PROJECT PRESENTATION

iTEC - Innovative Technologies for an Engaging Classroom

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English abstract

iTEC (Innovative Technologies for an Engaging Classroom) is a four year-project which aims to bring together researchers, technology vendors, policymakers and innovative teachers in order to design and build learning and teaching scenarios for the future classroom in Europe. iTEC involves 27 project partners, including 14 Ministries of Education (MoE), and is funded by 9.45 million Euros from the European Commission’s FP7 programme. The key aim is to develop engaging scenarios that can be validated in large-scale pilots and subsequently be taken to scale. More than 1000 school pilots, with emphasis on science and maths in secondary schools, will be delivered in the project period running from September 2010 to August 2014. European Schoolnet (EUN) manages the project through 11 work packages and national pedagogical and technical coordinators. The Norwegian Centre for ICT in Education (NCIE) coordinates iTEC in Norway, and will deliver 80 school pilots.

Keywords: School Development, 21st Century Learning, Future Classroom, Maths, Science.
Introduction

iTEC is the largest pan-European validation of ICT in schools yet made, but it is not only through size that the project should make an impact on European classrooms, learning and teaching practices and policymaking. The results from iTEC will be visible at different levels of educational systems throughout Europe, by introducing innovative technologies and practices, but also by analyzing the underlying change processes that are required in order to make the iTEC teaching and learning practices mainstream.

And while iTEC certainly will develop ambitious scenarios for the future classroom, it will also recognise the realities and pace of the educational reform process, and co-develop learning activities and proposed designs with teachers and learners. Other stakeholders, such as parents, technology vendors and the cultural sector are also part of the iTEC vision, and recognized as important forces in shaping the future classroom. Technology partners include interactive whiteboard companies SMART and Promethean, and associate partners Acer and Microsoft.

Obviously the future classroom will not look and feel the same in all European countries, there will be different levels of ICT implementation and use, different national curriculas and teacher education just as today. But the ambition is to involve the 15 Ministries of Education to ensure that iTEC results can be adopted by policymakers in different countries. The countries who deliver school pilots are Austria, Belgium, the Czech Republic, Estonia, Finland, France, Hungary, Israel, Italy, Lithuania, Norway, Portugal, Slovakia and Turkey.

Among the most important underpinning principles of iTEC are:

- That technology in itself cannot transform learning, learners and teachers. Vision, competency and technology designed with usability in mind are necessary in order to make permanent changes.
- That the use of Web 2.0 content and social tools will increase and extend learning beyond physical learning spaces. Ways must be found to ensure that teachers and learners can reliably discover, assemble and fully exploit these tools.
- That interactive whiteboards have played a valuable role in demonstrating how technology can engage teachers and learners. It is time to examine how interactive, multi-touch technologies can be successfully integrated with other emerging tools and services.
- That there is a need to challenge the tendency for schools to limit the learner’s use of personal technologies, requiring pupils to ‘power down’ when at school.

iTEC cycles and collection of data

The school pilots are delivered in five overlapping 18-month cycles. In each cycle, several scenarios are developed through trend analysis, workshops with learners, participatory design sessions (focus groups of advanced teachers), workshops and discussions in the iTEC Pedagogical Board and a high level-group of decision makers. The scenarios are transformed in the process to more detailed learning stories, which are tested by regular teachers in a pre-pilot. After the pre-piloting, the iTEC partners will decide which learning stories will be used in the large-scale piloting. Data and feedback from each cycle are collected from several sources. All teachers fill in online questionnaires, and
each national coordinator conducts three case studies. The case study teachers produce blogs and presentations about their experiences, and post them on Teacher Community, a section on the iTEC website. National coordinators are interviewed by Work Package 5, which is responsible for evaluating the school pilots. The objectives of Work Package 5, located at the Manchester Metropolitan University are:

1. To produce a knowledge map of current evidence of the use of innovative tools in classrooms.
2. To engage with teachers to record the process of operationalizing scenarios in classroom settings, within each project cycle.
3. To establish how teachers integrate innovative technological tools within their pedagogy.
4. To evaluate the impact of the scenarios in each cycle on: teaching practices; engagement with all stakeholders; individualisation; collaboration; creativity; expressiveness; overall transformative effect and the design of the future classroom, including underlying change processes.

iTEC technology focused objectives

The objectives of iTEC (and especially the more pedagogically orientated) should be sufficiently covered above, but it is worth noting that there are also some important technology focused objectives. Starting from large-scale-pilot 3, in the autumn of 2012, there will be technology available developed exclusively for iTEC. The tool TeamUp, created for organizing groups and recording sound bites, has already been used in cycles 1 and 2. But from cycle 3, participating teachers will also have the possibility to create their own set of widgets suited for different learning activities from a widget store. The technology-focused objectives also show how iTEC is thought of as a ‘Living Lab’:

- To select the resources (i.e., technologies: tools, learning platforms, services and plug-ins; content; and people) necessary to carry out the selected learning and teaching scenarios and then to group these resources into meaningful categories (i.e., depending on the way they contribute to the different scenarios) and provide a conceptual framework for describing each of these categories.
- To describe these selected resources according to the corresponding frameworks and to register them in one or more registries and then to apply a set of specifications and standards (e.g., IMS LTI, OpenID) to the selected resources in order to make them interoperable and easy to combine (mash-up).
- To develop a shell (possibly more than one) that will support the combination of resources in order to provide classrooms with the technical setting necessary to support the teaching and learning activities corresponding to the selected scenarios.
- To explore conceptual modelling paradigms (e.g., learning design, semantic-web ontologies) to formally describe learning and teaching scenarios.
- To build a prototype assistant for advising users how to find, select and combine resources that support the project scenarios.
Coordinating a cycle 2 large-scale pilot

As a national coordinator, the NCIE’s most important responsibilities are to recruit a sufficient amount of classrooms, to train teachers in technologies and tools, to adapt the learning stories and activities to Norway’s curricular goals and education system, and to deliver qualitative and quantitative data to Work Package 5. To meet the requirements for pilot schools, a school should:

- Have experience in educational projects in ICT at national level and ideally be experienced in international projects.
- Carry out an innovative and effective use of learning technology(ies) in a classroom.
- Have equipment, resources and connectivity levels that enable the scenarios to be developed without major further expenses.
- Have necessary human resources and a supportive head teacher/management team.

It is challenging to find schools which can meet all these criteria, but highly motivated teachers and schools are usually a good starting point. Many Norwegian schools are interested in making better use of technical and teacher resources, they have the equipment needed and they have some experience in educational projects at national or regional level.

It is of great importance for Norwegian teachers that the pilot covers learning goals in the national curricula. The Norwegian Centre for Science Education has provided valuable input for this in cycle 2, and also suggested tools and resources for our chosen learning story, *Students creating science resources*. The science resources will be produced as podcasts, blogs, videos, Prezi presentations and a wiki. Learners will make reflections about the work process and their chosen subject, work with structured information searching and social bookmarking, and comment on each other’s work. A closed community for Norwegian learners and teachers has been set up on the Ning platform, which has a very simple user interface and functionality similar to that of Facebook. Our ambition is that the Ning community can serve in cycle 2 (and perhaps further cycles) as an arena where learners can explore the combination of academic work and social media.

How to get involved in iTEC

Organisations and individuals are welcome in the iTEC Community. Members will receive regular updates and newsletters about the project and will be invited to participate in different online activities (e.g. scenario surveys, webinars).

Organisations such as universities, ICT Vendors and Ministries of Education can register as iTEC Associate Partners, and have a more active role in the project, with their own resources.

Teachers and schools who want to do classroom pilots in cycles 3 (the autumn of 2012), 4 and 5 (the spring and autumn of 2013) can contact national coordinators for more information about joining iTEC.
References

Ellis, Will: iTEC Project Overview. PDF. Brussels 2010: European Schoolnet


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1 Widgets are small applications that can be installed and executed within a web page by an end user.