Digital Technologies, Teachers' Competences, Students' Engagement and Future Classroom: ITEC Project

Neuza Pedro, João Filipe Matos, and Ana Pedro

Institute of Education- University of Lisbon, Portugal
{nspedro,jfmatos,aipedro}@ie.ul.pt

1 iTEC Project

iTEC -Innovative Technologies for Engaging Classrooms- is a four-year project in which European Schoolnet is working with education ministries, technology providers and research institutions to transform the way that technology is used in teaching and learning. With 26 project partners, including 14 Ministries of Education, iTEC is the largest initiative yet on the design of learning and teaching for the future classroom. Within iTEC, educational tools and resources have been piloted in over 2,000 classrooms across 19 European countries with the key objective of providing a sustainable model for fundamentally redesigning teaching and learning.

Started in 2010, education researchers, teachers, education ministries, IT providers representatives and other specialists in the field of education worked together to design the future classroom. The project aims to develop more meaningful visions and scenarios for the future classroom by putting in place a user-centered design process and rigorous testing methodology. All learning activities and new webtools designed for the future classroom are co-developed with teachers and are validated in large-scale pilots (five overlapping 18-month piloting cycles) in order to determine whether they can have the potential to be widely adopted by schools in Europe. The project as developed and piloted three innovative educational tools:

- Eduvista, a toolkit for designing and sharing Future Classroom Scenarios (<http://eduvista.eun.org/>);
- Edukata, a toolkit for Innovative Learning Activity Design (<http://edukata.fi/>). It was created upon a collaborative design process that allows educators to design future classroom activities;
- Eduteka: the technologies for Advanced Learning Activity Design (<http://itec.eun.org/web/guest/eduteka>). It has been developed and tested with the involvement of teachers and students involved in the classroom pilots. The tool also demonstrates 'intelligent' advice on resources, with the capability to make personalized, informed recommendations, based on the teacher's local context.

2 Teacher Skills and Competences for Classrooms of the Future

iTEC does not just focus on diffuse futuristic visions; instead, it provides educators with the necessary learning resources and pedagogical tools to allow them to innovate within their teaching and learning practices. However, in order to design the future

classroom, iTEC Project saw as required the need to identify the technical and pedagogical skills that teachers will need to effectively act in the classroom of tomorrow. Therefore, iTEC learning activities and webtools were designed considering an ICT Competence Framework for Teachers [2]. This framework is aligned with (i) today's key technological and educational trends and with (ii) the skills that are expected to be evidenced by learners in the near future, which are frequently referred to as 21st-century skills. This framework considers six different domains of teachers work: 1. Understanding ICT in education, 2. Curriculum and assessment, 3. Pedagogy, 4. ICT (digital literacy skills), 5. Organisation and administration, and 6. Teacher professional learning.

3 Evaluation of the Impact of iTEC Pilots in Schools

From 2010 to 2014, the project conducted five cycles of design and testing of learning activities. The evaluation of iTEC pilot activities draws information from several sources including questionnaires and case study data collection which includes lesson observations and interviews with the teachers, head teachers and students.

The report of the results founded so far particularly focus on students' learning outcomes and engagement, teachers' digital competence and pedagogical use of ICT. In it, four out of five teachers stated that students had become more deeply engaged in their work, and that the iTEC pilots had positively impacted on students' attitudes to learning. Over 80% of teachers also agreed that the pilot enabled the students to engage in active and independent learning, and that the Learning Activities provided students with new ways to express ideas. Teachers also felt that the pilot had a positive impact on their own attitudes and practices relating to ICT; 79% of the 826 teachers surveyed replied that their knowledge of ICT was improved through taking part in the pilot, with 84% indicating that they intended to use ICT more frequently in future. Above all, 87% of participating teachers felt that using iTEC Learning Activities enabled them to incorporate new pedagogical practices into their classroom activities [1].

The project results are likely to be transferred throughout the participating school and it presents the potential to be taken to scale in order to achieve European ICT-driven economic growth policies as the ones identified in the Horizon 2020 programme.

References

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2. UNESCO: ICT Competency Framework for Teachers (2011), <http://unesdoc.unesco.org/images/0021/002134/213475e.pdf> (retrieved)