Introducing School Innovation
Open Discovery Space Summer Academy 2016

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Ellinogermaniki Agogi Greece

The Open Discovery Space Project is funded by CIP-ICT-PSP-2011-5, Theme 2: Digital Content, Objective 2.4: eLearning Objective 2.4

Open Discovery Space

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

- Proposing innovative ways to encourage educational communities to use eLearning resources and exchange their experience.
- Proposing an innovative educational design and an educational metadata organisation scheme.
- Proposing innovative solutions that could remove linguistic and cultural barriers, improving the ease of use in existing repositories in order to deliver relevant Learning Resources to teachers, students and parents more effectively.
- ODS focused on the improvement of the means that novel educational content is produced, accessed, adapted, used and reused

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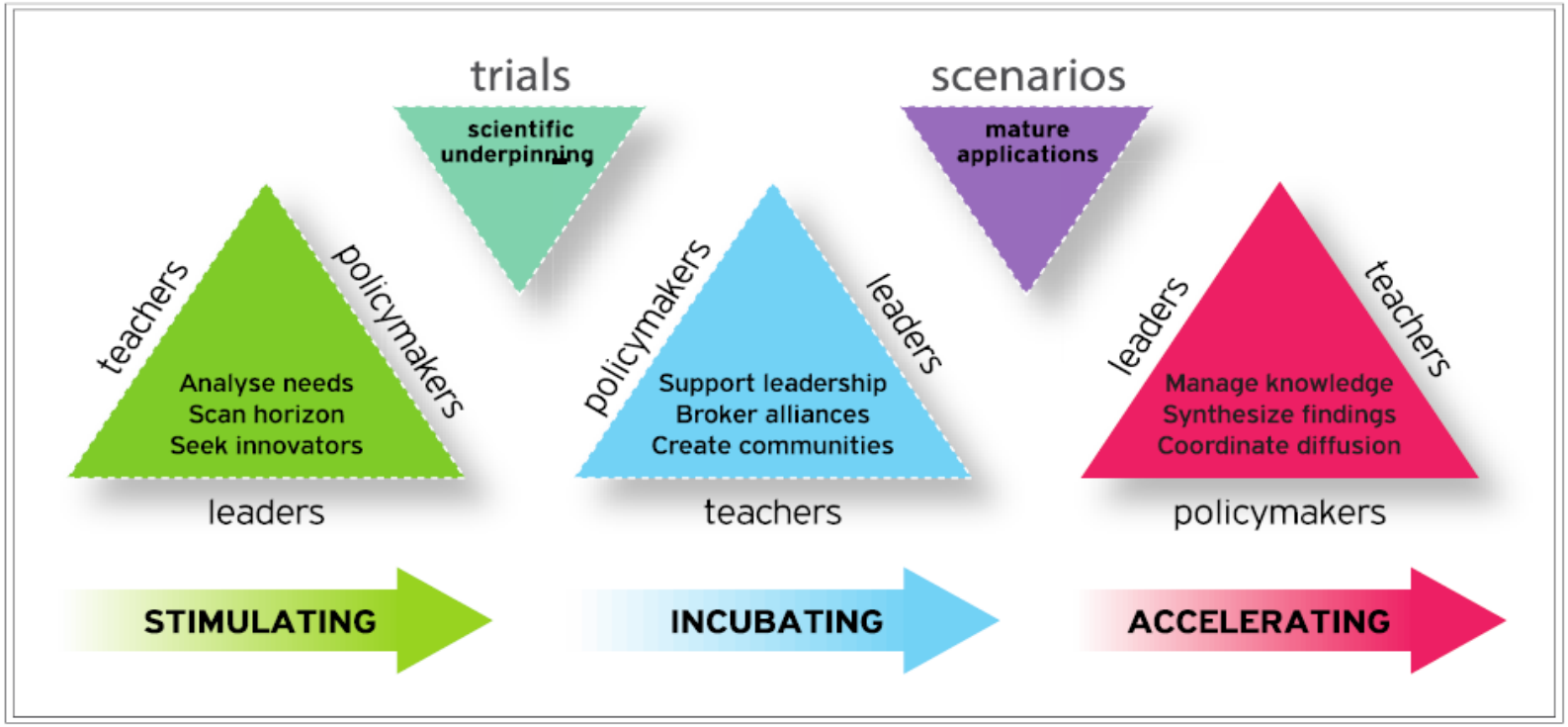
ODS Innovation Model

The ODS Innovation Model has 3 main phases: *stimulation, incubation and acceleration*. They offer a rough blueprint for a course of action that moves from a process of a school's needs analysis through specific tools to the implementation of targeted interventions



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The stimulation phase

At the stimulation phase, each school is provided with a set of tools that are designed to support an appreciation of a school's needs and the devising of an *action plan*. The tools include:

- An e-maturity self- assessment survey for the school, that measures the degree to which the ICT and open learning resources (OER) are used in the school, the culture of the school towards ICT and OER, and whether there is a common vision about the development of the school in terms of innovation and technology
- A self-assessment tool that measures a teacher's individual ICT competences. The tool has been developed based on the UNESCO ICT Competency Framework for Teachers.
- An action plan describing the vision and goals of the school, as well as the measures (activities, training, changes, etc.) that the school will undertake to accomplish them.

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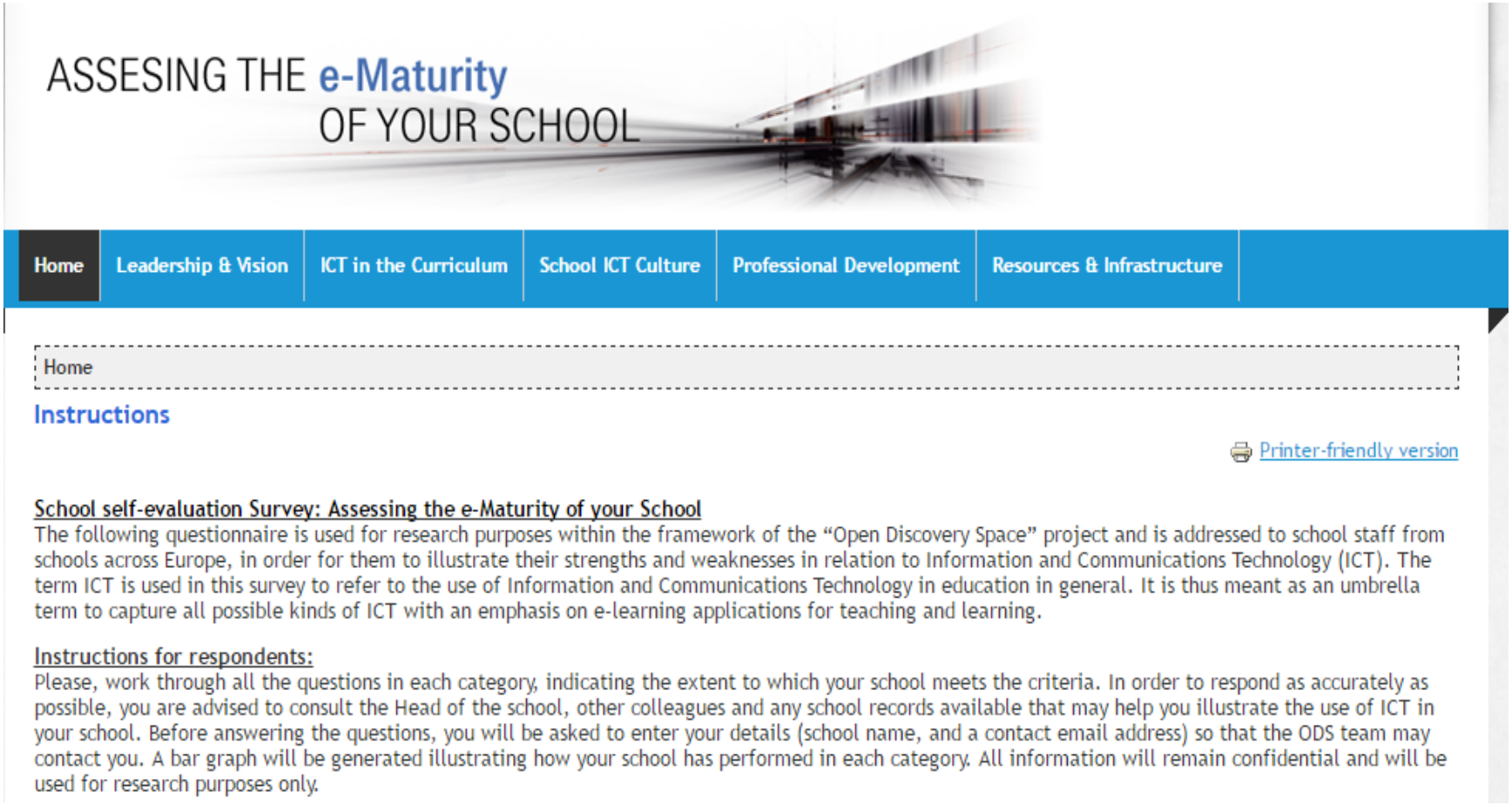
E-maturity



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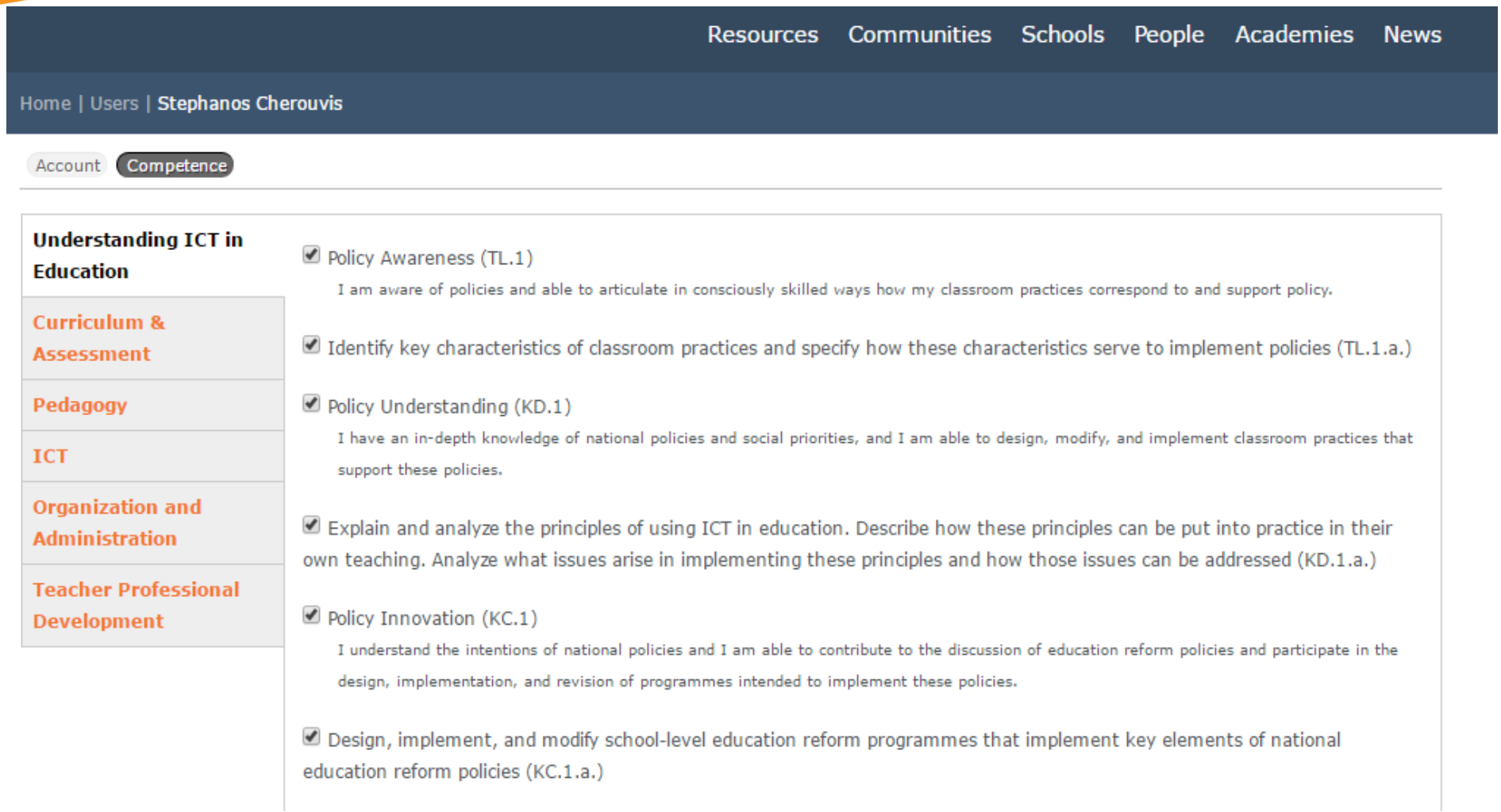
Competency self-assessment tool



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Understanding your school's Action Plan

Vision of the School

1. Where do you see you school in two years time?
2. How will ICT change your school?
3. Are there areas in the national curriculum that ICT or OER resources can have an immediate impact?
4. Are there areas that ICT would be more difficult to introduce?
5. Do you think that students are/are getting more advanced in the use of ICT tools?
6. Are you uncomfortable with that?
7. What can you do to tackle this issue?

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Understanding your school's Action Plan

Key areas of action

1. How will you introduce ICT in your school?
2. If your approach becomes a success story, are you willing to share your knowledge and experience with other teachers (show them the basics of proper OER searching & evaluation)?
3. What do you think you need to do in order to encourage the spread of ICT/OER in your school?
4. Do you see yourself as a *change agent*?

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E-maturity development objectives

1. What does ICT inclusion mean to you?
2. Where do you want to see your school in terms of ICT culture? Give us one or two examples.
3. How would the growing use of ICT affect your colleagues in terms of professional development? (Confidence – Hunger-Leadership.)

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Action plan

OPEN DISCOVERY SPACE

Pilot school data sheet

Name of school:

Secondary School Svetozar Miletić

SERBIA

School ID: RS29

School website: www.ekosmile.edu.rs
School e-mail: najboljaskola@open.telekom.rs
Address: Narodnih heroja 7, Novi Sad

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Action Plans

Vision of the school: The use of eLearning will accelerate the implementation of modern teaching methods. We would like to establish a learning philosophy that helps students become highly motivated and active in their search for all necessary knowledge and skills.

Key areas of action: We would like to start with training teachers in the use of our Moodle LMS. In addition, we will also introduce teachers in the use of the Open Discovery Space platform, highlighting the opportunities for creating strong digital communities and ties within the school, with outside stakeholders and with other schools at national and international level.

E-maturity development objectives: Creating electronic material and digital content for as many subjects as possible in our Moodle environment and in ODS. Supporting teachers in becoming confident in the use and sharing of such content. Focusing on ICT skills through professional development that are transferable (the skills) in the classroom.

Pilot Phases:

- ☐ January – April 2013
- ☑ September 2013- June 2014
- ☐ September 2014- April 2015

Level of education:

- ☐ Pre-Primary
- ☐ Primary
- ☑ Secondary
- ☐ College

Type of school:

- ☐ General
- ☐ Special Needs
- ☑ Technical/ Vocational
- ☐ Arts
- ☐ Other

Participating teachers: Dajana Vučaj, Mirjana Čelić, Suzana Vučurović, Jovan Sandić, Sanja Radočaj, Vladana Mihalački,Violeta Ćulibrk, Svetlana Ristanović, Ljiljana Ćevap, Julijana Kostić, Gordana Todorić,Milan Knežević , Zlatica Maletin, Slađana Aleksić, Spasenović Ljubomir, Branislav Andrić, Jasmina Jančić, Zorka Josimov, Jovanka Trajković, Mirjana Čelić, Biljana Delić, Sanja Jovanović, Dragana Rašić

"Change-agent" teacher: Sanja Jovanović

Participating students: 600 **Ages:** 15-19

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Action Plans

E-maturity level: e-Confident

Scores

Leadership & Vision: 67/100

ICT in the Curriculum: 54/100

ICT school culture: 47/100

Professional development: 60/100

Resources and Infrastructure: 100/100

Collaboration with other schools during the ODS pilot activities:

☐Yes/ ☐No

Name(s) of collaborating school(s):

Collaboration with school networks:

Curriculum areas targeted during the ODS pilot activities:

- ☐ Arithmetics
- ☐ Art and Design
- ☐ Astronomy
- ☐ Biology
- ☐ Business Studies and Economics
- ☐ Career Education
- ☐ Chemistry
- ☐ Citizenship
- ☐ Classical languages
- ☐ Communication and Language
- ☐ Drama
- ☐ English
- ☐ Environmental Education
- ☐ Geography and Earth Science
- ☐ German
- ☐ Government and politics
- ☐ Health and social care
- ☐ History
- ☐ ICT
- ☐ Literature & Language
- ☐ French
- ☐ Mathematics
- ☐ Media studies
- ☐ Music
- ☐ Philosophy
- ☐ Physical Education
- ☐ Physics
- ☐ Religious Education
- ☐ Science
- ☐ Sociology
- ☐ Special Education Needs Technology
- ☐ Other, please specify:

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ICT resources and infrastructures: **Equipment available (tablets, handheld devices, whiteboards etc.):** Computers **Repositories and tools used:** Productivity tools (word processor, presentation software etc.), Information searching tools, Basic communication tools (Email, instant messaging, video conferencing), Off the shelf software (Tutorials, drill and practice, computer applications, games), Web 2.0 (Wikis, blogs, podcasts), Multimedia tools (Graphics software), Learning management tools (E-portfolio, Lesson planning tools, CAA tools)
Estimated time for implementing the pilot activity: Ongoing through the ODS pilot phases. **Challenges foreseen:** None
Needs for technical support: Upon demand
Needs for pedagogical support: Upon demand
Needs for teacher training: Upon demand

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The Incubation phase

The process of incubation is based on providing support, designing targeted interventions and implementing innovative practices in order to instil a culture that is open to change and spread a common vision for learning.

- **New teaching and learning practices are tested and Open Educational Resources (OERs) are extensively used.**
- **Engagement with an environment such as the ODS platform and the development of thriving digital communities and use of authoring tools.**
- **Emphasis on teacher training and professional development in national and international initiatives and pilot actions, such as the *ODS Summer and Winter Training Schools*, conferences and regional workshops.**

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ODS Portal

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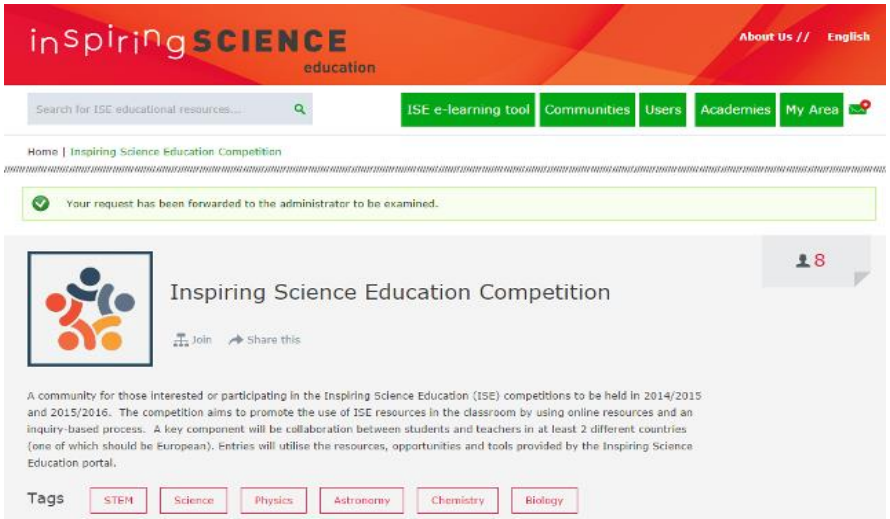
Activities: "Playing with Light" contest (in collaboration with ISE)

Conditions & Rules

- Entrants must complete the 2-step ODS registration
- Worksheets must be in English
- Participating schools must join the ISE Competition Community on the ODS portal
- At least one EU Member States must be represented in each submission
- Finalists will be invited to the Award ceremony in London in 2015



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Contests & Summer Schools

- Open Discovery Space International Summer Schools in 2013-2016 in Greece, supporting school innovation, training teachers and school leaders to promote the development of their schools into open learning communities.
- Teachers and school leaders from both Primary and Secondary Education attended the Summer School, coming from Serbia, France, UK, Finland, Greece, Portugal, Romania, Cyprus and Turkey.

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Contests & Summer Schools

- Participants were granted scholarships from the Open Discovery Space project.
- Others received grants from the ERASMUS+ program.
- Workshops focusing on competence based educational design through the use of digital tools.
- Workshops on parental engagement, Inclusive education (non-violent communication, game-based learning, etc.

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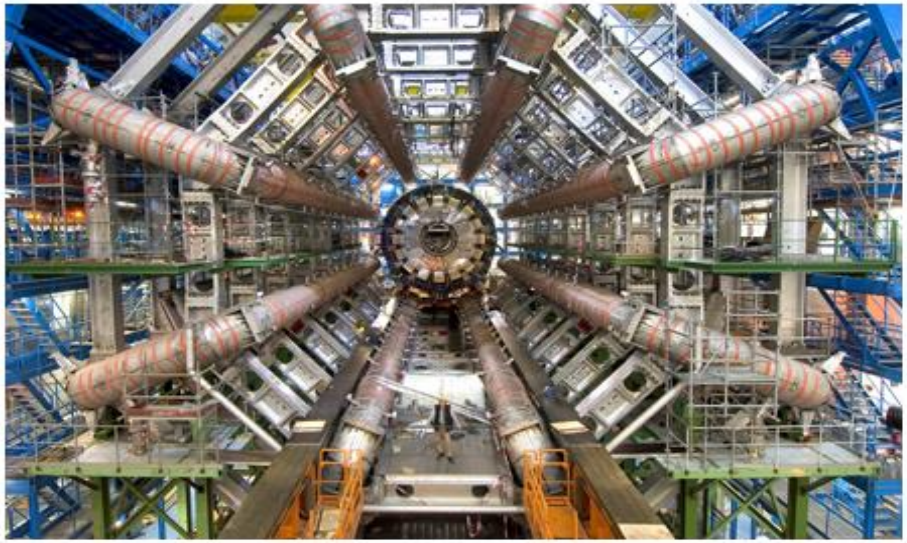
Activities: CERN Virtual Visits

ATLAS Virtual Visits



ATLAS Detector photo
© CERN for the benefit of the ATLAS Collaboration

The ATLAS Experiment at CERN is one of the largest most complex scientific instruments ever constructed. It is designed to explore the inner universe, advancing our understanding of the basic building blocks of nature.

Three thousand physicists from 177 institutions in 38 countries around the world participate in ATLAS. When the LHC is in operation, up to 600 million protons collide every second inside the detector.

ATLAS Virtual Visits gives the public a unique opportunity to be part of this great scientific adventure. Using web-based video conferencing tools, participants talk with an ATLAS physicist, receive a tour of the control room, and get answers to their questions.

CMS Virtual Visits

CMS Detector photo
© CERN for the benefit of the CMS Collaboration

The CMS Experiment is a gigantic particle detector, located around 100m below the ground in the foothills of the Jura Mountains in Cessy, France. It's one of four collision points at CERN's LHC that smashes protons together at energies never achieved before.

The CMS detector is one of the largess scientific instruments ever built by one of the biggest scientific collaborations of all time. It brings scientists, engineers and students from a multitude of disciplines to work together with a common goal: to understand why the universe is the way it is. The CMS collaboration involves more than 2,600 scientists, including around 900 students, from 182 institutes in 42 countries around the world.

CMS Virtual Visits offer students, teachers and the general public with a unique opportunity to explore the underground of the experimental site and to get close to the detector itself. The tours are guided by CMS scientists, ready to explain the physics and technology behind the experiment and to reveal how it is to be part of a global scientific team pushing the frontiers of science.

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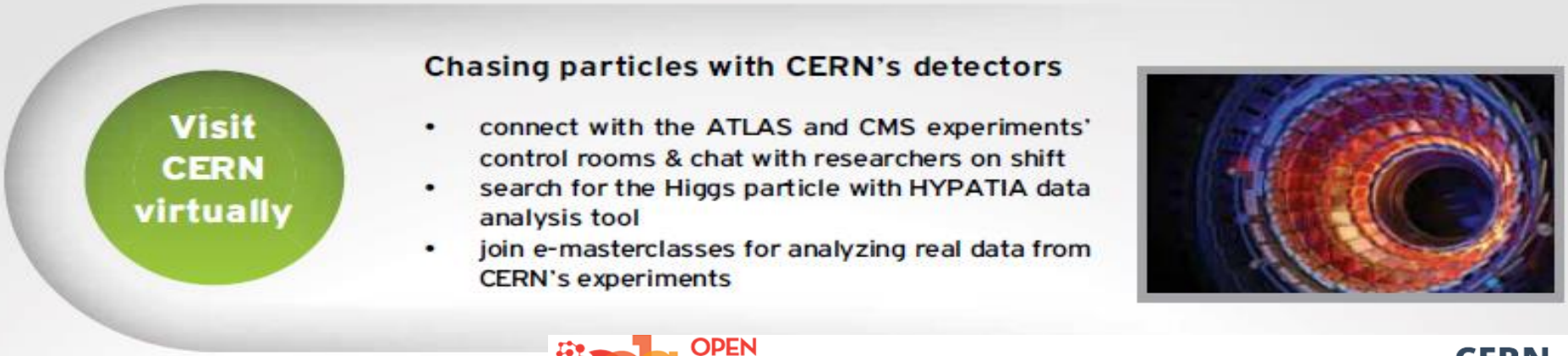
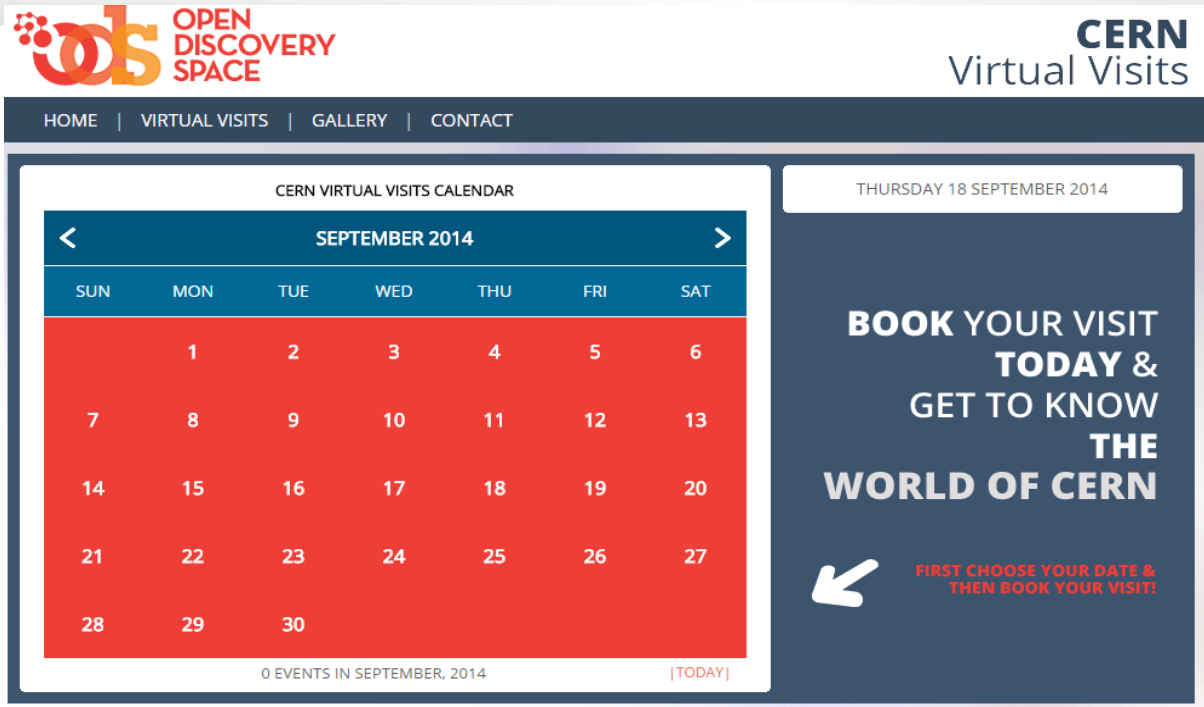
Activities: CERN Virtual Visits



- CERN Virtual Visits Booking supported by ODS: http://ea.gr/ep/virtualcern/
- ODS Discover the Cosmos Community supporting Virtual Visits: http://portal.opendiscoveryspace.eu/community/discover-cosmos-70530



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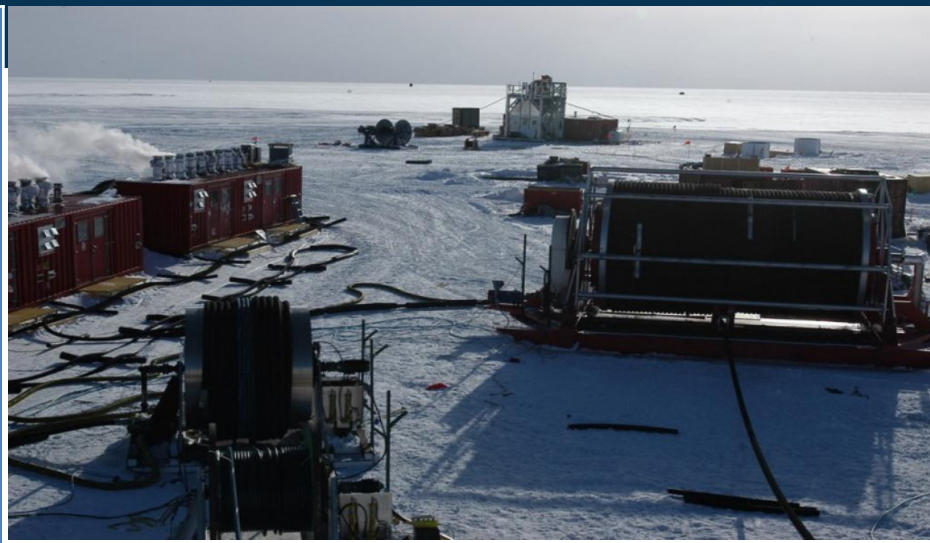
Activities: CERN Virtual Visits

A CERN-ICE CUBE Virtual Visit will took place on the 2nd of Oct 2015.

- 2 ODS schools (plus 2 US schools) got the chance to pay a virtual visit to CERN and The Ice Cube Neutrino Observatory and its particle detector buried in the Antarctic ice.

Schedule of events

- 14:00 CET Connection with schools and stand-by
  14:15 Welcome and introduction to virtual visit by CERN and IceCube teams
  14:30 Connection with IceCube in South Pole
  15:15 End of connection with South Pole
  15:15 Connection with CMS and ATLAS
  16:00 End of connection with CMS and ATLAS and goodbye



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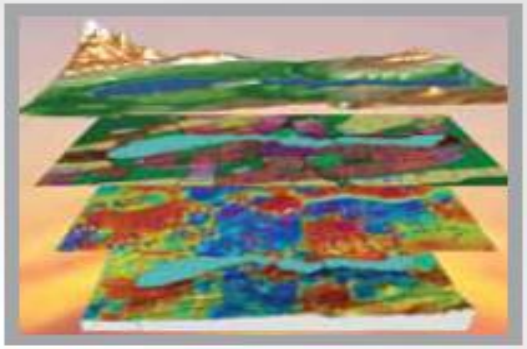
Activities: geospatial thinking skills tool supported by ODS

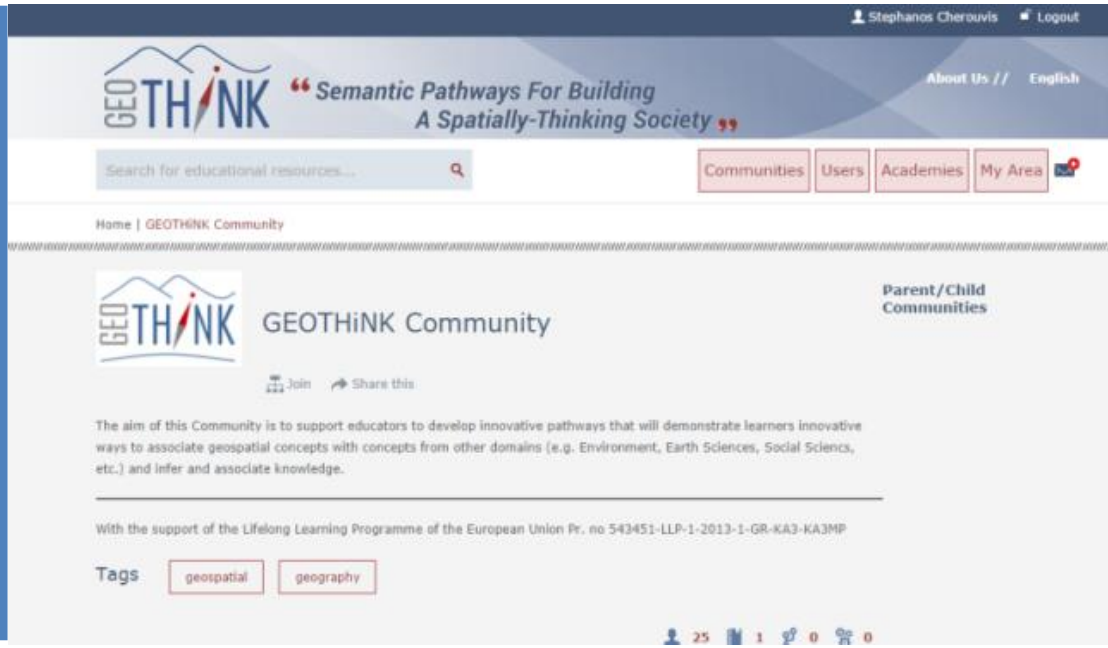
Develop geospatial thinking skills

Building a spatially-thinking science classroom

- enhance students' geospatial thinking skills using information technologies
- offer an open, collaborative platform of geo-content for teachers
- use interactive geo-exhibits for testing navigation and surveying skills



- Addressing Spatial thinking in STEM
- Emphasis on understanding visual-spatial notions scale, generalization, etc.
- Tools & Learning Scenarios in ODS



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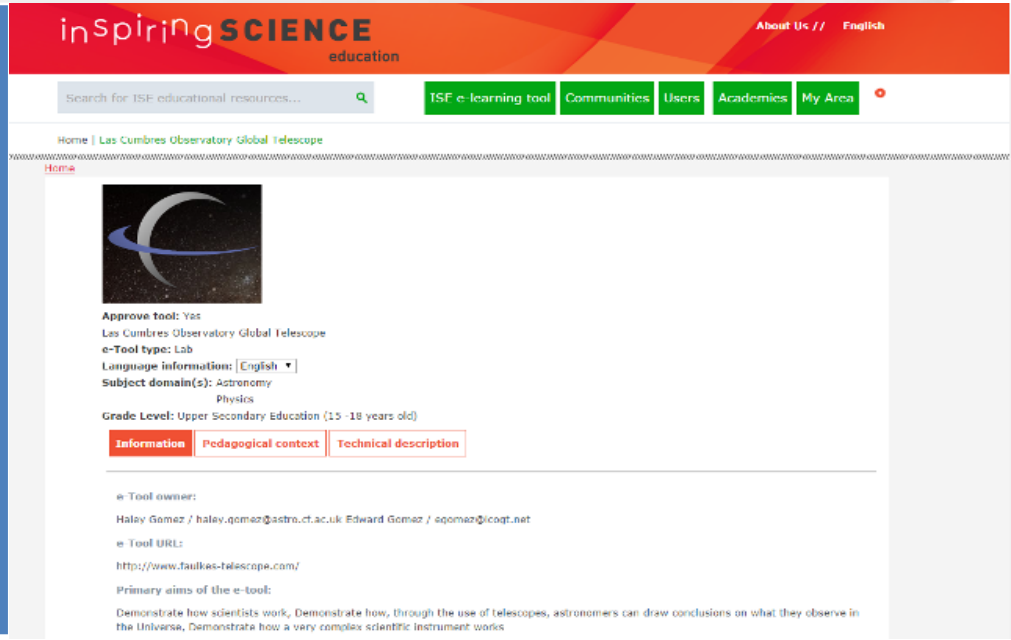
Activities: Observing the Universe from your Classroom

Observing the Universe from your Classroom

- learn how teachers can perform observations with Faulkes robotic telescope
- simulate galaxy crashes online
- access real databases of large astronomical institutions

Connect to robotic telescopes

- **Free access to robotic telescopes to be used in their curricular or extra-curricular activities**
- **Support by a range of educational materials and a team of educators and professional astronomers.**



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Activities: ODS Science Webinars

- The webinars included a series of lessons plans, scenarios & activities, with lots of material to use in the classroom.
- A number of relevant thematic communities have been created in ODS.

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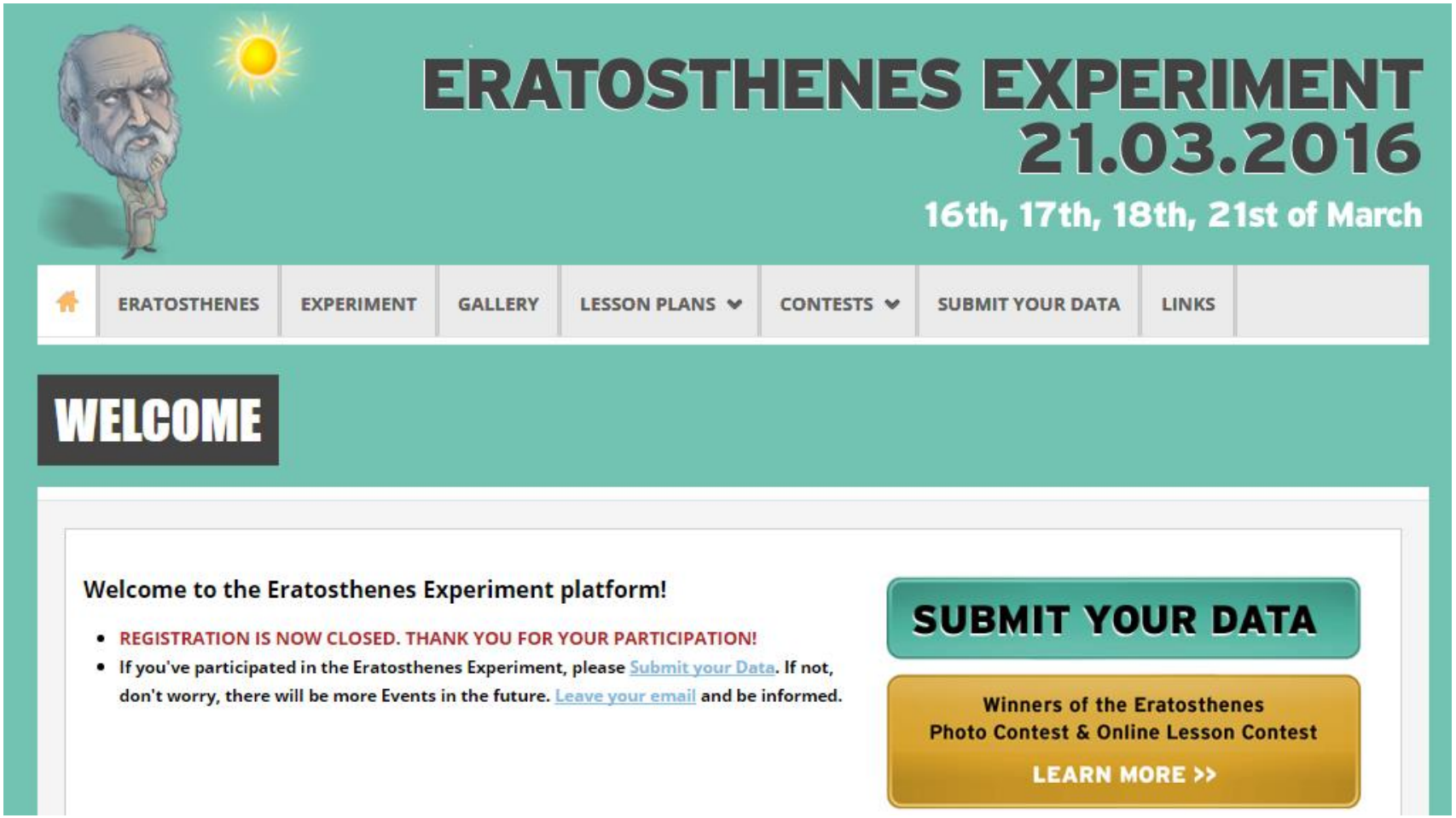
The Eratosthenes Experiment



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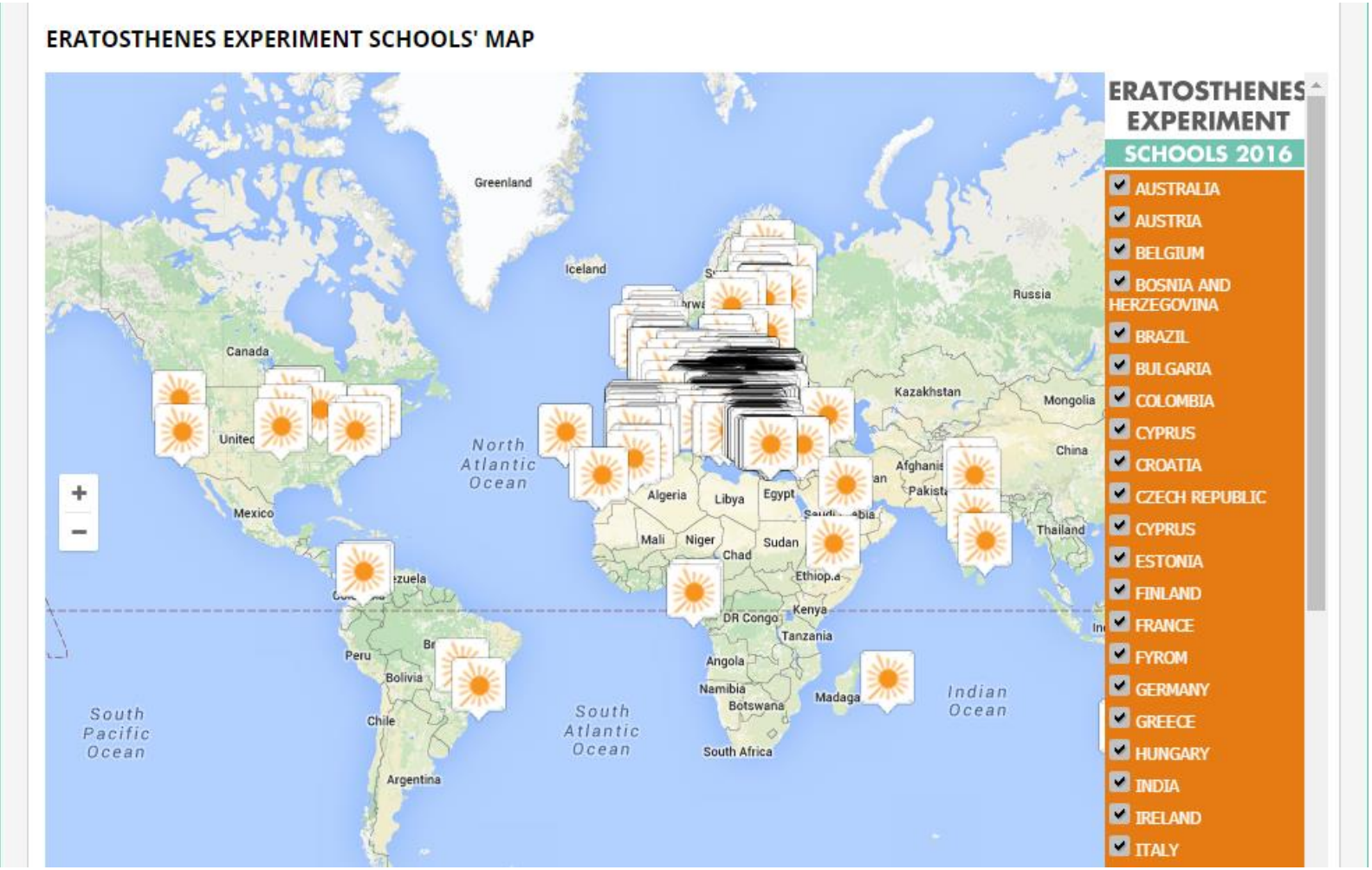
The Eratosthenes Experiment



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Activities: ODS Supporting ESOL Teaching

- An ODS community supporting the teaching of ESOL
- More than 100 activities, games, lesson plans.
- Support, webinars, discussion groups, etc.

Fun English Games: Free English Resources Online

2014.09.05

Repository: ODS | Teaching English as a Second Language

Contributor: Stephanos Cherouvis

Views: 2

Welcome to Fun English Games for Kids! Find a wide range of free teaching resources that are perfect for students learning English, ESL classes and teachers looking for ideas online. Enjoy...

The Internet TESL Journal

2014.09.05

Repository: ODS | Teaching English as a Second Language

Contributor: Stephanos Cherouvis

Views: 3

Articles, Research Papers, Lessons Plans, Classroom Handouts, Teaching Ideas & Links The Internet TESL Journal published articles from 1995 through 2010. This website is now an...

English Study Guides (advanced)

2014.08.28

Repository: ODS | Teaching English as a Second Language

Contributor: Stephanos Cherouvis

Views: 1

Study Guides is offered by the Birmingham City University's Center for Academic Success to help foreign students improve their writing and general English Language skills. Teachers and advanced...

50 Incredibly Useful Links For Learning & Teaching The English Language

2014.08.28

Repository: ODS | Teaching English as a Second Language

Contributor: Stephanos Cherouvis

Views: 2

Teaching a new language to non-native speakers may be one of the most challenging educational jobs out there, so ELL teachers can use all of the help they can get! Thankfully, many excellent...

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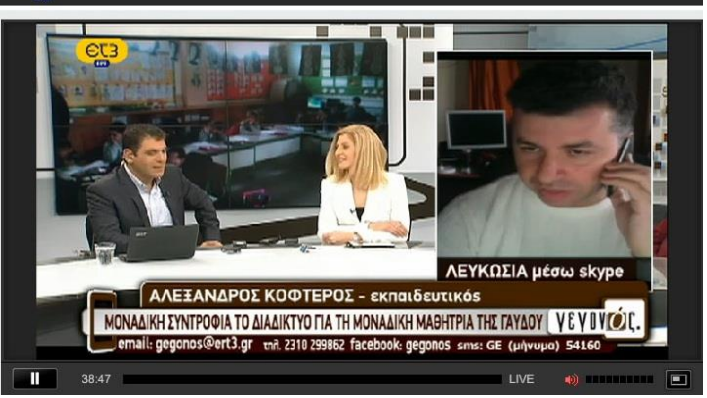
Virtual connections between a single pupil school in the island of Gavdos (the southernmost island of Europe) with Aghios Spyridonas school in Cyprus, Nicosia. Science and Environmental Education



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Parental engagement

Home | Training Academies | **Parents Academy**

Welcome to the Parents Academy

+ New Event

Welcome to eParents Academy! The eParents Training Programme is designed for parents who wish to gain insight into eLearning and work with eContent to support their children's learning.

Training is designed to inspire parents to become promoters and evangelists in the uptake, sharing, and reuse of digital learning resources in schools. Families are children's first and best teachers. However, parents still think of "The three Rs" (Reading, wRiting and aRithmetic), which refers to the basic skills-oriantated education program within schools as being neglected by the entrance of new technologies in school life. The eParents Training Programme should aim to help parents to transition to a different way of learning, by analyzing the changing role of learning today. Research shows that a positive parenting style has a strong positive impact on children. The eParents Training Programme needs to support parents to play a full and positive part in their children's learning and development. By the end of the course, parents should be able to support their children's learning by utilizing the resources and the content of the ODS infrastructure.

Training Activities

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Digital T/L Communities

1. Your School as a Learning Community.

1. Your School as part of a Learning Community: Opportunities for building a local, international, online network of peers.

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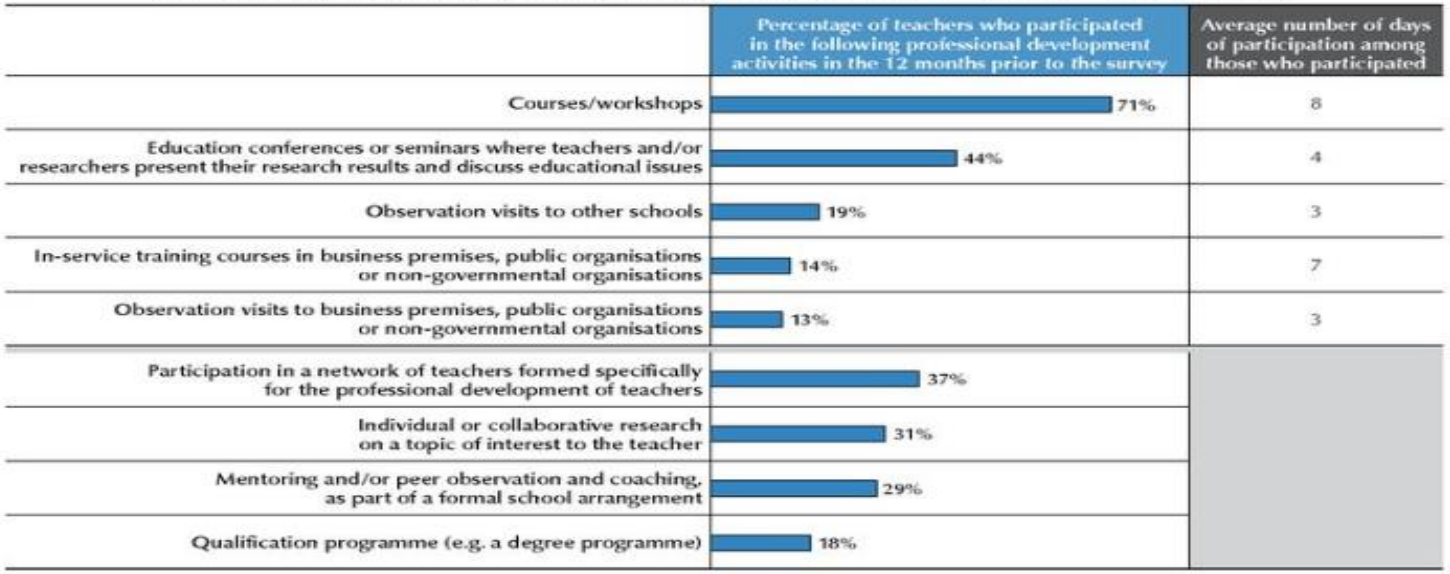
The TALIS Report 2013 (OECD, 2014) on the types of professional development activities undertaken by teachers. 71% of teachers chose courses/workshops, 44% opted for educational conferences and 37% reported the participation in a network of teachers formed specifically for their professional development.

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



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.

Source: OECD, TALIS 2013 Database, Tables 4.9 and 4.9.Web.

StatLink http://dx.doi.org/10.1787/888933041554

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The fundamentals of online communities

i. Clarity & relevance.
ii. Addressing your (participating teachers') intrinsic needs.
iii. Generic online communities tend to "die" quickly. Communities targeting groups of teachers with common needs and interests will "live longer" (Widenman 2010; Carr & Chambers, 2006).
iv. Access to content that is directly useful to someone's teaching (Widenman 2010; Baek & Barab, 2005). At the early stages of community development, experienced teachers who may be strong in particular fields should contribute to certain communities with content, tools, scenarios, etc. and/or work towards locating and engaging peers and contributors.

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The fundamentals of online communities

v. Trust, empathy, support.

vi. Creating a community of teachers who are not afraid to critically discuss their teaching approach, methods & material. (Widenman 2010; Baek & Barab, 2005; Lock, 2006).

vii. Teachers will not share their approach with peers for fear of exposing any possible weaknesses and will not criticize the teaching methods of others. (Widenman 2010; Baek & Barab, 2005; Barab, 2006; Scheckler, 2010).

viii. A good opportunity for building trust among participants in the pilots and Change Agents are the T3.5 workshops. Teachers are encouraged to explore common areas of interest. Start working together (sharing ideas, scenarios, etc.) and be the core members of a thematic digital community.

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The fundamentals of online communities

ix. Pseudo-communities vs. true communities.

x. Projecting an image of competence rather than exposing your real work.

xi. Keeping a balance between good quality and participation.

xii. Resource sharing can be informal: Suggesting a link or a tool that a teacher has found useful is a good approach. Communities should not become victims of the "fallacy of originality" (i.e. everything has to be original).

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The fundamentals of online communities

xiii. Formal recognition: Participation in a community's life is low when members participate on a voluntary basis than when participation is part of a more formal process (Widenman 2010).

xiv. Teachers should welcome an approach by a schoolmaster who wishes to establish a semi-formal structure in which teachers are evaluated on their use and support of (their own) online teaching/learning communities in ODS.

xv. See yourself as a 'Change Agent' and a community builder.

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The acceleration phase

During the acceleration phase an educational change is intended to extend its reach and impact. Two kinds of processes in this phase:

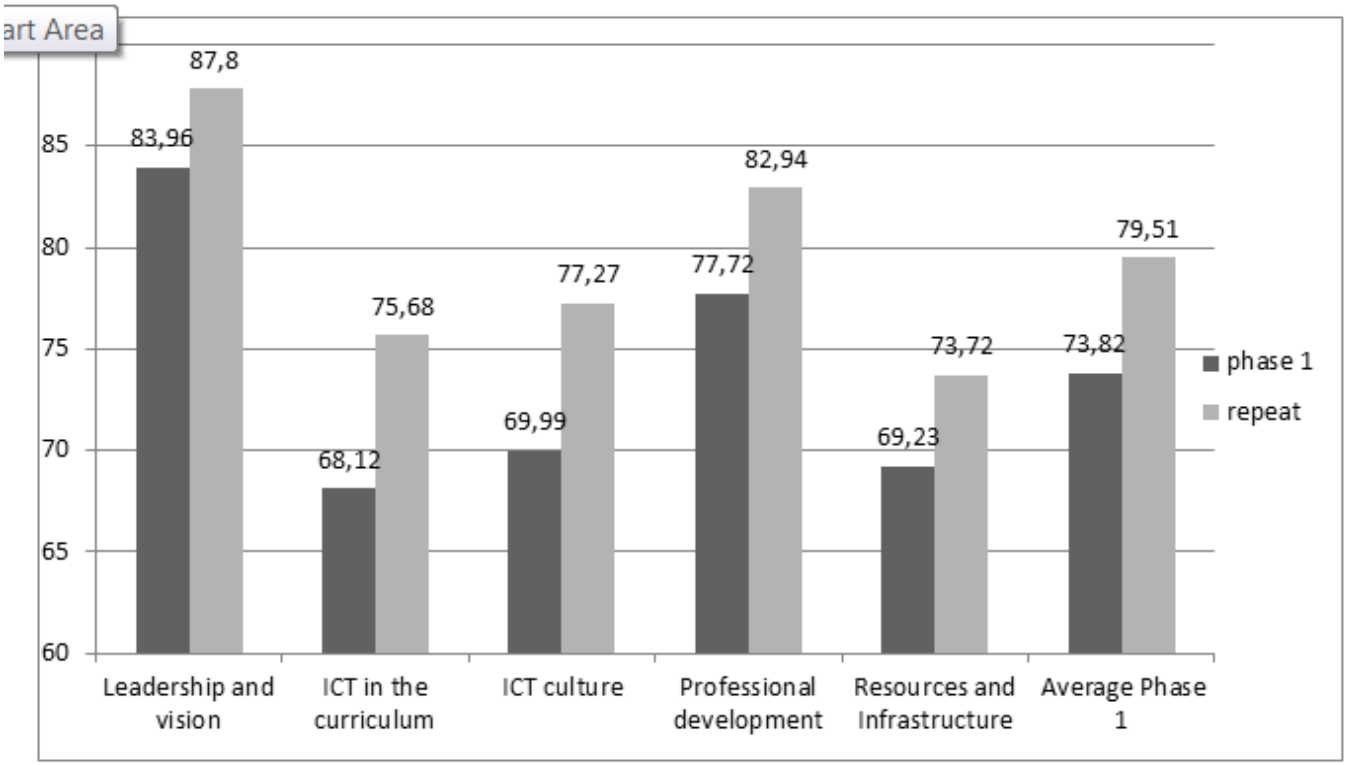
- Dissemination, a one-way process in which information is distributed through various means and channels. In ODS, information is shared through presentations, workshops, webinars, training events, meetings, websites, social media, etc.

- Diffusion is the process through which interventions are pulled into practice from within. For example, practitioners exchange information, arrange demonstrations or coach each other. Here reforms or norms of social interaction become embedded in school policies and routines. Teachers draw on those ideas and apply them in other aspects of their practice The role of school leaders is important in creating a positive atmosphere, exchange opportunities and openness among the staff that will gradually lead to the diffusion of an innovative practice.

The Open Discovery Space Project is funded by CIP-ICT-PSP-2011-5, Theme 2: Digital Content, Objective 2.4: eLearning Objective 2.4

Results

Sotiriou, Sofoklis, Katherina Riviou, Stephanos Cherouvis, Eleni Chelioti, and Franz X. Bogner. "Introducing Large-Scale Innovation in Schools." *Journal of Science Education and Technology* (2016)



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Key findings & recommendations from the ODS communities

- The importance of reliable and specialised content that is easily accessible in a trusted environment is still one of the most significant aspects of successful OERs.
- Trust among a community of peers is a major issue for teachers who consider "going" (partly or fully) digital.
- Teachers will continue to go online to seek professional development and new approaches to teaching and learning, but more as members of networks and communities than as consumers of online courses, MOOCs, etc.
- The idea of teachers as content designers themselves is becoming something of a norm in European education. In the large scale context of Open Discovery Space one in 3 teachers have created, uploaded and shared educational objects (scenarios, lesson plans, etc.).

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Key findings & recommendations from the ODS communities

- Parental engagement needs to follow the path of innovation through more European efforts and large scale approaches in a close cooperation with national agencies. There is plenty of reliable training content both in Open Discovery Space and in the various national settings for accelerating the process of parental engagement through the use of ICT and OERs, but there is still a need for a change in mind-set.

- Online communities of peers are an excellent vehicle for addressing remote schools in Europe as we saw with the cases of ODS communities supporting distance education in Gavdos, Greece.

- Although there is plenty of evidence in ODS of successful communities relying on a bottom-up growth, the role of a top-down approach should not be underestimated.

- A community building approach hoping to facilitate the increasing need for network participation by teachers should be part of a holistic strategic planning and not just a national or international initiative that simply encourages teachers to engage with digital communities. This has been highlighted by the role of the ODS's Innovation Model in guiding the uptake of online communities and OERs.

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Thank you for your attention

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