
- VET for teachers
TRANSIt consortium

Partners of TRANSIT Project

click on every country for more details on each partner
Project relationships and synergies

ODS-Metaportal
www.opendiscoveryspace.eu
Inquiry Based Education

Science Education

ATLAS@Cern-Portal Physics
Dtc-Portal Astronomy, Physics
COSMOS-Portal Astronomy

Organic-EduNet Portal Biology, Ecology
CerOrganic-Moodle Biology, Organic Agriculture
Natural Europe natural-europe.eu

National initiatives
Collection European Databases
History
Language learning
National Portals

Sustainability
Digital competences
Informal learning

at-Sci-Net Project
Inquiry Based Science Education in Primary Schools
Pathway-Project
Inquiry Based Science Education

OSR-Potential
Schools and Museums, Science Centres and Research Institutions

KLIC
Sensors, Physics

METASCHOOL
digital competences
TRANSIt/ODS approach

- **TRANSIt Approach**: teachers training on the didactics and e-assessment of key competences
- **Open Discovery Space** tries to engage teachers, parents, content designers, policy makers in numerous meaningful online communities who create, share, discuss and rate resources, ideas and experiences.
Main activities
Developing the training framework

• The TRANSIt training framework is based on:
  – Level 1. **Raising awareness** of administrative school staff on topics related to competency-based education
  – Level 2. Identification and sharing of **informed practices**
  – Level 3. **Design** of cross-curricular competence driven activities and e-portfolio assessment of key competences

• The development of the proposed training framework rests on a **user-centred approach** and **participatory design** through the systematic analysis of the target groups’ needs.
Framework
Process

Registration
Skill Check
Plan Activities
DO
Collect Evidence
Review ePortfolio
Receive an Open Badge
Learning Resources
Competency Framework
<table>
<thead>
<tr>
<th>Facilitate Student Learning</th>
<th>Assess and Report Student Learning Outcomes</th>
<th>Engage in Continuing Professional Development</th>
<th>Contribute to Curriculum Policy, Innovation and Change</th>
<th>Establish Partnerships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engage students in purposeful and appropriate learning experiences</td>
<td>Monitor, assess, record and report student learning outcomes</td>
<td>Reflect critically on professional experiences in order to enhance professional effectiveness</td>
<td>Participate in curriculum policy and program teamwork</td>
<td>Establish partnerships with students, colleagues, parents and other caregivers</td>
</tr>
<tr>
<td>Cater for diverse student learning styles and needs through consistent application of a wide range of teaching strategies</td>
<td>Apply comprehensive systems of assessment and reporting in relation to student attainment of learning outcomes</td>
<td>Contribute to the development of a learning community</td>
<td>Provide support for curriculum policy or other program teams</td>
<td>Support student learning through partnerships and teamwork with members of the school community</td>
</tr>
<tr>
<td>Use exemplary teaching strategy and techniques that meet the needs of individual students, groups and/or classes of students in a highly responsive and inclusive manner</td>
<td>Consistently use exemplary assessment and reporting strategy that are highly responsive and inclusive</td>
<td>Engage in a variety of learning activity that promote critical self reflection and the development of a learning community</td>
<td>Provide leadership in the school by assuming a key role in school development processes including curriculum planning and policy formulation</td>
<td>Facilitate teamwork within the school community</td>
</tr>
</tbody>
</table>
Competency and Training Framework

• Competency standards focus on application of knowledge and skills underpinned by professional values. In TRANSIt framework there is a qualitative scale for every competence.

• Framework links stages of Competency:
  – Stage 1 (e.g. Classroom)
  – Stage 2 (e.g. Teacher collaboration)
  – Stage 3 (e.g. Institution/national initiative)
TRANSIt Learning Outcomes/Modules

Design
• Derive Learning Objectives from a Key Competency Framework
• Design a Lesson Plan/Learning Scenario/Programme for KCA
• Derive Assessment Plan from Learning Objectives
• Plan Monitoring and Reporting

Prepare
• Prepare Learning Environment for KCA
• Identify / Select / Adapt / Develop Learning Material and Technologies enhancing Learning and Assessment

Run
• Run a Lesson Plan/Scenario/Programme for KCA
• Use Digital Technologies to Support Learning and Assessment
• Monitor and Assess Learning to Inform Further Learning

Review
• Review a Lesson Plan/Scenario/Programme for KCA
Assessment

• e-Portfolio construction
• Self-reflection
• Surveys
• Quizzes
• Feedback from TRANSIt Tutor
• Peer reviews
Involvement of a wide range of stakeholders

- The TRANSIt consortium aims to involve teachers from 2 kinds of schools:
  - **innovative** schools in Europe (ENIS (Austria), Digital Schools (Ireland), eTwinning Schools, as well as
  - small **rural** schools, members of the European Network of Rural Schools (Rural Wings)

- The involvement of such networks of schools will allow for research and evaluation of different attitudes and implementations of competences in education providing ways for **intercultural** dialogue.
Teaching Approaches

• Methodologies used to implement competence oriented education:
  – Project based learning
  – Guided discovery
  – Action learning
  – Problem based learning
  – Co-operative learning

What is project-based learning?

Project Based Learning: Explained.

http://www.youtube.com/watch?v=LMCZvGesRz
Project-based learning

• An educational scenario achieved with a project-based learning approach (PBL):
  – involves students in group activities associated with issues from the real world
  – students:
    • Construct the **knowledge**,  
    • Associate knowledge with **authentic activities**,  
    • Foster **critical thinking**,  
    • They **collaborate**,  
    • Foster the individual **talents** and **abilities** of team members
Designing a competence based learning (CBL) scenario: definition & rationale

- A learning scenario describes *educational activities* in real life situations.
- A scenario is a story about *people* and their activities.
- Scenarios are used mainly as case studies of *effective practice*.
- Scenarios refer to *learning goals* within a topic and they are characterized by learning activities and use of *resources*.
Learning Activity

• A learning activity is an interaction between a learner or learners with the environment, resources, tools and instruments that is carried out in response to a task with an intended learning outcome.

• It suggests the adoption of a pedagogical approach for designing the learning activity.
Design practices

- **Design**: planning, designing or conceiving an outline for a learning experience. Our designs are supported by ODS scenarios templates.

- **Instantiation**: setting up a specific context in which to deliver the design.

- **Realisation**: The process of making the design available to real learners.

- **Review**: The process of refining the design once it has been delivered.
Scenario Design & Implementation at Different Granularity Levels

Scenario -> Phases -> Learning activities -> Resources

Scenario

Phases

Learning activities

Resources
4 steps of designing a learning scenario

• **1st Step:** Study existing scenarios and select activities/resources to use or re-use the whole scenario or create a scenario ab initio

• **2nd Step:** Describe and adjust the learning scenario using the available “templates”

• **3rd Step:** Organise, search and enrich the learning scenario with content

• **4th Step:** Share your scenario and adapt it for use in other contexts.
The TRANSIt/Open Discovery Space Approach to Designing Learning Scenarios

• Provide exemplar templates or descriptions which can be shared, re-used and adapted to different contexts
Project-based learning template

Phase 1: Definition of the Project Goal
- Organize into Groups
- Presentation of the New Question/Problem
  - Discussion

Phase 2: Planning the Project
- Discussion among Group Participants
- Collection of Information
  - Synthesis of Information
  - Create Project

Phase 3: Doing the Project Work
- Project Outcomes Presentation
  - Discussion/Feedback

Phase 4: Presentation of the Outcomes
- Summative Assessment
2. team planning

4. data processing, conclusions

5. ways of presenting new knowledge

Formative Evaluation

Results

1. Public Presentation
2. Team eportfolio

Summative Evaluation
Supporting the creation of user-generated scenarios
Examples of Scenarios: “3d printing of a minoic vase”

**Definition of the Project Goal**
Organize into groups
Presentation of the new question/problem
Discussion

**Planning the Project**
Discussion on project phases among Group Participants
Assessment Design

**Doing the Project Work**
Collection of Information & Brainstorming/Mindmapping
ePortfolios & Synthesis of Information
Create project

**Presentation of the Outcomes**
Project Outcomes Presentation
Discussion/Feedback

**Assessing the Project Work**
Summative Assessment

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**Introduction to 3D printing**
**Εισαγωγή στην τριδιάστατη (3d) εκτύπωση**

**Introduction to (open source) 3D printing**
**Εισαγωγή στη 3d σχεδίαση**

Multilingual Scenarios

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*Thingiverse is a design community for discovering, making, and sharing 3D printable things. Everyone should be encouraged to create and remix 3D things. In the spirit of maintaining an open platform, all designs are encouraged to be licensed under a Creative Commons license, meaning that anyone can use or alter any design.*

**Resources**

Educational objects (as url):
1. “3d vase tutorial” on YouTube
Definition of the Project Goal
Organize into groups

Introduction to 3D printing
Presentation of the new question/problem

Discussion

Planning the Project
Discussion on project phases among Group Participants
Assessment Design

Doing the Project Work
Collection of Information & Brainstorming/Mindmapping
ePortfolios & Synthesis of Information
Create project

Presentation of the Outcomes
Project Outcomes Presentation
Discussion/Feedback

Assessing the Project Work
Summative Assessment

Introduction to 3D printing
Εισαγωγή στην τριδιάστατη (3d) εκτύπωση

3D VASE TUTORIAL

People should be encouraged to create and remix 3D things. In the spirit of maintaining an open platform, all designs are encouraged to be licensed under a Creative Commons license, meaning that anyone can use or alter any design.

Resources

Educational objects (as url):
1. "3d vase tutorial" on YouTube
Examples of Scenarios: “3d printing of a minoic vase”

- Ιστορία Γ' Δημοτικού, Βιβλίο μαθητή, Ενότητα 9: Ο Μινωικός Πολιτισμός, εν. 5 Η τέχνη των Μινωιτών (σελ. 127)
- Ιστορία Γ' Δημοτικού, Τετράδιο Εργασιών (σελ. 50)
- Μαθηματικά Στ' Δημοτικού, Θεματική Ενότητα 3, Λόγοι-Αναλωγίες

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

Η εργασία μπορεί να συνδυαστεί με εκπαιδευτικές επίσκεψεις:
- στο ανάκτορο της Κνωσού,
- στο Αρχαιολογικό Μουσείο Ηρακλείου,
- στο Μουσείο Αφίς

Linkage with the National Curriculum
Numerous Resources
Examples of Scenarios: “Making Bridges”
Examples of Scenarios: “Introduction to Braille”

- Collaborative Design
- Linkage with National Curricula
- Multilinguality
Events as community support mechanisms

- **Face to face training events**
  - 5-days training courses (summer, winter schools)
  - face to face training workshops that took place in Athens and Patras, Crete

- **Online training events**
  - Webinar entitled “Evaluation and ICT integration in project-based learning”
  - Webinar entitled “This year I will be implementing projects with my students – what do I need to know?”
  - Webinar entitled “Exploitation of Maraha eportfolio tool in projects”

- **Contest: CBL Scenario Design**
TRANSIt Main Outcomes
Needs analysis survey (Greece)

- June – July 2013, 648 responses were collected
- The questionnaire was aimed at identifying the profiles of the possible participants in TRANSIt training activities, the current implementation of competence-based didactics and assessment as well as participants training needs.
- The link for the survey was made available through the etwinning mailing list
TRANSIt multilingual Communities on ODS portal, portal.opendiscoveryspace.eu/

"A community for Teachers by Teachers"

We are a community of educators from around Europe sharing and exchanging ideas for competence based learning.

A few words about this space for sharing, commenting, informing:

**SEARCH COMMUNITY RESOURCES:** Here, we will be using the 'Educational Content' tool to share and exchange ideas, scenarios, etc. You will be able to gradually develop into fuller scenarios, formulating the 'Educational Scenarios'.

**GROUPS:** We are starting as a whole group, but it may turn out that some sub-groups will be created and we will be creating and visiting our sub-groups. In these Groups, you can create new discussions, post events and organize polls based on your specific interests.
TRANSIt training environment (Moodle integrated with Mahara eportfolio tool)
http://transit.cti.gr/moodle/
Progress of user registrations

- May 15
- Jun. 291
- Jul. 313
- Aug. 347
- (1/10) Sep. 555
Social data in Greek TRANSIt Community
"Conversing with the Poets" views
## Evaluation Results

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Mean value (webinar)</th>
<th>Mean value (pilot face to face workshops)</th>
<th>Summer School 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What is your opinion about the duration of the event?</td>
<td>4,29</td>
<td>4,54</td>
<td>4,42</td>
</tr>
<tr>
<td>2</td>
<td>How do you rate the overall organization?</td>
<td>4,43</td>
<td>4,45</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>How do you rate the design and program of the event?</td>
<td>4,42</td>
<td>4,36</td>
<td>3,83</td>
</tr>
<tr>
<td>4</td>
<td>How do you rate the venue?</td>
<td>-</td>
<td>4,66</td>
<td>3,92</td>
</tr>
<tr>
<td>5</td>
<td>How do you rate the quality of the distributed materials?</td>
<td>4,38</td>
<td>4,5</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>How do you rate the practical knowledge you gained from this workshop?</td>
<td>4,07</td>
<td>4,04</td>
<td>3,75</td>
</tr>
<tr>
<td>7</td>
<td>Please rate the trainer feedback on your questions.</td>
<td>4,35</td>
<td>4,52</td>
<td>4,25</td>
</tr>
<tr>
<td>8</td>
<td>Was the trainer effective in teaching?</td>
<td>4,48</td>
<td>4,36</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>How did the event meet your expectations?</td>
<td>4,29</td>
<td>4,54</td>
<td>3,92</td>
</tr>
<tr>
<td>10</td>
<td>What is your overall assessment of the event?</td>
<td>4,35</td>
<td>4,31</td>
<td>4,25</td>
</tr>
</tbody>
</table>
Data from interviews

- Awareness of Transversal Key Competences
- Professional skills and knowledge on didactics of Transversal Key Competences
- Professional skills and knowledge on e-assessment of Transversal Key Competences
Impact

- Satisfied about the **best practices/scenarios** demonstrated, as well as about the skills they developed.

- Highlight the value of learning **how to share resources** and practices and collaborate with other teachers.

- All participants (100%) would recommend the events to colleagues.

- 65% claim that they will implement it in their classrooms the upcoming school year.
Events: TRANSIt Summer School @ Crete, July 2013

• The community "Training teachers in competence based education: TRANSIt @ the Crete Summer School 2013" has been created – Please join!

• The description of the activities/workshops that took place are accessible here

• Participants worked in teams & individually and designed competence-based cross-curricular educational scenarios (using the Octopus authoring tool) (Learning Scenarios area of the community)

• Most of the scenarios apply to Social Sciences, Arts, Entrepreneurship & a combination of other subject fields such as Mathematics, ICT
Events: TRANSIt Winter School@Vilnius, February 2014

- In the context of the winter school, the community "Training teachers in competence based education: TRANSIt @ the Vilnius Winter School 2014" has been created.

- The description of the activities/workshops that took place, as well as the presentations delivered are available [here](#).

- 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 on the portal. During the winter school these initial ideas were developed further in Learning Scenarios, based on insights gained through a series of workshops.
Events: Summer School@ Attica, July 2014

- In the context of the summer school, the community “ODS Summer School 2014” has been created

- More information is available here
What is competence based learning for me?
Upcoming Summer School

12-17 July 2015@Attica, Greece
ods.ea.gr
TRANSIt Final Conference
www.transit-project.eu/conference
Join the TRANSIt community!

www.transit-project.eu

Upcoming Summer School 2015

ods.ea.gr/

Training teachers in competence based education: TRANSIt Community on ODS Portal


Moodle-Mahara Training Environment

transit.cti.gr/moodle/
Thank you!

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