**ITEC - WP <4>**

**<D4.4.> - <THIRD VALIDATION REPORT ON LARGE-SCALE PILOTING>**

“This document has been created in the context of the ITEC project. All information is provided “as is” and no guarantee or warranty is given that the information is fit for any particular purpose. The user thereof uses the information at its sole risk and liability. The document reflects solely the views of its authors. The European Commission is not liable for any use that may be made of the information contained therein.”

<table>
<thead>
<tr>
<th>CONTRACT NO</th>
<th>2577566</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
<td>01/08/2013</td>
</tr>
<tr>
<td>ABSTRACT &lt;max 70 char.&gt;</td>
<td>Deliverable 4.4 Third Validation Report on Large-Scale piloting</td>
</tr>
<tr>
<td>AUTHOR, COMPANY</td>
<td>Marie Le Boniec (EUN) for Part I and II. Will Ellis (EUN) for Part III</td>
</tr>
<tr>
<td>REVIEWER, COMPANY</td>
<td>Roger Blamire (EUN), Cathy Lewin (MMU), Gill Leahy (Promethean), Will Ellis (EUN) for part I and II.</td>
</tr>
<tr>
<td>WORKPACKAGE</td>
<td>WP 4</td>
</tr>
<tr>
<td>CONFIDENTIALITY LEVEL</td>
<td>Public</td>
</tr>
<tr>
<td>FILING CODE</td>
<td>ITEC-D4.4._Third_Validation_Report.Doc</td>
</tr>
</tbody>
</table>

---

1 PU = Public  
PP = Restricted to other programme participants (including the EC services);  
RE = Restricted to a group specified by the Consortium (including the EC services);  
CO = Confidential, only for members of the Consortium (including the EC services);  
INN - Internal only, only the members of the consortium (excluding the EC services)
<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Reason of change</th>
<th>Status</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>24/06/2012</td>
<td></td>
<td>V1</td>
<td>Reviewers</td>
</tr>
<tr>
<td>V2</td>
<td>17/07/2013</td>
<td>Integrate comments from the reviewers</td>
<td>V2</td>
<td>Reviewers + NPCs</td>
</tr>
<tr>
<td>V3</td>
<td>01/08/2013</td>
<td>Integrate final comments from the reviewers</td>
<td>V3</td>
<td>EC + partners</td>
</tr>
</tbody>
</table>
D4.4 Third Validation Report
On Large-Scale Piloting

July 2013

http://itec.eun.org
Abstract

The present document D4.4. “Third Validation report” relates to the Task 4.2, 4.3 and 4.6 described in the iTEC Description of Work “Development of school pilot protocol and support for coordinators”, which includes the following actions:

- Revise iTEC school pilot protocols (due M35, July 2013)
- Recruit and support teachers for both pre-pilots and large-scale pilots
- Produce deliverables D4.2-D4.5 (D4.4. due M35, July 2013)

D4.4 includes a report on how learning stories and activities and technologies have been used in a large number of classrooms in cycle 3 and 4. (Part I)

Deliverable 4.4 Third Validation Report on Large-Scale piloting contains a revised version of the iTEC School Pilot Protocol, delivered in March 2013 to the National Coordinators, describing their responsibilities as well as the project cycles’ timeline. It provides guidance and details the methodology for selecting and preparing teachers (both pre-pilots and full scale pilots) and running the validation activities within pilots in cycle 4. (Part II)

There have not been major changes from the last version of the School Pilot Protocol prepared in June 2012 for cycle 3; however, some objectives have been made more precise, the timeline and engagement target have been updated and the training and community building activities have been detailed further.

The report also describes revisions of the set of Scenario Selection Criteria for scaling up WP3 prototypes to pre-pilots and eventually to large scale pilots. (Part III)

Annexes to the report provide the Learning Stories and Activities taken to large scale piloting in cycle 3 and 4, as well as the reports on the second, third and fourth international workshop for iTEC teachers held respectively in September 2012, February and May 2013 in the Future Classroom Lab in Brussels.
Table of contents

**ITEC - WP <4>** .................................................................................................................. 2
**<D4.4.> - <THIRD VALIDATION REPORT ON LARGE-SCALE PILOTING>** .................... 2

**ABSTRACT** ..................................................................................................................... 5

**TABLE OF CONTENTS** ............................................................................................... 6

**PART I. THIRD VALIDATION REPORT ON LARGE SCALE PILOTING IN CYCLE 3 AND 4 (TASK 4.6)** ........ 8

**EXECUTIVE SUMMARY** .............................................................................................. 9

**INTRODUCTION** ............................................................................................................. 11

1. **THE ITEC RESOURCES** ............................................................................................ 12
   1.1. **PEDAGOGICAL RESOURCES IN CYCLE 3** ......................................................... 12
   1.2. **PEDAGOGICAL RESOURCES IN CYCLE 4** ......................................................... 14
   1.3. **ITEC TECHNOLOGIES AND OTHER RECOMMENDED TECHNOLOGIES** .......... 15

2. **THE PILOT TEACHERS** ............................................................................................ 21
   2.1. **HOW ITEC TEACHERS HAVE BEEN IDENTIFIED?** ......................................... 21
   2.2. **Which teachers, which classrooms?** .................................................................... 22

3. **PILOT TEACHER’S PREPARATION AND SUPPORT** .................................................. 27
   3.1. **RESOURCES PROVIDED BY NCs.** ..................................................................... 27
   3.2. **NATIONAL WORKSHOPS** ............................................................................... 28
   3.3. **FOLLOW UP AND SUPPORT** .......................................................................... 35
   3.4. **INTERNATIONAL WORKSHOPS** ..................................................................... 35

4. **COMMUNITY BUILDING** .......................................................................................... 43
   4.1. **NATIONAL ONLINE COMMUNITIES** ............................................................... 43
   4.2. **THE ITEC EUROPEAN ONLINE COMMUNITY** ............................................... 49

5. **USE OF ITEC RESOURCES IN THE PILOTS** ............................................................. 52
   5.1. **BACKGROUND** ................................................................................................ 52
   5.2. **EXAMPLES OF USE AND FEEDBACK FROM THE NATIONAL PEDAGOGICAL COORDINATORS** 54

**CONCLUSION** ................................................................................................................. 68

**PART II. REVISED SCHOOL PILOT PROTOCOL AND SUPPORT GUIDELINES FOR NATIONAL PEDAGOGICAL COORDINATORS (TASK 4.2)** ......................................................... 70

1. **INTRODUCTION** ........................................................................................................ 71
   1.1 **RATIONALE OF THIS DOCUMENT** ..................................................................... 71
   1.2 **AMENDMENTS IN THIS PRESENT VERSION OF THE PROTOCOL** ..................... 71
   1.3 **ITEC PARTNERS’ INVOLVEMENT IN SCHOOL PILOTS** ..................................... 73

2. **TIMELINE OF PILOT ACTIVITIES AND ENGAGEMENT TARGET** ......................... 74
   2.1. **TIMELINE OF PILOT ACTIVITIES** .................................................................... 74
   2.2. **QUANTITATIVE PERFORMANCES INDICATORS** ............................................. 74
   2.3. **CLASSROOMS ENGAGEMENT TARGET** ......................................................... 75
   2.4. **DEFINITION OF A “CLASSROOM” IN ITEC** ..................................................... 76

3. **ROLE AND TASKS OF NATIONAL PEDAGOGICAL COORDINATORS** ................... 77
   3.1. **ROLE OF NATIONAL PEDAGOGICAL COORDINATORS** ................................. 77
3.2. TASKS OF NATIONAL PEDAGOGICAL COORDINATORS .................................................................................................................. 77

4. SELECTION AND PREPARATION OF PILOT TEACHERS .................................................................................................................. 78
   4.1 SELECTING SCHOOLS FOR THE LARGE-SCALE iTEC PILOTS .......................................................................................... 78
   4.2. PROFILING PILOT SCHOOLS .................................................................................................................................................. 79
   4.3. PREPARING TEACHERS FOR PILOTS ................................................................................................................................. 80

5. IMPLEMENTATION AND EVALUATION OF PILOT ACTIVITIES .................................................................................................. 81
   5.1. IMPLEMENTATION .................................................................................................................................................................. 81
   5.2. SUPPORT EVALUATION ACTIVITIES: CASE STUDIES AND QUESTIONNAIRES ........................................................................ 82

PART III. SCALING UP SCENARIOS: REVISED SET OF DECISION CRITERIA & DECISION WORKSHOPS (TASK 4.3) 83
   1. INTRODUCTION AND RATIONALE ............................................................................................................................................. 84
   2. THE REVISED PILOT SELECTION CRITERIA ................................................................................................................................. 85
      REVISED SELECTION CRITERIA AND PROCESS .......................................................................................................................... 85
   3. DECISION MAKING PROCESS AND OUTCOMES FOR CYCLES 3 AND 4 ........................................................................... 93

ANNEXES .................................................................................................................................................................................. 96
   ANNEX 1: LEARNING ACTIVITIES AND STORIES CYCLE 3 ........................................................................................................... 97
   ANNEX 2: LEARNING ACTIVITIES AND STORIES CYCLE 4 ........................................................................................................... 98
   ANNEX 3: REPORT ON THE INTERNATIONAL WORKSHOPS FOR TEACHERS HELD IN SEPTEMBER 2012, FEBRUARY 2013 AND MAY
            2013 .................................................................................................................................................................................. 99
   ANNEX 4: REPORTING TEMPLATE FOR NATIONAL COORDINATORS FOR CYCLE 3 ................................................................. 115
   ANNEX 5: REPORTING TEMPLATE FOR NATIONAL COORDINATORS FOR CYCLE 4 ........................................................................ 117
PART I. Third validation report on large scale piloting in cycle 3 and 4 (Task 4.6)
Executive Summary

In this report, the iTEC project partners involved in the large scale validation of iTEC pedagogical and technological resources describe in detail the steps taken to organise the pilot activities, from the selection of teachers to the training of participants and use of resources in the classroom.

The objectives were to engage sufficient number of classrooms in the pilot activities, following a pilot protocol, and ensure a widespread and proper use of the resources by teachers, leading to change and innovation in teaching and learning.

The engagement objective was significantly exceeded, with some 1452 piloting classrooms from 19 countries over cycle 3 (September-December 2012) and cycle 4 (March-June 2013); the initial target was to reach a minimum of 250 classrooms per cycle (i.e. 500 classrooms over cycles 3 and 4). The piloting countries and coordinating organisations included: Austria (BMUKK), Belgium (FL - Edubit), Czech Republic (DZS, Associate Partner), Estonia (TLF), Finland (FNBE, Associate Partner), France (CNDP), Germany (SMART), Hungary (Educatio), Israel (MAKASH), Italy (INDIRE), Lithuania (ITC), The Netherlands (SMART), Norway (NCIE), Poland (SMART), Portugal (DGE), Slovakia (ELFA), Spain (Promethean, SMART and Extremadura region - Associate partner), Turkey (MONE), United Kingdom (Promethean and SMART).

In cycle 3 (C3) and cycle 4 (C4), the activities focused on creativity, collaboration and communication through a design based set of processes included in the Learning Activities. Each time, these Learning Activities (LAs) were exemplified by several Learning Stories showing more practically how the activities can be performed in the classroom.

To promote technology driven pedagogical innovation, a range of technical tools were proposed to teachers, to be used along with the LSs and LAs. They included technologies developed by iTEC partners and online web 2.0 tools or learning platforms.

In the iTEC technical vision, learning environments are based on a shell, or a form of virtual learning environment, that allows the teacher to tailor an environment, i.e. to set it up with services or functionalities in the form of tools, applications, content, etc. that support the activities of a given lesson plan. The iTEC environments currently make use of the following tools and services: Moodle, DotLRN, the Promethean ActivInspire and Planet, the SMART Notebook and Exchange and the Widget Store, a compilation of small desktop apps for education.

Other technologies have been developed by iTEC partners: TeamUp, a web-based tool to assist teachers in forming teams based on students’ skills and interests and Reflex, a tool allowing students to build and reflect on their personal learning case by recording short audio clips. Additionally, a collection of web 2.0 and collaboration services and virtual learning environments were also proposed in C3 and C4.

In order to prepare to the use of iTEC Learning Activities and technologies, over 900 participants took part in 87 online and face-to-face events in 19 countries. These events allowed teachers to familiarize themselves with the idea of change in education and to learn from their peers. In addition, a series of international teachers’ workshops have been held in the Future Classroom Lab in Brussels, involving 60 teachers in total. These workshops offered the teachers the opportunity to discover a wide range of technologies and to receive further training on specific aspects of the iTEC methodology such as the development of their
own Future Classroom Scenario and the integration of latest technologies and web tools in the teaching practices.

National Pedagogical Coordinators (NPCs) have used a variety of ways to support pilot teachers, including face-to-face and online workshops, school visits, follow up webinars and the use of online national platforms and communities of practices in 17 countries. They have also identified and/or developed guidelines, tutorials, videos, etc. to inspire teachers. At European level, the online teacher community created at the start of the pilot activities was revamped before cycle 3 (C3) to better respond to teachers’ needs and become a more attractive forum for teachers. A team of moderators animated and moderated the forum to provide advice and ideas to pilot teachers and encourage them to share their experience. As a result, over 800 users are registered in this community and 1519 messages were posted in the forum and viewed 264,486 times. Seventy five teachers’ stories, describing the use of iTEC resources by pilot teachers, were published online.

After each piloting cycle, NPCs reported on the activities and teachers’ feedback, as well as their observations during teacher events and school visits. NPCs feedback and analysis was used in this report to describe the pilot teachers’ activities. Teachers’ direct feedback is collected under WP5 for evaluation purposes and an analysis will be provided in the D5.4. “Evaluation interim report three”. The D4.5 will include a more detailed analysis of the impact of the project and barriers identified in the pilots.

For many National Pedagogical Coordinators, the innovation lay in the design based work, active involvement of pupils in their own learning process, usage of ICT in all phases of the learning process and connection to real life problems. The Learning Activities and Stories themselves seemed to act as an enabler for change.

The activities also challenged the traditional role of the teacher, as in some activities the teacher was more a guide and tutor, leaving pupils handling their own learning process. This aspect had a positive impact on engagement and motivation of students, who felt more responsibility for their own learning.

Teachers reported an increased used of ICT in the classroom and some started to train themselves in the use of ICT. There is evidence that teachers wished to continue to use such practices outside or after the project, and shared the experience with their peers.

Unsurprisingly, perceived challenges continued to be the time required to implement changes and, to a lesser extent, insufficient access to technologies or to the internet. Some teachers were also challenged by the use of technologies and by the change they were expected to introduce in their pedagogy. Some said the concept of design was challenging too. However, it was also reported that, after a few months of piloting, and once they had been addressed, these challenges were then seen as enablers bringing about change in the classroom.
Introduction

This report aims to provide facts and figures on how the pedagogical and technological resources developed by iTEC partners have been validated within the pilots in cycle 3 (September-December 2012) and cycle 4 (March – June 2013).

It firstly describes the pedagogical and technological iTEC resources developed for cycle 3 and 4 pilots. It then reports on the various areas of activities defined in the school pilot protocol:

- Identifying the pilot teachers
- Preparing and training the teachers to the use of the iTEC resources
- Ensuring support and building a community of practice
- Validating the iTEC methodology in the classrooms

The report looks at the cycle 3 and cycle 4 together and is based on data collected in the WP4 monitoring and reporting documents: the pilot management table, the WP4 cycle 3 and cycle 4 reports filled in by the National Pedagogical Coordinators at the end of each cycle, as well as on the teachers’ stories, the activities and content from the online iTEC communities.

This data allows us to describe what and how activities have been organised throughout Europe. For cycle 3, some information retrieved from the evaluation report has been used to complete the picture of pilot activities. Academic analysis of the iTEC methodology outcomes in cycle 3 and 4 is provided in the evaluation report prepared by WP5, included in the deliverable D5.4. “Evaluation interim report three”. 
1. The iTEC resources

1.1. Pedagogical resources in Cycle 3

In iTEC, the teachers are guided to pedagogical change through the use of sets of Learning Activities and Stories including a variety of activities for the classroom. These Stories and Activities are developed in WP3 building on the scenarios developed in WP2 and activities developed and successfully piloted in previous cycles. In cycle 3, they were tested during cycle 3 pre-pilot activities in April-May 2012, then fine-tuned and re-presented to the National Coordinators in an online meeting in June 2012.

As highlighted in the evaluation report, a concern raised by some NPCs in Cycle 1, and to a lesser extent Cycle 2, that there was insufficient time to prepare the pilot activities and familiarise with the LSs and LAs. In order to tackle the issue, the process for selecting and handing over LAs and LSs between WP3 to WP4 was simplified. This enabled WP4 to launch Cycle 3 more promptly. The LAs and LSs were presented in June 2012 during an online workshop with National Coordinators, instead of August 2012, ie 3 months prior to the start of the Cycle 3. The meeting allowed the presentation of the last version of the Stories and Activities (after fine-tuning according to the pre pilot feedback) and replied to any questions posed before NPCs started to identify and prepare the teachers involved in the pilot in cycle 3 from September 2012 onward.

The pilot activities focused on the learning through design processes, turning the learner into an active designer of a product and highlighting the importance of data collection, team work, presentation and reflection.

The Learning Activities (LAs)

The learning process defined in WP3 resulted in the development of two sets of Learning Activities. Each Learning Activity was supported, either partially or completely, by a set of technological tools. The use of technology is explained explicitly in the Learning Activity guidance which has been prepared by WP3 for teachers.

In cycle 3 the two sets of LAs were:

1. Observe and Design
   - Learning activity 1: Design brief - students are presented with an initial design brief linking the tasks to curriculum topics, students form teams and refine the design considering purpose and initial design challenges
   - Learning activity 2: Contextual inquiry: Observation - students decide who and what to observe, conduct observation and analyse data, refining design brief further
   - Learning activity 3: Product design - students create a prototype and refine the design brief
   - Learning activity 4: Participatory design workshop - students meet with 3-4 potential users, present prototypes and elicit feedback, analyse feedback, and refine design brief
   - Learning activity 5: Final product design - students create final design prototype, draw on recorded reflections and consider how identified challenges were overcome, finalise blog and present work to their peers
Learning activity 6: Reflection - After the end of each of the above Learning Activities, post and share audio updates of perceived challenges

2. **Benchmark and Design**
   - Learning activity 1: Design brief - as above
   - Learning activity 2: Contextual inquiry: Benchmarking - based on who they are designing for and what they are designing, students collect exemplars of the artifact they are trying to design, share the resources and analyse them, refining their design brief further
   - Learning activity 3: Product design - as above
   - Learning activity 4: Participatory design workshop - as above
   - Learning activity 5: Final product design - as above
   - Learning activity 6: Reflection - as above

### The Learning Stories (LSs)

A Learning Story (LS) is a narrative providing concrete examples, Learning Activity by Learning Activity, of how the sets of LAs can be performed in the classroom. In cycle 3, two Learning Stories per packages of Learning Activities were proposed:

1. **Observe and Design**
   - Learning Story A: Visualization the planet surface This LS requires students to design a guided walk that highlights aspects (wildlife, buildings/monuments/geographical features) of the local environment for community members or tourists. The final walk should be based on geocaching, a location-aware smartphone game, Google map or printed map, or QR codes.
   - Learning Story B: Redesigning School This LS requires students to think about spatial design and the different motivations of people who use the space. A new space for future use is designed based on identified current challenges in relation to school-based activities.

2. **Benchmark and Design**
   - Learning Story A: Designing a physics simulation This LS requires students to design a simulation that can be used to teach a physics concept (eg friction) to other students. The simulation can be virtual or physical.
   - Learning Story B: Designing a math learning game This LS requires students to design a math learning game to teach a maths concept (eg simple geometry) to younger students. Students are asked to consider what younger students might find challenging and what they might find engaging.

It is to be noted that in C3, while it was recommended to perform the LAs as close to the descriptions as possible, the Learning Stories were considered as examples and teachers were free to amend them or to create their own story, adapted to the local context and teacher’s pedagogical objectives.

The LAs and LSs from all piloted cycles can be found on the Resources pages of the iTEC website in all project languages ([http://itec.eun.org/web/guest/learning-activities](http://itec.eun.org/web/guest/learning-activities)). They can be rated and commented by the iTEC website users. The detailed LAs and LSs for cycle 3 can be accessed in Annex 1.
1.2. Pedagogical resources in Cycle 4

These Stories and Activities were again developed in WP3 following the established design process. Once again, they built on the scenarios developed in WP2 and have been tested during cycle 4 pre-pilot activities in November-December 2012. The final fine-tuned package was provided to the National Coordinators in an online meeting on 5 February 2013. The meeting was a question and answer session on the proposed activities and the recommended tools and technologies.

In cycle 4, the pilot activities focused on teaching and learning sequences through the product creation. As in the cycle 3, it encourages the students to take the producer/designer/story teller hat and reflect about A to Z production steps, including research, reflection and collaboration.

The Learning Activities (LAs)

As described above in Cycle 3 pages, the Learning Activity is a concrete description of a learning sequence that can be used in teaching and learning. A Learning Activity can be supported, either partially or completely, by a set of technological tools. The use of technology is explained explicitly in the Learning Activity guidance which has been prepared by WP3 for teachers.

In cycle 4 the Learning Activities were:

- Learning Activity 1: Dream – Introducing, understanding and questioning a design brief
- Learning Activity 2: Explore (Benchmark/Observation) – Collecting information in relation to the design brief
- Learning Activity 3: Map – Creating a mindmap to understand relations between the collected information
- Learning Activity 4: Reflect – Recording audio-visual reflections and feedback
- Learning Activity 5: Make – Creating a design
- Learning Activity 6: Ask – Performing workshops with people who may represent future users of the design
- Learning Activity 7: Show – Publishing and presenting designs to an audience
- Learning Activity 8: Collaborate – Forming ad-hoc collaborations with learners of other schools

The Learning Stories (LSs)

A Learning Story (LS) is a narrative providing concrete examples, Learning Activity by Learning Activity, of how the set of LAs can be performed in the classroom. In cycle 4, three Learning Stories were proposed to illustrate the use of Learning Activities:

- Learning Activity 1: Tell a Story – Narrating an academic topic through audiovisual means.
- Learning Activity 2: Create an Object – Developing a tangible design.
- Learning Activity 3: Create a Game – Constructing a playful activity.

As in the previous cycle, while it was recommended to perform the LAs as close to the descriptions as possible, the Learning Stories were considered as examples and teachers
were free to amend them or to create their own story, adapted to the local context and teacher’s pedagogical objectives.

The LAs and LSs from all piloted cycles can be found on the Resources pages of the iTEC website in all project languages (http://itec.eun.org/web/guest/learning-activities). They can be rated and commented by the iTEC website users. The detailed LAs and LSs for cycle 4 can be accessed in Annex 2.

1.3. iTEC technologies and other recommended technologies

To promote technology driven pedagogical innovation, a range of technical tools was proposed to teachers, to be used along with the LSs and LAs. These tools were either iTEC prototypes, already tested iTEC tools or existing web 2.0 tools or learning platforms.

In the iTEC technical vision, environments are based on a shell, or a form of virtual learning environment, that allows the teacher to tailor a learning environment, i.e. to set it up with services or functionalities in the form of tools, applications, content, etc. that support the activities of a given lesson plan. The iTEC environments currently make use of the following tools and services:

- Moodle
- DotLRN
- Promethean ActivInspire and Planet
- SMART Notebook and Exchange
- The Widget Store: a compilation of small desktop apps for education

Other tools have been developed by iTEC partners: TeamUp, a web-based tool to assist teachers in forming teams based on students’ skills and interest and Reflex, a tool allowing students to build and reflect on their personal learning case by recording short audio clips.

A series of manuals supporting the use of these technologies had been developed and updated by the WP6 partners. These were circulated to the NTCs and are available online in the iTEC website library. See deliverables 6.3 at http://tinyurl.com/jwoblpc. The work of WP6 has supported partners in using the shell technologies below as the platforms for using the widgets provided through the iTEC widget Store in cycles 3 and 4.

• Moodle

Moodle (http://itec-moodle.eun.org/) is a learning management system (LMS), i.e. it is a system that comes with a series of functionalities specifically tailored for educational environments and needs. It is a highly flexible system that allows to switch most features on or off depending on the needs. Moodle is a good example of an iTEC shell in that it allows the user to easily set up learning environments with only needed elements and nothing else. (D.6.3)

In Moodle, the starting point for all activities is the course. Users are either teachers or students. Teachers can create courses, and users can enrol in one or more courses. (D.6.3). Then, in the courses, a number of services can be used to personalize the use of courses: widget store, fora, blogs wiki, html blocs...
• DotLRN

DotLRN (http://itec-dotlrn.eun.org/) is a learning management system much like the more well-known Moodle LMS. Like Moodle, DotLRN provides a wide range of built-in applications or functionalities such as calendar, grading, questions and tests, learning resource library, problem-based learning, a SCORM player etc.

The DotLRN system is built around the concept of communities. DotLRN provides a collaborative space where users can communicate and collaborate using built-in applications tailored to learning needs as well as learning resources. Communities can be created on different levels: schools, classes, courses or even (sub) groups of students.

The communities can have their own tailored start page, the community portal, where different kinds of content may be displayed based on the needs of that particular community.

In addition, the DotLRN shell offers a range of applications, which enable users to tailor the learning environment according to their needs. Applications available in DotLRN include: Chat, Discussions, File Storage, Photos, Library (Learning Resources such as files, folders, videos, online tests, interactive textbooks, etc.), Wiki, Wookie.

• Promethean ActivInspire and Promethean Planet

Promethean’s integrated environment is comprised of interactive whiteboards, learner response systems, software, training and professional development, resources and teacher communities.

ActivInspire as an iTEC Shell

Activ Inspire is the software provided to use the Promethean IWB. It helps teachers to create new lessons by providing resources and activities and it supports students’ assessment, individually, in groups or as the whole class. It is available in multiple platforms (Windows, Mac and Linux) and in 36 languages.

In the iTEC project, Promethean pilot teachers are using the shell of ActivInspire and the Promethean Planet community. As the project progresses, the tools and services being developed to support the iTEC environment are being trialled within this shell.

ActivInspire offers a range of integrated tools like set square, spotlight and revealer – to help teachers deliver more effective lessons. Tools can be dragged onto the flipchart directly, e.g. in the Learning Story, Designing a Maths Game, the dice or the equation editor may be required. It allows to create question sets across multiple pages and flipcharts. Assessment tools can be used for feedback and assessment in real time throughout, e.g., in iTEC, to gather ideas for the design brief activity or during the participatory design or for the reflection activity.

ActivInspire also includes libraries, used for locating, personalizing and sharing resources with others. Backgrounds, images and activities, as well as templates can be used for thought sharing, collaborating, collecting ideas for design brief, reflection and participatory design activities. In terms of media tools, it has camera, sound recorder, screen recorder, ActiView for animation. An Embedded Web Browser allows users to stream content directly from websites into a flipchart. This enables Promethean iTEC pilot teachers to explore and use the iTEC widgets that have been created for the project directly in the ActivInspire shell.
Promethean widgets include a variety of times, clocks, random number generators and student pickers and other tools that are on the ITEC Widget Store.

**Promethean Planet**

Along with the Promethean software, Promethean Planet is an online community where educators converge to share, connect and collaborate. More details can be found about Promethean Planet in the later section on online communities.

- **SMART Notebook and Exchange**

Apart from the interactive whiteboard itself, SMART provides tools and services to allow users to benefit from the IWB hardware. Most of the relevant materials can be found online. SMART Notebook software offers intuitive tools and features that can help teachers to create and deliver engaging lessons. SMART tools can be incorporated into the teaching to transform student learning and increase engagement. They are also designed to be integrated, modular and evolving.

**SMART Widgets**

Interactive widgets are mini-applications that can be added to a SMART Notebook page, enabling educators to add interactivity and dynamic content to lessons. A growing collection of widgets are available for download on SMART Exchange for students to use to explore concepts, develop new skills and receive feedback. Educators can also embed third-party interactive widgets directly within a SMART Notebook page, such as group chat for student groups to discuss projects directly from within SMART Notebook, or TeacherTube videos and mp3 players to play content directly from a SMART Notebook page.

For iTEC, SMART has created and promoted a number of widgets (The Idea Card Widget, The Six thinking hats widget, Run a survey, Daily log book, Let it sketch, Do interviews, Ask your friends, Go to the museum, Combine ideas, Observe yourself; etc.).

The embedded web browser enables users to bring elements from the Web directly into the SMART Notebook file, saving time and keeping students focused during lessons.

Other features, such as the activity builder and crayon, offer new ways to engage students in their lessons. The Activity Builder allows teachers to create activities where objects react to actions by accepting or rejecting other objects or by triggering animations or sound. The activity builder is particularly useful for arranging, sorting and labelling and for creating VENN diagrams.

- **The Widget store**

The iTec shells are supported by a number of new pedagogical tools, among them the iTec widget store. The widget store allows teachers to create their own educational widgets – simple web-based applications – to assist them delivering their course material. Teachers can then rate and tag the widgets, providing a peer-reviewed database of free technological tools for use in their classes.
Other tools have been developed to provide support the classrooms activities:

- **TeamUp** ([www.teamup.aalto.fi](http://www.teamup.aalto.fi))

TeamUp is a web-based tool to assist teachers in forming teams based on skills and interests, and to allow teams to record their progress into short, 1 minute audio reflections. This makes it time-efficient for the teacher to review each team's progress, and forces students to think about how to summarize their activities.

TeamUp is provided in many pilot languages: EE, EN, ES, FR, IL, HU, IT, LT, NL, NO, PT, SI, FI, SK, TR. It was developed by Aalto University and has been available for teachers since cycle 1 of pilots.
• Reflex (www.reflex.aalto.fi)

Reflex is a simple tool for students to build and reflect on their personal learning case by recording short audio clips about their learning. The recordings are displayed on a timeline where you can always go back and listen to former reflections. A new recording can be saved choosing "Keep" or "Timecapsule" (the "Timecapsule" stores your recordings for future listenings - maybe you want to remind yourself about something). Important recordings can be marked with a star.

Image 4: ReFlex

• Other technologies used in the pilots

In addition to the technologies developed by iTEC partners, a range of web 2.0 tools were recommended to National Coordinators by the WP6.

Access to the technologies and tutorials can be found on the Resources pages in the iTEC website (http://itec.eun.org/web/guest/technologies). These pages are fed by the WP6 partners.

National Technical Coordinators have also recommended certain hardware and software to the teachers. In cycle 3 and 4, a wide variety of hardware and software has been used by teachers to support the pilot Activities.

In terms of hardware, Interactive whiteboards, desktop computers, mobile devices such as laptop, tablets, notebook or smartphones have been largely used among pilot groups. Webcams, digital and video cameras, HD capture devices, Quadcopter and 3D printers (Austria), PlayStations, and the concept of BYOD were also used (France, Italy, Norway, Spain).

Various Learning environments were used: Moodle, DotLRN, Promethean and SMART services, Fronter and other VLEs, virtual worlds (Opensim-based edMondo). Voki.com was used to create avatars.

In terms of software and online services, a range of collaborative tools and apps were used:

- Collaboration, communication, sharing: TeamUp, Skype, eclicker for voting, Wallwisher/Padlet, mind mapping tools, TitanPad, Jing, Coarkboard, Popplet, linoit.com, SMART Random Words widgets, Delicious, Pintarest, Bubbl.us, Mindomo,
MindMeister, MindMap, text2mindmap, wevideo, Scribd (document sharing), Zoho, SurveyMonkey, helloslide, Dropbox,

- **Blogging and website services:** Wordpress, Blogger, Glogster, Tumblr, Wikis, Webnode, Wix,

- **Interactive Whiteboard Software:** Open – sankore.org

- **Visual presentation tools/ visualisation:** Prezi, Mindomo, Isuu, Proshow Gold (HD slideshow), Screen cast-o-matic, Galaxy tag, Slideshare, Flipsnack

- **Video conference tools:** Webex, Adobe Connect,

- **Video or animations making tools:** iMovie, MovieMaker, PowToon, Reflex, Cartoon design, MonkeyJam, iMotion HD, P22 Music Text Composition Generator, Supalogo to create logos, Clipping Magic (Removing background images), Voicethread, Storybird, Bitstrips (cartoons), Fantashow, GoAnimate,

- **Geolocalisation and maps:** MotionX, i-nigma (and other QR-readers), QR code treasure hunt generator, geocaching, Microsoft QR-tag, Kartiskolen.no (webatlas)

- **Programming games or exercises:** Scratch, Hot Potatoes, Kodu game Lab, Construction 2, GameMaker,

- **Games:** Sumdog, Minecraft, Minecraftedu, Socrative (games, quizzes, for assessment)

- **Subject specific tools:** Geogebra, Coach 6 for physics, Sketch up and Blender for 3D drawing, Dragon Box for Math games, PhET Simulations for Physics

- **Apps and widget collections:** Widgetbox.com,

Several of these tools had been “widgetised” so they can be directly accessed by the teachers from their customized widget store.

Many pilot groups used the Google services: Google Drive, Google maps, Google Earth, Google hangout and the social media (Youtube, Facebook, …).

**Promethean tools:** ActivInspire software (teachers and students); Activboard (IWB), ActivExpression (learner response handheld devices); ActivEngage (assessment for mobiles), ActivView (visualiser), Promethean Planet blogs. As mentioned above, Promethean widgets include a variety of times, clocks, random number generators and student pickers.

2. The pilot teachers

The profile of teachers to engage in iTEC pilots is defined in the school pilot protocol (See Part II of present document, Section 4). Overall, the teachers involved in the pilots should already be making some innovative use of ICT. However, the dissemination part of the project allows to seek to engage less advanced teachers with lower levels of ICT confidence.

Selection is also influenced by the characteristics of the particular Learning Stories and Activities to be piloted. In each cycle, the schools involved can be the same or different.

2.1. How iTEC teachers have been identified?

In Cycle 3, as in previous cycles, recruitment of teachers was done in various ways:

- Appointment by the National or local educational authorities
- Applicants following promotion on online national platforms
- Contact of known and suitable teachers
- Teachers who have taken part in past or current European projects such as Ingenious (www.ingenious-science.eu), eTwinning (www.etwinning.net), ACER-EUN pilot (http://1to1.eun.org/web/acer).

In almost all countries, some teachers who took part in iTEC in previous cycles participated in Cycle 3, sometimes recruited to provide support to teachers new to iTEC:

- Teachers from previous pilot cycles, (Austria, Estonia, Italy, SMART - Germany, Poland, Spain, Belgium, Czech Republic, France, Hungary, Norway, Portugal, Slovakia, Turkey)
- All teachers or the core group is new to iTEC (Finland, France, Belgium, Hungary, Norway, Promethean - UK, Spain -, Portugal, Slovakia, Turkey)
- Teachers “recruited” via iTEC teachers from previous cycles, either from their network or working in the same school (Italy, SMART- Spain)

As stated in the evaluation report on C3 pilots, in few countries, all volunteers were accepted, but the majority involved some form of selection by the NPC.

In Cycle 4, NPCs continued to recruit teachers as they did in cycle 3, using the different options listed above. More details on the recruitment is provided below.

In C4, the Czech NPC decided to involve teachers from smaller towns around Prague and not previously involved in iTEC. One of them works in school for students with special needs, and this was the first time iTEC resources were used in this type of school.

In Estonia, a lot of seminars and workshops were organized across the country to introduce the iTEC project. All interested teachers were invited to take part. In Finland, an open online questionnaire was used. 15 of 24 schools were selected. One of the objective in C4 was to get a good regional coverage of all Finland. Lithuanian teachers could apply via the national educational portal. All teachers wishing to participate were invited to iTEC.
The Hungarian NPC used the usual communication channels: mailing lists and social networking groups. Teachers from previous cycles as well as eTwinning teachers were also contacted, and the project was presented at conferences. In France, the pilots included teachers who took part in C2 and C3, and new teachers recruited by these colleagues who had already need involved, or by the Ministry of Education. Israeli teachers were recruited by the MoE and some teachers who had heard of the project from their peers applied to participate.

In Italy, the NCs selected teachers from the previous cycles, to act as ambassadors. Five new teachers from "premium" schools (schools that have started a more systemic innovation process, driven by head teacher and involving all the classes) also took part in. Four "local coordinator teachers" were identified within the group to involve and coordinate other teachers of their school.

In Norway, some teachers who participated in cycle 2 also took part in cycle 4. Two new schools joined after finding out about iTEC in brochures at conferences, and made contact to hear more about the project. One of these schools lies far from Oslo, so the school was briefed by e-mail. The other school was visited by the NCs who met the school leader and a team of teachers. A couple of teachers also made contacted the NCs via e-mail.

Promethean groups involved teachers from the UK, Spain, and support was also provided to one teacher in Belgium. Teachers were recruited via a variety of ways: Mainstreaming in schools (Two case study teachers helped to recruit 15 additional teachers from within their schools); Promotion at events and running dissemination workshops of C1- C3; Recruitment through the Promethean Planet online community of teachers; Recruitment and recommendation through the Promethean advocates and from the Promethean regional education teams. Teachers who had been involved in other projects were also contacted.

SMART groups included teachers from Spain, Germany and the UK, as well as two teachers from Poland and one from the Netherlands. The Polish, German and Spanish groups from previous cycles continued to participate in the project in Cycle 4. In Spain, where a new Associate Partner, the region of Extremadura, joined the project in 2012, a large range of schools have joined the SMART pilot group. In the UK and the Netherlands, the SMART Showcase schools and the network of teachers was contacted.

In Turkey, local education representatives have invited teachers to participate in C4. The invited newcomers represent half of the C4 pilot group. The other half of the group consists of teachers from cycle1, 2 and 3 groups carrying on the project activities. Some new teachers also applied spontaneously to C4.

2.2. Which teachers, which classrooms?

Overall in cycle 3, the iTEC activities and technologies had been run by 484 teachers across 578 classrooms from 18 countries: Austria, Belgium, Czech Republic, Estonia, Finland France, Germany, Hungary, Israel, Italy, Lithuania, Norway, Poland, Portugal, Slovakia, Spain, Turkey, and United Kingdom.

Among the partners coordinating the pilot activities, 14 were iTEC full partners and 3 were Associate partners (DZS, FNBE, Extremadura region); 15 represented national or regional educational authorities (either within or related to the MoE) and 2 were Interactive Whiteboard producers (SMART and Promethean).
More than double the minimum number (250 per cycle) of classrooms were involved in cycle 3. Table 1 provides an overview in terms of engagement in each country.

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation</th>
<th># teachers</th>
<th># classrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>BMUKK</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Belgium</td>
<td>EDUBIT</td>
<td>73</td>
<td>84</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>DZS</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Estonia</td>
<td>TLF</td>
<td>22</td>
<td>38</td>
</tr>
<tr>
<td>Finland</td>
<td>FNBE</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>France</td>
<td>CNDP</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Germany</td>
<td>SMART</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Hungary</td>
<td>EDUCATIO</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>Israel</td>
<td>MAKASH</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Italy</td>
<td>INDIRE</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Lithuania</td>
<td>ITC</td>
<td>41</td>
<td>70</td>
</tr>
<tr>
<td>Norway</td>
<td>NCIE</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>Poland</td>
<td>SMART</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Portugal</td>
<td>DGE</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Slovakia</td>
<td>ELFA</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td>Spain</td>
<td>SMART and Extremadura region</td>
<td>24</td>
<td>29</td>
</tr>
<tr>
<td>Spain</td>
<td>Promethean</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Turkey</td>
<td>MONE</td>
<td>79</td>
<td>82</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Promethean</td>
<td>22</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>484</strong></td>
<td><strong>578</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Engagement of teachers and classes in cycle 3

Image 5: Number of classrooms per country in Cycle 3
In cycle 4, as detailed in table 2 and image 6 below, up to 874 classrooms from 19 countries took part in the pilot activities.

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation</th>
<th># classrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>BMUKK</td>
<td>76</td>
</tr>
<tr>
<td>Belgium</td>
<td>EDUBIT</td>
<td>38</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>DZS</td>
<td>14</td>
</tr>
<tr>
<td>Estonia</td>
<td>TLF</td>
<td>30</td>
</tr>
<tr>
<td>Finland</td>
<td>FNBE</td>
<td>56</td>
</tr>
<tr>
<td>France</td>
<td>CNDP</td>
<td>21</td>
</tr>
<tr>
<td>Germany</td>
<td>SMART</td>
<td>5</td>
</tr>
<tr>
<td>Hungary</td>
<td>EDUCATIO</td>
<td>41</td>
</tr>
<tr>
<td>Israel</td>
<td>MAKASH</td>
<td>39</td>
</tr>
<tr>
<td>Italy</td>
<td>INDIRE</td>
<td>28</td>
</tr>
<tr>
<td>Lithuania</td>
<td>ITC</td>
<td>101</td>
</tr>
<tr>
<td>Netherlands</td>
<td>SMART</td>
<td>1</td>
</tr>
<tr>
<td>Norway</td>
<td>NCIE</td>
<td>23</td>
</tr>
<tr>
<td>Poland</td>
<td>SMART</td>
<td>2</td>
</tr>
<tr>
<td>Portugal</td>
<td>DGE</td>
<td>35</td>
</tr>
<tr>
<td>Slovakia</td>
<td>ELFA</td>
<td>20</td>
</tr>
<tr>
<td>Spain</td>
<td>Promethean</td>
<td>7</td>
</tr>
<tr>
<td>Spain</td>
<td>SMART and Extremadura region</td>
<td>73</td>
</tr>
<tr>
<td>Turkey</td>
<td>MONE</td>
<td>190</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Promethean</td>
<td>68</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>SMART</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>874</strong></td>
</tr>
</tbody>
</table>

Table 2: Number of teachers and classrooms involved in cycle 4 pilots
In cycle 4, as shown in the image 7, 36% of classrooms have been previously involved in iTEC, in one or several cycles. This suggests teachers could see immediate benefits from being part of the project, using new methods and tools, and wished to deepen the use of these resources.

Image 6: Number of classrooms per country in Cycle 4

Image 7: Share of classrooms previously involved in iTEC when starting C4
Image 8 shows an estimate of the share of subjects across pilots. It shows that in cycle 3, a short majority of iTEC teachers teach sciences, technology, engineering or mathematics (STEM). 310 classrooms over 578, representing 54% of all classrooms are led by STEM teachers. In 175 classrooms, i.e. 30% of pilots, the activities are developed in the frame of the Humanities (language, literature, history, social sciences, arts…). This can be explained by the STEM orientation given to some resources at the beginning or the project more particularly.

Image 8: Number of classrooms according to the subject taught by the pilot teacher

In addition, among these classrooms, approximately 25% seem to be from primary education, as the figures on student’s age show that about 25% of classes include students under 10.

From these various elements it appears that the proposed Stories and Learning Activities are subject agnostic and easily adaptable to any educational topic or student level/age range.

Image 9 and 10: Average age of students within Cycle 3 pilots
3. Pilot teacher’s preparation and support

In order to support pilot preparation WP4 organised various activities and follow up in C3 and C4 to inform the NCs on latest projects developments.

Along with partners from other WPs, EUN organized, in September 2012, a workshop for the NCs to present the iTEC technologies available for cycle 3 pilots (The iTEC environments, also called “shells”, and the widget store). The partners were also presented with prototypes services: the Composer, and the People and Events Directory.

EUN also kept frequent contact by email via the NC mailing list to inform them to upcoming events, teacher training opportunities, teacher community, reporting, etc. On average, monthly messages were sent in C3 and biweekly messages in C4.

WP6 also supported the NTCs in the use of the technologies developed in iTEC or used by partners, such as the Promethean and SMART Technologies. Webinars have been organised on various tech tools and guidelines have been circulated and made available online on the iTEC website (http://itec.eun.org/web/guest/technologies).

This can be considered as the first phase of the “cascade” pilot preparation process, in which the iTEC pedagogical and technical WP leaders present the activities and tools to the NCs, who then present them and to teachers and provide localized training on their use.

3.1. Resources provided by NCs

In order to support the pilot activities, a number of materials were created by the NPCs or by the teachers across cycles 3 and 4.

Once the Learning Activities are fine-tuned for the full scale pilots, the NPCs translate and localise them to adapt to the local language and context. This commonly involves inclusion of additional tools by NTCs.NPCs also produce or provide access to support materials such as tutorials (BE, EE, FI, HU, LT, TR, SMART), guidelines (CZ, NO, SK, PROM, SMART) or roadmap (FR), ideas and examples on how to use the activities (PROM, SMART), Moodle course template with embedded widgets (France), videos made by NPCs (EE, FR, PROM, Portugal, TR) or by iTEC teachers (FR, SK) presentations (EE, FR, HU, PT, SK ), blogs (EE) or wikis (PROM, TR) and additional resources.

Blogs were created and either centrally managed by the NPCs (Belgium, Czech Republic, France, UK, Spain, Slovakia ) or created by the teachers or the students to show progress and offer a space for reflection and commenting (in almost all countries).

For instance, the resources used by NPCs to support the teachers include:

- Various tutorials about the use of TeamUp: http://www.cndp.fr/itec/tutoriels/ (France)
- Examples of web 2.0 tools that can be used in the classroom:
  - The Italian iTEC “matrix”: https://sites.google.com/site/itecmatrixitaly/widget-suggeriti
  - Tips from the Norwegian NPC: http://itecnorge.ning.com/page/teknologitips
- A series of example of use of the iTEC activities and technologies
Presentations from Estonia: https://docs.google.com/presentation/d/1EpbH2aqUxqVrlK2RXyrFRotWuJ6JxIWqCPJC08ngk4/edit#slide=id.p23

Videos from France: http://www.cndp.fr/itec/productions

Examples from other educational initiatives:
- Collaborative activities in the classroom (France): http://outils-reseaux.org/EcritureCollaborative

From the teacher's side, the use or production of videos was widely spread over pilot groups (Austria, Belgium, Czech Republic, Estonia, Finland, France, Germany, Hungary, Norway, Slovakia, Spain, Turkey, United Kingdom,).

Some groups used presentations slides to show their work or give guidance, and the majority of pilot teachers created their own lesson plans. 20 teachers prepared an iTEC Multimedia Story (iMmS) and 75 submitted their own ‘teacher story’ narrative to be published on the iTEC website.

### 3.2. National workshops

Prior to or at the start of each cycle, NPCs initiate the training of participating teachers in the piloting processes, the Learning Stories and Activities, and the iTEC technologies or existing technologies recommended for each Activity.

Such training sessions were mostly held during face-to-face meetings but some NPCs also organized online sessions or webinar to present the resources to pilot teachers. These events have proved to be essential for teachers to feel confident in the implementation of the activities.

Table 3 lists the initial workshops held by NPCs in cycle 3. These events often included follow up sessions. Overall, more than 50 training and follow-up events were organized for the cycle.

#### Table 3: Teacher workshops held across Europe during Cycle 3

<table>
<thead>
<tr>
<th>Country</th>
<th>Date and place</th>
<th>Objectives and content</th>
<th>Format</th>
<th># pax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>15-19 October 2012, Bad Hofgastein</td>
<td>Presentation of the latest developments in iTEC, i.e. technologies</td>
<td>Face-to-face</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>29 November 2012, Eisenstadt</td>
<td>Use of the composer tool. Face-to-face workshop during the eLearning Conference 2012</td>
<td>Face-to-face</td>
<td>42</td>
</tr>
<tr>
<td>Belgium</td>
<td>12 September 2012</td>
<td>Teacher training and discussion on the practical and local implementation</td>
<td>Face-to-face</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>3, 17, 23, 27 October 2012</td>
<td>Teacher training and discussion on the practical and local implementation</td>
<td>Face-to-face</td>
<td>8</td>
</tr>
<tr>
<td>Date/Location</td>
<td>Event Description</td>
<td>Delivery Method</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------------</td>
<td>-----------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 November 2012</td>
<td>Teacher training and discussion on the practical and local implementation</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 December 2012</td>
<td>Teacher training and discussion on the practical and local implementation</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 September 2012</td>
<td>Teacher training</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Czech Republic</strong>&lt;br&gt;14, 21 October 2012</td>
<td>Presentation and approval on lesson plans before implementing iTEC</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 October 2012</td>
<td>Presentation of the project to teachers before the cycle, and debriefing on the pilots outcomes at the end of the cycle.</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 December 2012</td>
<td>Presentation of the project to teachers before the cycle</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estonia</strong>&lt;br&gt;11 October 2012, Tallinn</td>
<td>Presentation of the project to teachers before the cycle</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 January 2013</td>
<td>Debriefing on the pilots outcomes at the end of the cycle</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Finland</strong>&lt;br&gt;13 September 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>France</strong>&lt;br&gt;19-20 September 2012</td>
<td>Seminar on iTEC LAs and examples from previous pilot cycles.</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Germany</strong>&lt;br&gt;12 October 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hungary</strong>&lt;br&gt;14-15 September 2012, Budapest</td>
<td>Presentation of iTEC project and resources. Two x 1 day workshops.</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Israel</strong>&lt;br&gt;30 October 2012</td>
<td>Presentation of iTEC resources and introducing C3</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-5 October 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 October 2012</td>
<td>This first online meeting officially started up the LS implementation stage. Here we made sure all of the teachers had written their own LS, and were ready to start with their activities.</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Italy</strong>&lt;br&gt;12 November 2012</td>
<td>Placed at mid-cycle, the second online meeting’ main objective was to make sure there were good progress of the use of LAs/LS.</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 December 2012</td>
<td>Third and last web meeting was held at the end of the cycle, when all of the teacher terminated the pilot activities. The goal was to verify if and how the pilot activities were completed. Some teachers did not finish the piloting because it had required more time than expected.</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lithuania</strong>&lt;br&gt;16-18 October 2012, Vilnius</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-18 October 2012, Klaipeda</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Norway</strong>&lt;br&gt;26 September 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Czech Republic</strong>&lt;br&gt;14, 21 October 2012</td>
<td>Presentation and approval on lesson plans before implementing iTEC</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 October 2012</td>
<td>Presentation of the project to teachers before the cycle, and debriefing on the pilots outcomes at the end of the cycle.</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 December 2012</td>
<td>Presentation of the project to teachers before the cycle</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estonia</strong>&lt;br&gt;11 October 2012, Tallinn</td>
<td>Presentation of the project to teachers before the cycle</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 January 2013</td>
<td>Debriefing on the pilots outcomes at the end of the cycle</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Finland</strong>&lt;br&gt;13 September 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>France</strong>&lt;br&gt;19-20 September 2012</td>
<td>Seminar on iTEC LAs and examples from previous pilot cycles.</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Germany</strong>&lt;br&gt;12 October 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hungary</strong>&lt;br&gt;14-15 September 2012, Budapest</td>
<td>Presentation of iTEC project and resources. Two x 1 day workshops.</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Israel</strong>&lt;br&gt;30 October 2012</td>
<td>Presentation of iTEC resources and introducing C3</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-5 October 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 October 2012</td>
<td>This first online meeting officially started up the LS implementation stage. Here we made sure all of the teachers had written their own LS, and were ready to start with their activities.</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Italy</strong>&lt;br&gt;12 November 2012</td>
<td>Placed at mid-cycle, the second online meeting’ main objective was to make sure there were good progress of the use of LAs/LS.</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 December 2012</td>
<td>Third and last web meeting was held at the end of the cycle, when all of the teacher terminated the pilot activities. The goal was to verify if and how the pilot activities were completed. Some teachers did not finish the piloting because it had required more time than expected.</td>
<td>Online/Webinar</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lithuania</strong>&lt;br&gt;16-18 October 2012, Vilnius</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-18 October 2012, Klaipeda</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Norway</strong>&lt;br&gt;26 September 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 3: Teacher workshops held across Europe during Cycle 3

<table>
<thead>
<tr>
<th>Country</th>
<th>Date</th>
<th>Description</th>
<th>Method</th>
<th>Not Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td>11, 12, 15, 16 October 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Online / Webinar</td>
<td>Not available</td>
</tr>
<tr>
<td>Portugal</td>
<td>12 September 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td>Not available</td>
</tr>
<tr>
<td>Slovakia</td>
<td>21 September 2012, Poprad</td>
<td>The meeting aimed to introduce C3 learning activities, learning stories, iTEC tools</td>
<td>Face-to-face</td>
<td>22</td>
</tr>
<tr>
<td>Slovakia</td>
<td>21 November 2012</td>
<td>The main objective was to prepare webinar on piloting C3 for teachers who were not present in Poprad</td>
<td>Online / Webinar</td>
<td>7</td>
</tr>
<tr>
<td>Spain (Promethean)</td>
<td>29 October 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Face-to-face</td>
<td>Not available</td>
</tr>
<tr>
<td>Spain (Promethean)</td>
<td>23-25 November 2012</td>
<td>Week end iTEC. Follow up.</td>
<td>Face-to-face</td>
<td>Not available</td>
</tr>
<tr>
<td>Spain (SMART)</td>
<td>29 October and 8 November 2012</td>
<td>Presentation of iTEC project and resources and follow up</td>
<td>Online / Webinar</td>
<td>Not available</td>
</tr>
<tr>
<td>Poland (SMART)</td>
<td>11, 12, 15, 16 October 2012</td>
<td>Online webinar presenting iTEC, its goals and the way it is conducted. Presenting SMART content and ideas for pilots in cycle 3. Learning Stories and Learning Activities of Cycle 3.</td>
<td>Online / Webinar</td>
<td>10</td>
</tr>
<tr>
<td>Poland (SMART)</td>
<td>19 October 2012</td>
<td>Teachers’ declaration of participation and choice of the Learning Stories: Online webinar where the NPC gathered information from teachers on their participation and reasons to go/not to go. The participating teachers also discussed their choice of Learning stories with the NPC.</td>
<td>Online / Webinar</td>
<td>10</td>
</tr>
<tr>
<td>Turkey</td>
<td>September 2012</td>
<td>Presentation of iTEC project and resources</td>
<td>Online / Webinar</td>
<td>35</td>
</tr>
<tr>
<td>United Kingdom (Promethean)</td>
<td>9, 24 October, 13 November, 11 December 2012</td>
<td>To monitor and support, answer questions encourage, update etc</td>
<td>Online / Webinar</td>
<td>15</td>
</tr>
<tr>
<td>United Kingdom (Promethean)</td>
<td>10 October and 1st December 2012</td>
<td>To monitor and support, answer questions encourage, update etc</td>
<td>Face-to-face</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>52 events</strong></td>
<td></td>
<td></td>
<td><strong>401</strong></td>
</tr>
</tbody>
</table>

To prepare teachers to the cycle 3 pilots, National Coordinators have organised more than 50 events in which over 401\(^2\) participants attended. About half of these events were face-to-face ones.

\(^2\) Some figures were not known at the time of writing this report.
In cycle 4, as detailed in the table 4 below, 36 national workshops and webinars have been held, allowing over 559 participants, most of them teachers, to familiarise with iTEC methodologies and technologies (see table 4).

Table 4: Teacher workshops held across Europe during Cycle 4

<table>
<thead>
<tr>
<th>Country</th>
<th>Date and place</th>
<th>Objective, content and technologies used/presented</th>
<th>Profile participants</th>
<th># pax</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>16 February, Hofgastein</td>
<td>Progress on activities; Presentation iTEC Shell, Widget store, Composer. Tools used: Capture camera; Promethean tools; iTEC shell and Composer tools; TeamUp and Reflex.</td>
<td>NPCs, iTEC partners, teachers</td>
<td>26</td>
<td>Face-to-face</td>
</tr>
<tr>
<td></td>
<td>16 May Langenlois</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 May 2013, Tirol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>17 April, 2 May, 15 May 2013</td>
<td>Follow up webinars</td>
<td>Teachers</td>
<td>43</td>
<td>Online</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>18 March 2013</td>
<td>The main aim of the session was to discuss implementation of scenarios into classroom. Experienced iTEC teacher presented their previous project from cycle 3. Technical support teacher presented iTEC tools. Teachers presented their ideas and draft lesson plans and asked for help, explanations etc. Blackboard online session + PPT presentation + websites (ITEC, Czech iTEC blog and other relevant)</td>
<td>Teachers, technical and pedagogical support (ITEC teacher/best practice example)</td>
<td>11</td>
<td>Online / Webinar</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>20 February 2013</td>
<td>A webinar for non iTEC teachers and educational experts about iTEC scenarios and teaching in a future classroom</td>
<td>Teachers and experts</td>
<td>15</td>
<td>Online / Webinar</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>12 June 2013</td>
<td>Follow up webinar for iTEC teachers – presentation of cycle 4 results</td>
<td>Teachers</td>
<td>7</td>
<td>Online / Webinar</td>
</tr>
<tr>
<td>Estonia</td>
<td>22 February 2013, Tallinn</td>
<td>To introduce the learning story “Tell a story” and iTEC widgets</td>
<td>Teachers</td>
<td>29</td>
<td>Face-to-face</td>
</tr>
<tr>
<td>Finland</td>
<td>9 April 2013</td>
<td>Webinar SMART iTEC resources for Finnish teachers</td>
<td>Teachers</td>
<td>11</td>
<td>Online / Webinar</td>
</tr>
<tr>
<td>Finland</td>
<td>20-21 March 2013</td>
<td>To give basic information of iTEC project and preparing pilot. Program is available in Finnish <a href="http://oppimaisema.fi/index.php?477">http://oppimaisema.fi/index.php?477</a> Laptops, video projector, IWB (Promethean), tablets, widgets what</td>
<td>Teachers</td>
<td>38</td>
<td>Face-to-face</td>
</tr>
</tbody>
</table>

3 Some figures were not known at the time of writing this report.
### France
**Date:** 26-27 March, Poitiers

- **Meeting:** Teachers, exchange ideas and provide training for cycle 4.
- **Specific Objectives:**
  - Present C4 scenarios and activities, meet and exchange ideas with teachers.
  - Complete the "road map", present C4 evaluation and professional development opportunities.
  - Share examples from other countries (videos, testimonials), present and manipulate iTEC technologies and widgets.
- **Tools used:** iTEC-Moodle, widgets (TeamUp, Bubbl.us, Six hats, Idea Cards, and others).

### Germany (SMART)
**Date:** 12 March 2013

- **Meeting:** Presentation iTEC Learning Activities, Stories and Technologies.
- **Participants:** Teachers
- **Mode:** Not available
- **Format:** Online / Webinar

### Hungary
**Date:** 6 April 2013, Budapest

- **Meeting:** Presentation and group activities on iTEC Learning Activities, Stories and Technologies.
- **Participants:** Teachers
- **Mode:** 31
- **Format:** Face-to-face

### Israel
**Date:** 26 February 2013, Givaatayim

- **Meeting:** Introducing C4 learning activities and technology.
  - We had 2 teachers from previous cycles who showed what they have done and talked about the process.
  - We had round tables of discussions about iTEC pedagogy, TeamUp, the widget store, Six's, Google technology.
- **Participants:** Teachers, ICT coordinators, Headmasters
- **Mode:** 25
- **Format:** Face-to-face

### Israel
**Date:** 29 April 2013

- **Meeting:** Follow up webinar.
- **Participants:** Teachers
- **Mode:** Not available
- **Format:** Online / Webinar

### Italy
**Date:** 21-22 February 2013, Florence

- **Meeting:** To introduce the iTEC project and the cycle 4 pilot activities; to train the teachers in writing and implementing their own LS; to show them the iTEC technologies.
  - 2 days seminar: the first day, we presented the iTEC project (aims, objective and structures) and the Cycle 3 Learning Activities Packages. Second day, we let them start to create their own LS, counting on our presence for questions and doubts. Then the NTC introduced them to the iTEC technologies.
  - We used a pc + projector to show presentations and tools (TeamUp). We made pc's available to teachers, in order for them to start their own LS during the second day.
- **Participants:** Teachers
- **Mode:** 16
- **Format:** Face-to-face
<table>
<thead>
<tr>
<th>Country</th>
<th>Date</th>
<th>Event Description</th>
<th>Participants</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithuania</td>
<td>22, 25 February 2013</td>
<td>To get acquainted with iTEC, main stories and software, notebooks with proposed software</td>
<td>Teachers</td>
<td>Face-to-face</td>
</tr>
<tr>
<td>The Netherlands (SMART)</td>
<td>11 March 2013</td>
<td>Presentation iTEC Learning Activities, Stories and Technologies.</td>
<td>Teachers</td>
<td>Not available / Online / Webinar</td>
</tr>
<tr>
<td>Norway</td>
<td>19 March 2013</td>
<td>Informing teachers about iTEC, pilots, learning stories and activities. Learning about widgets and the widget store Main objective: teacher training and inspiration for planning of the iTEC pilots. For agenda, see: <a href="http://itecnorge.ning.com/">http://itecnorge.ning.com/</a> Keynote/Powerpoint, Wallwisher, video conference (Mark Johnson, Uni. Of Bolton) About 30 C4 teachers, 3 C3 teachers presenting their experiences, 1 researcher from Oslo University.</td>
<td>40</td>
<td>Face-to-face</td>
</tr>
<tr>
<td>Poland (SMART)</td>
<td>5 March 2013</td>
<td>Presentation iTEC Learning Activities, Stories and Technologies.</td>
<td>Teachers</td>
<td>Not available / Online / Webinar</td>
</tr>
<tr>
<td>Portugal</td>
<td>27 February 2013</td>
<td>Presentation iTEC Learning Activities, Stories and Technologies.</td>
<td>Teachers</td>
<td>Not available / Face-to-face</td>
</tr>
<tr>
<td>Portugal</td>
<td>April 2013</td>
<td>Follow up webinars</td>
<td>Teachers</td>
<td>Not available / Online / Webinar</td>
</tr>
<tr>
<td>Slovakia</td>
<td>April 2, 2013</td>
<td>Presentation of iTEC LAs, LSs and Technologies</td>
<td>Teachers</td>
<td>Face-to-face</td>
</tr>
<tr>
<td>Slovakia</td>
<td>May 3, 2013</td>
<td>Presentation of iTEC Learning Activities, Stories and Technologies, sharing best practices from Oslo and Brussels workshops by teachers who attended these events</td>
<td>Teachers</td>
<td>Face-to-face</td>
</tr>
<tr>
<td>Turkey</td>
<td>8 April 2013</td>
<td>Webinar SMART iTEC resources for Turkish teacher</td>
<td>Teachers</td>
<td>Not available / Online / Webinar</td>
</tr>
<tr>
<td>Turkey</td>
<td>17 April 2013</td>
<td>Promethean support for Turkish iTEC Cycle 4 pilot teachers</td>
<td>Teachers</td>
<td>15 Online / Webinar</td>
</tr>
<tr>
<td>Turkey</td>
<td>14-15 May 2013, Balıkesir</td>
<td>Ece Amca Primary school</td>
<td>Teachers</td>
<td>20 Face-to-face</td>
</tr>
<tr>
<td>Turkey</td>
<td>17-21 June 2013, Yalova</td>
<td>To introduce the iTEC widgets and give the participants a chance to practice and produce their own widget store. To give chance to share good practices via teacher story presentation.</td>
<td>50 iTEC pilot teachers and 20 iTEC head teachers</td>
<td>70 Online / Webinar</td>
</tr>
<tr>
<td>Spain (SMART)</td>
<td>28 February, Extramadura</td>
<td>To get familiar with the project, iTEC LS and LA. Presentation iTEC project, LAs, LSs, toolbox and examples to support the work of teachers, evaluation of the project, briefing from a teacher who attended an iTEC international workshop in Brussels, work group and conclusions.</td>
<td>Teachers, ICT and headteachers from pilots</td>
<td>43 Face-to-face</td>
</tr>
</tbody>
</table>
| United Kingdom (SMART) | 19 March 2013, Crown Woods | To introduce the ITEC Project to key teachers  
Face to Face: (1) General Introduction to ITEC (2) Overview of ITEC Pilot including Learning Stories and Activities (3) Evaluation Process (4) SMART Solutions (5) ITEC Webinars (6) Planning  
SMART Board, SMART Notebook, XC, SMART Widgets, Widget Store | Teachers 2 | Face-to-face |
|-----------------------|---------------------------|---------------------------------------------------------------------------------------------------------------|----------------|-----------------|
| United Kingdom (SMART) | 23 April 2013, Shirelands Academy | To introduce the ITEC Project to key teachers  
Face to Face: (1) General Introduction to ITEC (2) Overview of ITEC Pilot including Learning Stories and Activities (3) Evaluation Process (4) SMART Solutions (5) ITEC Webinars  
SMART Board, SMART Notebook, XC, SMART Widgets, Widget Store | Teachers 6 | Face-to-face |
| United Kingdom (SMART) | 13 May 2013, Wednesfield High | To introduce the ITEC Project to key teachers  
Face to Face: (1) General Introduction to ITEC (2) Overview of ITEC Pilot including Learning Stories and Activities (3) Evaluation Process (4) SMART Solutions (5) ITEC Webinars  
SMART Board, SMART Notebook, XC, SMART Widgets, Widget Store | Teachers 2 | Face-to-face |
| United Kingdom (Promethean) | Not available | Promethean support for UK ITEC Cycle 4 pilot teachers. Two iterations of the webinar. | Teachers 15 | Online / Webinar |
| **Total** | **36 events** | | **559** | 

Table 4: Teacher workshops held across Europe during Cycle 4
3.3. Follow up and support

Again, as in cycle 1 and 2, the NPCs have used a variety of ways to follow up and support the pilot teachers. They used face-to-face (initial teacher workshop, follow up meeting, school visits) and/or remote (e-mails, skype, webinars …) communication channels.

A national online platform, already used in Cycle 1 and 2, was used in 17 countries to provide information, advice and support, monitor the progresses and collect feedbacks and questions (blog, pages on national website, Moodle, Dot.Learn, SMART or Promethean platform, Google group, Facebook group).

Dozens of follow up meetings have also been held all over Europe to support and monitor pilot teachers’ progress. Some NPCs also organised school visits.

3.4. International workshops

Face-to-face workshops

To prepare ambassador teachers for the use of iTEC resources and also to build bonds between teachers across Europe, a series of three international teacher workshops (Task 4.5) have been delivered in C3 and C4, focusing each time on different aspects of piloting activities (technologies, creation of scenarios, …).

The events were organized in the Future Classroom Lab in Brussels, a fully equipped, reconfigurable, teaching and learning space. The objective was to immerse teachers in a radically different teaching environment to present new ways of organizing the lessons and trigger reflection among workshop participants.

The visit and use of the Future Classroom Lab also served as incentive for teachers as this was a good opportunity for them to find out more about the current trends in technologies for education, which connects well with the interests of participants in the iTEC project.

The workshops involved each time 20+ participants each time from all over Europe for a 2 day event, organized around several training sessions, group work and including social activities. These workshop are unique opportunities for teachers to work and share with their peers from across Europe.

1. Second international teacher workshop – 6-7 September 2012

In preparation for cycle 3, where new and upgraded iTEC tools had been released, several workshops were organised with both National Coordinators and Teachers in order to present the tools, make them familiar with it and collect their feedback. These workshops were held in the second week of September 2012 just after the iTEC General Assembly took place. The event was organised as follows:

- 5-6 September: Workshop for National Coordinators
- 6-7 September: Workshop for teachers

During the teacher workshop, eighteen teachers from sixteen countries were presented with the two iTEC Learning Activities for Cycle 3, ‘Observe and design’, and ‘Benchmark and design’. New iTEC technologies were presented over the course of the workshop.
On day 1, sessions included introduction of participants, of the projects activities, the FCL, and the iTEC learning environments, also called the “shells”:

- **Getting to know one another**: Introduction of teachers and sharing of experience (in groups)
- **Understanding the iTEC project**: Presentation of iTEC objectives and cycle 3 Learning Activities
- **Exploring technologies in the Future Classroom Lab (FCL)**: Presentation of FCL tools + Share and gain ideas about the use of various technologies in iTEC activities (in groups)
- **What is an iTEC Shell**: Introduction to the concept of an iTEC shell and the different shell technologies that can be used.
- **Getting started with iTEC Shells**: Create teachers’ workspace within a selected iTEC shell (in groups of 2)
- **Configuring a shell for the iTEC Learning Activities**: Select tools/widgets which could be used for the delivery of the iTEC Learning Activities

On day 2, participants were presented and explored the community, the composer tool and the widget store:

- **The online teacher community resources**: Guided tour in the iTEC online platform
- **What is the iTEC Composer?** Purpose and function of the iTEC Composer tool
- **Presentation of the people and event directory services**: Explore how access to People and Event directory could support teaching
- **The iTEC widget store**: Create educational widgets using existing content, or by content created in common web.
- **Simple educational widget creation**:

Creating educational widgets from pre-existing content.

- **Design ideas for educational widgets**: Propose new widget tool ideas

The event was a great opportunity for teachers from all over Europe to meet, share and exchange ideas.

An online survey was sent to the participants after the workshop to collect their feedback and identify strengths and weaknesses. 13 participants of 18 replied to the survey and expressed very positive feedback:
The 13 respondents rated positively the venue, the Future Classroom Lab (10 as excellent, 3 as good)

All respondents rated positively the workshop overall (excellent 8, good 5), and more particularly:
- Shells: 12 gave positive feedback (4 excellent, 8 good)
- Composer: 12 gave positive feedback (2 excellent, 10 good)
- Widgets: all gave positive feedback (7 excellent, 6 good)

After the workshop, all the respondents felt confident to use the iTEC technologies in the Cycle 3 and 10 on 13 said they would keep in contact with other workshop participants.

Some commented on the sessions: “[There were several sessions that could be rated as “most useful”...] I liked the visit of the Future Classroom Lab, the whiteboard session, the widget session... because they are giving me new impulses and ideas that I can use in my teaching”. (A teacher from Norway)

Participants valued the peer exchange and collaboration, within their school or with other participants from across Europe:

- “I will "teach" other teachers of my school so they can benefit from what was presented in the workshop as they will be pilot teachers on cycle 3. After that, sharing with them and the attending teachers the challenges and solutions we will find during the pilots, I will do my best to "spread" all what I learned attending the workshop." (A teacher from Spain)
- “I will of course participate in Cycle 3 and get in touch with another school to choose a learning history like ours to share and discuss ideas among students not among teachers.” (Another teacher from Spain)
- “I am going to do training for teachers on how to create a blog and use widgets.” (A teacher from Lithuania)

“Best part was exchanging experience with other teachers”. (An Estonian teacher)

2. Third international teacher workshop – 25-26 February 2013

The third international teacher workshop was held in February 2013 before the Cycle 4 of pilots started. The course was designed to give a hands-on approach to help participants develop their own ideas about 21st Century Learning and the effective use of technology.

The workshop aimed to give the participants the opportunity to:

- Explore the use of the innovative TeamUp tool for managing group activity in the classroom.
- Share experiences with other teachers and learn about the capability of different technical settings in European Schools.
- Explore Future Classroom ideas made possible by the range of hardware and software available in the Future Classroom Lab and its different learning zones.
• Be provided with access to the iTEC Widget Store, giving the opportunity to use a number of tools and resources to support innovative approaches to learning and teaching.
• Learn to easily create and collect simple learning resources and tools for reuse, and to enhance the learning process.
• Develop an appreciation of how Learning Activities and Learning Stories, produced in the flagship European Commission funded iTEC project, can be delivered in practice.
• Access community support and resources to provide ongoing opportunities for introducing innovative approaches to teaching practice.

The workshop was a 9 hour course spread over two days. It included 3 sessions

1. The Future is here: about participants approaches to innovation and tools used or that could be used to bring innovation to the teaching
2. iTEC Future Classroom Scenario tools: Presentation and use of the iTEC technologies (shells and widgets), reflection and creation of new widgets
3. My Learning Story: Presentation of ideas for implementation and reflection on tools and methods participants may use while delivering the pilot activities.

It also included a “world café” session, aiming to make participants reflect on what they have learnt during the workshop, how they would use the technologies, which widget they would create, how they would make use of the Learning Activities and how they will communicate on their piloting experience.

Twenty-two teachers from 10 countries attended the workshop; which gave them an opportunity to work with teachers from across Europe to develop innovative ideas for the future classroom, and to explore new ideas and technologies for use to enhance classroom delivery.

A survey collected the feedback from participants. 14 people responded to the survey. The workshop was rated as good or excellent by all respondents.

13 on 14 respondents said they would keep in contact with other participants after the workshop. All of them felt confident to use the shells and widgets in the cycle 4.

Participants comments showed again, as for previous workshops, that they wish to share what they have learned with their peers and to collaborate with other teachers: “As a result of the workshop, I will share the experience with my school/town...
teachers, definitely participate in the next iTEC cycle; stay in contact with other participants, as to process further cooperation and use more ICT in my teaching process." (A Lithuanian teacher). A participant from Portugal said: "[After the workshop], my effort will mostly be to spread within the school among colleagues to strengthen collaboration in projects development that can engage students in curricular activities based on some these innovative technologies."

The workshop was seen as inspirational by some: "I think the workshop was a real eye-opener. It gave me some new ideas and inspired me to double my efforts here in school. I think it was most useful and would recommend it to any teacher eager to try some new approach to his routine." (A teacher from Poland) and as a great opportunity to meet peers and share with them: "I was honoured to take part in this event and this was a worthwhile experience to collaborate with colleagues from Portugal, the UK, Austria and from across Europe." (A Turkish participant).

Finally, another Polish participant said that this workshop was “the best and most valuable workshop I have ever taken part in since I became a teacher.”

The practical organization (travel, hotel, meals, discovery of Brussels activities and dinner) was also well rated, with 100 % of positive replies (either excellent or good).

4. Fourth international teacher workshop – 6-7 May 2013

The fourth international teacher workshop held in May 2013 at a time where NPCs started to design the scenarios for cycle 5 at national level and no longer at central level as in previous cycles.

The course offered its participants the opportunity to be trained on the use of the toolkit for developing future classroom scenarios.

After the workshop, the participants were expected to support the National Pedagogical Coordinators in the development of future classroom scenarios for the cycle 5.

The workshop aimed to give the participants the opportunity to:

- Start to develop visions for the future classroom, following which, they discuss and analyse them and their impact on the future school environment.
- Be encouraged to visualise the future classroom as part of the educational landscape in the future.
- Collaboratively develop an understanding of significant developments, or trends in education society and technology.
- Critically evaluate their own work to produce a Future Classroom Scenario, and decide how they can use the techniques they have used in support of their school development plans.
• Explore Future Classroom ideas made possible by the range of hardware and software available in the Future Classroom Lab and its different learning zones.
• Access community support and resources to provide ongoing opportunities for introducing innovative approaches to teaching practice through international collaboration.

The course was organised around 3 modules:

1. The Future Classroom and a foresight approach: Overview of the ITEC project’s approach to development of Future Classroom Scenarios with examples for inspiration. Group activity based on assertions on future working methods and environments.
2. Educational landscape in the future: Changing educational landscape, changing teaching pedagogy supported by technology, student-centred learning, projects. Using trends to inspire Future Classroom Scenarios.
3. Working with scenarios: The Future Scenarios Toolkit for schools, exploring how to use it; working in groups with developing Future Classroom Scenarios.

20 participants from 12 countries took part in the workshop. 13 participants replied to the anonymous feedback survey circulated after the workshop. As for previous events, participants were very enthusiastic during the workshop and expressed it in the survey:

• The workshop as a whole was rated as excellent by 10 respondents and as good by 3 of them.
• Practical organization (travel booking, accommodation, venue, meals and social activities) was also very much appreciated (8 excellent, 4 good).
• 11 over 12 respondent (one did not reply) were confident to create a new scenario using the Future Classroom Scenario (FCS) toolkit presented and used during the workshop. A participant said he would use the toolkit to design school projects.

As a result of the workshop, the participants were more motivated to use the project resources and wished to present the ideas they got during the event to their colleagues: “I will introduce the iTEC project to my school colleagues in a few days and hope to involve more of them in the next activities.”

The event also made the participants confident to use more tools and technologies in their teaching: A participant for Turkey stated he/she
would “give more importance to iTEC technologies on the iTEC school blog and be more active because [he/she had] been very much motivated [by the workshop]. For example, she/he will use Moodle, Promethean Planet, LMS, Facebook group, teachers’ forum much more.”

Another from Portugal said “Now I feel more confident in using some collaborative tools like Padlet and Titan and even TeamUp. I’m already using them in an activity with my students (I’ve just used Padlet, TeamUp, an hour ago and everything went well and they liked). Now I understand what a scenario is and I became more versatile regarding my teaching.” A Czech teacher stated that “It was good to experience working with new apps as Titanpad or Power League, exploring things as augmented reality or see all the modern equipment in the Future Classroom Lab.”

Some were also inspired by the Future Classroom Lab: “Observing the Future Classroom Lab has brought ideas concerning my own classroom. I would like to change the environment in order to make it better for a group work For example I would like to use an older PC and a webcam we got in Brussels to make it easy to create animations in my classroom.” (A Czech participant).

Participants were enthusiastic about sharing experience with their peers: “It was great to cooperate with teachers from other countries and share ideas. We are still in touch ad keep exchanging ideas and materials.”

**Webinars**

Webinars have also been organised during cycle 3 and 4. Some were focusing on iTEC evaluation results and were open to anyone. Others targeted teachers more specifically and aimed at providing training on methods and tools that can be used to innovate teaching practices along with the LAs.

- **Promethean webinars for National Coordinators / for teachers on the implementation of C4 learning stories and activities**

Promethean held a series of webinars to give ideas for implementing the C4 learning stories and learning activities in the classroom.

The webinar presented:
  - Technologies for C4 including Internet based tools and the widget store
  - The shell of ActivInspire
  - The Promethean Planet iTEC on line community
  - Further training and support

The recording of the webinar is available at [http://prometheantraining.com/itec/Cycle_4.mp4](http://prometheantraining.com/itec/Cycle_4.mp4)

This webinar was offered 3 times to the iTEC National Coordinators and attended by NCs from Austria, Turkey, Hungary and Latvia.
The workshop was also run on five occasions for the teachers, two times for UK teachers (15 participants), once for Turkish teachers (14 participants), once for Austrian teachers (12 participants) as well as for an international audience in English (18 participants). In total, 59 teachers took part in online events organised by Promethean.

- **SMART webinars on the implementation of C4 learning stories and activities**

SMART has delivered two webinars for teachers.

One on 13 March 2013, providing ideas for C4 activities. The recording of the webinar is available at [http://www.youtube.com/watch?v=YR1rjF2uEIQ&list=PLW15RuzKCboiGE1VnNlYQBv3_a47FRTrT&index=9](http://www.youtube.com/watch?v=YR1rjF2uEIQ&list=PLW15RuzKCboiGE1VnNlYQBv3_a47FRTrT&index=9)

One on 14 March 2013 on SMART Widgets and XC webinar. The recording of the webinar is available at [http://www.youtube.com/watch?v=IdNLcWwq0Hw&list=PLW15RuzKCboiGE1VnNlYQBv3_a47FRTrT&index=8](http://www.youtube.com/watch?v=IdNLcWwq0Hw&list=PLW15RuzKCboiGE1VnNlYQBv3_a47FRTrT&index=8)

- **27 February 2013: Webinar on the flipped classroom**

The flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. In this webinar the core principles of a flipped classroom and different ways in which it might practically be achieved were discussed from a European perspective.

The webinar was led by the researcher Tarmo Toikkanen from Aalto University in Finland. 217 people registered to the webinar and 20 attended the live webinar. The recording can be found at [http://itec.eun.org/web/guest/webinars](http://itec.eun.org/web/guest/webinars).

- **15 May 2013: International webinar on VLE and 3D**

The webinar aimed at showing the teaching and learning potential of Multi User Virtual Environments (MUVE). The event was held in 'edMondo' (not 'Edmodo'), the virtual world for education tailored by INDIRE.

During the event, participants got familiar with the basic functions of edMondo and immersed in a real learning experience. It was a good opportunity to get inspired and share ideas for developing learning stories in 3D virtual spaces.

The webinar was led by Andrea Benassi from INDIRE, the National institute for innovation in education, Italy. 182 people registered to the webinar and about 20 participants took part in the virtual trip in edMondo.
4. Community building

4.1. National online communities

As mentioned and detailed in the D4.7, most pilot groups or countries used a national platform to support the pilot activities and allow the pilot teachers to exchange and raise questions. Overall, and as in previous cycles, the national online platforms were used to:

- Provide information on the Learning Activities, tools and technologies delivered in iTec
- Organize online briefing meetings via a video-conference tool
- Provide methodological and technical support through forums, document sharing, chats or video-conference
- Support teacher collaboration and enable peer advice and sharing of good practices and experiences
- Follow up on teachers’ progress (teachers uploading their work, creating blog posts, posting videos…)
- Show the outputs produced by teachers and give inspiration to other teachers (videos, lessons plans, blogs, etc.).

NCs used different formats of online communication tools, as detailed below in Table 5. This gives an overview of the online platforms used by NCs to support their teachers.
<table>
<thead>
<tr>
<th>Country</th>
<th>Type and URL of the online platform</th>
<th>Features and Content</th>
<th># users or page views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>DotLRN: <a href="http://itec-dotlrn.eun.org/dotlrn/depts/itec4at">http://itec-dotlrn.eun.org/dotlrn/depts/itec4at</a></td>
<td>The DotLRN platform includes workshop material, background information on pilots and feedback and evaluation of activities.</td>
<td>Data not available</td>
</tr>
<tr>
<td></td>
<td>Websites : <a href="http://www.lms.at">http://www.lms.at</a> and <a href="http://virtuelleschule.bmukk.gv.at/projekte-international/eu-projekte/itec/">http://virtuelleschule.bmukk.gv.at/projekte-international/eu-projekte/itec/</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>Website and private space for teachers: <a href="http://www.edubit.be/wp/welkom/itec-europees-project">http://www.edubit.be/wp/welkom/itec-europees-project</a></td>
<td>Main goal was to distribute examples, explain the procedure</td>
<td>80 users</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>National website: <a href="http://www.dzs.cz/index.php?a=view-project-folder&amp;project_folder_id=469&amp;">http://www.dzs.cz/index.php?a=view-project-folder&amp;project_folder_id=469&amp;</a></td>
<td>DZS official website where main information about iTEC is published for the public (objectives, number of teachers, schools etc.). Work platform for iTEC teachers to get advice and share experiences. Includes guidelines, outcomes and videos. Also targets other teachers interested in innovative learning and teaching approaches.</td>
<td>Data not available</td>
</tr>
<tr>
<td></td>
<td>National blog for teachers: <a href="http://www.itecblog.cz">www.itecblog.cz</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td>Portal Koolielu (group iTEC Eesti) forwards information about different events in educational life in Estonia and elsewhere: <a href="http://koolielu.ee/groups/profile/137067/itec-eesti">http://koolielu.ee/groups/profile/137067/itec-eesti</a></td>
<td>In iTEC Eesti group, teachers share translated materials and use the forum to ask questions. As in cycle 2, they do not much use that opportunity; most of the questions came by email. The Facebook group is used to share news and information about iTEC. The blogs aim at sharing information among pilot teachers. They include presentations, materials, links, articles, tutorials.</td>
<td>54 members</td>
</tr>
<tr>
<td></td>
<td>Facebook (group iTEC Eesti): <a href="https://www.facebook.com/iteceesti">https://www.facebook.com/iteceesti</a></td>
<td></td>
<td>63 likes</td>
</tr>
<tr>
<td>Country</td>
<td>Website/Group</td>
<td>Website (if applicable)</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>---------------</td>
<td>-------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Finland</td>
<td>oppimaisema.fi</td>
<td><a href="http://oppimaisema.fi">link</a></td>
<td>The website includes the Learning stories and activities, a forum, a blog, wiki, video tools, project presentation tool, tutorials, pilot processes, links to widget store, TeamUp etc. The main objective of the national website is to provide information about iTEC in Finnish to an audience of teachers, advisors, and decision makers. The website also provides links to teachers' pedagogical websites and other documents. It includes a call for participation for teachers.</td>
</tr>
<tr>
<td>France</td>
<td><a href="http://eduscol.education.fr/cid71352/projet-europeen-itec.html">link</a></td>
<td><a href="http://www.cndp.fr/itec/">link</a></td>
<td>The main objective of the national website is to provide information about iTEC in French to an audience of teachers, advisors, and decision makers. The website also provides links to teachers' pedagogical websites and other documents. It includes a call for participation for teachers.</td>
</tr>
<tr>
<td>Hungary</td>
<td>Facebook Group <a href="https://www.facebook.com/groups/1110565155585164/">link</a>, Sulinet portal group <a href="http://kozosseg.sulinet.hu/hu/group/itec-c3/profile">link</a>, Sulinet closed group <a href="http://kozosseg.sulinet.hu/hu/group/itec-c4/profile">link</a></td>
<td><a href="http://kozosseg.sulinet.hu/hu/group/itec-c3/wall">link</a></td>
<td>Facebook proved to be more suitable for some teachers than mailing lists. A small group of teachers regularly checked the group site and reacted on the activities. This group was active in sharing their ideas and providing feedback to others. The Facebook page was originally created for cycle 2 teachers. After cycle 2 teachers were active from time to time. Sulinet was also tested but it was less popular than Facebook. The aim was to use Sulinet for communication on the long term since it is more suitable for educational purposes and as an educational website. It includes wall, document library, messages, etc. It was used as a common platform where all training materials were shared, as well as teacher documents. Teachers were asked to write one post per week on the wall about their progress. The wall was also used to communicate on news, training opportunities, ideas, etc.</td>
</tr>
<tr>
<td>Italy</td>
<td><a href="http://www.indire.it/blogs/itec3">link</a>, <a href="http://www.indire.it/itec4">link</a></td>
<td><a href="http://www.indire.it/blogs/itec3">link</a></td>
<td>It's an in-house developed platform, called &quot;Edulab&quot;, already used in Cycle 1 and 2. We came back to Edulab after realizing that the choice of using a Wordpress platform in Cycle 3 had caused a decrease in teacher participation (see Cycle 3 report). Forum, chat, document repository, and an Adobe Connect &quot;room&quot; used for web conferencing during the pilot.</td>
</tr>
</tbody>
</table>
The aim is to stay in touch, discuss and share information within the Italian community of teachers. It was also the home of the 3 pre-scheduled Web meetings (at start/middle/end of pilot activities).

<table>
<thead>
<tr>
<th>Country</th>
<th>Platform/Website</th>
<th>Description</th>
<th>Subscriptions/Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Israel</td>
<td>Facebook page <a href="https://www.facebook.com/itecilisrael">https://www.facebook.com/itecilisrael</a></td>
<td>The main objective of the page is to offer teachers a space where to find out more about iTEC and where to post within the community their teaching process.</td>
<td>64 likes</td>
</tr>
<tr>
<td>Lithuania</td>
<td>Website: <a href="http://lemill.net">http://lemill.net</a> and <a href="https://sites.google.com/site/itecscenarijai">https://sites.google.com/site/itecscenarijai</a></td>
<td>This is a web-site and collaboration platform, allowing teachers to collaborate and receive iTEC teacher’s materials and reports. All information for teachers is presented in this community. Teachers can comment on each post.</td>
<td>120 users – 100+ forum posts</td>
</tr>
<tr>
<td>Norway</td>
<td>Ning platform: <a href="http://itecnorge.ning.com">http://itecnorge.ning.com</a></td>
<td>It is a closed social network where teachers can connect and share experiences and tools. Teachers can also upload documents, video, pictures, and post on the blog.</td>
<td></td>
</tr>
</tbody>
</table>
| Portugal | Moodle platform: [http://moodle.crie.min-edu.pt/course/view.php?id=551](http://moodle.crie.min-edu.pt/course/view.php?id=551) | IT aims to promote interaction between teachers (Pedagogical and technical forums), To support teachers (pedagogical and technical); To acquire feedback from teachers; To encourage the sharing of materials. It includes Learning Stories and Activities, tools and technologies and resources produced by teachers and students. It also includes the presentations and resources used in the face to face meetings. | Pedagogical Forum: 2669 views
Technical Forum: 1019 views
Global plans Forum: 1617 views
TeamUp Tutorial: 210 views
Cycle 3 materials: 230 views |
| Promisean | Promethean Planet English home page [http://community.prometheanplanet.com/en/user_groups/itecprom/default.aspx](http://community.prometheanplanet.com/en/user_groups/itecprom/default.aspx) | Promethean Planet iTEC Project landing page EN [www.prometheanplanet.com/iTEC](http://www.prometheanplanet.com/iTEC) ES [http://www1.prometheanplanet.com/es/server.php?show=nav.29749](http://www1.prometheanplanet.com/es/server.php?show=nav.29749) PT [http://www1.prometheanplanet.com/pt/server.php?show=nav.29759](http://www1.prometheanplanet.com/pt/server.php?show=nav.29759) | Promethean Planet is a free online community for teachers aiming to bring change in the classroom. It has over 1.6 million members, 80,000 resources which have been downloaded 30,000,000 times. iTEC project landing page in English, Spanish, and Portuguese The community section of Promethean’s support for the iTEC project is an online place where Promethean provides its pilot teachers and wider community with the latest information to keep up to date on the iTEC project. It contains blogs, forums, a file gallery and a wiki. Teachers are encouraged to join the conversations by commenting on a blog article or posting in the forums. Teachers can also find resources from previous cycles, learn about future cycles, and meet Promethean’s iTEC coordinators and iTEC teachers. | Data for the iTEC Promethean community  
- Cycle 3: 58 users  
- Cycle 4: 81 users  
- 17 “iTEC Prom teacher” blogs viewed 6808 times  
- 11 “iTEC Prom expert” blogs viewed 4371 times  
- 8 “iTEC Prom update and news” blogs viewed 3044 times  
- 23,363 page view | Data not available |
| Slovakia | Website: [http://itec.elfa.sk](http://itec.elfa.sk) | The website provides complete information on the iTEC resources: Learning Stories and Activities, iTEC technologies, updates on events. It is the main communication channel between the NPC and the teachers. The website is also fed by teachers who share their best practices and their experience in iTEC international workshops for those who attended | | | |
SMART

Websites:
Spain
http://www.smarttecnologiayeducacion.es/index.php/category/ai{nhoa-marcos/itec-project/} and
http://www.edmodo.com/home#/join/cddb323977f22cb4a5058cd8a4823ac

Poland
http://www.tablice.net.pl/ and

Edmodo groups, one general fora for SMART pilot teachers
http://www.edmodo.com/home#/join/4f9a86ffbc5aad8c605f8dd833071c4e

The pages include SMART Widgets (Six thinking hats, Randoms Words, Idea Cards, and Progressive Inquiry). The SMART Notebook includes templates for Learning Activities.

The SMART groups have also used Edmodo, where all SMART teachers could access the material, the blogs, the videos of the webinars, as well as a Facebook group.

Table 5: Online national platforms set up to support iTEC teachers

<table>
<thead>
<tr>
<th>Turkey</th>
<th>Google group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Official page of the project: <a href="http://egitek.meb.gov.tr/itec.html">http://egitek.meb.gov.tr/itec.html</a></td>
<td></td>
</tr>
<tr>
<td>The page for Cycle 3 of the project: <a href="http://itec-turkeycycle3.wikispaces.com/">http://itec-turkeycycle3.wikispaces.com/</a> and for cycle 4: <a href="http://itec-cycle4-turkey.wikispaces.com/Ana+Sayfa">http://itec-cycle4-turkey.wikispaces.com/Ana+Sayfa</a></td>
<td></td>
</tr>
<tr>
<td>It includes news, updates and information on the project. Teachers can ask questions to which the NPC replies.</td>
<td></td>
</tr>
<tr>
<td>It is targeting the public audiences. It introduces iTEC and present activities for each cycle.</td>
<td></td>
</tr>
<tr>
<td>These pages provide information and a tutorial to candidate teachers. It is established especially for Cycles 3, 4 and 5. Include a chat widget: <a href="http://itec-cycle4-turkey.wikispaces.com/Help+Desk+Chat+">http://itec-cycle4-turkey.wikispaces.com/Help+Desk+Chat+</a></td>
<td></td>
</tr>
<tr>
<td>550 teachers registered</td>
<td></td>
</tr>
</tbody>
</table>

Edmodo iTEC Spain 40 members
Facebook group: 377 likes
Edmodo SMART iTEC 32 members;
As stated in the D4.7, the use of national platforms, offering teachers a space for sharing information, proved to be a successful initiative. NCs have tested and adapted the tools to the needs and behaviours of the teachers in order to offer them the most appropriate support.

### 4.2. The iTEC European online community

Since the start of the pilot activities (Cycle 1, Sept. – Dec. 2011), an online European community platform had been offered to teachers where they could find resources from iTEC, examples of use and support via the forum. The iTEC community strategy targets both pilot teachers and teachers not yet involved in iTEC, with the aim of engaging a wider community of practice and sustaining the implementation of iTEC activities.

After the cycle 1 and 2, and as detailed in the D4.7 report on the Teacher Community, delivered in August 2012, the online community pages were re-designed to follow the recommendations formulated by iTEC partners and better meet teachers needs but also to give more visibility to teachers’ activities within pilots.

During Cycle 3, a teacher survey on dissemination means showed that teachers preferred to use the iTEC teacher community as the main means to get information, and that they also liked to use Facebook and other social media.

In August 2012, before the start of cycle 3, the iTEC website and community were re-designed and merged. The new Community included a forum, a blog including teachers stories, an overview of pilot countries and a page on training opportunities. The moderation and animation of the forum had been managed by EUN as well as iTEC teachers playing the role of CoP moderators. All the community pages are public and registration/log in is necessary to post in the forum.

Overall, when visiting the iTEC website, teachers can find information about: Scenarios, Learning Activities and Stories, Technologies, Ideas for implementation, training opportunities, and more recently about activities in piloting countries. They can give feedback, rate and comment on the resources (LAs), and can ask for advice or tell about their experience in the forum, or by sending their own story.
The teacher community pages (see Image 11) include:

- **Teacher's stories**: A space where teachers can find examples of use of the iTEC resources by other teachers and where they can find a guidance template to submit their own story. Once submitted, stories are approved by the iTEC web editor. Stories can be rated by the registered users. 75 teacher stories have been published so far. See [http://itec.eun.org/web/guest/teacher-stories](http://itec.eun.org/web/guest/teacher-stories)

- **Pilot countries**: a map indicates which are the pilot countries and give an overview of the activities as well as links to the national platform and knowledge map, detailing the current situation if ICT use in education in the piloting countries. See [http://itec.eun.org/web/guest/pilot-countries](http://itec.eun.org/web/guest/pilot-countries)

- **Training**: Information on past and upcoming teacher workshops and other online events organised by iTEC partners at European level (in English). See [http://itec.eun.org/web/guest/training](http://itec.eun.org/web/guest/training)

- **Forum**: The forum is divided into 5 categories plus a “Teacher café” where users can exchange views and thoughts on any topics. See [http://itec.eun.org/web/guest/forum](http://itec.eun.org/web/guest/forum). The categories include:
As previously mentioned, teachers from the iTEC pilots have been selected to moderate and animate the forum discussions and to encourage other teachers in the pilots to exchange experience and best practices. There were 2 moderators in C3 (Spain, Turkey) and 12 in C4, from 12 different piloting countries. The role of moderators was to reply to any question in the forum but also to share their own experiences and practices and to encourage their network to do so.

At the end of C4 there were 843 members registered to the Teacher Community. 133 users are posting in the forum and many users visit the forum to retrieve information as shown by the high numbers of page views. The forum use and traffic on community pages is detailed in Table 6 below.

<table>
<thead>
<tr>
<th>Registered users</th>
<th>TC unique page views</th>
<th>TC page views</th>
<th>Forum page views</th>
<th>Forum posts</th>
<th>Forum participants</th>
<th>Forum posts views</th>
</tr>
</thead>
<tbody>
<tr>
<td>843</td>
<td>5,994</td>
<td>10,502</td>
<td>4,300</td>
<td>1,519</td>
<td>133</td>
<td>264,486</td>
</tr>
</tbody>
</table>

Table 6: Teacher Community traffic statistics in C3 and C4 (September 2012 - July 2013)
Source: Google analytics and iTEC website management system.

In the forum, popular topics included examples of use of the Learning Activities and Stories and teachers own stories and practices, technologies used to implement the activities such as iTEC technologies and in particular widgets, but also other social media tools, online virtual environments and hardware such as tables and 3D printing. Sharing of experiences and looking for advice were the main aspects attracting teachers to the community. Some forum users also asked technical questions and few looked for peers with whom to collaborate.
5. Use of iTEC resources in the pilots

5.1. Background

In cycle 3 and 4, the validation of iTEC resources took place in over 1400 classrooms across 19 countries. The high numbers of pilots seems to show the methodology and tools developed in iTEC are attractive to teachers, who often state they try or wish to have more colleagues involved in the project at school level.

As shown in image 12, in cycle 3, the most popular package of Learning Activities were within “Observe and Design”, chosen by 62% of the pilot teachers (360 classrooms). Benchmark and Design was chosen by 36% of pilot teachers (208 classrooms) and 2% of teachers either used a mix of both or did not specify.

![Image 12: Use of Learning Activities in cycle 3](image12.png)

Image 13 hereunder indicates the use of Learning Stories within each package of Learning Activities. Among all pilot teachers, 44% choose the Learning Story “Redesigning School” and 11% Visualising the planet surface (these LSs are related to the package Observe and Design). 22% used the “Designing a Maths Learning Game” and 7% the “Design a physics simulation” story, both related to the package “Benchmark and Design”. The two Stories exemplifying the LA “Benchmark and Design”, which were subject specific, were less popular than the more generic ones.
Benchmark and Design was used in 208 classrooms (36%) and was mostly used with the Story “Design a Learning Game” - 125 classrooms - 22% of total pilots. The Story on Physic Simulation was used in 40 classrooms (7%).

Image 14 above shows that the most popular Learning Story among teachers in cycle 4 was “Tell a story”, used in 401 classrooms from 17 countries, representing 47% of all C4 pilots. The two other stories, “Create an object” and “Create a game” were respectively used in 158 (19%) and 103 classrooms (12%). Teachers used a mix of 2 or 3 proposed LSs or sometimes LSs from cycle 3 as a continuation of their C3 activities.
5.2. **Examples of use and feedback from the National Pedagogical Coordinators**

**Cycle 3**

Many innovative approaches, i.e. any changes to the teachers' usual practice, were reported by NPCs in cycle 3. There were different degrees of innovation and various perceived enablers and barriers.

For many NPCs, the innovation lay in the design based work, active involvement of pupils in their own learning process, usage of ICT in all phases of the learning process and connection to real life problems. The role of the teacher in class was also challenged and renewed as in some activities he/she was more a guide and tutor, leaving pupils handling their own learning process.

**iTEC Learning Activities seen as an enabler to innovation**

In some countries, the Learning Activities/Stories approach were perceived as the enabler for change and innovation. The Italian NPC stated it was very successful among teachers, who learned a new and effective way of designing lessons. In Italy, working in teams was not new to teachers but using iTEC means to drive the teamwork to a new level was challenging.

In Belgium, teachers working together with students on design brief and videos production was seen as very stimulating and fruitful. In Turkey, the NPC felt iTEC provided freedom, allowed and recognised creative thinking and enabled the students to express themselves, increase their technology literacy and team skills. In Czech Republic, the NPC stated all teachers managed well to integrate iTEC in their normal curricula, and they assessed the project as interesting, innovative and attractive for pupils. For the Hungarian NPC, the involvement of an additional (younger) group of pupils was new in many cases. Students creating learning resources was also innovative (Hungary).

**A change in the teacher and student roles and attitudes**

For Finnish teachers, the LSs/LAs in cycle 3 had pushed teachers to rethink their pedagogical routines and encouraged students to get involved, plan and fulfill courses. Teachers in Slovakia started to organise teamwork, played the role of facilitator and guided students working on real life problems. In France, many teachers were already familiarized with the iTEC project pedagogy and use of ICT. However, before getting involved in iTEC, they had not pushed it to the point of replacing regular lectures by such approaches. Some teachers said they were very satisfied with students' engagement with this form of learning and that it led to student autonomy.

In Hungary, there were different attitudes among teachers. Some remained within their comfort zones and were also less active in the community. The ones who really introduced changes in their praxis gave more freedom to pupils in what to learn and how to learn. This was also new for pupils.

In Turkey, it was reported teachers started to reflect on their role and renewed it to become more a tutor in the educational process. The central blackboard was less used as primary information tool and the teachers supported more actively the students. After taking part in the iTEC pilot, the teachers have changed their teaching strategies and methods as they have appreciated the value of and the innovation based learning, and the integration of web tools with curriculum for 21st century learning.
In Portugal, teachers introduced new technologies in their practices and they changed their methodology implementing "novel instructional formats, increased delegation of responsibility and control over the learning process to the students".

Some Italian teachers reported there was a lot to do in the off-school time. This was mainly because lot of technology was needed to do a “good job”, and technology is more accessible at home, rather than school, especially for students. This implies a sort of flipping: the teacher is forced to rethink what to do in the classroom and what to do at home. This presents benefits but also disadvantages: some teachers reported such a flip could create gaps between students as some do not have computer and internet at home.

Teachers in Promethean pilots used flipped learning, blogs, collaborated online with other teachers and worked in school teams. Also, teacher’s role in class was different from before as student and teacher became co-learners of the new technology. It was reported students took more responsibility for their own learning and they became presenters.

The Teacher Story 1 hereunder illustrates the use of the flipped learning approach through the implementation of the redesign activity from cycle 3.

Teacher story 1: Redesigning the classroom through 'flipped learning', United Kingdom

Redesigning the classroom through 'flipped learning'

The flipped classroom is a pedagogical model through which the established learning dynamic is reversed: pupils access their lessons and classwork from home, and then carry out ‘homework’ in school, working with their classmates.

Godfrey Almeida, a mathematics teacher in London, decided to try out this method of teaching as part of his iTEC project activities. Pupils accessed video lessons from home, did their own research independently into the topic, and then discussed their findings with their classmates and teacher during their lesson.

"I first heard about flipped learning when I met the National Pedagogical Coordinator for the UK and discussed possible ideas for cycle 3 as part of the iTEC pre pilot activity back in Winter 2011. I chose to do this with a year 12 group to see if I could get them to learn independently and also as a precursor to their possible studies at university. I actually have 2 year 12 groups. I chose the weaker of the two groups to see if they could take this on and challenge the other group in a tangible way.

The initial brief was based around the idea of the teacher producing the content videos and reading materials for students to watch and read before the lesson. Any misconceptions arising would be discussed back in the class with students grasping most of the key ideas for themselves. Having done some background reading into independent study, I decided to manipulate the brief a little. For me the idea of flipped learning is that students find the content themselves and study independently to try to understand the topic. The ulterior motive being less work for me! I gave a very short brief to my students about what I wanted them to do and what I expected them to produce as a result.

My brief was, “Research the intersections of lines and circles. Find out as much as you can to do with this topic. You should produce a 2 page document of notes, with examples and as many references as you can.” Other than that, I left the students to their own devices…"
The notes that came back were more detailed than I had hoped. There was a very comprehensive set of notes with great detail.

After several sessions, most students had improved their learning and got better results in the assessment. Godfrey continued to carry such activities to understand better the impact of flipped classroom on its pupils learning.

To learn more about the class’s activities, click here.

For SMART groups in Spain and Germany, as in other groups, the innovation consisted of more collaboration among students, teachers letting students organise their research and work, and asking them to present and share with others.

**Increased student motivation and the development of new skills**

In Turkey, the project motivated the students because they were doing something different from other classes and were given trust and responsibilities. The most attractive aspect to students seemed to be the possibility for students to learn with fun and at their own pace. Unlike other courses, their lesson is completely project-based and has a set of activities. The activities also provided student groups with room for creativity. After teachers have used few learning activities, the new learning process became natural and students were very pleased to learn that way, although it was very different and difficult at the beginning.

Turkish teachers reported to the NPC that students developed their self-confidence, teamwork, cooperative learning skills, interaction, communication skills, social skills, knowledge transfer and responsibility. The Turkish students enjoyed very much the increased use of technologies in the classroom but also the autonomy given by the iTEC activities. They have developed digital skills by learning how to use a range of web tools (blogs, Prezi, TeamUp and Scratch). They also increase their self-expression skills and online information search. The use of Learning Stories helped developing self-learning, cooperative learning, project-based learning and study without having to learn by heart. By working in groups, they learned to cooperate in order to reach a specific goal. Their motivation and interest in the subjects increased and they have spent a lot of time working on inquiry based activities. According to the NPC, the student’s results generally increased from 40-50% (before ITEC) to 80-90% of success (after iTEC).

In Belgium, the main pedagogical change concerned the way of approaching technology. Because they have used tablets in C3, teachers could focus on the content rather than on the technical barriers and challenges. Main highlight is that teachers discovered that working in a creative way on a topic enables a better engagement of students. When students make their own film, they feel very much involved and pay lot of attention to the topic, the preliminary analysis and the production steps.

Not only the motivation increased but also the role of the students changed, as described by the Turkish NPC: The students attended the lessons more effectively than before and took more responsibility as well. The renewed student role included several aspects:

- **Individualisation**: The students both learn how to study in teams and individually as every student has got a responsibility of preparing at least one digital work.
- **Collaboration**: The students are usually connected to each other in the team that they present their works together and support each other
• Creativity: The students try to create their own digital works like adding music or pictures that they like or love or using the tools in a different way.
• Expressiveness: They displayed their works such as Presides or Scratches by telling how to use it.

In Turkey, it was reported teachers understood the importance of the peer groups’ motivating effect. By themselves other students began to use web tools, used in pilot class.

Other reported pedagogical changes

In Portugal, pilot teachers organized teamwork more often and introduced technologies in their practices; they changed their usual practices, became more constructivist and promoted collaboration between students.

According to the Promethean NPC, different pedagogies emerged around personalisation with one to one schemes.

French teachers adopted a multidisciplinary approach to develop the scenarios and involved a range of stakeholders in their projects: Students were encouraged to interview and seek outside experts, to collaborate in small groups, to submit their productions to an external audience (mainly family).

Austrian teachers read the Learning Stories on an inquiry based perspective and developed further this aspect of teaching.

In Italy, the Participatory Design Workshops opened new ways of assessing work. It obliged students to deal with critics (and the negative feelings often associated to them) and to change their plans according to these critics. Some teachers reported it was a strong experience learning for the students.

Teacher training and professional development

The teacher workshops were seen as a way to boost collaboration, motivation and effective use of the iTEC methodology in the pilots. They also offered professional development opportunities to its participants.

The teacher's workshop seems to be an important enabler, as teachers are allowed to experiment, exchange ideas, and use time for planning their pilots (Norway NPC, cycle 3).

The teacher who choose to use intensively the technologies for teaching had to develop they own ICT skills to be able to do so (Turkey NPC, cycle 3). In other countries as well it was reported that teachers started to develop their own skills independently.

Using technologies to drive pedagogical innovation

In cycle 3 and 4 a wide variety of hardware and software have been used to support the Learning Activities. Details was given above in the report, in the section 1.3 on technologies. The practices detailed here under have been reported by NPCs after the completion of C3 pilots.

In Belgium, creating a blog, a video or using tablets for teaching was new to teachers.
In Czech Republic, teachers were already very familiar with a large range of tools and started to use TeamUp, SketchUp and Blogger. They were very open to start using new tools. In Slovakia, teachers learned to use SketchUp and blogging tools.

In France, the greatest innovation in this cycle was that teachers used technologies to give students more autonomy and flexibility to learn lessons and cover points of the curriculum. Hungarian teachers stated iTEC brought them to more student-centered open classroom atmosphere and ICT was used for this purpose.

In Italy, some teachers let the students use Facebook in the classroom for the first time. They used it to coordinate student's homework. Students used it to document their processes and share products and documents between teammates and with other teams. Some teachers reported that - in the iTEC pilot - students were left to be more independent in which technologies to use and how. Other teachers reported to have used the same technologies but in a different way, eg IWB not only used to show something but to let the students to "build" something.

In Norway, some were able to use technology in a more innovative way than we expected. Few were able to design their own math's games and to experiment with game-based learning. Finnish teachers used programming robotics, QR codes in election adds to work on redesigning of the environment.

The Teacher Story 2 hereunder exemplifies the creation of games in Cycle 3.

**Teacher story 2: Creating learning games in HTML5, Norway**

**Creating learning games in HTML5**

Jan Lindsø’s pupils were tasked with creating an educational learning game for a specific audience as part of their iTEC pilot activities.

The pupils set to work, brainstorming ideas, and then writing collaboratively to expand upon their concepts.

Pupils used mind-mapping software (Mindomo) to present their ideas visually. After receiving feedback from their teacher, the pupils used **Construct 2** to create their games in HTML5.

The games created include a multi-platform game involving maths problems, a point-and-click game for learning ICT skills, and a role-playing game that tests users' spelling abilities.
To view the Prezi, visit the Teacher story page at: http://itec.eun.org/web/guest/teacher-stories/-/blogs/creating-learning-games-in-
html5?_33_redirect=%2Fweb%2Fguest%2Fteacher-stories

It was indicated that most Portuguese teachers integrated the use of specific tools in the curriculum according the learning stories and activities.

Within Promethean groups of pilots (UK, Spain), all teachers tried something new to them. Some teachers used the technology to personalise learning outside of the classroom.

The teachers coordinated by SMART (Spain, Germany, Poland) had already worked with SMART solutions - SMART Board and SMART Notebook - but in some cases they didn't use internet and blogs as a part of education process. Using students’ devices was something new as well. Using widgets also was a great innovation.

Examples of best practices

In Norway, a few teachers worked with game design and tried game-based learning in their classrooms. Some worked with different technologies in mathematics (GPS, measuring width, length, diagonals). And some others had good results by making guided tours with QR-codes and digital storytelling. In Finland, students created games for the younger students, made comics with Cartoon Camera, used QR codes in presentations etc.

In Czech Republic, examples of use of the LSs and LAs included “Pupils producing their own learning activities in a form of a textbook for physics movement or maths”; “Pupils producing a handbook about the most difficult grammar issues in English”; “Designing a new school environment in the PC lab of the school”.

Barriers, challenge and enablers

Different barriers an enablers were identified depending on the local context and the teacher skills.

The lack of time was in some cases an important barrier to the implementation of pilot activities, which require some training, change and adjustments. In Czech Republic, the only negative feedback received by the NPC, but mentioned by most Czech teachers, was that the LSs and LAs needed a lot of time for both preparation and implementation in the class. In Norway, the NPC also reported the biggest barrier was time: the teachers felt they had little time to prepare and implement iTEC. In addition, some teachers faced organizational changes at their school or had to replace sick colleagues (Norway, cycle 3). In Turkey, the exam-oriented education was seen as a barrier to experimentation and development of new pedagogical approaches.

In Hungary, assessment, time management, tensions with the curriculum were the main key challenges. For Slovak teachers, it was difficult to support and facilitate team work and to assess the team outcomes. The main enabler was the increased interest and motivation of students, who were given less instruction and could be more creative.

In the Portuguese pilots, the main challenge for teachers was to start using a "new" technology which they never used before. The main enabler was the students’ increased motivation and autonomy.
The main barrier reported in Italy have been slow internet connection for the everyday use of technology and technical problems in the use of connection at school. For some teachers, especially those who were not used to manage students' blogs, it revealed to be complicated to manage students' accounts. One major enabler was the use of Facebook: because students feel more comfortable to manage this kind of tools instead of blogs. Also, it was important to define the concept of 'design' before starting the activities. Then, the main pedagogical challenge was to see the students acting as real designers, taking into account real users' needs. It was not easy as students, as well as teachers, are used to thinking about their activities in terms of "content" and not in terms of "products". Usually, there is no other "user" than themselves or somehow the teacher. The main output is that some teachers (not all) succeeded in facing this challenge.

In Poland (SMART), most of students liked the new methods and their independence in learning. Nevertheless, asking students to work autonomously was not easy to implement in the classroom. As they were not used to be responsible for their own work, students were frequently late in their tasks, and not all the students were successful in working individually. Group work, however, gave the opportunity to the best students to support less confident, knowledgeable or self-disciplined peers.

In Turkey, the technical infrastructure and the lack of hardware was reported as the biggest challenge. The use of internet in the school try was extremely problematic. Not only that the network is not very strong, but that a lot of video, audio etc. sites are blocked. Also, not all the students have an internet connection or a computer at home and some of them have limited access to the Internet due to the parents' restrictions. However, the students who had a computer helped the ones who did not, and teachers’ computers were used in addition to the schools computers. The lack of equipment, in particular access to computer and/or to the Internet, was also an issue in Portugal and in Spain. In Poland, it was difficult to reach an agreement on the use of BYOD as parents and the school management was reluctant to it.

**Mainstreaming**

In Promethean group, the degrees of change were seen as small for individual teachers, eg redesigning the learning experience by a gentle shift of teacher as researcher/inquirer to student being more independent and inquiring. However these small changes in practice inspired other teachers to try ideas which were often greater degrees of change in their practice.

For the Promethean NPC in the UK, change in whole school structures were evident - eg access from home, eg Edmodo, establishing trust and rules for working outside. IT departments having to be more agile was a strength and weakness in schools. In addition, in some countries such as Italy, many teachers stated they wanted to use this approach again, even outside of iTEC.

**Cycle 4**

In C4 as in C3, NPC were asked to describe the different degrees of change and levels of innovation they may have observed amongst the pilot teachers, including teachers’ practices, specific barriers and enablers.

**Changes noted in the teachers and students attitudes**
In Austria, all pilot teachers have changed their method of teaching to introduce "Inquiry based learning", using electronic devices, whiteboards and Learning Management Systems instead of printed materials. They have also self trained themselves to the use of some tools in order to be able to create objects.

In Belgium, it was reported teacher made a change in their perception: They became more critical against classical learning platforms, where there was a strong focus on exercises (including assessment), while learning was henceforth seen as creating action (video, sound, texts, blogs).

In Czech Republic, it was noted that the role of the teacher in the classroom changed while using the LAs: Teachers had to become guides, providing advice but leaving pupils managing their own learning process. Also, teachers have noticed students were more active than usual and that they also worked on the project after school hours. Students who usually do not participate much in educational activities were actively engaged in the process and were willing to present their work to others students.

Teacher collaboration and student role: Novelty among Estonian pilots schools collaboration which is not common in the country, and students creating videos stories themselves.

In Finland, some schools used students as experts: they had to design games for younger students. These games were designed in a collaborative and participatory planning method. Background research and benchmarking was needed to identify the students’ needs and what type of content they had to learn. The game creators received guidance from students in different schools.

In France, the curriculum was taught through collaborative group work and formative assessment, instead of the traditional whole class teaching concluded by exams.

In Israel, the main reported change concerned the role of teachers. Pilot teachers stated they had to rethink their goals in teaching: before iTEC, their teaching aimed at ensuring students succeeded in exams, rather than achieving more valuable earning objectives, whereas since they took part in iTEC the objective itself is to set a successful learning process. Another aspect of the change in Israel was that students themselves have endorsed their share of the learning responsibility, by being the source of the knowledge via search and inquiry. Teachers have stepped back by leaving more space to the students.

Change in the role of students: In Lithuania, the teaching and learning methods were redesigned to incorporate technology, building on research in learning and cognition. The teachers used new pedagogies such as the learner as teacher or concept mapping to develop students’ competences.

Several Norwegian teachers experimented a new work flow in the classroom by letting the students influence the activities more than usual. For instance, students could bring their own devices (BYOD) i.e. mobile phones and laptops. These teachers also let the students choose the tools they wanted to use to implement the activities. It was apparent that the students were very engaged and enjoyed the pilot.
- Student role: In Promethean groups (Spain, United Kingdom), some teachers used flipped learning and inquiry based learning, which allowed students to take more responsibility for their own learning. As in cycle 3, some teachers worked in school teams, and acted as co-learners of the technology with the students. Some Promethean teachers evaluated lessons against a new set of criteria and looked at current formative assessment practices. See also Teacher story 1 illustrating the use of flipped learning.

- In Turkey, trying to use the “flipped classroom” model has been somewhat different for students.

A deeper use of the technologies for teaching

- In Austria, activities included the construction of Helicopters (see video at http://vimeo.com/63350985?autoplay=1), of a solar car and the use of 3D printers.

- In Belgium, the NPC reported that the impact of the use of tablets was clearly positive and that teachers were very enthusiastic about it. They considered the classical computer and laptop as a barrier (long time to start, difficult to move and to use for filming, sometimes complex software…). In the context of the use of tablets, the widget store was seen as less useful because teachers could already access a vast range of apps in the tablets’ apps store. TeamUp & Reflex were successful tools as they were easy to use.

- Czech teachers had been asked to use at least TeamUp and two others tools of their choice amongst the ones proposed in iTEC. They did not face any problems when using ICT in this extent and used a variety of technologies: TeamUp, Blender, SMARTboard, Skype, Webnode, Blogger, SketchUp, QR treasure hunt generator, Kodu game Lab, Mindmap, Google docs, Voki.com, YouTube, Facebook... The pilot group involved experienced users of ICT so they were asked to find tools they did not know to experiment in C4. The pilot activities offered teachers the opportunity to further develop their ICT skills.

- Estonian teachers used a lot of different technologies. Some of them used the national portal (http://koolielu.ee/tools/index) where they can find lots of tools and tutorials. Some teachers tried to use iTEC widgets but they could not fit them to the learning story. Many iTEC teachers used TeamUp in their teaching.

- In Finland, different apps were used together. Making games with Notebook was also new to teachers and students.

- French teachers have used mobile learning and of the concept of BYOD. Best practices included the creation of video tutorials by students, using smartphones (see http://www.cndp.fr/agence-usages-tice/temoignages/realisation-de-tutoriels-video-en-physique-chimie-a-l-aide-de-smartphones-1210.htm)

- Moodle and in general the use of a VLE was new for most of the Hungarian teachers since it was not common in Hungarian schools to have a school VLE. Therefore
teachers had to be familiarized with the whole concept of VLE. This was an intense learning process for many with some promising early experiments. However, after the setup of the Moodle course with teachers, only few teachers reached the second step, where widgets are embedded in the course. A few teachers experimented the use of mobile technologies. Some successful tools included QR codes and the Munzee hunt game (www.munzee.com). A teacher used Google SketchUp to plan car models.

- **In Israel**, the main innovative aspect was the fact that some of the teachers had to think of a technology that would serve the pedagogy and not the other way round which was usually the case. In C4, a change in the way of thinking of many teachers was observed: they focused firstly on the pedagogy and secondly on the possible technologies fitting in. All kinds of technology were used. Google docs and drive was the main web tool used. For some teachers, the fact that they used technology in teaching was new. Others, more used to use technologies, found TeamUp was a very innovative tool. Other technologies used were Six's, Blogger, Glogster, Google maps and many more.

- **In Italy**, teachers used a wide range of technologies. Mostly used were the blogs, but teachers choose different blog services and had very different approaches each time. Teachers who were used to blogging felt it was innovative to use blogs as a shell, and in most cases they used blogs in a mix of old ways (to share what they have done) and the new way (as a shell with students). Most teachers preferred to use technologies they already knew and to experiment new pedagogical uses. Best practices included the use of edMondo, the 3D VLE, the use of one- to-one pedagogy and experiments of flipped activities.

- **Lithuanian** teachers have used programming software, website creation tools, games, video clips, animations, 3D models etc, as well as 1:1 computing.

- **In Norway**, the teachers who choose “Tell a story” worked with MovieMaker, iMovie, YouTube (one school published all the student works on its YouTube channel). Padlet (formerly Wallwisher) has been a very popular tool for all teachers. Padlet has been used as a log, as a reflection tool and as a tool for assessment. It was popular among students as well since it is very easy to use. All the tools mentioned above were used for the first time by most pilot teachers. The teachers who used the story “Create a game” let their students use Construction2, a visual programming tool available for free. The teacher had already used this tool in the past, but not with the students involved. The teachers who used “Create an object” did not plan to use 3D-printing at the start of the pilot, but this was never a barrier. Luckily this was made possible at the completion of the pilot. The teacher also used Google SketchUp on the schools laptops with the support from the ICT-coordinator. In general, open educational resources like Google SketchUp, Padlet, and Construct2 were the most important enablers. Some teachers stated that the widget store/iTEC Technology is a very good idea, but it was difficult to find any fitting widgets for their pilots.

- **In the SMART pilots groups** (Spain, United Kingdom, two classes in Poland and one in the Netherlands), teachers and students have used SMART Board's and SMART Notebook 11 software as a learning environment, or shell. Students could
work online, using SMART Notebook or in their own devices. Using XC during the class has been seen by teachers as the most innovative way to have students working together and collaborating. Some teachers have allowed students to use their own devices at school (BYOD), which in some cases was normally not allowed, especially mobile phones. This allowed students to use technology inside and outside the class. Teachers have very much enjoyed the use of SMART widgets, especially the Six Thinking Hats, which stimulated the reflection process. Having an Edmodo group where all SMART teachers could easily access the material, the blogs and the videos of the webinars has been very useful too. Finally, teacher peer collaboration via the Facebook group has also been a very positive experience. One of the schools has students with special needs. New technologies help them to communicate with other people and develop their creativity. They used SMART IWB to create games (memory game with sounds) for younger students.

**Enablers reported by the NPCs**

- Several **Austrian** teachers used TeamUp and Reflex for the first time and had very good experiences with these tools. Some teachers worked with 3D printing technology in connection to Sketch Up for the first time as well.

- One of the enablers identified in **Belgium** was that iTEC pilot activities do not focus on remembering but on the development of 21st century skills such as collaborative work, team spirit, etc. In Belgium, group work was used as the main way to teach. During group work, students experienced social learning. The Learning Activities encouraging such work was also seen as an enabler by the Belgian NPC. He said it also made teachers more confident when acting as a "coach" rather than as a more traditional source of knowledge. Finally, the LAs encouraged teachers to collaborate with their peers within the school.

- In **Estonia**, the Learning Stories and Activities were seen as innovative to many teachers because they introduced group work and the use of a range of technologies for teaching.

- In **Israel**, another pedagogical innovation was the use of TeamUp which teachers had never used before, and that was reported as an enabler, having a positive impact on the learning and on the assessment of students.

- In **Italy**, the NPC reported the Learning Story/Activities approach continued to have a great success among teachers, as they felt it was a new and effective way for designing lessons. In the **Italian** NPC view, the cycle 4 processes were very similar, in various aspects, to the cycle 3, which is considered as a positive aspect. This has indeed allowed teachers from Cycle 3 to work further the "design" approach: students acting as real designers, taking in account the "user" needs. It is to be noted that this was not an easy shift: students, and above all teachers, are used to think of what they do in terms of "content", not in terms of "product". Another novel aspect in Cycle 4 was the use of remote collaboration through edMondo, the Italian recently released 3D Virtual Learning Environment. It allowed students to share a digital common space where to create "products". Collaboration between classes was organized so some students could help other students from other classes in building their product.
• In **Norway**, most of the teachers used the story “Tell a story” in their pilot class. For these teachers, it was the first time their classes worked on digital storytelling and movie editing. The reports from the teachers were very positive, and the NPC visits to schools confirmed that more or less all of them managed to innovate in their teaching practices.

The **Teacher Story 3** hereunder gives an example of the use of the “Tell a Story” activities in cycle 4 in Italy.

**Teacher story 3: Creating video 'book trailers, Italy**

---

**Creating video 'book trailers in Italy**

Raffaella Fiorini is an iTEC teacher in Liceo Classico Chris Cappell in Anzio, Italy. While studying works of English literature with her class, Raffaella decided to create 'book trailers’ for the books; that is, short reviews of the books in video format.

In carrying out this project, Raffaella wanted her pupils to learn not only about the books in question, and to improve their English, but to learn the principles of audio-visual editing, and to collaborate with one another and learn project-based skills:

>“It is not only the narrative content; it’s about arousing interest in the book in potential new readers. The aim is to share the emotions. That’s all in the choice of the music, of the images, the video editing”.

The pupils searched for multimedia resources, such as videos, music, and still images, to use as part of their book trailers. This involved the pupils working independently, with minimal direction from their teacher.

According to Raffaella: “I think it's important for the teacher to act as a tutor, providing guidance and feedback without lecturing the students all the time”.

The pupils were divided into groups, with each group working on one book. Each group had a blog, where pupils could record their progress through video logs, and share results with and provide feedback to other groups. At the end of the project, each group produced a multimedia library, containing the book trailer, and a conceptual map of the book that they had studied.

The book trailers had the effect of motivating the pupils to broaden their reading, deepening their knowledge and understanding of the book that they themselves worked on, and gave them an insight into how information and ideas can be presented and shared.

Four book trailer were realized. One focuses on George Orwell’s classic dystopian novel ‘1984’. See video here: [http://www.youtube.com/watch?feature=player_embedded&v=1Ln42aFRdMc](http://www.youtube.com/watch?feature=player_embedded&v=1Ln42aFRdMc)


---

• In general in the **SMART** groups (Spain, United Kingdom, two classes in Poland and one in the Netherlands), the pedagogical innovation has come from the iTEC methodology itself, i.e. the Learning Activities various aspects: New ways to assess students work, changing the role of the teacher and the role of the student, students creating content, technology used to support students experiences, more students
interaction with technology, peer collaboration. One of the enablers in some cases has been the level of confidence in the teachers, especially for teachers who participated in previous pilot cycles. Also, using similar Learning Activities and Stories as in pre-pilots has been an advantage for NPCs to prepare the material.

- Main enablers in Turkey were reported as the access to equipment, the support from the school management, and the curiosity of students. Students enjoyed being involved in the project because they felt they were active during the courses.

- In Slovakia, the NP indicated that students were engaged in the project and enjoyed learning. Some students improved in terms of attainment. The LAs and LSs were seen as enablers for teachers, inviting them to redesign their practices. The teachers reported to the NPC they appreciated the interest of students and could see how group work, use of technologies, and use of students centered approaches could benefit to student involvement.

**Examples of best practices reported by the NPCs**

- Among best examples in Austria, the students build a solar car in 7th grade, others worked with quad copters in geography.

- In Czech Republic, best practices and examples of concrete results included the creation of educational games for other students, objects (toys), the design of new merchandising object and video stories about culture in the city.

- In one of the Finnish pilots (Ivalo, in northern Lapland) primary school students have developed an educational game in collaboration with a game industry company from Tampere, which is 900 km away from the school. This implied the use of distance communications channels. In the school of Luostarinvuori from Turku, students studied literature by making a trailer of the fictional film from the book they studied. The trailer was a sort of a visual summary of the content. In the project in Siltamäki school (in Helsinki) environmental technology researchers were used as experts in the film of "Trash's life," a digital story project. The project used innovative ways of learning design principles.

- In France, some of the innovative approaches included communication of ideas to an audience, learning through games (see blog [http://zepad.absolutenglish.org/](http://zepad.absolutenglish.org/)); more experimentation and hands-on exercises (see [http://chateau-thierry1.ia02.ac-amiens.fr/articles.php?lng=fr&pg=350](http://chateau-thierry1.ia02.ac-amiens.fr/articles.php?lng=fr&pg=350)).

- Italy: edMondo is the 3D environment (Second Life like) developed by Indire using Opens Sim technology. This environment is created for schools, so it has no commercial implication, and it is safe both for children and teachers. A teacher who chooses the "Create a game" story developed in edMondo a treasure hunt where students have to search for clues exploring a 3D island, by solving math problems. The game was used by other students from other parts of Italy, making possible to use it for the "ask and collaborate" activity.
• The Norwegian NPC reported one of the most interesting experiences involved the “Create an object” story. The subject of the class was religion and the goal of the classroom project was to build holy buildings (churches, mosques) in Google SketchUp and Minecraft. After that, a local university was contacted and accepted to lend the school a 3D-printer in order to give real shape to the virtual buildings. Even though 3D-printing is not yet a very mature technology, this experience showed teachers and students it was possible to build their own product in 3D in school. Also, it enabled teachers to develop their skills and use new tools they did not know before such as Google SketchUp.

Remarks on sustainability and mainstreaming:
• In Italy: Seen as an effective way of teaching, iTEC method became a "tool" that many teachers started to use even in non iTEC contexts. Teachers who took part in several pilot cycles became more confident with aspects such as learning in teams, documentation through blogs and remote communication and coordination using Facebook or edMondo.
• In Hungary, some of the C4 teachers took part in previous cycles. These teachers successfully combine activities of previous cycles with C4 activities. There is a hope that these elements could be embedded into the everyday practice of teachers even after the end of the project. This includes working with pupils from different age groups, creating products which are useful for younger pupils. Visiting places outside of school to collect real-word experiences is also seen by teachers as realistic and useful practice.
• For the Promethean NPC, the increase in teacher numbers at Trentham and Ashmole are great examples of how iTEC is mainstreaming innovation in schools.
Conclusion

From September 2012 to June 2013, in cycles 3 and 4, the iTEC Learning Activities and technologies were piloted in over 1400 classrooms in 19 countries.

Teachers of a wide range of subjects took part: sciences, technology, mathematics, language, literature, history, geography, social sciences and arts. This range shows that Learning Activities are not perceived as subject specific and that they can be applied to many subject areas and topics.

The students involved were mostly in secondary schools but primary schools students were well represented with an estimated 25% of the total classrooms. This also suggests that iTEc resources are versatile and can be adapted to different age groups: the teacher can determine the level of complexity according to the students’ ages.

Many teachers engaged in previous cycles have continued to participate in the iTEC project activities (36% of cycle 4 teachers were involved in previous cycles), suggesting that they perceived benefits from applying the iTEC practices and tools to their teaching and wished to deepen and extend their use. Teachers in previous cycles said they would share with others what they had learned in the project, and as a result some cycle 4 participants were recruited on the basis of recommendations made by their colleagues.

To support the pilots in using the project tools and methods and provide continuous professional development opportunities, over 85 training events involving more than 950 participants have been held at national and European level. These events included sessions on the use of Learning Stories and Activities, the different shells, TeamUp, Reflex, Interactive Whiteboards, other technologies and a large range of web 2.0 tools.

Positive changes have been reported by the National Pedagogical Coordinators, notably changes in teachers’ and students’ role and/or attitude in the classroom, something observed in most countries. Many NPCs have noticed that teachers took on the role of tutor and that students became more actively engaged in their learning. Students’ motivation increased during the iTEC activities, and some NPCs noted the development of new types of students’ skills such as creativity, the ability to collaborate, self-learning and communications skills.

The Learning Activities, in particular the design-based approach behind them, were perceived as enabling these and other changes. More specifically, their use contributed to more teamwork, cross-subject approaches, new assessment methods and game-based learning. Sometimes there were changes in the allocation of tasks between school and home (‘flipped learning’) and in some cases the teachers introduced the Bring Your Own Device (BYOD) approach.

In addition to the use of new practices and a wide range of technical tools in the classroom, teachers seemed to increase collaboration and it was reported some teachers became more open to pedagogical change and spontaneous self-directed
training. Some pilot teachers also started to use technologies they had not used before. Such changes are analysed in more detail in evaluation reports from work package 5.

In the final pilot cycle, teachers will learn how to create their own innovative Learning Activities and reflect further on how to push the boundaries of innovation in the classroom and offer new learning opportunities to their students.
PART II.
Revised school pilot protocol and support guidelines for national pedagogical coordinators (Task 4.2)
1. Introduction

The changes completed since the submission of the protocol in the D4.3 delivered in June 2012 are highlighted in yellow.

1.1 Rationale of this document

The “Revised school pilot protocol and support guidelines for national pedagogical coordinators” details the activities described in the iTEC Description of Work, Task 4.2 “Development of school pilot protocol and support for coordinators”.

The main focus of this document is to provide guidance on the Work Package 4 full-scale piloting of iTEC Learning Stories and Activities. It defines the pilot engagement targets and timeline of activities and the role of the National Coordinators. It also gives guidance on the selection and preparation of pilot teachers, as well as implementation and evaluation of the pilots’ activities.

1.2 Amendments in this present version of the protocol

After it was revised in June 2012, a new revision of the protocol was needed after the end of cycle 3 of pilots to ensure the protocol fits cycle 4 and 5 objectives and follows the recommendations of the EC during the annual review held in November 2012.

The revision of the protocol was initiated in January 2013 and was finalised in March 2013. It was then circulated to the National Pedagogical Coordinators.

For cycle 4 and cycle 5, it was decided, by the iTEC Steering Committee, to focus more specifically on the following objectives:

1. To ensure a wide and effective use of the iTEC technologies within the pilots

As more iTEC technologies become available, steps needed to be taken to ensure their integration into the practices of iTEC teachers. In cycle 4 and 5, National Coordinators will be asked to make sure sufficient numbers of teachers use the iTEC technologies such as the widget store and the iTEC shells. In cycle 5, we will also be using the Composer (WP7) as a planning tool, as well as the People and Event Directory (WP9), a pool of people and events resources to support the implementation of learning stories and learning activities and for teachers’ continuous professional development. The latest versions of these technologies will need to be introduced in National training organised by the NCs, and best efforts should be made to support teachers in pilot planning to ensure that iTEC technologies are tested within the implementation of the iTEC Learning Activities. In particular, the work package 6 will provide the necessary support and guidance to the NTCs through the development of technologies manuals and trainings.

2. To demonstrate how innovation is taking place within the iTEC pilots

At the EC review, it was recognised that innovation was happening in the iTEC project, however, there was a need to document it with additional data. Data on how innovation takes place within the pilots is collected from Cycle 4 by WP4 through
the collection of iTEC “Teachers Stories” made available on the website, videos from teachers and National Coordinators, and reporting from National Partners. It is also collected by WP5 through teacher questionnaires and case study interviews (See the Evaluation guidelines from MMU).

3. To ensure the sustainability of the methodology developed in iTEC

For the cycle 5 pilot and after the end of the iTEC project, a decentralised, national Scenario and Learning Activities design process has been set up to support the adoption of the processes by the national partners and thus allow a sustainable use of the iTEC innovative methodology among stakeholders.

This process is based on two toolkits, one focusing on scenario development and the other on the Learning Activities design. These toolkits, building on the scenarios and activities design methodology developed in iTEC, will be used in cycle 5 of iTEC pilots. Unlike in previous cycles, there will be no centrally produced scenarios and learning activities in cycle 5. Instead, partners should adapt or develop their own scenario for innovation, based on local and national trends, opportunities and challenges, using the set of guidance materials: the “Future Scenario Development Toolkit” to develop a new or adapt an existing scenario, and the Learning Activities design toolkit also called “Edukata”, to develop new Learning Activities.

These toolkits are intended to be a valuable stand-alone legacy for the project, and its value and importance was recognised at the annual review in November 2012.

In addition, and following a recommendation from the second annual review by the EC, more radically innovative scenarios will be developed for implementation in small-scale pilots. Specific selection criteria will be used a detailed in part III of the present document. These pilots will act as examples of radical innovation to those schools which are capable of such change, and to provide insight into the challenge involved in such radical innovation.

To adapt the protocol to cycle 4 (and to foresee the organisation of cycle 5) and to be compliant with the objectives highlighted above, the present protocol includes the following revisions:

- Timeline was updated as there are new dates for Cycle 5
- Engagement target was redefined according to the classrooms’ engagement in previous cycles
- The content of pilot teachers preparation workshops was further described
- The follow up of teachers and community building was highlighted and further detailed to support the project outcomes’ sustainability.

The following people contributed to this revised version of the pilot protocol:

- WP4 (lead): Marie Le Boniec, Will Ellis, Roger Blamire

More detailed and specific indications about cycle 5 will be provided to the NPCs in another revised school pilot protocol.
1.3 iTEC partners’ involvement in school pilots

Within WP4, Task 4.2, partners are involved at different stages as follows:

- Selection criteria: AALTO, FPCE-UL, FULAB, UNI-C, MMU and other GA partners
- Lead, pilots general support and coordination: EUN
- Pre-pilots and pilots: AALTO and 12 representatives of Ministries of Education (ANSAS-INDIRE, BMUKK, CNDP, DGIDC, EDUB, EDUC, ELFA, ITC, MAK, MONE, TLF, NCIE) as well as two Associated Partners (FNBE, Finland and DZS, Czech Republic) PROM (United Kingdom, Austria, Portugal, Turkey, Spain) and SMART (Germany, Spain, Poland, United Kingdom) whose pilots cover a variety of countries depending on each cycle.

Each iTEC partner coordinating school pilots has been asked to nominate a contact point for organising pre-pilots and large scale pilots. There are two key roles:

- National Pedagogical Coordinator (NPC). The NPC is responsible at the national level for the overall piloting in schools (WP4), which includes organising participatory design-sessions (WP3), selecting and supporting pre-pilots (WP3) and pilot schools (WP4), and overseeing evaluation data collection (WP5) and case studies.
- National Technical Coordinator (NTC). The NTC is responsible for setting up the technical conditions for pilots in schools and supporting the testing and evaluation of iTEC technologies.

WP4 uses several means of communications with NPC’s and NTC’s including: two mailing lists (NPCs: itec-npc@eun.org and NTCs: itec-ntc@eun.org) and the Teachers’ “online community of practice” where a private workspace is available for National Coordinators (http://itec.eun.org/web/guest/coordinators). The support material is made available here, together with other tools such as forums, for raising issues and seeking advice.
2. Timeline of pilot activities and engagement target

2.1. Timeline of pilot activities

During the 4 years of the iTEC project, piloting activities are divided into 5 cycles, during which Learning Stories and Activities, aiming to bring about innovative and engaging ways to support the development of 21st century skills with the effective use of ICT, are tested in the classroom. Each cycle is divided into two phases:

- **Pre-pilots**: Two teachers per country and at least 30 classrooms test the Learning Stories over a period of 2 months and in 12 countries.
- **Full scale pilots**: A certain number of teachers per country test the 2 or 3 selected Learning Stories (and the activities they involve) over a period of 4 months and in all countries.

Timeline is as described in Table 1.

<table>
<thead>
<tr>
<th>Cycle</th>
<th>Pre-pilots within WP3</th>
<th>Learning Stories &amp; Activities published</th>
<th>Preparation time for large-scale pilots within WP4</th>
<th>Large-scale pilots within WP4</th>
<th>Evaluation data delivered by WP5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cycle 5</strong></td>
<td>No pre-pilots in the Cycle 5 (teachers previously involved in iTEC pilots will be asked to adapt learning activities previously piloted).</td>
<td>National LS &amp; LAs development by NCs: July – October 2013</td>
<td>November – December 2013</td>
<td>December 2013 – March 2014</td>
<td>April 2014</td>
</tr>
</tbody>
</table>

Table 1. iTEC Cycles for pre-pilots and large-scale pilots

2.2. Quantitative performances indicators

In iTEC, both quantitative and qualitative performance indicators (including those for research) are used. School pilot activities are required to respect the following specific indicators:

- In each large-scale pilot, 2 to 3 Learning Stories and 1 or 2 packages of Learning Activities will be tested.
- In each large-scale pilot, there should be a minimum 250 classrooms from a minimum of 5 different countries.

---

5 The cycle 5 Scenarios and Learning Activities will be prepared by the National piloting partners, in accordance with the Scenarios development and Learning Activities design toolkits being delivered. This is part of the sustainability measures of iTEC project and it is detailed in the Annex 3 of the 2nd Periodic Report.
Each country is asked to participate in at least 4 cycles out of 5 cycles, out of which the first and second cycles are strongly encouraged in order to put the right processes in place for the general workflow.

Once during the project, each country is asked to engage with 40 classes within one cycle, preferably piloting the same Learning Story and Package of Activities, in order to facilitate quantitative evaluation.

To ensure a good quality of delivery of pilots and to ensure the project reaches as many teachers as possible, the number of classrooms a teacher can pilot during one cycle will be limited to 2 from cycle 3 onwards.

### 2.3. Classrooms engagement target

Over the 5 pilots' cycles, the iTEC project aims to involve at least 1000 classrooms in the testing of Learning Stories and Activities. Each piloting partner has to take part in at least 4 cycles out of the 5 cycles of the project and involve a minimum number of classrooms as detailed in Table 3.

Table 2 details the engagement reached for each partner in cycle 1 (Sept-Dec. 2011) cycle 2 (March-June 2012) and 3 (September – December 2013). It also indicates the minimum number of classrooms that should be involved in cycles 4 and 5 to reach the minimum objective of 250 classrooms per cycle, as required by evaluation activities. In one of the 5 cycles, partners will involve 40 classrooms as requested by the evaluation activities. The last column of the table indicates whether this “large” pilot cycle took place already, or is to be planned for either cycle 4 or cycle 5.

<table>
<thead>
<tr>
<th>Country</th>
<th>Total of classes in 5 Cycles</th>
<th>Nb classrooms piloted in Cycle 1</th>
<th>Nb classrooms piloted in Cycle 2</th>
<th>Nb classrooms piloted in Cycle 3</th>
<th>Total C1+C2+C3</th>
<th>Minimum classes in C4 and C5</th>
<th>1 cycle with 40 classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU (EDUC)</td>
<td>115</td>
<td>47</td>
<td>50</td>
<td>54</td>
<td>151</td>
<td>26</td>
<td>C1</td>
</tr>
<tr>
<td>EE (TLF)</td>
<td>80</td>
<td>21</td>
<td>30</td>
<td>38</td>
<td>89</td>
<td>16</td>
<td>C3</td>
</tr>
<tr>
<td>FR (CNDP)</td>
<td>80</td>
<td>10</td>
<td>25</td>
<td>15</td>
<td>50</td>
<td>40 + 16</td>
<td>C4 or C5</td>
</tr>
<tr>
<td>IT (ANSAS)</td>
<td>80</td>
<td>12</td>
<td>41</td>
<td>14</td>
<td>67</td>
<td>16</td>
<td>C2</td>
</tr>
<tr>
<td>LT (ITC)</td>
<td>80</td>
<td>84</td>
<td>67</td>
<td>70</td>
<td>221</td>
<td>16</td>
<td>C1</td>
</tr>
<tr>
<td>TR (MONE)</td>
<td>80</td>
<td>42</td>
<td>36</td>
<td>82</td>
<td>160</td>
<td>16</td>
<td>C1</td>
</tr>
<tr>
<td>AT (BMUKK)</td>
<td>80</td>
<td>20</td>
<td>22</td>
<td>20</td>
<td>62</td>
<td>40 + 16</td>
<td>C4 or C5</td>
</tr>
<tr>
<td>BE (EDUB)</td>
<td>80</td>
<td>10</td>
<td>0</td>
<td>84</td>
<td>94</td>
<td>16</td>
<td>C3</td>
</tr>
<tr>
<td>IL (MAK)</td>
<td>80</td>
<td>8</td>
<td>18</td>
<td>9</td>
<td>35</td>
<td>40 + 16</td>
<td>C4 or C5</td>
</tr>
<tr>
<td>NO (NCIE)</td>
<td>80</td>
<td>12</td>
<td>14</td>
<td>23</td>
<td>49</td>
<td>40 + 16</td>
<td>C4 or C5</td>
</tr>
<tr>
<td>PT (DGIDC)</td>
<td>80</td>
<td>13</td>
<td>32</td>
<td>33</td>
<td>78</td>
<td>40 + 16</td>
<td>C4 or C5</td>
</tr>
<tr>
<td>SK (ELFA)</td>
<td>80</td>
<td>14</td>
<td>14</td>
<td>20</td>
<td>48</td>
<td>40 + 16</td>
<td>C4 or C5</td>
</tr>
<tr>
<td>Promethean schools</td>
<td>115</td>
<td>4</td>
<td>28</td>
<td>32</td>
<td>64</td>
<td>40 + 24</td>
<td>C4 or C5</td>
</tr>
<tr>
<td>SMART schools</td>
<td>115</td>
<td>21</td>
<td>37</td>
<td>39</td>
<td>97</td>
<td>24</td>
<td>C3</td>
</tr>
<tr>
<td>Associated partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FI (NBED)</td>
<td>80</td>
<td>19</td>
<td>0</td>
<td>26</td>
<td>45</td>
<td>16</td>
<td>n/a</td>
</tr>
<tr>
<td>CZ (DZS) Other associated</td>
<td>16</td>
<td>4</td>
<td>4</td>
<td>14</td>
<td>22</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Number of classes participating in the school pilots

<table>
<thead>
<tr>
<th>partners</th>
<th>Total classes in iTEC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1321</td>
</tr>
<tr>
<td></td>
<td>341</td>
</tr>
<tr>
<td></td>
<td>418</td>
</tr>
<tr>
<td></td>
<td>573</td>
</tr>
<tr>
<td></td>
<td>1332</td>
</tr>
</tbody>
</table>

2.4 Definition of a “classroom” in ITEC

A "classroom" is defined as a "class of learners" or cohort, meaning that one teacher may engage with one Learning Story with more than one of his/her classes. Several classes can consequently be identified within the same school. The following three examples illustrate possibilities that can be considered within piloting scenarios:

- Teacher A teaches the same subject to two different age groups of learners:
  - Teacher A teaches math to 12-13 year olds => counts as 1 class piloting a Learning Story
  - Teacher A teaches math to 14-15 year olds => counts as a 2nd class piloting a Learning Story (different from the 1st above)

- Teacher B teaches 2 math classes in the same year but of differing abilities
  - Teacher B teaches a normal class of math to 12-13 year olds => counts as 1 class piloting a Learning Story
  - Teacher B teaches an advanced math class to 12-13 year olds => counts as 2nd class piloting a Learning Story (different from the 1st above)

- Teachers C and D teach 2 different subjects to the same class of learners:
  - Teacher C teaches math to 12-13 year olds => counts as 1 class piloting a Learning Story
  - Teacher D teaches chemistry to the same group of 12-13 year olds => counts as 2nd class piloting a Learning Story (different from the 1st above)

To have the relevant number of classes counted during the evaluation phase at the end of cycle 1, each teacher had to submit a separate questionnaire for each pilot class of learners. From cycle 2, the number of classrooms was identified through the pilot management table filled by the National Pedagogical Coordinators. The table gathers information for each pilot group/country, about the teachers involved: school and teacher details, subject taught, students age group, LAs/LSs piloted, etc. Teachers completed only one questionnaire irrespective of whether they piloted in one or two classrooms.
3. Role and tasks of national pedagogical coordinators

3.1. Role of National Pedagogical Coordinators

Each iTEC partner involved in school pilots has been asked to nominate a contact point for organising pilots. There are two key roles:

- **National Pedagogical Coordinator (NPC):** Responsible at national level for the overall piloting in schools (WP4) which includes:
  - organising participatory design sessions (WP3)
  - selecting and supporting pre-pilot schools (WP3)
  - selecting and supporting pilot schools (WP4)
  - overseeing evaluation data collection and case studies (WP5)

Within WP4, the NPC’s role is to assign schools and teachers to the Learning Stories that are piloted. NPC tasks include pedagogical support for Learning Stories, localisation of Learning Stories and supporting evaluation activities.

- **National Technical Coordinator (NTC):** Responsible for setting up the technical conditions for pilots in schools and supporting the testing and evaluation of iTEC technologies.

3.2. Tasks of National Pedagogical Coordinators

Key tasks for NPCs in each large-scale pilots cycle include:

1. **Selection and preparation for implementation**

   - Participate in a pilot preparation workshop\(^6\) - presentation and selection of scenarios for full scale pilots, iTEC technologies, evaluation procedure, and for cycle 5: iTEC workshops on the Future Classroom Scenario development toolkit (January 2013, UK) and on the Learning Activities design toolkit, (Spring 2013).
   - Identify schools, school coordinator, teachers and classrooms for pilots.
   - Provide the profile of participating schools, teacher and classrooms. This is done via the pilot management table. Qualitative data on the type of innovation in the classrooms (degree of change, enablers and barriers, technologies used), and examples of use of the resources are provided at the end of the cycle when National Coordinators report to WP4 using the template provided by EUN (See Annexes 4 and 5).
   - Prepare teachers for pilots during local preparatory meetings and via an online community. The preparatory workshops for teachers shall include a presentation of the Learning Activities, iTEC technologies and of the online teacher communities.

---

\(^6\) A “pilot preparation workshop” (face-to-face or online) is be organised in each Cycle to introduce NPCs and NTCs to the selected iTEC scenarios. It covers the rationale behind the scenarios and includes training on iTEC tools and technical support for NTCs provided by WP6, making use of a strategy based on the engagement of participants in a community of practice (i.e. an online community environment).
2. Learning Story implementation and evaluation

- Monitor and support schools during pilot activities. Ensure the iTEC teachers use the iTEC technologies to support the use of the iTEC Learning Activities and for teaching in the classroom.
- Support evaluation, case studies and ensure that questionnaires are filled in.

4. Selection and preparation of pilot teachers

4.1 Selecting schools for the large-scale iTEC pilots

The schools included in the iTEC pilots should already be making some innovative use of ICT. However, the dissemination part of the project will seek to engage less advanced schools where the ‘average’ teacher will have lower levels of ICT confidence and probably be less motivated to explore and adopt the iTEC scenarios.

Guidelines for selecting schools are clustered into three groups: people, processes and resources. Selection is also influenced by the characteristics of the particular scenario to be piloted. In each cycle the schools involved can be the same or different. The schools taking part in iTEC pilots should aim to have the following features:

4.1.1 People

The following criteria apply for teachers in both pre-pilots and pilots. For pre-pilots’ teachers specifically, the ability to communicate in English is an additional requirement.

- **A supportive head teacher / senior management team** who will commit to the project and provide feedback on the organisational changes that may be required by some of the iTEC scenarios in order to ensure their full implementation within their school.
- **An innovative and effective use** of learning technologies in a classroom (preferably a learning environment other than the school’s computer suite/ICT room).
- At least one **ICT confident teacher**\(^7\) who is:
  - Motivated to **experiment** with new learning technologies and innovative pedagogical approaches and willing and prepared to commit to the project;
  - Willing and committed to be involved and deeply engaged in a long term project (that could be linked with plans to develop graduate studies in the field of ICT in education) in order to deeply engage teachers in the activities;
  - **If several teachers, preferably from a range of subjects and school levels** to ensure that a variety of subjects and levels are represented across iTEC as a whole. The focus should be on Science, Technology, Engineering and Mathematics - however STEM is not an exclusion criteria- and on teachers working with pupils in the first 2-3 years of secondary school.
- **An ICT coordinator**\(^8\) (if there is no ICT coordinator, this may be the above ICT confident teacher) willing to commit to and support the project.

---

\(^7\) The People section has been revised after receiving feedback from NC’s in the first cycles. The requirements of having two confident ICT teachers is difficult to fulfil as teachers are selected individually for their interest and experience; it is not easy to evaluate their colleagues and it doesn’t seem as a necessary requirement.
• **An ICT technical support for the teachers** involved in the project (desirable but not essential).
• Someone designated as the “**iTEC contact person**” with overall responsibility of ensuring full participation in the project requirements (desirable but not essential).

### 4.1.2 Processes

- Have experience of educational projects in ICT at national level.
- It is desirable (but not essential) to be experienced in international projects, such as eTwinning or EUN Acer project. Have the possibility to influence neighbouring schools in the region (measured according to geographical location, density of schools and type of local organization), in order to spread key ideas and involve more teachers in local communities.

### 4.1.3 Resources

- Have equipment, resources and connectivity levels that enable the scenarios to be developed without major further expenses.

**Remark:** It was stated at the time when cycle 4 started (February 2013) that having mixed profiles in the pilots rather than only advanced teachers would be an asset for evaluation purposes, as the iTEC project aims at up-scaling the teaching outputs produced by the consortium. It would be useful having a more diverse audience to evaluate and thus to identify whether the outputs can also be used in schools that do not have all the above requirements.

### 4.2. Profiling pilot schools

Information about the schools, classrooms, teachers and learners taking part in pilots should be provided in a common format. Essentially, the NPC have to report this data to EUN. The data should describe the main demographics and teaching areas of iTEC teachers, the physical learning spaces and hardware available (e.g. learning platforms, IWBs, responders, handheld devices, netbooks, mobile phones etc.).

**General information on the pilot teacher profiles is provided via the pilot management table. More detailed data on the pilot activities will be provided by the NPCs at the end of the cycle. National Coordinators will be requested to report to WP4 using the template provided by EUN (See Annexes 4 and 5).**

---

8 Having an ICT coordinator in the school is not common practice in most of the involved countries; therefore this would be desirable but not a requirement.

9 Having a school coordinator is not a common practice in most of the involved countries; therefore the requirement is to have a contact person in the school for iTEC purposes.
4.3. Preparing teachers for pilots

Localisation of the Learning Activities and of the Learning Activities design toolkit

NPCs localise and translate Learning Stories and Activities and other relevant texts. They also create / adapt / translate support materials.

Delivery of national teacher’s workshops

They design and deliver face-to-face and online workshops and animate online communities of practice for teachers, and report on the workshops, training and support provided. The preparatory workshops for teachers shall include a presentation of the Learning Activities or of the Learning Activities design toolkit, of iTEC technologies and of the online teacher communities, i.e. the national platform used in each country and the iTEC teacher community (http://itec.eun.org/web/posteacommunities).

- **Presentation of the Learning Activities and of the Learning Activities design toolkit**

  For cycle 4, and as in cycle 1, 2 and 3, teachers will be presented with packages of Learning Activities and Stories they will pilot with their classrooms.

  In cycle 5, National Coordinators will lead the development of a national scenario. This scenario will then be used by teachers to create their own package of Learning Activities. National Coordinators will present and make use of the Learning Activities design toolkit in a teacher workshop before cycle 5 starts.

- **Train and encourage teachers to use the iTEC technologies**

  To ensure a wide and effective use of the iTEC technologies within the pilots, National Coordinators will be asked to make sure sufficient numbers of teachers use the iTEC technologies such as TeamUp, Reflex, the widget store and the iTEC shells.

  These technologies will need to be introduced in National training organised by the NCs. Additionally, the National Coordinators will have to make best efforts to support teachers in pilot planning to ensure that iTEC technologies are tested within the implementation of the iTEC Learning Activities.

  The relevant work package leaders will provide the necessary support and guidance including promotional activity such as a pan European widget competition.

- **Use and strengthening of the online teacher communities**

  In order to build the iTEC community of teachers, it is recommended that, during the national preparation workshops for teachers, NCs:

  - Invite pilots teachers from previous cycles to present their success stories/best practices
  - Involve pre-pilots teachers in the full pilot training to share their experience in the use of the LAs
- Present the ITEC online community to ensure teachers are familiar with it and know what information/resources they can find there, and how.
- Encourage confident teachers to take a pro-active role in supporting their peers by sharing their experience online

**Report on the teacher training activities**

NPCs are asked to report back to WP4 leaders on how the preparations, local training sessions, localisation efforts and introduction of scenarios to schools have taken place in the country. In cycle 1 and 2, this was done during mid-cycle interviews. In cycle 3 and 4 a reporting template will also support the collection of this information. It can be found in Annex 4 and 5.

### 5. Implementation and evaluation of pilot activities

#### 5.1. Implementation

**Support and follow up**

The NPC keeps regular contact with their teachers and ensures that the Learning Activities and Stories are implemented on the ground in line with expectations, monitors progress, provides support via the school coordinator and enables peer support using online tools and services.

*After their involvement in iTEC, teachers should be followed up by NCs, so they keep engaging with innovative activities.*

Also, WP4 encourages teachers to share their experience of iTEC by making films that can be published online and by submitting "Teachers Stories", also published online and aiming to provide information on the way LAs are used in the pilots and ideas for others teachers interested in using iTEC outputs. The teacher’s stories are written by ITEC teachers using the guidance template available in all projects languages in the iTEC website library (<http://itec.eun.org/web/guest/library>). They are then approved by the iTEC website web editor and published on the iTEC community pages. A searching tool allows users to look for stories by key words (country, subject, topic...). See: <http://itec.eun.org/web/guest/teacher-stories>.

**Online community**

A European online community of practice was made available at the start of cycle 1 to all teachers who participate in the iTEC pilots. All participating teachers are expected to become part of this community. Pilot teachers are encouraged to use the online community to seek for peer advice and/or share their individual experiences regarding the implementation of learning activities and other events or activities organised in WP4.

These can vary from small comments on the online forum to more elaborated reflections on scenarios and Learning Stories either in their own mother tongue or in English, if possible. They can also write their own Story as mentioned above.
In cycle 3 and 4, teachers (2 in cycle 3, 12 in cycle 4) who have been involved in iTEC in previous cycles have been identified to become community animators and moderators, sharing experiences and providing advice or feedback to other forum users.

Additionally, any pilot country uses its own local online environment to communicate with the teachers, conduct the training sessions and support participants throughout the pilot. National platforms are linked to the common website.

It is important to stimulate both international and national communities in order to establish a network of teachers familiar with the iTEC methodology and willing to carry on further “Future Classroom” activities after the projects ends. In the iTEC vision, national partners will adopt the iTEC toolkits as means to bring about innovation in education after the project is over. The communities of users developed during the project can support carrying on these activities which involved different stakeholders and also relies on the implementation by teachers.

5.2. Support evaluation activities: case studies and questionnaires

Both qualitative data (case studies) and quantitative data (questionnaires) are collected in the iTEC project by Manchester Metropolitan University (MMU in WP5). National Pedagogical coordinators assist MMU in the data collection. The NPCs are expected to ensure that response rates to the evaluation questionnaire at the end of each cycle are maximised (preferably 100% and no lower than 80%). See the specific Evaluation Handbook for cycle 4 for more details.
PART III. Scaling up scenarios: Revised set of decision criteria & Decision workshops (Task 4.3)
1. Introduction and rationale

Task 4.3 Decision for scaling up scenarios M12, M17, M24, M29, M35 (DoW, p.22)

The role and process for scenario selection for full scale pilots has increased in importance through the iTEC project. It has now become a central feature of the development cycle for both learning scenarios, and the learning activities that are created for iTEC pilots.

Through the second and third years of the project there has been an ongoing effort to develop the selection criteria and process to ensure that the quality criteria for a successful scenario is clearly established and understood across the consortium, and that these criteria can be used effectively and with the involvement of consortium members. The iTEC Integration Committee, established in the second year of the project following a recommendation from the EC appointed reviewers, has played a key role in the development and use of the criteria. The Integration Committee is made up of a representative group of project partners, including technical and pedagogical WP leaders, and National Pedagogical Coordinators, together with National Technical Coordinators. The principle of scenario selection at the start of the project was simply to identify which pre-pilot activities were suitable for full scale pilots based on a number of criteria relating to achievability and degree of innovation. The process was initially limited to a single workshop activity involving partners. This was seen as insufficient in a number of ways, including lack of detail in the decision criteria and insufficient time and structure for the selection process. Most notably it was felt that the criteria themselves should not just be used to select scenarios, but also as a principle design guide for both scenarios and the learning activities that are created for pilots.

The ongoing development of the selection criteria and process has adhered to the iTEC project objective 2:

“To develop decision support criteria (technological, pedagogical and policy-related) that facilitates the selection of scenarios that can be mainstreamed and taken to scale.”

The process has also taken objective 6, below, into consideration, to ensure scenarios are created that deliver the classroom transformations the project has set out to achieve:

“To evaluate the extent to which the iTEC scenarios have been successful in supporting collaboration as well as individualisation, creativity and expressiveness, identify those with maximum potential to have a transformative effect on the design of the future classroom, and the underlying change processes necessary to bring about this transformation.”

Within the second year of the project a significant effort was applied to develop an understanding, and consensus, of innovation in the context of iTEC Scenarios. The results of the evaluation in years 2 and 3 have also informed the development of the selection criteria. Work on the mapping of scenarios, to increase the range of innovation, and the maturity matrix (D2.2) have also influenced the selection criteria.

Also, in year 3, following the 2nd annual review by the European Commission In November 2012, consideration was given to the degree of innovation present in the pilots. The criteria used for cycles 2 and 3 of the project had been developed to ensure a balance between the innovation nature of the pilot with the practical reality for piloting. To support wide scale mainstreaming, the consortium has tried to ensure a balance that allows scalable innovation that can be adopted by large numbers of schools. For cycle 4 of the project the criteria were
revised to increase the focus on innovation. In addition to this the following criteria were drafted to define more radically innovative scenarios:

- No evidence of the scenario currently in use in European Schools, other than in specific research projects
- Clear barriers to up-scaling resulting in very low probability of mainstreaming in the near future e.g. policy barriers (BYOD), technical barriers such as limited technical infrastructure and current pedagogical constraints of curriculum and assessment
- Making use of technologies rarely used in schools (e.g. very new technology, expensive technology, or technology not perceived to have a place in education)
- The theme of current TEL research e.g. cloud computing; mobile learning; 3D printing; augmented reality; Serious games and gamification; personalised learning; and virtual laboratories or remote labs.

These points have not been integrated into the iTEC scenario selection criteria, as they conflict with the primary objective of ensuring scenarios do not pose too significant a barrier to wide scale adoption. They are however, being used in cycle 5 to identify a smaller number of pilots which will act as examples of radical innovation to those schools which are capable of such change, and to provide insight into the challenge involved in such radical innovation.

2. The REVISED pilot selection Criteria

Revised selection criteria and process

Within WP2 (task 2.8) Scenarios were originally selected through a ranking process involving all WP 2 partners. This process was enhanced by the involvement of the Pedagogical Board, groups of teachers and later, wider stakeholders including the EUN Steering Committee made up of all EUN MoE representatives. 8-10 Scenarios per cycle were selected as an output from WP2, for prototyping in WP3. This process is identified as Milestone’s 1-5 in the iTEC Description of Work (initially scheduled for M4, 9, 16, 21 and 28).

In cycles 1-4 WP3 developed the selected Scenarios to create prototype Learning Stories and Activities for delivery in the classroom, through a process of participatory design and pre-pilots with teachers from piloting countries. The output of this process was a conclusion report that provided the information necessary to select which prototypes would be taken forward to full scale piloting in WP4. This required a “decision workshop” intended to involve all consortium members. These workshops are identified under task 4.3 and as milestones 11 – 15 (initially scheduled for M12, 17, 24, 29, 35).

The criteria for this selection is documented in the WP4 validation reports (D4.2-4.5) produced in collaboration between WP2, 3, 4 and 5 lead members. The criteria are renewed after each cycle with a key input being the WP5 evaluation reports.

Revised selection criteria and process (year 2)

The selection criteria were comprehensively updated taking into consideration the following inputs:

- Early review of Scenarios from the Pedagogical Board in Year 1
Feedback from iTEC General Assembly members during project Steering Committee meetings
Feedback from reviewers during the first annual progress review
WP2 summaries of trends and drivers
WP3 conclusion reporting
Initial WP4 selection criteria from D4.2
Input from the WP5 evaluation plan and reports D5.2 and D5.3 (draft)
Outputs from the iTEC Innovation Subgroup, including the “Scenario Innovation Mapping Tool”
WP4 work on teacher competencies, building on D4.1
Information from the Microsoft sponsored ITL research project

The updated criteria and process for using them was documented in D4.3 - 2nd Validation Report on large-scale piloting, completed in month 22.

Revised selection criteria and process (year 3)

In year 3 of the project the selection criteria have been updated as follows:
• Increasing the emphasis in innovation in the classroom, in response to the iTEC review recommendations
• The inclusion of design challenges generated by iTEC pilot evaluation outcomes in cycles 1 - 3
• Modifying the process to fit within the cycle 5 strategy to use toolkits to develop Scenarios and Learning Stories and Activities at a local level
• Changes and improvements to the Scenario Selection Criteria to take into consideration feedback on use in cycle 3 and 4
• A need to ensure that the Scenario Selection Criteria have value and potential use beyond the iTEC project
• Changes to incorporate new developments in iTEC as follows:
  o The use of the UNESCO teacher competency framework to map competencies to Learning Stories and Activities
  o The provision of the Innovation Matrix by WP2

Process for cycle 5

Cycle 5, the final cycle of the iTEC project, involves a change to the process of Scenario Development (WP2) and Learning Activity Design (WP3). In both cases the centralised process used in earlier cycles is replaced with a devolved process, allowing each partner to make use of “toolkits” that can be evaluated for use beyond the project. The process for Scenario selection and Learning Story and Activity selection has therefore been updated in the context of this.
The Scenario Selection Criteria are to be used as the guidelines and framework for Scenario development within the Future Classroom Scenario Toolkit, and within the Learning Activity Design Toolkit (A.K.A. Edukata). Details of the use of the criteria are therefore included within the toolkits. As a central quality measure for the development of cycle 5 Scenarios and Learning Stories and Activities, the criteria will continue to be used by the iTEC Integration Committee as follows:

1. The selection process, carried out by the iTEC Integration Committee, will identify the strengths and weaknesses for each Scenario produced by partners. The process is primarily intended to identify Scenarios suitable for publishing and further use in the iTEC process. Those remaining will be identified as requiring further development to ensure that they are of sufficient quality for further use in the project, and publishing.

2. In cycle 5, piloting partners will be expected to design their own Learning Stories and Activities for pilots (each partner designing their own set). These new Learning Stories and Activities should be based on revisions of previously piloted Learning Stories and Activities, however the collection of published cycle 5 Scenarios should also act as an input or stimulus for the final cycle of Learning Story and Activity design.

3. In cycle 5 it will not be possible for the Integration Committee to hold a Learning Story Verification Meeting, as was the case in cycle 4. This is a consequence of the increased numbers of Learning Stories and Activities being produced. It is also the case that the Learning Stories and Activities will not be directly derived from the Scenarios as in previous cycles, and therefore the “verification” process is not feasible. Alternatively the Integration Committee will evaluate the Learning Stories produced in cycle 5 by partners, using the Selection Criteria in the same way as with the Scenarios. The objective, as with the Scenarios, is to identify those Learning Stories which are of sufficient quality for publishing, and for use in cycle 5 pilots. Any Learning Stories that do not meet the quality standards of the Integration Committee will not be published, and will not be recommended for use in pilots.

The Integration Committee will continue to be made up of a representative group of iTEC consortium members, including National Coordinators, technology providers and policy makers.

Integration Committee Members and Scenario Selection Meetings

Each member of the Integration Committee listed below will take responsibility for assessing Scenarios using the dimension indicated. This should be done through discussion with a minimum of three other project partners. This will allow a representative opinion from across the consortium. This process will be organised so that each partner is involved in at least one dimension. All MoE partners will be involved in dimension 5.

<table>
<thead>
<tr>
<th>Member</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niel McLean</td>
<td>Dimension 1 - Is the Scenario (or Learning Story) sufficiently Innovative for the future classroom?</td>
</tr>
<tr>
<td>Maureen Haldane</td>
<td>Dimension 2 - Does the Scenario (or Learning Story) respond to relevant trends and established barriers and challenges to innovation in learning and teaching supported by ICT?</td>
</tr>
<tr>
<td>Leo Højsholt-Poulsen</td>
<td>Dimension 3 - Does the Scenario (or Learning Story) provide opportunities for teachers to develop and</td>
</tr>
</tbody>
</table>
demonstrate higher level competencies in using ICT in learning and teaching?

Roger Blamire  
Dimension 4 – Does the Scenario (or Learning Story) provide sufficient opportunities for learners to develop and demonstrate 21st Century Skills?

Will Ellis  
Dimension 5 – Does the Scenario (or Learning Story) effectively address recognised focus areas for educational reform?

Jean-Noël Colin  
Dimension 6 – Is the Scenario (or Learning Story) sufficiently innovative in the potential use of technology whilst also being sufficiently scalability for potentially large scale impact?

Scoring and Recommendations

This formal process will be carried out by the Integration Committee, on behalf of the iTEC Consortium. The criteria must be used in the following way by each participating member. It is the responsibility of Dimension Leaders to follow this process.

For each dimension a score of 0-3 should be awarded, as follows through the collaborative decision making of the dimension group:

- Score 0 = does not match any of the criteria
- Score 1 = matches some of the criteria
- Score 2 = matches most of the criteria
- Score 3 = matches all of the criteria

Once the scores have been collected and averaged the Scenarios or Learning Stories will be ranked in two stages:

- stage 1- ranked according to the number of dimensions that score 3. The Scenarios (or Learning Story) scoring 3 on the most dimensions are ranked highest.
- stage 2 – where Scenarios (or Learning Stories) have the same number of dimensions that score 3, they are then ranked according to overall score.

The integration committee member will also be expected to provide details of strengths and weaknesses for each Scenario (or Learning Story) specific to the dimension they focus on. This will be recorded using the format in appendix 1.

Scenario selection schedule 2013

<table>
<thead>
<tr>
<th>Scenario selection</th>
<th>Learning Story Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2013</td>
<td>December 2013</td>
</tr>
</tbody>
</table>
Selection Criteria

Dimension 1 – Is the Scenario (or Learning Story) sufficiently innovative for the future classroom

ITEC Scenarios, and the Learning Stories and Activities they inspire, should have the potential to transform teaching and learning practices positively, in the country in which they are used, in relation to pedagogy and technology. In this respect they should support innovation.

Does the Scenario (or Learning Story):

1. include approaches to learning that are not currently common place in schools, and with clearly expressed benefits such as increased learner (or teacher) engagement, and increased range of pedagogical strategies and assessment approaches?

2. Describe a learning experience gaining clear benefits from a seamless integration of connected technologies supporting learning beyond the classroom by making effective use of learning tools, services and communities outside of the school (this could include mobile technologies, personal devices, GPS and locative technology)?

3. Greater personalisation of learning objectives and learners acting as co-designers of the learning journey, supported by intelligent content and analytics supporting self review and self assessment?

---

10 Dimension derived from WP2 work to define innovation in iTEC and the Innovation Matrix.
Dimension 2 – Does the Scenario (or Learning Story) respond to relevant trends and established barriers and challenges to innovation in learning and teaching, supported by ICT\textsuperscript{11}

Does the Scenario (or Learning Story):

1. tackle a clearly identified trend or educational challenge and is there evidence that the challenge is derived from relevant and valid trends research e.g. into European and global trends in society, use of technology and education?

2. respond to some of the commonly identified barriers to innovation in teaching and learning supported by ICT? The scenario (or Learning Story) should provide the teacher and school leadership with sufficient guidance, support and encouragement to outweigh some of the barriers listed.
   - Balancing innovation with the need to meet curriculum and assessment requirements.
   - Lack of support from school management for introducing new approaches, which may be seen as taking risks.
   - School policy barriers e.g. bans on mobile phones and social networking sites
   - Reluctance of teachers to try new ideas due to time required to develop new approaches and adopt new tools and resources.
   - Limitations of teacher training (time and focus).
   - Reluctance of teachers to change roles and move out of their “comfort zone”, e.g. by increasing learner autonomy.

3. describe effective approaches to assessment that are not commonplace in European schools e.g. computer-based, access to internet permitted, peer assessment, self-assessment, data-driven decision-making, e-portfolios, use of video recordings to involve parents, innovative assessment approaches with learners with special needs?

\textsuperscript{11} Dimension derived from iTEC WP2 work on trends and WP5 identification of barriers to innovation.
Dimension 3 – Does the Scenario (or Learning Story) provide opportunities for teachers to develop and demonstrate higher level competencies in using ICT in learning and teaching.\textsuperscript{12}

Does the Scenario (or Learning Story) require or support a teacher to use or develop certain higher level competencies i.e. level 3 (knowledge creation) of the UNESCO ICT Competency Framework for teachers\textsuperscript{13}, including some of those listed below:

1. Pedagogical competencies (in teaching), notably
   - Explicitly model their own reasoning, problem solving and knowledge-creation while teaching students
   - Design online materials and activities that engage students in collaborative problem-solving, research or creating art.

2. Pedagogical competencies (supporting learning), notably
   - Help students design project plans and activities that engage them in collaborative problem-solving, research, or artistic creation.
   - Help students incorporate multimedia production, web production and publishing technologies into their projects in ways that support their ongoing knowledge production and communication with other audiences.
   - Help students reflect on their own learning.

3. ICT competence, notably
   - Describe the function and purpose of ICT production tools and resources (multimedia recording and production equipment, editing tools, publication software, web design tools) and use them to support students’ innovation and knowledge creation.

\textsuperscript{12} Dimension derived from the WP4 work on teacher competencies in iTEC Learning Stories and Activities.
Dimension 4 – Does the Scenario (or Learning Story) provide sufficient opportunities for learners to develop and demonstrate 21st Century Skills\textsuperscript{14}

Does the Scenario (or Learning Story) require students to employ one of more of the following skills:

1. Thinking skills including

   - Creativity and innovation - creating new and worthwhile ideas individually and/or collaboratively and evaluating these ideas in order to improve and develop into useful products/creations?
   - Critical thinking, problem solving, decision making - using arguments, reasoning and analysis, and appreciating different viewpoints to make judgements and conclusions, particularly involving complex systems?
   - Learning to learn, Meta-cognition - Effective self-management of learning (time management, autonomy, discipline, perseverance, concentration) and reflect critically and communicating on the personal learning?

2. Ways of working and tools for working including

   - Communication - confidently and clearly, in various forms and a variety of situations, and understand others and considering different perspectives to formulate arguments. Using writing process (from drafting to proofreading) and speaking or in a convincing manner and using communication aids (such as notes, maps etc.)?
   - Collaboration - speaking and listening with consideration and respect for others and working in diverse teams making use of differences to create new ideas. Collaboratively planning and organising, influence, selflessness, integrity and an ability to lead and follow others?
   - Information literacy - accessing, evaluating and using information across a range of digital source and formats. Using information and communication aids (presentations, graphs, charts, maps etc) to present complex information?
   - ICT literacy - accessing ICT and critically evaluating and using a range of tools competently in communication, collaboration, creativity, problem solving and critical thinking. Applying an understanding of the ethical/legal issues in using ICT?

3. Life and social skills including:

   - Citizenship – participation in community and political activities display, helping to solve problems affecting the local or the wider community and positively interacting with public institutions?
   - Life and career - flexibly taking on varied roles and responsibilities and adapting to change. Using advice guidance and self reflection to set and manage personal and professional goals and relationships, dealing with obstacles and priorities?
   - Initiative and entrepreneurship – including creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives
   - Personal & social responsibility – including cultural awareness and competence?

\textsuperscript{14} Dimension derived from a range of sources, notably: ATC21S (Assessment and Teaching of 21st Century Skills): \url{http://atc21s.org/index.php/about/what-are-21st-century-skills/} and EU Key competences \url{http://ec.europa.eu/dgs/education_culture/publ/pdf/ll-learning/keycomp_en.pdf}
3. DECISION MAKING PROCESS AND OUTCOMES FOR CYCLES 3 AND 4

Cycle 3

In accordance with the project plan, decision workshops were due to take place in M24 (cycle 3, milestone13) and M29 (cycle 4, milestone14). The role of the process has continued to be to “choose scenarios for large-scale testing”. The process represents the transition from WP3 work on pre-pilots, to full scale piloting. The selection of prototype learning activities is informed by the WP3 conclusion reports provided by Aalto University. The process for selection has involved all partners, coordinated via the Integration Committee.

In June 2012, WP4 coordinated a partner workshop to approve the Learning Stories and Activities developed through the WP3 process. The following Learning Stories and Activities were approved for full scale pilots in the autumn 2012. The workshop took place one month earlier than scheduled to allow National Coordinators more time to prepare for pilots.

There were two sets of Learning Activities that teachers could choose:

3. Observe and Design
   - Learning activity 1: Design brief - students are presented with an initial design brief linking the tasks to curriculum topics, students form teams and refine the design considering purpose and initial design challenges
   - Learning activity 2: Contextual inquiry: Observation - students decide who and what to observe, conduct observation and analyse data, refining design brief further
   - Learning activity 3: Product design - students create a prototype and refine the design brief
   - Learning activity 4: Participatory design workshop - students meet with 3-4 potential users, present prototypes and elicit feedback, analyse feedback, and refine design brief
   - Learning activity 5: Final product design - students create final design prototype, draw on recorded reflections and consider how identified challenges were overcome, finalise blog and present work to their peers
   - Learning activity 6: Reflection - After the end of each of the above Learning Activities, post and share audio updates of perceived challenges

4. Benchmark and Design
   - Learning activity 1: Design brief - as above
   - Learning activity 2: Contextual inquiry: Benchmarking - based on who they are designing for and what they are designing, students collect exemplars of the artifact they are trying to design, share the resources and analyse them, refining their design brief further
   - Learning activity 3: Product design - as above
   - Learning activity 4: Participatory design workshop - as above
   - Learning activity 5: Final product design - as above
   - Learning activity 6: Reflection - as above

The, two Learning Stories illustrated the use of each package of Learning Activities:
3. **Package “Observe and Design”**
   - Learning Story A: Visualization the planet surface This LS requires students to design a guided walk that highlights aspects (wildlife, buildings/monuments/geographical features) of the local environment for community members or tourists. The final walk should be based on geocaching, a location-aware smartphone game, Google map or printed map, or QR codes.
   - Learning Story B: Redesigning School This LS requires students to think about spatial design and the different motivations of people who use the space. A new space for future use is designed based on identified current challenges in relation to school-based activities.

4. **Package “Benchmark and Design”**
   - Learning Story A: Designing a physics simulation This LS requires students to design a simulation that can be used to teach a physics concept (eg friction) to other students. The simulation can be virtual or physical.
   - Learning Story B: Designing a math learning game This LS requires students to design a math learning game to teach a maths concept (eg simple geometry) to younger students. Students are asked to consider what younger students might find challenging and what they might find engaging.

**Cycle 4**

The results of the cycle 4 scenario selection process by the Integration Committee were discussed in the August 2012 committee meeting, and the ranking of the scenarios was discussed. The committee approved the rankings for handover to WP3 for further development into learning stories and activities. The decision was taken to provide WP3 with all scenarios created for cycle 4 and the scenario selection feedback. This included instructions that WP3 development must focus on the top 5 ranked scenarios only, and that the feedback provided as part of the scenario selection process should also be used to guide the design work in WP3.

The 5 scenarios selected, in priority of order were:

1. Digital producers
2. Mind mapping the soil
3. GPS Enabled learning games
4. Audio/video feedback
5. Create a model

Dimension leaders from the Integration Committee were asked to provide a short report for their dimension, which identifies the strengths and weaknesses of each of the top 5 Scenarios. This was in the form of bullet points, identifying why the scenario has been determined as suitable for prototyping with reference to the selection criteria, and identifying weaknesses for further development.

The development of learning Activities and Learning Stories took place over the autumn 2012, through WP3. During this period the Integration Committee met again in October and December to discuss the development of the Learning Activates in line with the selection criteria. These Learning Activities were completed in February, and approved by the integration committee for pilots. The following Learning Activities were approved for cycle 4 pilots starting in March 2013:

- Learning Activity 1: **Dream** – Introducing, understanding and questioning a design brief
• Learning Activity 2: **Explore (Benchmark/Observation)** – Collecting information in relation to the design brief
• Learning Activity 3: **Map** – Creating a mind map to understand relations between the collected information
• Learning Activity 4: **Reflect** – Recording audio-visual reflections and feedback
• Learning Activity 5: **Make** – Creating a design
• Learning Activity 6: **Ask** – Performing workshops with people who may represent future users of the design
• Learning Activity 7: **Show** – Publishing and presenting designs to an audience
• Learning Activity 8: **Collaborate** – Forming ad-hoc collaborations with learners of other schools

To illustrate the use of cycle 4 Learning Activities, three Learning Stories were proposed to pilot teachers:

• Learning Activity 1: **Tell a Story** – Narrating an academic topic through audio-visual means.
• Learning Activity 2: **Create an Object** – Developing a tangible design.
• Learning Activity 3: **Create a Game** – Constructing a playful activity.
ANNEXES

Annexes Part I.

Annex 1: Learning Activities and Stories Cycle 3
Annex 2: Learning Activities and Stories Cycle 4
Annex 3: Reports on the international workshops for teachers held in September 2012, February 2013 and May 2013

Annexes Part II.

Annex 4: Reporting template for National Coordinators for cycle 3
Annex 5: Reporting template for National Coordinators for cycle 4
Annex 1: Learning Activities and Stories Cycle 3

See the Stories and Activities on the iTEC website:

- Observe and design: http://itec.eun.org/web/guest/la5
- Benchmark and design: http://itec.eun.org/web/guest/la6
Annex 2: Learning Activities and Stories Cycle 4

See the Stories and Activities on the ITEC website:

- Tell a story: [http://itec.eun.org/web/guest/tell-story](http://itec.eun.org/web/guest/tell-story)
- Create an object: [http://itec.eun.org/web/guest/create-an-object](http://itec.eun.org/web/guest/create-an-object)
- Create a game: [http://itec.eun.org/web/guest/create-a-game](http://itec.eun.org/web/guest/create-a-game)

Report on International teacher workshops
2012 - 2013

Reminder of the context

The Description of Work (DoW) states in the Task 4.5 that WP4 shall organize “three international (face-to-face) workshops for selected teachers (target: 50 at each workshop). Following each workshop with teachers, an internal report is produced that provides guidance to the next iteration and follow-up and produces recommendations for the improvement of modules and resources for teacher education. They take place according to the project cycles enabling of activities and further knowledge building. The workshops focus on the development of a network of people engaged and tuned with the goals of iTEC who will take a key role in guiding and supporting communities of teachers in schools."

The present report focuses on the international workshops for teachers organised in the frame of cycle 3 (C3) and 4 (C4) during the school year 2012-2013.

Introduction

To trigger reflection about innovation, prepare teachers to the use of iTEC resources but also to build bonds between teachers across Europe, a series of three international teacher workshops (Task 4.5) have been organized in C3 and C4, focusing on different aspects of piloting activities: use of technologies in the classroom, creation of a future classroom lab scenario and more generally reflection on change in education.

The events were organized in the Future Classroom Lab in Brussels, a fully equipped, reconfigurable, teaching and learning space. The objective was to immerse teachers in a radically different teaching environment to present new ways of organizing the lessons and trigger reflection among workshop participants.

The visit and use of the Future Classroom Lab also served as incentive for teachers as this was a good opportunity for them to find out more about the current trends in technologies for education, which connects well with the interests of participants in the iTEC project.

The workshops involved each time about 20 participants from all over Europe for a 2 days event, organized around several training sessions, group work and including social activities. Having 20 participants allowed all individuals to take part actively in the presentations and the group work. These workshop were unique opportunities for teachers to work and share with their peers from across Europe.
The Future Classroom Lab

The Future Classroom Lab in Brussels, where the three workshops took place, is a fully equipped, reconfigurable, teaching and learning space developed by European Schoolnet, its 30 supporting Ministries of Education and leading educational technology providers.

The Future Classroom Lab (FCL), inaugurated in 2012, has been created to help visualise how conventional classrooms and other learning spaces can be reorganised to support changing styles of teaching and learning. It has been designed as a “Living Lab” for how ICT can be implemented in schools and where policy makers, ICT suppliers, teachers and educational researchers can come together to:

- Rethink how new technologies can support the educational reform process at both national and European level.
- Engage in regular workshops, seminars and courses on how existing and emerging technologies can have a transformative effect on teaching and learning processes.
- Develop new economic models in order that teaching and learning activities designed for the future classroom can be mainstreamed and taken to scale.

The Future Classroom Lab is formed by six different learning spaces. Each space highlights specific areas of learning and teaching and helps to rethink different points: physical space, resources, changing roles of student and teacher, and how to support different learning styles.

The six different learning spaces are:

- **Interact** - The Future Classroom Lab has a small interactive classroom to illustrate how a teacher in a traditional classroom uses technology to enhance interactivity and student participation.
- **Present** - An area for teacher and student-led presentations with tiered seating and an interactive whiteboard that can also be flipped into a horizontal position for group work.
- **Investigate** - A flexible area for group and project work with integrated technology and power to support investigations, particularly in science and technology.
- **Create** - A mini ‘broadcasting studio’ for video creation, editing and streaming that includes ‘green screen’ technology to help pupils demonstrate their understanding and present their work using new media techniques.
- **Exchange** - A breakout area particularly for small group collaborative work that supports project-based learning scenarios and fosters team building.
- **Develop** - An area where pupils can access learning resources, do individual research and learn informally.

All together the spaces form the Future Classroom vision defined by European Schoolnet, a unique way to visualise a new, holistic view on teaching. The zones reflect the FCL vision of what good teaching should be about: being connected, being involved, and being challenged.
1. Second International Workshop for ITEC Teachers

In preparation of the iTEC cycle 3 of pilots, several workshops have been organised with both National Coordinators and Teachers in order to present them the tools, make them familiar with it and collect their feedback. These workshops have been held in the second week of September 2012 just after the iTEC General Assembly took place. The event was organised as follows:

- 5-6 September: Workshop for National Coordinators
- 6-7 September: Workshop for teachers

During the teacher workshop, eighteen teachers from fifteen countries were presented with the two iTEC Learning Activities for Cycle 3, ‘Observe and design’, and ‘Benchmark and design’. New iTEC technologies were presented over the course of the workshop.

Programme

On day 1, sessions included introduction of participants, of the projects activities, the FCL, and the iTEC learning environments, also called the “shells”:

- **Getting to know one another**: Introduction of teachers and sharing of experience (in groups)
- **Understanding the iTEC project**: Presentation of iTEC objectives and cycle 3 Learning Activities
- **Exploring technologies in the Future Classroom Lab (FCL)**: Presentation of FCL tools + Share and gain ideas about the use of various technologies in iTEC activities (in groups)
- **What is an iTEC Shell**: Introduction to the concept of an iTEC shell and the different shell technologies that can be used.
- **Getting started with iTEC Shells**: Create teachers’ workspace within a selected iTEC shell (in groups of 2)
- **Configuring a shell for the iTEC Learning Activities**: Select tools/widgets which could be used for the delivery of the iTEC Learning Activities

On day 2, participants were presented and explored the community, the composer tool and the widget store:

- **The online teacher community resources**: Guided tour in the iTEC online platform
- **What is the iTEC Composer?** Purpose and function of the iTEC Composer tool
- **Presentation of the people and event directory services**: Explore how access to People and Event directory could support teaching
- **The iTEC widget store**: Create educational widgets using existing content, or by content created in common web.
- **Simple educational widget creation**: Creating educational widgets from pre-existing content.
- **Design ideas for educational widgets**: Propose new widget tool ideas
Participants

Eighteen people from fifteen countries took part in the workshop. The represented countries were: Austria, Czech Republic, Estonia, Finland, France, Germany, Hungary, Israel, Italy, Lithuania, Norway, Portugal, Slovakia, Spain and Turkey.

Resources used for the workshop

During the workshop, a number of technologies have been used: FCL technologies such as Interactive Whiteboards, iTEC shells, several iTEC prototypes such as the Composer and the People and Events Directory.

On day 1, the participating teachers were given a tour of the FCL and could then explore the possibilities offered by the FCL tools and technologies.

Then, the concept of the shell which is central in iTEC, was presented and teachers got familiar with the ideas of using a learning environment or a shell and to customize it to its own needs for teaching. The shells used and presented during the event were the ones used in pilots in cycle 3 and 4: Moodle, dot.LRN, Promethean Active Inspire and Smart Notebook.

The following day, participants were presented with the iTEC European teacher community and were encouraged to use it during the workshop to give their feedback on the iTEC learning activities and technologies, using various functionalities on the community (rating, commenting system, forum).

Participants were also presented with prototypes of iTEC technologies being developed at that time such as the Composer tool and the People and Events Directory. Useful feedback was gathered during this workshop in order to improve these tools.

The last session of the workshop focused on the widget concept. Teachers were shown how to use educational widgets and to create their own widget. The idea is to allow each one to create its own repository on online tool in a single place, the widget store.

Community building aspects and activities

One of the objective of the workshop was to build a network of teachers who can then advice their peers when back in school, but also continue to exchange at European level.

In addition to the training and familiarization with iTEC resources and technologies, it was felt important to get teachers to know each other, to exchange, and to build bonds that would make them continue to exchange after the event.
Several aspects of the event replied to this objective. The first session aimed to introduce the speakers and the participants and to encourage participants to exchange in smaller groups about their current practices. Throughout the event, some other activities were also done in small groups (visit of the FCL, creation of widgets...). On the day 2, the teacher community was presented and participants were asked to provide feedback using the community functionalities (rating, commenting, forum) so they were already familiar with it before going back home. A social casual dinner was organized on the day one, leaving the participants the time to meet each other in a more relaxed context.

**Teacher feedback and comments**

An online survey was sent to the participants after the workshop to collect their feedback and identify strengths and weaknesses. 13 participants on 18 replied to the survey and expressed very positive feedback:

- **100 % of respondents rated positively the venue, the Future Classroom Lab** (77% as excellent, 23% as good)
- **100% of respondents rated positively the workshop overall** (excellent 62%, good 38%), and more particularly:
  - Shells: 92% positive feedback (31% excellent, 62% good)
  - Composer: 92% positive feedback (15% excellent, 77% good)
  - Widgets: 100% positive feedback (54% excellent, 46% good)

After the workshop, **100% of respondents felt confident to use the iTEC technologies** in the Cycle 3 and **77%** said they **would keep in contact** with other workshop participants.

Some commented on the sessions: “[There were several sessions that could be rated as “most useful”...] I liked the visit of the Future Classroom Lab, the whiteboard session, the widget session... because they are giving me new impulses and ideas that I can use in my teaching”. (A teacher from Norway)

Participants valued the peer exchange and collaboration, within their school or with other participants from across Europe:

- “I will "teach" other teachers of my school so they can benefit from what was presented in the workshop as they will be pilot teachers on cycle 3. After that, sharing with them and the attending teachers the challenges and solutions we will find during the pilots, I will do my best to "spread" all what I learned attending the workshop.” (A teacher from Spain)
- “I will of course participate in Cycle 3 and get in touch with another school to choose a learning history like ours to share and discuss ideas among students not among teachers." (Another teacher from Spain)
- “I am going to do training for teachers on how to create a blog and use widgets.” (A teacher from Lithuania)
“Best part was exchanging experience with other teachers”. (An Estonian teacher)

Guidance and recommendations for the next iterations of training workshops

The workshop went well and most participants were enthusiastic about it, as they expressed during the event and in the feedback form.

It was decided that future teacher’s workshops would keep this format (about 20 participants) as it was seen as beneficial to participants, with more direct contact between each other and with the trainers. It allowed more individualized advice too from the trainers to the teachers.

The content of future workshops will vary on the specific activities of future cycles but also on the technologies delivered by iTEC partners. The design of future courses would be produced using a format developed in the CPDLab LLP project run by European Schoolnet.

As one of the recommendations, it was also suggested, taking into account the feedback from participants that more ice-breaking, group work and social activities should be organised so participants get acquainted with each other in a faster and smoother way. This would offer more chances to have participants learning from each other but also enjoy the meeting and their stay in Brussels.
II. Third International Workshop for ITEC Teachers

The third international teacher workshop was held in February 2013 before the Cycle 4 of pilots started. The course was designed to give a hands on approach to help participants develop their own ideas about 21st Century Learning and the effective use of technology.

The workshop objectives covered various aspects of the training and the event aimed to give the participants the opportunity to:

- Explore the use of the innovative “TeamUp” tool for managing group activity in the classroom.
- Share experiences with other teachers and learn about the capability of different technical settings in European Schools.
- Explore Future Classroom ideas made possible by the range of hardware and software available in the Future Classroom Lab and its different learning zones.
- Be provided with access to the iTEC Widget Store, giving the opportunity to use a number of tools and resources to support innovative approaches to learning and teaching.
- Learn to easily create and collect simple learning resources and tools for reuse, and to enhance the learning process.
- Develop an appreciation of how Learning Activites and Learning Stories, produced in the flagship European Commission funded iTEC project, can be delivered in practice.
- Access community support and resources to provide ongoing opportunities for introducing innovative approaches to teaching practice.

Programme

The workshop was a nine hour course spread over two days. It included three sessions

5. The Future is here: about participants approaches to innovation and tools used or that could be used to bring innovation to the teaching

The Module provided an introduction to the work carried out under the iTEC project. The objective of the module was also that, after it was completed, participants should be able to:

- Appreciate the innovative use of technology to support 21st century skills in the classroom, exemplified by using the iTEC TeamUp tool to form collaborative groups.
- Evaluate the capability of an educational “technical setting”.
- Identify and explore the potential capability offered by technologies in the future classroom, and the pedagogical approaches they support.
6. TEC Future Classroom Scenario tools: Presentation and use of the iTEC technologies (shells and widgets), reflection and creation of new widgets

This module presented the technologies developed within the iTEC project, for use in the classroom to support delivery of iTEC Learning Stories and Activities.

The objective of the module was that, after it is completed, participants should be able to:

- Login to the iTEC services to use technologies provided by the project, and support colleagues who also wish to register.
- Make use of an iTEC “shell” in their teaching.
- Find and make use of useful tools from the widget store and create a simple one of their own.

7. My Learning Story: Presentation of ideas for implementation and reflection on tools and methods participants may use while delivering the pilot activities.

This module aimed to develop among participants a shared understanding of how Learning Stories and Activities, based on Future Classroom Scenarios, can be delivered in the classroom, benefitting learners and teachers. After the completion of the module participants should be able to:

- Understand the value of a selected FCS Learning Story and its activities and have an appreciation of how they can be delivered in practice.
- Engage with the iTEC teacher community to discover more Learning Activities and resources to support their adoption, including community discussions.
- Use selected iTEC tools in the delivery of the selected Learning Story.

The workshop also included a “world café” session, aiming to make participants reflect on what they have learnt during the workshop, how they would use the technologies, which widget they would create, how they would make use of the Learning Activities and how they will communicate on their piloting experience.

Participants

Twenty-two teachers from eleven countries attended the workshop. The represented countries were: Austria, Estonia, Germany, Israel, Lithuania, Poland, Portugal, Slovakia, Spain and Turkey, United Kingdom. Most teachers came in pairs from the same school.

Participants were teaching a large range of different subjects: Design Technology, Business Administration and Marketing, History, Geography, Mathematics, English, German language/literature, Politics, Economy, Social science, Music and Informatics/ICT.

The event gave its participants the opportunity to work with teachers from across Europe, to develop innovative ideas for the future classroom and to explore new ideas and technologies for use to enhance classroom delivery.

Resources used for the workshop

In the first session it was made use of TeamUp to as a way for teachers to introduce themselves, and with the view to create working groups: They all entered they profile into the online software and told few words about them to other participants. In this session participants learned how to use Team Up and the use of this tool to present themselves.
contributed to the setup of a relaxed atmosphere among participants which then facilitated the discussions and active participation of all of them.

Interactive whiteboards were used many times throughout the workshop to support discussions on innovation but also specific group work such as creation of a cartoons, reflection on a topic, presentation of tools.

The various iTEC shells were presented as well as the widget store. To support the work, a Moodle Course was created, showing concretely how Moodle can be used and customized and how to integrate widgets in the platform. The participants were invited to brainstorm on the creation of widgets and to come up with a list of existing widgets they would find useful for their teaching or widgets they would create to fulfill their needs.

Ideas for implementation of the iTEC Learning Activities were provided during the last session and participants worked in small groups to share ideas and practices from their previous piloting activities. This allowed teachers to gain an additional set of tools they could use, in addition to the iTEC technologies presented previously in the workshop.

**Community building aspects and activities**

The workshop is a unique opportunity to get iTEC pilot teachers from all over Europe to meet each other and share about their experience, possible concerns and good practices. As previously mentioned, one of the workshop objectives is to develop a network of teachers able to advice their peers after they attended the workshop, and motivated to be active in the European online community.

As highlighted in the recommendations from the workshop held in September 2012, it was important to organize sessions when teachers have enough time to meet and exchange during the workshop but also during more informal moments.

The first session using TeamUp as described above, aimed at warming up the group, by having all introducing themselves and then reflecting together on innovation, the concept of the Future Classroom, good examples and current needs in education. People also showed, in small groups, the video they had produced before the workshop on their own school environment and classroom equipment or activities.

Then, the modules were organized in many sub-sessions, with regular shifts between presentations by the trainer and group work activities. This brought a certain dynamism to the activities. In addition, the group members were changed each time there was a new group activity to allow all to meet each other. This was easily done using Team Up and this allowed all participants to work together in small groups of two to five people depending on the activities.
The online European teacher community was presented and participants were invited to come back on the community if they had questions during the pilot activities, or if they wanted to tell about what they have done when back in the school.

After the day one, a Treasure Hunt was organized to allow participants to discover Brussels in small groups, acting as teams and following a range of steps within Brussels historical area. The Treasure hunt tour in Brussels ended in a restaurant for a casual dinner.

After the workshop, communications to participants followed up on their progress (widget creation, video) and a webinar, held three months after the workshop on May 29th, 2013, gathered again some of the teachers to tell about the pilot activities and what they have started to use in their teaching as a results of the workshop.

**Teacher feedback and comments**

A survey collected the feedback from participants. 14 people responded to the survey. Overall, the workshop was rated as good or excellent by more than 92% of respondents.

93% of respondent said they would keep in contact with other participants after the workshop. 100% of respondents felt confident to use the shells and widgets in the cycle 4.

Participants comments showed again, as for previous workshops, that they wish to share what they have learned with their peers and to collaborate with other teachers: “As a result of the workshop, I will share the experience with my school/town teachers, definitely participate in the next ITEC cycle; stay in contact with other participants, as to process further cooperation and use more ICT in my teaching process.” (A Lithuania teacher). A participant from Portugal said: “[After the workshop], my effort will mostly be to spread within the school among colleagues to strengthen collaboration in projects development that can engage students in curricular activities based on some these innovative technologies.”

The workshop was seen as inspirational by some: “I think the workshop was a real eye-opener. It gave me some new ideas and inspired me to double my efforts here in school. I think it was most useful and would recommend it to any teacher eager to try some new approach to his routine.” (A teacher from Poland) and as a great opportunity to meet peers and share with them: “I was honoured to take part in this event and this was a worthwhile experience to collaborate with colleagues from Portugal, the UK, Austria and from across Europe.” (A Turkish participant).

Finally, another Polish participant said that this workshop was “the best and most valuable workshop I have ever taken part in since I became a teacher.”

The practical organization (travel, hotel, meals, discovery of Brussels activities and dinner) was also well rated, with 93 to 100 % of positive replies (either excellent or good).
Guidance and recommendations for the next iterations of training workshops

The participants to the workshop were very enthusiastic and motivated and took part actively in the activities. This shows the modules triggered reflection and that discussions were made possible by the format of the event.

This time, teachers had been involved in pairs from the same country and most of them were from the same school. The idea was to leverage the impact of the use of iTEC activities and technologies within their schools by having a small team of two teachers able to help each other and to communicate what they have learned to their fellow colleagues.

Having peers of teachers from the same country or already knowing each other also a positive impact on participation and contributed to the good atmosphere during the two days event.

It was therefore decided to keep involving two teachers per country each time, as much as it is allowed by logistical constraints (limited number of places in the workshops).

As the one detailed above, several aspects of the event were successful and it was decided to reiterate in the next workshop:

- Involving teachers coming in peers from the same country, if possible from the same school and/or knowing each other
- Continuing to involve teachers with a good technical knowledge and skills and able to follow smoothly the modules activities
- Asking participants to prepare videos of their school, classroom and/or classroom activities to show and present to other participants
- Continue to rely on Team Up to create teams
- Holding brainstorming sessions as a way to trigger reflection
- Including a “world café” session as it is a good mean to collect immediate teachers feedback and having them looking into their future activities and opportunities to use what they gained from the workshop
- Leaving some time for social activities such as the The Treasure hunt which was appreciated by the participants.

Some recommendations were formulated to improve some aspects of the workshop:

- Participants should be confident to communicate in English
- Providing a printed activity guide to support the group activities could help following the modules
- The module focusing on the widget creation could be split into more steps to provide more guidance and time to participants
- Sufficient time should be left to conclude each of the modules
III. Fourth International Workshop for ITEC Teachers

The fourth international teacher workshop held in May 2013 at a time where NPCs started to design the scenarios for cycle 5, at national level and not anymore at central level as in previous cycles.

The course offered its participants the opportunity to get trained on the development and use of Future Classroom practices. The event focused specifically on the Future Classroom Scenarios development.

The participation in this workshop also aimed at involving further the participating teachers in the cycle 5 scenario design process happening at national level. After the workshop, the participants were expected to support the National Pedagogical Coordinators in the development of future classroom scenarios for the cycle 5.

The workshop aimed to give the participants the opportunity to:

- Start to develop visions for the future classroom, following which, they discuss and analyse them and their impact on the future school environment.
- Be encouraged to visualise the future classroom as part of the educational landscape in the future.
- Collaboratively develop an understanding of significant developments, or trends in education.
- Critically evaluate their own work to produce a Future Classroom Scenario, and decide how they can use the techniques they have used in support of their school development plans.
- Explore Future Classroom ideas made possible by the range of hardware and software available in the Future Classroom Lab and its different learning zones.
- Access community support and resources to provide ongoing opportunities for introducing innovative approaches to teaching practice.

Programme

The course was organised around 3 modules:

4. **The Future Classroom and a foresight approach:** Overview of the ITEC project’s approach to development of Future Classroom Scenarios with examples for
inspiration. Group activity based on assertions on future working methods and environments.

This module is the first of three covering the development of Future Classroom Scenarios, in a process described by the iTEC Future Classroom Scenario development toolkit. The module is intended to ensure that participants are familiar with the iTEC project, its working methods and goals. The participants started to develop visions for the future classroom, following which, they discussed and analysed them and their impact on the future school environment. The module worked through parts of the toolkit in order to demonstrate how the participants may use these techniques in their own school.

5. **Educational landscape in the future**: Changing educational landscape, changing teaching pedagogy supported by technology, student-centred learning, projects. Using trends to inspire Future Classroom Scenarios

The module focuses on identification of trends that are likely to have an impact on the future education landscape, and helps participants develop a shared conception of the future school. The trainer were asked to point out the multiform spaces of learning and their connection with learning methods and tools, and the role of technology as part of this whole.

6. **Working with scenarios**: The Future Scenarios Toolkit for schools, exploring how to use it, working in groups with developing Future Classroom Scenarios.

In this module the trends established in the previous modules are used as the basis for developing a Future Classroom Scenario intended to provide the blueprint for school developments. The module was organized as a role-playing session.

Participants worked in groups of 4, representing key stakeholders in the development process, and used their different perspectives to determine how identified trends will impact on future classroom practices. This insight was then used to produce a Future Classroom Scenario. An objective was that the narrative included in the scenario was designed to move the institution on in terms of innovation maturity.

**Participants**

Twenty participants from twelve countries took part in the workshop. The represented countries were: Austria, Belgium, Czech Republic, Finland, France, Hungary, Italy, Lithuania, Norway, Portugal, Spain and Turkey.

Participants were teachers one or several subjects among which ICT, Maths, Physics and Chemistry Sciences, Geography, History, Social studies, Religion, Art, Music, Dutch, French, English, Swedish, Finnish and Spanish. Some taught a wide range of subjects above mentioned even in the secondary schools (for eg. A Finnish teacher taught Social studies, Mathematics, Religion, English, Science to his 13-16 students.)

**Resources used for the workshop**

TeamUp was successfully used throughout all modules to create teams of different size for the group work activities.

Again, Interactive whiteboards were used for different purposes including presentation, reflection, or for group work.
Web 2.0 tools such as Titanpad, Blogster, augmented reality and game based learning tools were also used to support the modules.

**Community building aspects and activities**

Again in this event, the social aspects were considered and group work was used in all the course modules and social informal activities were organized for the participants.

As in the previous edition, the modules were organized in many sub-sessions, with regular shifts between presentations by the trainer and group work activities. This was again a successful aspect of the event format and groups were formed using TeamUp.

Participants were of course presented with the online European teacher community, in whom they could post questions, seek for advice or tell their story in the forum and could also post in the blog “Teacher Stories”.

After the day one, a Treasure Hunt in Brussels historical center was organized, offering participants the time to discover the city in an informal way and again in teams of 4 to 6 following a series of steps. A diner was organized in the center with the participants and workshop speakers.

After the workshop, a follow up was done by e-mail and a webinar was organized one month and a half after the event, on June 26th, 2013. The webinar was the occasion to present and collect feedback on the scenarios and related videos finalized by participants after the workshop, to encourage exchange and/or collaboration between them and to collect impressions on what they have gained from the workshop, one month and a half later.

**Teacher feedback and comments**

Over the 20 participants, 12 replied to the anonymous feedback survey circulated after the workshop. As for previous events, participants were very enthusiastic during the workshop and expressed it in the survey:

- The workshop as a whole was rated as excellent by 76% of respondents and as good by 24% of them.
- Practical organization (travel booking, accommodation, venue, meals and social activities) was also very much appreciated (72 % excellent, 24 % good).
- 92 % were confident to create a new scenario using the
Future Classroom Scenario (FCS) toolkit presented and used during the workshop. A participant said he would use the toolkit to design school projects.

As a result of the workshop, the participants were more motivated to use the project resources and wished to present the ideas they got during the event to their colleagues: “I will introduce the iTEC project to my school colleagues in a few days and hope to involve more of them in the next activities.”

The event also made the participants confident to use more tools and technologies in their teaching: A participant for Turkey stated he/she would “give more importance to iTEC technologies on the iTEC school blog and be more active because [he/she had] been very much motivated [by the workshop]. For example, she/he will use moodle, promethean planet, LMS, facebook group, teachers’ forum much more.”

Another from Portugal said “Now I feel more confident in using some collaborative tools like Padlet and Titan and even Teamup. I’m already using them in an activity with my students (I’ve just used Padlet, Teamup, an hour ago and everything went well and they liked). Now I understand what a scenario is and I became more versatile regarding my teaching.” A Czech teacher stated that “It was good to experience working with new apps as Titanpad or Power League, exploring things as augmented reality or see all the modern equipment in the Future Classroom Lab.”

Some were also inspired by the Future Classroom Lab: “Observing the Future Classroom Lab has brought ideas concerning my own classroom. I would like to change the environment in order to make it better for a group work. For example I would like to use an older PC and a webcam we got in Brussels to make it easy to create animations in my classroom.” (A Czech participant).

Participants were enthusiastic about sharing experience with their peers: “It was great to cooperate with teachers from other countries and share ideas. We are still in touch and keep exchanging ideas and materials.”

**Guidance and recommendations for the next iterations of training workshops**

The successful features identified in the previous events were repeated and shall continue to be taken into account when organizing the workshops.

Further recommendations on elements to be improved included:

- The selection criteria used to support the creation of innovative scenarios should be simplified when it is used in teacher’s events
- Some activities were perceived as quite similar in module 1 and 2 as both implied reflections on the classroom of the future and innovation in education. Redundancy should be addressed to avoid possible repetitions in the next iteration.
- The Future Classroom Scenario toolkit should be introduced as a whole item at the start of the event and teachers should be made aware the toolkit will become available online for school management and teacher’s use
- The workshop could include more time for hands on activities, ie. creation of a scenario
Conclusion

The international teachers’ workshops organized in Cycle 3 and 4 have benefited to both its participants and its organisers as it has also enabled us to collect teachers’ feedback and thus fine-tune the modules for future training.

Overall, most teachers send positive feedback about the training, stating it had inspired them and opened new perspectives for the teaching. National Coordinators were encouraged to involve teachers who attended these events in the dissemination of iTEC practices.

Involving experimented teachers, knowledgeable in the use of technologies, was also a good indicator to measure the degree of innovation and challenge towards participants and pilots teachers in general may be pushed.

Gathering teacher’s feedback allowed us to improve both the logistics and the content of the training events, in the view to provide its participants a unique opportunity to discover, reflect, learn from each other and come back with new ideas to use in their classroom.
### Annex 4: Reporting template for National Coordinators for cycle 3

#### iTEC WP4 & WP5 // Cycle 3

<table>
<thead>
<tr>
<th>1. Selection process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of teachers previously involved in iTEC vs. New to iTEC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Resources and national community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource produced by NC if any (tutorial, video, …)</td>
</tr>
<tr>
<td>Resource identified by NC if any (tutorial, video, link to online tools or resources, …)</td>
</tr>
<tr>
<td>URL national online platform</td>
</tr>
<tr>
<td>Type of platform (website, blog, Moodle, Facebook group, etc.)</td>
</tr>
<tr>
<td>Features (tools, widgets)</td>
</tr>
<tr>
<td>Objectives/Content/Activities</td>
</tr>
<tr>
<td># users (if applicable)</td>
</tr>
<tr>
<td># posts (if applicable)</td>
</tr>
<tr>
<td># page views and period (if data available)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Preparation, Support, Monitoring activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National workshop</strong></td>
</tr>
<tr>
<td>Date and place</td>
</tr>
<tr>
<td>Nb participants</td>
</tr>
<tr>
<td>Profile participants (teachers, ICT coordinators, careers advisors, …)</td>
</tr>
<tr>
<td>Main objective</td>
</tr>
<tr>
<td>Description (face to face or online, specific objectives, content, outcomes…)</td>
</tr>
<tr>
<td>Technologies (hardware, software) used / presented during the workshop</td>
</tr>
</tbody>
</table>

**Follow up meeting 1 (if applicable)**

| Date and place |
| Nb participants |
| Main objective |
| Description (face to face or online, specific objectives, content, outcomes…) |

**Follow up meeting 2 (if applicable)**

| Date and place |
| Nb participants |
| Main objective |
| Description (face to face or online, specific objectives, content, outcomes…) |

<table>
<thead>
<tr>
<th>4. Pedagogical innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. What were the main pedagogical outputs produced by teachers during the C3 pilot activities (eg: lesson plan, video, blog …)</td>
</tr>
<tr>
<td>b. What types of innovative approaches (ie any changes to the teachers’ usual practice) were adopted by your pilot teachers?</td>
</tr>
</tbody>
</table>
c. iTEC may have stimulated **different degrees of change** and **different levels of innovation** amongst your pilot teachers. Please describe briefly your teachers' practices including these various levels of pedagogical innovation. Also mention any specific barriers and enablers. Give examples including best practices.

### 5. Technical innovation

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a.</strong></td>
<td>What technologies did teachers use (please list both hardware and software)?</td>
</tr>
<tr>
<td><strong>b.</strong></td>
<td>To what extent did teachers make innovative use of the technologies?</td>
</tr>
<tr>
<td><strong>c.</strong></td>
<td>There may be different degrees of change and/or different levels of innovation amongst your pilot teachers in relation to their use of technology whilst piloting the iTEC Learning Stories. Please describe briefly your teachers' use of the technology. Also mention any specific barriers and enablers. Give examples including best practices.</td>
</tr>
</tbody>
</table>
Annex 5: Reporting template for National Coordinators for cycle 4

### iTEC WP4 reporting // Cycle 4

#### 1. Selection process

**How did you attract and/or identify and/or select the teachers for C4?**

#### 2. Resources and national community

- Resource produced by NC if any (tutorial, video, …)
- Resource identified by NC if any (tutorial, video, link to online tools or resources, …)
- URL national online platform
- Type of platform (website, blog, Moodle, Facebook group, etc.)
- Features (tools, widgets)
- Objectives/Content/Activities
- # users (if applicable)
- # posts (if applicable)
- # page views and period (if data available)

#### 3. Preparation, Support, Monitoring activities

**National workshop**

- Date and place
- Nb participants
- Profile participants (teachers, ICT coordinators, careers advisors, …)
- Main objective
- Description (face to face or online, specific objectives, content, outcomes…)
- Technologies (hardware, software) used / presented during the workshop

**Follow up meeting 1 (if applicable)**

- Date and place
- Nb participants
- Main objective
- Description (face to face or online, specific objectives, content, outcomes…)

**Follow up meeting 2 (if applicable)**

- Date and place
- Nb participants
- Main objective
- Description (face to face or online, specific objectives, content, outcomes…)

**Main teacher support means in C4**

- e-mail, calls, online platform, school visits, …

#### 4. Pedagogical innovation

ITEC may have stimulated different degrees of change and different levels of innovation amongst your pilot teachers. Please describe briefly your teachers’ practices including these various levels of pedagogical innovation. Also mention any specific barriers and enablers. Give examples including best practices.

#### 5. Technical innovation

There may be different degrees of change and/or different levels of innovation amongst your pilot teachers in relation to their use of technology whilst piloting the iTEC Learning Stories. Please describe briefly your teachers’ use of the technology. Also mention any specific barriers and enablers. Give examples including best practices.