

DESIGNING THE FUTURE CLASSROOM

Issue 2 – August 2014

- * School experiences with Future Classroom Scenarios
- * Teacher training – a key element for innovation
- * Scaling up best practice in schools
- * Beyond iTEC



iTEC
Designing the future
classroom



Future
Classroom Lab
by European Schoolnet



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PICTURE CREDITS
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ORIGINAL DESIGN
Karakas Graphic Communications, Brussels

DTP AND PRINTING
Hofi Studio, CZ

PUBLISHED
August 2014

PRINT RUN
3000 in English
300 in French, Spanish, Italian and German

ISBN
9789491440571

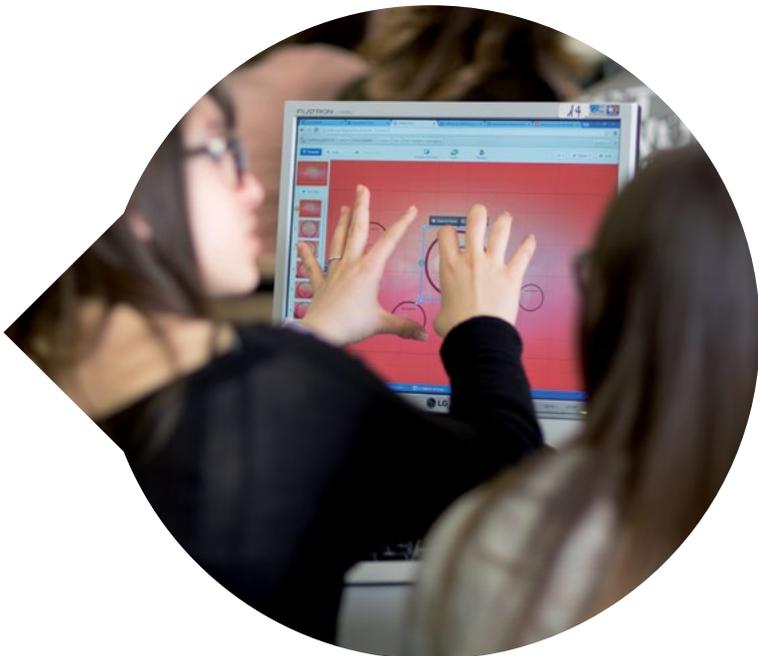
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The work presented in this publication is financially supported by the European Commission’s FP7 programme – project ITEC: Innovative Technologies for an Engaging Classroom (Grant agreement N° 257566). The content of this publication is the sole responsibility of the consortium members and it does not represent the opinion of the European Commission and the Commission is not responsible for any use that might be made of information contained herein.



What can we expect from the future classroom?

“The future classroom is not about the environment or about the furniture or the technology either. It’s about how the students learn.” Kerry Shoebridge, United Kingdom



This is how one iTEC teacher in the UK sums up iTEC (Innovative Technology for an Engaging Classroom), a four-year project on designing the future classroom. The evidence gathered from more than 2,500 classrooms involved in the project suggests that iTEC has succeeded in improving learning by allowing teachers to innovate in their classroom practice.

Key to the success of the iTEC project, and what makes it different from other, technology-focused education initiatives, is that it allows teachers to take a step back from their everyday practice to visualise and create scenarios of how learning could be.

The iTEC project, which is a cooperation between Ministries of Education, educational technology providers and pedagogical experts, as well as primary and secondary teachers in classrooms across Europe, has developed a ‘scenario-driven learning design’ process. This process facilitates teachers innovating in their teaching practice, supported with ICT. iTEC has developed a Future Classroom Toolkit and additional training services so that iTEC can be easily adopted by teachers internationally.

In this magazine you can learn more about how the Future Classroom methodology has already had an impact in classrooms across 20 countries, allowing schools to rethink how they are currently using ICT and close the ‘mainstreaming gap’ – when technology is not fully-integrated in teaching and learning, both inside and outside of school. ●

“Sometimes a pencil and a piece of paper aren’t enough to show what is in my mind.”

Student, Turkey



*WILL ELLIS
iTEC Project Manager*



*ROGER BLAMIRE
Senior manager
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Supporting independent learning in the future classroom

“I was tricked into the iTEC project”, laughs Kerry Shoebridge, a physical education teacher at Shireland Collegiate Academy in the United Kingdom. “I wanted to learn to use an interactive whiteboard, and during the training I realised I was also being introduced to the iTEC project.”

When Kerry began teaching three years ago, she had little experience in the use of technology for learning. *“The project has helped me, for example, to find software that’s useful for physical education, and to discover ways to use handheld devices, like iPads and Flip cameras, outside”.*

The iTEC project had opened up new avenues of teaching for Kerry and her students, such as the concept of flipped learning. *“I created a video for them that introduced a new topic and the students used an online discussion board to exchange views on what the new learning unit will be about and answered a few questions. That then raised their enthusiasm to a peak and when they came to the lesson they were really engaged, really wanting to know what the unit was going to be about, and what they were going to learn.”*

Another way Kerry flipped the classroom was by asking the students to create their own revision tool. She received computer games, a rap song, presentations, and many more. *“Lots of different ideas, it wasn’t one common idea of 35 students, but something completely different, which was fantastic.”*

Kerry’s flipped classroom was a big success, with 95% of her pupils passing. According to the students themselves, it was not just using technology that was important, but the fact that ICT supported independent learning by enabling students to take notes in whatever way they liked, and facilitated them developing their own learning styles.

“For a teacher, being able to step back and let the students learn by themselves was a very big step for me because I like being at the front of the class and taking ownership”, Kerry says. “The future classroom is not about the environment or about the furniture or the technology either. It’s about how the students learn. For example, independent learning has really taken off. It allows students to explore their own learning and take ownership of it”.

iTEC has successfully challenged and extended the skills of a number of newly qualified teachers such as Kerry. *“The project has given me additional confidence to deliver project-based learning and design Learning Activities that are slightly outside the normal ways of teaching”. ●*

 <http://bit.ly/fclvideo1>

“The project has given me additional confidence to deliver project-based learning and design Learning Activities that are slightly outside the normal ways of teaching”.



Engaging learners at the Odda secondary school

Engaging' was the word that intrigued Sven Olaf Brekke about iTEC. As the head teacher of the secondary school in Odda, Norway, with 250 students, he wanted to explore through iTEC how he could provide learning that engages learners instead of traditional classes that can be "quite boring to students", as he puts it.



"The iTEC project showed us that when teachers dare to step out of their comfort zone, they can gain something very valuable from it", says Sven. Two years ago he recruited two of his teachers to develop a project using the iTEC methodology. Despite some initial hesitation, the teachers soon became very committed. The project, on measuring and calculating triangles and rectangles in the school yard using different digital and analogue tools, turned out to be a success, making the mathematics 'classroom' more understandable, meaningful and fun – indeed, engaging.

Sven also makes the observation that many teachers think that, in order to use technology in the classroom they should be the expert, and they are hesitant to ask for students' help. *"But it's quite the opposite; the students have a higher regard for the teachers who are honest about their skills and accept and appreciate students' advice. Therefore, daring to ask the students to help with ICT can improve the teacher-student relationship."*

He is also very positive about using social media, such as Facebook, for school projects. *"Facebook was used as a communication and sharing tool in one of our projects, and I feel that I know better the students who were involved in that project. In that sense, social media can make students and teachers come together."*

As a head teacher Sven is in charge of his staff's professional development, and he has noticed a positive change in this regard; now, the teachers look for development opportunities more spontaneously and are more open to try out new ways of teaching and tools. *"I think that iTEC has played a role in making Odda secondary school more innovative, and more eager to try out new things,"* Sven concludes. ●

 <http://bit.ly/fclvideo2>

Learning from radical pilots

3D printing, quadcopters and brain-controlled robots... Hermann Morgenbesser's iTEC projects may sound like science-fiction, but they have all actually taken place in his school, the Klosterneuburg International School in Austria.

Hermann has been involved in all five pilot cycles of iTEC, first as a teacher and subsequently as the Austrian National Coordinator. In each cycle, a number of learning scenarios were tested and evaluated by learners and teachers. *"It was clear to me and my colleagues that it wasn't just about technology, but about a change of pedagogy. We developed inquiry-based learning for the students with the help of the TeamUp collaboration tool developed in iTEC, reflection tools, and communication tools, like Skype and Webex".*

In the later cycles, the work focused on more unfamiliar or 'leading-edge' technologies: *"In the third cycle, about 25 classes built, and then used a 3D printer, according to the classroom scenario that we developed for them. The printers were used also in the following cycle to print parts to build quadcopters."* Hermann also developed a maths online book together with his colleagues.

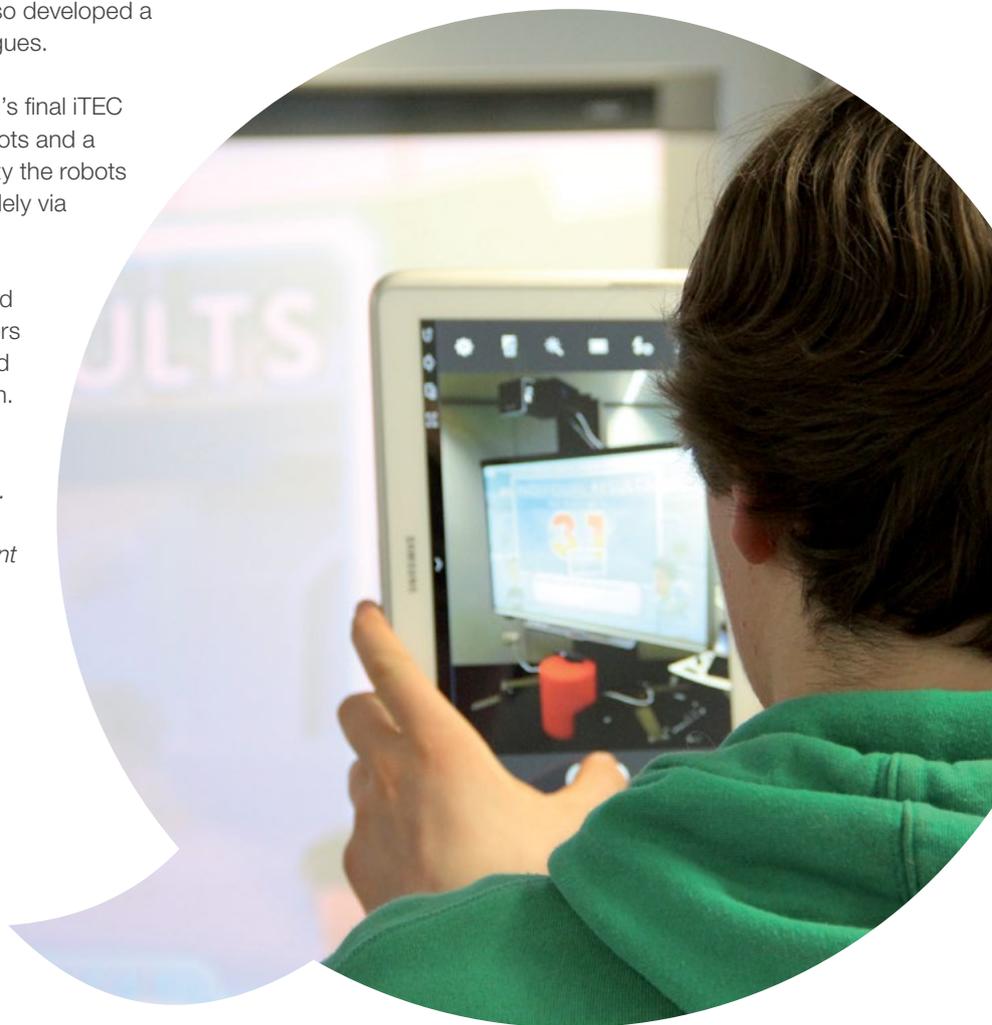
Hermann is particularly proud of the school's final iTEC scenario that involved Lego Mindstorm robots and a remote mind control: in this Learning Activity the robots were remotely operated by the students solely via thought control!

Apart from all the innovative tools developed during iTEC, Hermann feels that the teachers involved in the project particularly benefitted from new approaches to lesson preparation. *"I'm impressed about how the teachers developed flipped learning, which changes how teachers approach lesson preparation. Also, we used tools developed within iTEC, like the Widget Store, Scenario Development Environment [SDE] and Composer, to support lesson preparations further."*

"For students, the major impact has been the use of TeamUp and reflection tools, especially when such tools – that support critical thinking – are not widely used in schools in Austria".

Even though the iTEC project itself ends this year, the situation looks very bright in Austria. The iTEC Future Classroom Scenario method will be used in a national project called KIDZ, which will involve up to 1,000 classrooms, and the experiences from iTEC are expected to influence the national curriculum in the coming years. ●

 <http://bit.ly/fclvideo4>



Encouraging a change in the classroom

SMART Technologies has been a partner in the iTEC project from the start and, over the four years of project, has involved more than 200 classrooms in the iTEC school pilots. Six of the classrooms went one step further and piloted the new SMART amp™ collaboration tool in the final cycle.

Technology can support students' collaborative work and help to develop their skills. *"My students have learned to work together in such a way that they will be able to use these skills also at other times, at other projects,"* says Francesca Panzica, teacher at Santa Maria a Castagnolo, Italy. She feels the project has made a difference in her classroom: *"Using technology means working on the students' motivation, their attention, and their interest but also on different cognitive styles. Through technology, all the various styles can be taken into consideration."*

Ainhoa Marcos, SMART Education Consultant Manager for EMEA North-West, has coordinated the project at SMART from the beginning and has seen how the iTEC approach has become embedded in classrooms across Europe. One of the schools, I.E.S. *"Luis de Camoens"* from Ceuta, Spain, joined the project in its final cycle. Two teachers, Margareta Genil and Marina Pozo, developed a Learning Story called Virtual Museum from a mathematical perspective, a presentation and study of curves in their environment, from definitions and application practices through different paths and properties. In the classroom, each team researched and created a blog to gather information about their curve. Progress and difficulties were recorded using the TeamUp tool. The dynamics of collaborative work introduced with the support of SMART amp particularly motivated the students. The students also reflected on the work they were doing using the XC Collaboration tool and created interactive images using ThingLink. The work was centralised on a blog, which served as a reference for the process.

"The most motivating result for using the iTEC scenarios has been to see how all students can construct their own knowledge. During the project, the students took part actively in guiding and supporting each other, and in their own knowledge building. This workflow enabled learning to be more meaningful for them," according to Sergio Gonzalez, the school's ICT pedagogical adviser.

Taking part in the iTEC project has enabled numerous teachers to provide students with opportunities to be involved in more collaborative work. SMART's aim is to go on supporting this process with innovative tools and software. As Warren Barkley, Chief Technology Officer at SMART Technologies, puts it: *"What we all do when we work in our life, is work together to build things. Collaboration is really where we need to focus and that's where we're smart and that's where we're going, just building solutions that can do that. Things are moving so quickly now, and schools need to be able to have the agility to be able to keep up with that." ●*



 <http://bit.ly/fclvideo5>



KERSTIN FISCHER
Social Media Manager
SMART Technologies

Supporting 21st century learning – Results of iTEC pilot evaluation

So, was iTEC worthwhile? iTEC has piloted Future Classroom Scenarios and Learning Activities with some 50,000 students in over 2,500 classrooms in 20 countries, but has there been an effective return on the investment made in the project? There are many anecdotal success stories as can be seen in the other articles in this magazine, but what are the hard facts about the value of iTEC?

Over the four years, the evaluators gathered the views of teachers and students (some 1,488 were surveyed), national coordinators and policy-makers through surveys, interviews, focus groups, case studies and observations. The results were collated under three headings in the final evaluation report. Here is a foretaste of them.

Impact on learners and learning

- Students developed their 21st century skills, notably independent learning, and felt that they would perform better in examinations.
- Students took on new roles in classes, becoming peer-assessors, peer-tutors, and co-designers of their learning, even teacher trainers.
- Participation in Learning Activities underpinned by the iTEC approach impacted positively on student motivation.

Impact on teachers and teaching

- The Scenario Development and Learning Activity Design process was clearly seen as innovative.
- Teachers' digital competencies and pedagogy were enhanced.
- Teachers became more enthusiastic about their pedagogical practices.
- There was increased use of technology, integrated throughout the learning process rather than only for research or presentation.
- More collaboration took place between teachers within and beyond schools, facilitated through online communities.

Scalability

- As the iTEC approach matured over the five cycles, there was more evidence of widespread adoption.
- The scenario-led design process could support mainstreaming of innovation.

- The library of Scenarios, Learning Stories and Learning Activities were seen as a valuable output of iTEC to support system-wide innovation.
- In countries where iTEC aligns with national policies and strategies, the iTEC approach is likely to be adopted and to influence future practices.

Read more about these and other findings in the iTEC final evaluation report.

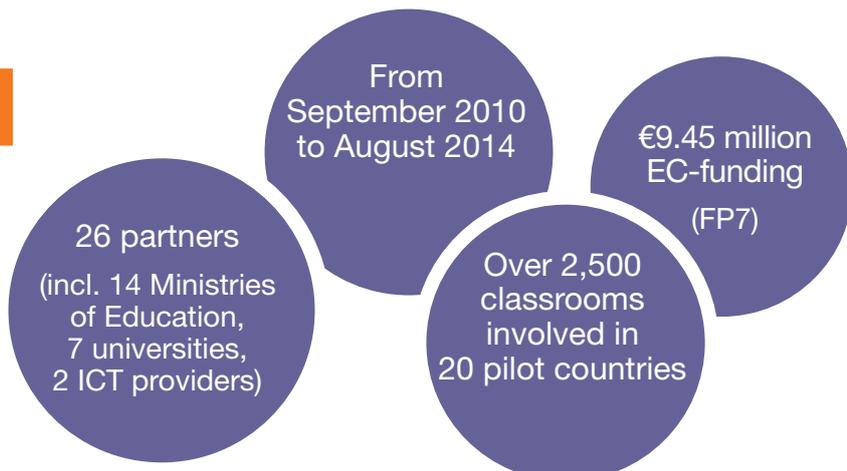
▶ <http://bit.ly/itecevalreport>

iTEC set out with the challenging objective of finding a way to mainstream effective use of learning technology in European classrooms, with a particular focus on supporting the development of advanced competencies in teachers, and 21st century skills in learners. The evaluation evidence overwhelmingly indicates that the project has achieved this, and at scale. The development of training opportunities - the EUN Academy – and materials such as the Future Classroom Toolkit lay the foundations for further creating future classrooms in thousands more of Europe's schools. ●



CATHY LEWIN
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iTEC in numbers



Impacting on teachers' classroom pedagogies



"iTEC Learning Stories and Activities presented exciting opportunities for me to do things differently in the classroom" 86%



Supporting the development of students' 21st century skills

According to the students, iTEC Learning Activities had a positive effect on their



"The knowledge and skills gained through participating in iTEC will help me to do better in my assessments." 80%

Showing the percentage of teachers and students agreeing.

From research to solutions – Promethean’s iTEC story

I have had the pleasure of leading Promethean’s partnership in the iTEC project, working over the last four years alongside teachers in over 100 classrooms across Europe to design, build and test the Future Classroom Scenarios. During the project, we have seen trends emerge, gain momentum and influence classrooms locally and internationally.

Our first theme in the project was learning outside, with teachers like Rebecca and her students transferring information about habitats back into their classroom via Dropbox, Peter running a maths trail in the playground using ActivExpression, and student Matthew making a video to explain how to use data loggers.



Another output is the focus on student-centred learning in ClassFlow, allowing for sharing between devices and for the collaborative development of lessons and content in real time.

Throughout iTEC, the Promethean development teams have worked with teachers and advocates to solve technical challenges and to prototype and test innovative solutions; for example, how to integrate the use of iTEC widgets into ActivInspire software and how to seamlessly connect learning and devices inside and outside the classroom using ClassFlow.

The second theme kicked off with teachers Fabia and Carrie focused on developing innovative approaches to formative assessment and exam practice. Whether it was sending questions to students’ devices with ActivEngage, or using ActivExpression’s self-paced questions for identifying gaps in understanding, or students designing the questions, it is definitely a trend that is here to stay.

A radical change witnessed in many classrooms as a result of the iTEC project is a greater emphasis on knowledge sharing and collaboration across knowledge communities and less of a focus on the teacher, just transferring knowledge.

Working with innovative schools like Ashmole Academy, Trentham High School, English International School and Colegio Base, that use personalised and collaborative approaches to learning and teaching, is helping Promethean test and validate features in the new cloud-based teaching and learning tool, ClassFlow.

An example of this is alignment of ClassFlow functions with best practices in formative assessment and the use of feedback and open questions to drive productive learning conversations and creativity in classrooms.

Promethean would like to thank all the innovative teachers and schools we have worked alongside in the iTEC project. These schools keep pace with changes in society and technology, and are willing to open their doors so their advanced teaching practices can be adopted and exploited by other European schools, while Promethean is able to develop solutions, such as ClassFlow, that align to these best practices. ●

▶ www.prometheanplanet.com/iTEC



GILL LEAHY
Head of Curriculum Development and Research, Promethean

Influence of the future classroom in Hungarian national strategies

iTEC has been an opportunity for many partnering Ministries of Educations to enrich their national strategies for future schooling and education. One concrete example of this comes from Hungary.

Hungary has been an active member of the iTEC project since the beginning: Educatio, iTEC's Hungarian partner, involved over 200 classrooms in the five pilot cycles, including 22 advanced teachers in the final cycle, designing new learning scenarios and activities. *“Taking part in the iTEC activities has allowed the teachers to develop their skills through hands-on training, to build a community to share practice, and to learn how to develop project-based learning in their classrooms”*, according to András Bakos, the Head of Development at Educatio.

Moving forward, Educatio will localise the Future Classroom Scenarios course for Hungarian teachers. *“As our intention is to provide teachers with more professional development opportunities, it's an ideal moment to localise the Future Classroom Scenarios course and introduce it in Hungary. The course will be open to up to 10.000 teachers,”* András explains.

Educatio has been closely involved in the preparation of the National Education Development Strategy 2014-2020, part of Hungary's National ICT Strategy. The strategy will have a strong focus on innovative learning methods with the aim of preparing teachers to use digital content and tools in the classroom, and to promote self-directed learning, critical thinking and problem-solving skills.

“Thanks to iTEC we know for example more about transversal skills and how to develop them at classroom level, and we have used this knowledge to develop the strategy. Moreover, when the strategy starts to be implemented, it will reflect what was developed in iTEC as it's a very practice-oriented methodology”, affirms András.

“iTEC's significance for the national strategy has been substantial and the future dissemination potential of the iTEC methodology through informal and formal professional development channels is enormous in Hungary”. ●



Enhancing teacher training with iTEC tools

The iTEC methodology has been tested and used not only in classrooms, but also in teacher training - both in continuing professional development and initial teacher education - with impressive results.

"For the three last years I have taught a course within the Educational Technologies master studies, aimed at teachers at different school levels", explains Martin Sillaots from Tallinn University. This year, he decided to introduce the iTEC toolkit, Eduvista, into his course on Innovative Technologies.

Using Eduvista, the teachers first had to evaluate the innovation maturity level of their school, and then design Future Classroom Scenarios. *"I have a feeling the task was very meaningful for them. Eduvista can be a very useful tool that helps both teachers and school leaders to evaluate and further develop the level of pedagogical innovation that has been reached either within an individual classroom or across the whole school",* Martin says.

In addition, the trends identification and evaluation tool was much appreciated by the teachers. *"This tool helps them to explore new possibilities for their teaching and how to put them into practice, or discover the threats and help to avoid them. It's really good inspiration for teachers".*

"Eduvista really makes sense to my teachers and I will continue using it in my course".

A newer version of Eduvista, called the Future Classroom toolkit, is currently available and open to all those interested on the Future Classroom Lab website fcl.eun.org.

Sergio G. Cabezas is a lecturer in educational technology at the Autonomous University of Madrid, Spain, and is involved in training future teachers on how to use ICT innovatively in the classroom. He has introduced the iTEC methodology to student teachers during their initial studies and to experienced teachers that have already taught for a number of years.

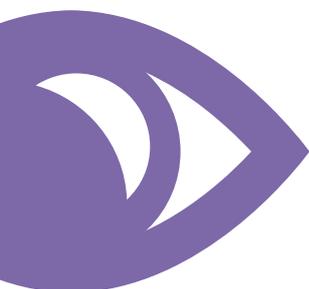
"Two years ago I started giving training on the iTEC methodology to Spanish teachers, and since then I have been showing them how to create educational scenarios and how to embed them into their teaching" Sergio explains.

"It is important to introduce ICT in pedagogy during initial teacher training. These young students will then be able and motivated to apply ICT in their teaching practice years after".

Sergio also teaches children himself – at primary school and kindergarden – and thinks the Learning Activities can be a good way to design engaging learning opportunities. One Learning Activity that he uses with his students incorporates an augmented reality approach.

"It's about turning a classical painting into a piece of living art. The students select a painting and then research about the painter's life. Within this Learning Activity they get to work with technology and art from a project-based approach – and collaboratively." ●

 <http://bit.ly/fclvideo3>



European Schoolnet Academy – Online teacher professional development

European Schoolnet Academy, launched in March 2014 is the first pan-European platform providing free online courses tailored specifically for teachers and educators.

The first two European Schoolnet pilot MOOCs (Massive Open Online Courses) finished in May 2014. These online courses on Future Classroom Scenarios and Innovative practice for engaging STEM¹ teaching reached out to more than 3.200 participants from 60 countries in Europe and across the world.

Not only were the retention and completion rates high, but both qualitative and quantitative feedback confirmed that participants had a very positive experience on both courses.

The Future Classroom Scenarios course, developed within the ITEC project and based on its methodology and Future Classroom Toolkit, focused on: 21st century skills; the role of technological tools in the future classroom; teaching and learning environments; and innovative Learning Activities.

Out of over 1.300 people who started the course, 55% of them completed it - an extremely high retention rate. The module completion was even higher, with over 90% of those who started a module completing it. This is all the more remarkable when we consider that, on average, only around 5% of students who sign up for a MOOC earn a credential signifying official completion of the course². Moreover, 80% of respondents to the FCS course evaluation survey rated the course with the highest mark “very good” with another 19% rating it “good”.

“The enthusiasm of teachers in participating and sharing their experiences on the course community throughout the course was truly amazing. Teachers were learning a lot from each other and many created and shared realistic pedagogical scenarios that they will apply to their classrooms”, Benjamin Hertz, European Schoolnet Academy coordinator, explains.

The 2nd edition of the FSC course is planned for the summer 2014, and more courses are planned to launch in 2014 and 2015. •

“This course has given me new energy and inspiration. I love my job, but every once in a while you need a professional development that gets you reenergized”.

“We can change our classroom practices only if teachers are given the opportunity to be learners themselves”.

FCS course participants

▶ www.eunacademy.eu



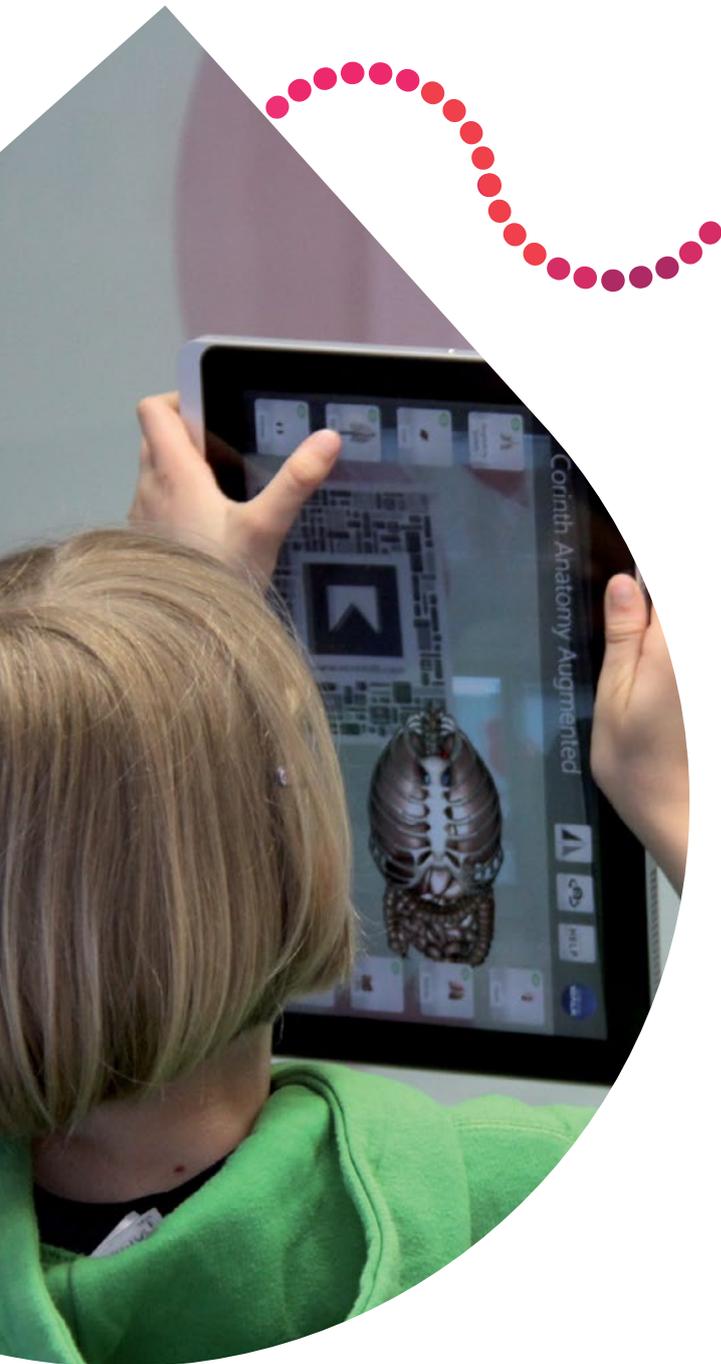
80%

OF RESPONDENTS RATED THE COURSE WITH THE HIGHEST MARK “VERY GOOD”

¹ Science, Technology, Engineering and Mathematics
² <http://bit.ly/1xYAF9Q>

Create your own Learning Activities

iTEC Learning Activities are a key part of the project, and provides teachers with concrete guidance in how to deliver the innovative teaching and learning approaches described by the iTEC Future Classroom Scenarios.



iTEC Learning Activities have now been piloted in over 2,500 classrooms around Europe, and have been a huge success. The secret behind their success is the use of a participatory design process. Edukata is a guide for any teacher to follow this design process and create their own Learning Activities.

The principle is quite simple: collect a team of teachers, agree on an inspiring scenario, work together to identify challenges and opportunities, get feedback and reactions from others, work out the ideas, and create and share the Learning Activities.

But design is not always easy. When you want people to participate in the process, there are numerous ways to involve them, and deciding on the participation level is not easy. Getting all those tweaks correct so they help the overall process requires some designer intuition.

The Edukata guide has been created by pedagogical design experts at Aalto University as a part of the Future Classroom Toolkit, supporting the holistic process of whole-school change by bringing innovation to the classroom level. While the Future Classroom Toolkit provides some tools and guidance on the Learning Activity design process, the complete Edukata, which includes the Learning Activities piloted in iTEC, is available online under the Creative Commons Attribution 4.0 license at edukata.fi. Anyone is free to read, download, and use them. Edukata also offers a facilitator service, which is recommended for new teachers designing their first activities. Facilitators are either certified Edukata facilitators or experienced designers familiar with participatory design principles. ●

▶ <http://edukata.fi>



TARMO TOIKKANEN
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Design and Architecture, Finland

iTEC technologies for collaborative learning design

Whilst evidence shows that teachers largely appreciate the value of technology, many can be put off, or even threatened, by initiatives which put the technology before the needs of learners, or the reality of the classroom.

A central principle in iTEC is that the technology is there to support change, and not drive (or even force) change. Each of the iTEC technical outputs has been developed specifically not to be 'disruptive', but to enable teachers to adapt to and exploit the technology-rich society they live in, but which does not always make its way into the classroom.

A number of learning technologies have been created and tested within the iTEC project pilots. Each has been designed to support a shift in the role of the teacher from that of an isolated subject expert to a collaborative learning designer, able to find and share new ideas, approaches and tools, to bring resources and inspiration together to innovate, as part of an education community.

The Composer tool is a prototype created by Knowledge Markets, one of Austria's leading providers of learning platforms for schools. The Composer helps teachers to find Learning Activities, based on a taxonomy of 21st century skills, and allows teachers to create, adapt and share Learning Activities. This facility is extended by a technology called the Scenario Development Environment (SDE), provided by Vigo University in Spain. The SDE provides suggested technologies which may be appropriate to use within the delivery of a selected Learning Activity. This is a powerful way of exposing teachers to new technologies and, as a consequence of that, new approaches to learning and teaching.

Resource recommendations also come from a growing repository of learning tools called widgets in the Widget Store, another prototype technology, provided by the iTEC partner Bolton University. These widgets include simple tools such as a calculator or something more sophisticated like the award winning, TeamUp tool from Aalto University, developed in iTEC to facilitate student collaboration and reflection. The widget store also allows teachers to create their own widget collections by "capturing" parts of the internet, such as videos, animations and online activities. These widgets can be deployed in a number of platforms including Moodle,

and the platforms developed by the project technology providers SMART Technologies and Promethean.

The final iTEC technical prototype is the People and Events Directory, developed by Leuven University, facilitating professional networking and collaboration, by connecting teachers with similar interests and allowing them to share knowledge and experiences. The community collaboration is driven by the contributions of ambassador teachers from different countries, sharing their experiences of using iTEC Learning Activities and new and innovative approaches and technologies via short online events.

Each of these technologies has been used in the iTEC project to support the development of innovative Learning Activities based on inspirational Future Classroom Scenarios. ●

▶ <http://bit.ly/fcltools>



WILL ELLIS
iTEC Project Manager
European Schoolnet



Building on iTEC

With school pilots in over 2,500 classrooms in 20 countries, iTEC has been the largest pan-European project to date focused on teaching and learning in the future classroom. As such, it is essential that the project's results continue helping teachers and schools to innovate with ICT and to find new ways to improve their practice long after the project has ended.



models for supporting whole school use of ICT. Moreover, the ongoing Creative Classrooms Lab project (2013-2015) is using the iTEC methodology to develop Scenarios and Learning Activities for policy experimentations and school pilots focused on the use of tablets. The following pages provide a flavour of what has been happening in these projects and some new initiatives which will further ensure that iTEC results continue to be mainstreamed.

Embedding iTEC results successfully at national level will particularly rely on the 17 Ministries of Education that took part in the project, other EUN education ministries that have shown interest in the process, as well as the on-going commitment of school leaders and teachers. Here the signs are encouraging. It is already clear that the Future Classroom Toolkit will be customised and translated for local use, not only by a number of iTEC ministries, but also by initial teacher training organisations and iTEC industry partners. Another positive sign is the resounding success of the Future Classroom Scenarios online course delivered through the European Schoolnet Academy. An upcoming network of Future Classroom Ambassadors, supported by the Ministries of Education, will also help to take the iTEC message to the local and national level.

A key part of the iTEC mainstreaming strategy is the European Schoolnet Future Classroom Lab in Brussels that showcases project results and provides training on the iTEC change management process both via face-to-face courses and online. This provides a permanent platform or 'Ideas Lab' where policy-makers, industry partners, teachers, and school leaders can rethink how innovative practice should be developed and supported in 21st century classrooms.

At the end of the project, iTEC Future Classroom Scenarios and Learning Activities have been tested by teachers, not in 1,000 classrooms (the original target) but in 2,500 classrooms. The results from the evaluation also clearly show how iTEC has not only inspired and motivated teachers, but also provided students with more independent, collaborative and engaging learning across Europe. Nothing like this level of 'bottom-up' response could have been predicted at the start of the project. So, although iTEC has finished its work, there is most definitely a solid base on which to build as we move forward with the mainstreaming of project results. ●

European Schoolnet has also developed a family of related projects under the umbrella of the Future Classroom Lab which have built on the iTEC methodology and outputs. In turn, these projects are now providing resources, training, networking opportunities and guidelines that align with the iTEC project objectives. For example, the CPDLab project (2011-2013) produced and ran successful courses for teachers on Future Classroom Scenarios, Interactive Whiteboards and eSafety. The Living Schools Lab project (2012-2014) has complemented the iTEC focus on mainstreaming innovative practice by developing new



MARC DURANDO
Executive Director
European Schoolnet



Future Classroom Lab – Challenging educators to rethink teaching and learning

Established by European Schoolnet, the Future Classroom Lab is an inspirational learning environment based in Brussels providing a place for teacher training workshops, strategic seminars for policy-makers and other events.

The Lab encourages visitors to rethink teaching and learning through its six learning zones which focus on learning space design, current and emerging technology, skills and roles, learning styles, and societal trends affecting schools.

The Lab is an independently funded initiative supported by European Schoolnet working with 25 industry partners, including many major ICT suppliers. It offers a permanent platform where policy-makers, school leaders, teachers, project partners and industry can come together to develop visions for the future classroom that engage teachers and learners but which also recognise the realities and pace of the educational reform process. Recent high-level visitors have included Lord David Puttnam and Lord Jim Knight from the UK, a delegation from the Chinese Ministry of Education, and Torbjørn Røe Isaksen, the Minister of Education and Research in Norway.

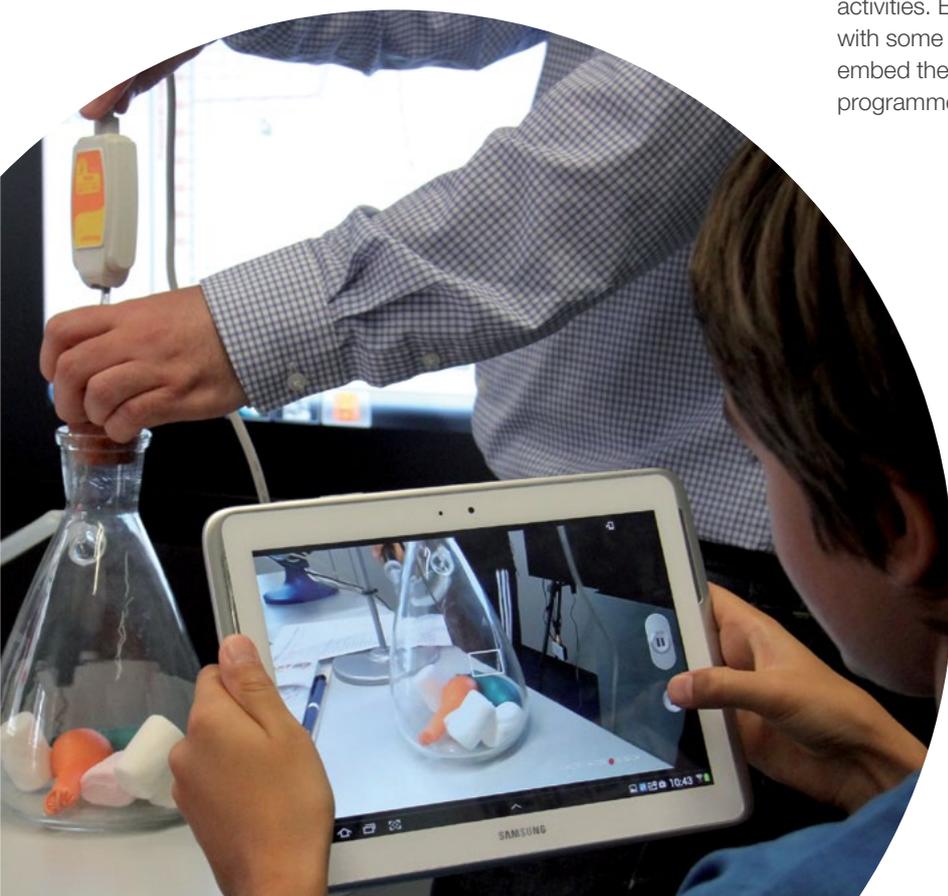
Training is the most popular feature of the lab. Hundreds of teachers from across Europe have already attended two-day workshops and more in-depth five-day courses. The training opportunities are offered to teachers in the European Commission's eTwinning, network or who have obtained a European Commission training grant (Erasmus+), as well as innovative teachers in numerous European Schoolnet projects. With the launch of the European Schoolnet Academy, training opportunities such as the Future Classroom Scenarios course are now also being offered to a larger audience online.

Perhaps the best indication of the inspiration provided by the Future Classroom Lab has been the setting up of small replicas, or "satellite labs" by enthusiastic teachers and other organisations who have attended courses and workshops in Brussels. For example, schools in Portugal, Italy and Croatia have set up their own labs to support both their teaching and school professional development activities. European Schoolnet is also starting to work with some initial teacher training providers to help them embed the Future Classroom Lab concept within their programmes for student teachers. ●

▶ <http://fcl.eun.org>



*ELINA JOKISALO
Future Classroom
Lab coordinator*



How to scale up good practice in ICT in our schools?

Many schools are using ICT in teaching and learning, but some may not be using technology across the whole school, and may not have a strong vision on how to develop it further, from the isolated practitioner to the whole school. With this in mind, the Living Schools Lab (LSL) project has created a meeting point for schools that have embedded technology effectively across the whole school (Advanced Schools), and schools where technology is used only partially (Advanced Practitioner Schools).

Within the project, Diana Bannister, from the University of Wolverhampton, has visited several schools in all 12 LSL partner countries to observe and document how a school can become an Advanced School.

“We looked at the different stages the school may go through to become more advanced. What we have found is that at the beginning of their development they may start much more reactive to change. So they are able to make the changes based on the technologies that are available and they react to the next technology”, Diana explains.

Further along that scale the schools then start to respond to national initiatives more readily and become more responsive to outside changes or external influence from commercial suppliers. Diana believes it's important for a school to have a project involving the whole staff linked to changes in learning and teaching, and linked to something they are trying to move forward as a whole school. She concludes that *“At the top of the scale are schools that are becoming collaborative and interconnected, seeing the benefits of working with other schools to enable them make those changes, to get teachers working across schools, in different communities, and ultimately, across Europe”.*

In the LSL project, the participating schools have formed regional clusters to share good practices and to provide opportunities for closer mentoring and collaboration between schools. Diana explains how *“Working together in regional hubs in order to build expertise and challenge one another to develop their practice has been particularly helpful and important in moving them forward mainstreaming the change across their school.”*



Lycée Pilote Innovant International (LP2i) in Poitiers, France has been one of the project's Advanced Schools. *“The involvement in the Living Schools Lab project has been important for us. Taking part in the regional hub helped us to share good practices on a topic we have been working with, the use of one-to-one devices. In the project we have also upgraded our knowledge on collaborative learning, a topic we elaborated together with teachers from other European countries”,* Xavier Garnier from LP2i explains.

Taking part in Living Schools Lab has also been a very positive experience for St. Patrick's school in Galway, Ireland. As an Advanced Practitioner School, they were introduced to Edmodo, a Virtual Learning Environment. *“The project gave us the impetus and inspiration to spread this throughout the school... working with LSL we have been able to see how good practices have been spread throughout other schools, how other teachers have for instance set up e-learning teams, where some teachers train and support others. We have been able to replicate that,”* the school's ICT coordinator, Ciarán Kennedy, points out. The project's final report will be available in September 2014 at fcl.eun.org ●

What does professional development look like in innovative schools?

Some schools may still underestimate the importance of lifelong learning and teachers' continuous professional development – key elements of successful change management for any school.

When I graduated and started teaching over 30 years ago, it soon became evident that professional learning and development would be needed throughout of my professional life. I attended, as did many of my colleagues, isolated in-service training courses delivered outside the school. As studies have shown, however this type of training is not always effective in really embedding innovation involving ICT and changing classroom practice long-term. More effective Continuous Professional Development (CPD) also needs to have a social element; it needs to connect people and it should focus on a long-term change.



I have the impression that many teachers and school leaders are not fully aware of the various opportunities for CPD. To address this, the Living Schools Lab project (LSL) has worked with schools who have already established a strong framework for ICT integration, including the teacher training aspect. These schools formally support and develop bottom-up initiatives, peer-teaching opportunities, and 'innovation teams', which take care of introducing new tools and ideas to colleagues.

Within the project, the advanced schools have encouraged and guided other schools aspiring to adopt the same kind of practices. A good starting point for many schools can be connecting to educational networks or encouraging teachers to take part in bite-size training, like the webinars or Twitter discussions LSL has organised. After the basics, the schools can evolve towards more advanced practices, e.g. peer-teaching and distributed leadership, which allows more teachers to feel ownership over school's innovation process. It is equally important to realise that teacher development very often takes place in informal networks.

For me, successful schools are the kind of schools that are active both in pan-European and local networks, while not forgetting networking at the school level. Sharing practices should be encouraged, including 'open classroom doors', professional input and output channels (e.g. blogs and Twitter), and eventually everyone's Personal Learning Network. Also, the students are often a forgotten or a hidden resource schools should exploit more: youngsters know a lot about ICT, and aren't afraid to use it.

Within Living Schools Lab I have witnessed both small and bigger steps, both on an individual level and a school level, and I hope the teachers and schools will continue in that direction. The schools have now taken part in regional hubs to share practices, and can continue their development by, for example, taking part in the pan-European eTwinning network, which provides rich and versatile opportunities for school collaboration and professional development. ●

▶ <http://lsl.eun.org/snack-bar>



*BART VERSWIJVEL
Future Classroom Lab
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Scenarios to foster innovative use of tablets in school – From iTEC to the Creative Classrooms Lab project



It can be a challenge to ensure that the policy-makers' priorities and schools' everyday routine meet. European Schoolnet's Creative Classrooms Lab project (CCL) is addressing this challenge by developing Learning Scenarios for teachers using the methodology created by the iTEC project.

The CCL project aims to carry out policy experimentations on the innovative use of tablets for teaching and learning. Ministries of Education in the CCL project started by using iTEC approaches to develop Policy Maker Scenarios, to ensure that the pilot activities would target concrete policy concerns of the partners, and that the use of tablets would be secondary to the educational objectives. The partners defined four scenarios to focus on during the first pilot cycle: personalisation, content creation, flipped learning, and collaboration.

“Using the tablets, the students seem to be more responsible over their own learning process.”

Teacher, Belgium

Next, the project's lead teachers and partners collaboratively developed Learning Stories which reflect the key ideas from the Policy Maker Scenarios. As in iTEC, the Learning Stories are sample narratives that outline how a collection of Learning Activities could be performed with students. Learning Activities give guidance on how to expand teaching practices with practical steps, motivational benefits, and tips on technology. The seven core activities in each Learning Story are also taken from iTEC: dream, explore, map, make, ask, remake, and show.

Using these Learning Stories and Learning Activities, the 45 teachers in the project developed their own lesson plans, with more detailed descriptions of the learning objectives, activities and timeline. Teachers adapted the general topic to the specific context of their own country, school, or class.

“The change we want to make happen in the classroom, has to be student-centric. Even if the teacher support and pedagogy styles are focused, ultimately the focus has to be on the learner. And we can only get that right if we have both top-down policies and bottom-up strategies,” comments Valerie Thompson from the e-Learning Foundation in the UK, one of the partners in the CCL project. *“The difficulty is to link national policy to what teachers actually identify as what works in the classroom. And this kind of project is the mechanism to bring those together in the interest of children.”*

For the current cycle of the project, CCL partners identified a new set of key priorities: school-to-school collaboration, collaboration and assessment, and independent learning. ●

...▶ <http://creative.eun.org>



KATJA ENGELHARDT
CCL project coordinator,
European Schoolnet



Insights on tablets in schools – School visits in Flanders

In May 2014, during one week, I travelled 700km to visit five Flemish schools involved in the Creative Classrooms Lab project. What I saw were very dedicated teachers and principals trying to make the most of their educational technology. Here are eight observations I made from the school visits.

1 Support from the principal is essential.

A clear vision supported by the head teacher is key in all the schools. Without their vision and support the achievements in the five schools would not be possible.

2 Coordinating the ICT policy is equally important.

ICT coordinators or advanced teachers are the ones to support other teachers in their use of ICT, but at the same time they also require support to make the practice sustainable, long-term and spread across the whole school. Thus, the way a school handles its mainstreaming school policy and practice is crucial.

3 Training and support provided by ICT coordinators.

In-house training seems more effective than general ICT courses, but can be time-consuming and a burden for the organiser, usually the ICT coordinator. ICT support should be available but not too easily, so that teachers are encouraged to take responsibility for equipment themselves and learn to use it independently.

4 Step-by-step integration of tablets.

The CCL schools have opted for a deliberate, incremental and step-by-step integration of tablets, mostly in an experimental way, giving teachers time to test them and explore different didactical uses.

5 Use of technology based on pedagogy, not vice versa.

Tablets are powerful learning tools thanks to their mobility, access to multimedia, and support for collaborative work. However, tablets should not be mandatory for all learning situations as they don't, for example, sit well in 'traditional' teaching.

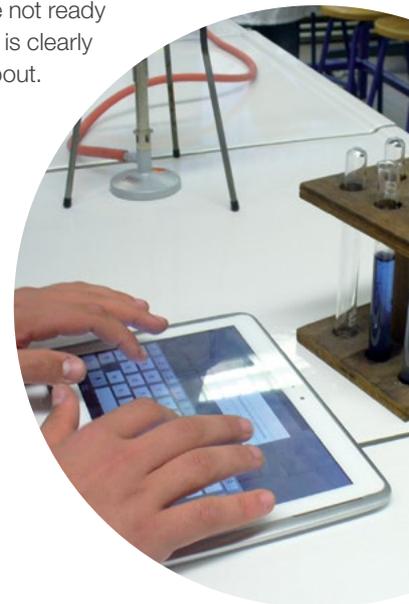
6 Not only learning but also assessment.

If ICT is used for learning, it should also be used for assessment at the end of the didactical process. I was happily surprised to find that tablets were used for evaluation and assessment, and in one case even for a formal examination, in all of the schools.

7 Content is the key. Teachers spend a lot of time creating their own content and testing and selecting apps to use with tablets. They clearly need support from, but also access to pre-selected apps to make technology adoption easier. For apps, less is more.

8 Bring Your Own Device (BYOD). One of the Flemish schools, Lucerna College, supports BYOD already. Although the other schools are not ready yet for a full roll out of BYOD, it is clearly something they are thinking about.

My conclusion is that all the schools can be proud of their progress, and should keep up the good work, but also remain critical about their practice in order to take it to the next level where the use of tablets will go beyond the experimental stage. The new set of scenarios coming from the project in September 2014 can and should provide help and support to streamline tablet use across all CCL schools. ●



 <http://bit.ly/fclvideo6>



JAN DE CRAEMER
Assistant to the Director at the
Flemish Ministry of Education,
Belgium; CCL project partner

About



In iTEC (Innovative Technologies for Engaging Classrooms, 2010-2014), European Schoolnet worked with education ministries, technology providers and research organisations to transform the way that technology is used in schools. Over the course of the project, educational tools and resources were piloted in over 2,500 classrooms across 20 European countries, with the goal of providing a sustainable model for fundamentally redesigning teaching and learning. The project involved 26 project partners, including 14 Ministries of Education, and funding of €9.45 million from the European Commission's FP7 programme.

...▶ <http://itec.eun.org>



With the participation of 15 partners, including 10 education ministries, the two-year Living Schools Lab project promoted a whole-school approach to ICT use, scaling up best practices in the use of ICT between schools with various levels of technological proficiency. The participating schools were supported through peer-exchanges in regional hubs, pan-European teams working collaboratively on a number of themes, and a variety of opportunities for teachers' ongoing professional development. Observation of advanced schools in 12 countries produced a report and recommendations on the mainstreaming of best practice, and the development of whole-school approaches to ICT. The project was funded by the FP7 of European Commission, and ended in September 2014.

...▶ <http://lsl.eun.org>



The Creative Classrooms Lab project (2013-2015) is working with 45 schools in 8 European countries and policy-makers to collect evidence on the implementation, impact and up-scaling of 1:1 pedagogical approaches using tablets. The results – guidelines and recommendations – will help policy-makers to take informed decisions on the most successful strategies for implementing 1:1 computing programmes, and providing practical advice on the effective integration of tablets. The project, funded by European Commission's Lifelong Learning Programme, is coordinated by European Schoolnet, and has 10 partners.

...▶ <http://creative.eun.org>



Future Classroom Lab is an inspirational learning environment in Brussels, designed for teacher training and workshops. The Lab encourages the visitors to rethink teaching and learning through its six learning zones which represent different aspects of learning: learning environment design, technology, skills and roles, learning styles, and societal trends affecting schools. Future Classroom Lab provides a platform for policy-makers, industry partners, teachers and other education stakeholders to share and discuss about the school of the future, and strategies on how to get there.

...▶ <http://fcl.eun.org>





Future
Classroom Lab
by European Schoolnet



Discover at the Future Classroom Lab website

FUTURE CLASSROOM TOOLKIT

Helping teachers and schools to create and implement scenarios which create a vision of innovative teaching and learning in schools.

DIRECTORY OF PRACTICES

A collection of inspiring Scenarios, Learning Activities and classroom practice examples.

TRAINING FOR EDUCATORS

Professional development opportunities at the lab and available online, and training materials for professional teacher trainers.

PUBLICATIONS

Recommendations for policy-makers and practical guidelines for teachers to integrate technology in schools.

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