Pan-European policy experimentations with tablets
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D5.3 FINAL REPORT FROM AN INDEPENDENT EVALUATOR

EVALUATOR

WP5

GLPM

Evaluation and guidance services
for projects in education

European Schoolnet

Lifelong Learning Programme

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INTRODUCTION

GLPM

GLPM is a consortium of experts working in the field of transnational cooperation in projects in education and training. It was established by Gareth Long when he left his position as Minerva Project Officer at the Socrates Leonardo and Youth Technical Assistance Office in Brussels at the end of 2005. In the period since, he and his colleagues have evaluated more than 30 projects from the Lifelong Learning Programme and other initiatives with EU funding.

GLPM adopts an innovative approach to the evaluation work undertaken in that it covers all areas of project work. This includes, but is not limited to, the outcomes achieved, the progress toward the outcomes, the transnational dynamics of that progress, the consistency of the project in addressing its initial aims, the extent and consistency of the involvement of the target group in ongoing project work, the mechanisms built-in to ensure sustainability, steps taken to embed innovative outcomes into mainstream provision, consideration of, and complementarity with, the state of the art, and instances of added value.

Gareth Long has worked in the field of ICT in learning since 1995 when he was Projects and ICT Development Manager at Stockport College of Further and Higher Education in the UK. He specialised in innovative ODL-based projects featuring extensive use of new technologies in learning, including the creation and delivery of teacher training programmes. He became Project Officer for the Minerva (ICT-based) action of the Socrates, Leonardo and Youth Programme in 2003 and fulfilled this role before becoming the E-learning research Co-ordinator at the Higher Education Academy in the UK. He became an independent consultant specialising in EU projects in 2006 and has since worked as an assessor for the Lifelong Learning Programme across numerous actions, particularly those associated with ICT in learning, including e-learning, Minerva, KA3, Erasmus Virtual Campus and Erasmus Multilateral actions. Of further relevance to the evaluation of the Creative Classrooms Lab project is the fact that he has been an assessor also for the KA1 and sister action, ECET, and so has extensive experience of the expectations connected to a KA1 initiative. He has also been the external evaluator of more than 30 LLP and related projects in the same period. With the onset of the Erasmus+ programme, he has been used as an assessor for Knowledge Alliance, Key Action 2 and Civil Society and Education assessment work also.

Andrina Granić holds a Doctorate degree in Computer Science from the University of Zagreb, Croatia. She has more than 20 years of experience from the Croatian educational system currently working as Full Professor teaching courses for the computer science curriculum and more than 10 years of experience of implementing and evaluating national and international projects. She has been an expert evaluator of projects for the Education, Audiovisual and Culture Executive Agency (EACEA) and the Research Executive Agency (REA). In addition to the Lifelong Learning Programme, she has worked in projects funded through the 6th and 7th Framework Programmes. Her main research interests are presently focused on Human-Computer Interaction (HCI) field and Technology-Enhanced Learning (TEL). She serves in Editorial Boards of a number of international journals as well as in Program Boards of considerable number of international conferences and workshops. She is Croatian representative in IFIP Technical Committee on Human-Computer Interaction (TC13), member of the Croatian Society for Communications, Computing, Electronics, Measurement and Control (KoREMA) and IEEE member.

EXTERNAL EVALUATION METHODOLOGY

General for a transnational project: The external evaluation strategy was based on an approach that addresses the needs of all key actors involved in project activity, including both internal personnel and the target groups and end-users.

THE METHOD HAS BEEN TO LOOK AT:

i. The progress made towards the contractual outcomes and respect of the contractual work-plan
ii. The manner in which the nine Ministries of Education / or organisations delegated to act on their behalf in Europe work closely with leading ICT vendors as associate partners as a transnational collaboration (cross-cultural understanding, sharing of activities, effectiveness of communication, meeting deadlines, etc.,)
iii. The consistency of the initiative's relevance to the KA1 ECETB action and to the identified objectives and priorities.
iv. The quality of the outcomes and products in their own right as well as in terms of their position within the state of the art
v. Monitoring the way in which the projects reacts to feedback:
    a. from the EACEA assessment processes
    b. from the pedagogical board
    c. from the stakeholders and policy-makers
    d. from other targets groups
    e. from its own internal processes, led by the BE coordinator (EUN) and the CZ partner (DZS)
    f. from the recommendations of the external evaluation
vi. The effectiveness and impact of dissemination activities and the extent to which the project has employed models of best practice from related projects
vii. The quality of the innovative, pedagogical and ICT elements of the project activities
viii. The extent to which a strategy for sustaining the project activities beyond the programme funding has been applied within the project

SPECIFIC FOR CCL IN YEAR ONE:

GLPM examined the initial outcomes and processes, with specific reference to the ways and means by which the perspectives and collaboration of the project partnership have influenced the:

i. Developed protocol (T3.1) for experimentation on the pedagogical use of tablets in a controlled environment
ii. Literature Review (T2.1 months 1-2) and Development of Phase I tablet scenarios (T2.2 months 1-6), with a specific emphasis on how the project has achieved to develop "innovative teaching and learning scenarios, a major objective of the project.
iii. Webinars on Project Expectations (T.4.1 month 2) and Project Ideas-Early achievements and goals (month 6) together with the teacher feedback on each.

This included a review of the:

iv.   Report (May 2014) of the interviews by telephone/Skype with MoE lead representatives from each partner to document the overview and planned course of activity for the project at the national level for each partner context.

v.   Feedback from the Pedagogical Board from month 2 of the project to the present time

vi.   Mainstreaming Workshop on National Policy Challenges (T7.1 month 2)

Next to the main project deliverables the evaluation also monitored the involvement and contribution of associated partners during the first phase of the project. The methodological approach was based upon an approach that reflects the intended levels of impact on the different target groups as the project progressed – in this instance, with particular focus on the partner perspective in phase 1. This featured mainly an assessment of the way in which the MoEs have worked with the associate partners on the scenario development. This was initially going to be through survey work but was instead more effective through the face-to-face contact between evaluators and partners at the meetings and mainstreaming and scenario development workshops especially in May and June 2014.

Particular emphasis was placed (again reinforcing the importance of the relevance of the project as a KA1 project) on how the Ministries selected the schools to work with and how they, as well as EUN and lead teachers, supported schools in the context of overall frameworks for effective pedagogical use of tablets in the classroom.

During this period, GLPM reviewed also all activities in all work packages in order to ensure that the project has mechanisms in place (reflected in internal monitoring procedures and risk management strategies) to address any negative implications associated with the quality and timely delivery of key outputs and deliverables and how these may have impacted upon subsequent work packages.

NB – one of the subsequent sections of the first evaluation report considered the way in which the project responded to the feedback received from the application assessment in its first year. There was some confusion apparent in the assessment of the application feedback, as there are two recommendations to engage an external evaluation process although this was clearly planned in the application. Even so, it should be emphasised that external evaluators were engaged as soon as the framework tender process could be completed. This did result in a relatively late engagement of evaluators, but an adjustment to the standard approach by GLPM to project evaluation ensured problems were kept to a minimum. The process benefited from extensive and beneficial discussion with the CCL project coordination team. This included a meeting between Anja Balanskat (EUN) and Gareth Long (GLPM) 01.04.2014 at the EUN offices in Brussels. The external evaluators would like to thank the EUN team for their patience and readiness to help GLPM "catch up" with the project activities of the first year.

SPECIFIC FOR CCL IN YEAR TWO

GLPM continued to monitor the project progress across all work packages as the initiative moved into its final and extensively implementation-based period. The approach required adaptation to take into account the successful request for a two-month extension chiefly to allow for the realisation of the MOOC course which was an additional valuable outcome of the project and therefore required inclusion in the final external evaluation activities. Overall, the final evaluation report addresses:

i.   Analysis of the Development of Phase II tablet scenarios and how they reflected the experiences of the first pilot in WP4 as well as gauging the extent to which teacher and other feedback was collated and used following the two-day workshop featuring partners and associate partners.

ii.   Survey work undertaken of the views of a selection of the policy-makers and other stakeholders of their experiences to-date, as the drivers of the innovative learning scenarios and to gauge opinion on the extent to which project dissemination and exploitation activities have had a positive impact on the development of national 1:1 computing strategies.

iii. Analysis of the Report on Phase II Scenario Development produced by the partnership and in the context of recommendations to policy-makers in KA1 relevance terms.

iv.   Analysis of the way in which the dynamics of the project processes help to establish and enhance on an ongoing basis, the teachers' Community of Practice.

v.   Analysis of the Report on organisation of the Phase I pilots and on the Link Research Visits in the context of utilising feedback from all relevant groups for improvement and mainstreaming.

vi.   Evaluation of the effectiveness and impact of the project dissemination strategy, with particular focus on the web-site as being appropriate for purpose (engaging with teachers, influencing policy and as repository for course materials and course outline).

vii. Evaluation of the way in which feedback and recommendations from the Pedagogical Board and focus group teachers have influenced the scenario development process.

viii. Evaluation of the Final Report on the organisation of the pilots.

PURPOSE OF THE DOCUMENT

This final report from an independent evaluator is a public report (deliverable D5.3) reviewing project operations, project reports and Year 2 deliverables with the aim of deciding whether project quality assurance processes have been effectively designed and applied. The deliverable will:

- report on the extent to which feedback and recommendations from independent experts in the Pedagogical Board and focus group teachers have impacted upon and influenced the scenario development process and

- examine (via a questionnaire and interviews with policy makers) to what extent the tablet experimentations carried out in the CCL project have had a positive impact on the development of 1:1 computing strategies of participating MoE

ABOUT THE CALL AND ITS OBJECTIVES

Call for proposals — EACEA/20/12 under the Lifelong Learning Programme 'Implementation of the European strategic objectives in education and training (ET 2020) (stakeholder cooperation, experimentation and innovation)'

GENERAL AND SPECIFIC OBJECTIVES

The **general objective** of the call is to promote the implementation of the four strategic objectives of the 'Strategic framework for European cooperation in education and training (ET 2020)':

- lifelong learning and mobility,
- quality and efficiency,
- equity, social cohesion and active citizenship,
- creativity and innovation

and the strategic priorities agreed for 2012-14 through activities improving institutional commitment, coordination and partnership with all relevant stakeholders at national/regional/local levels.

Since the Creative Classroom Lab (CCL) project is funded under part B of the call, the general objectives should be achieved by supporting trans-national co-operation (policy experimentation, joint policy development, exchange of good practice and innovation) in the development and implementation of innovative policy approaches in line with the priorities set out in Europe 2020 and ET 2020, with a focus on 'creative classrooms'.

Support to implementation of innovative learning environments using ICT (called 'creative classrooms') in the frame of transnational cooperation in the development and implementation of transversal education and training policy issues linked to the priorities set out in Europe 2020 and ET 2020 should include following activities i.e. **specific objectives**:

- Policy experimentations by transnational partnerships, involving relevant authorities, stakeholders and research institutions. Actions will not address broad topics, but target concrete common policy concerns. Appropriate importance has to be given to developing a robust evidence base and involving reliable monitoring, evaluation and reporting procedures of the multiple experimentations of 'creative classroom' settings,
- Jointly designing and testing innovative tools and practices through experimentations involving a sufficiently high number of educational establishments to reach a representative critical mass,
- Actions aiming at analysing from a policy point of view the effectiveness, efficiency and conditions of generalisation of the experimentations, as well as transnational transfer of the lessons learned and good practice (peer learning) which may include analyses, conferences and seminars, aimed at directly supporting policy-making and implementation,
- Actions to ensure systematic dissemination at national and international level and foster transferability between different education and training systems and policies.

According to the Call, transnational cooperation may occur at national, regional or local level; it may cover different types (formal, non-formal, informal) and levels (pre-school, primary, secondary, tertiary, adult, initial and continuing vocational education and training) of learning and may include links to other sectors (e.g. employment and business).

THEME, PRIORITIES AND EXPECTED RESULTS

In the context of the Call, policy experimentations should comprise the following components:

- **Trans-national preparation**: education ministries from different LLP participating countries identify together a common European policy challenge concerning mainstreaming the use of ICT in educational practices and build a partnership which develops, with the support of scientific experts, a common concept for addressing this challenge;

- **National implementation**: the concept agreed upon by trans-national partnership is tested ('policy experimentation') at national level, in one or more of the partner countries, in a representative sample schools. Each ministry is in charge of the implementation in the territory under its responsibility;
- **National and trans-national evaluations**: the results of the experimentations around the use of ICT in education are evaluated first at country level and then collectively with the other partner countries, with the systematic involvement of scientific experts;
- **National and trans-national operational conclusions:** policy experimentations achieving successful results – according to scientific evidence and policy evaluation – will prompt responsible ministries to introduce changes in the education system/curricula and foster large-scale implementation.

The **priority** is on formal primary and secondary school education. Priority should be given to policy experimentations, carried out by national or regional ministries in charge of education and training and life-long learning policies, addressing innovative and open learning environments called 'Creative Classrooms', mainstreaming the use of ICT in school education practices, in such areas as for example:

- The use of 'one-laptop-pre-child' models enhancing innovative pedagogies and teaching approaches, personalized learning, collaboration, interactivity etc.,
- Didactical use of ICT in teacher education and professional development schemes,
- Use, re-use and co-creation of educational resources enhancing flexible and open learning practices.

The **expected results** i.e. operational objectives are listed in the following:

- Scalability through multiplying a number of significant real life pilots involving a large number of learners, educators and educational institutions addressing issues of common policy concern across Europe, to be performed on the basis of commonly agreed methodologies;
- Improve the knowledge of policy makers in the design and implementation of policies dealing with common education and training issues set out in the context of Europe 2020 and ET 2020, with a focus on the use of technologies for learning by building efficient brokerage mechanisms to the policy makers of the evidence gained through 'Creative Classroom' pilots;
- European added value through bringing together best practice with lessons on 'what works' and 'what does not work', on successful implementation strategies and critical success factors for policy makers and practitioners;
- Increased effectiveness of national, regional/local measures designed to tackle complex challenges in education and training, enabling reforms to produce a systemic impact on education and training systems through transferring the best practices and recommendations to other contexts.

POLICY SCENARIOS

With regard to a review of progress of the Policy Scenarios, it is worthwhile to include here comments from the assessment of the application on the criterion of Quality of Methodology.

> "The methodology proposed is generally sound and is grounded in previously undertaken studies (e.g. laptop 1:1 study), but it does not appear to build on specific pedagogical theories or paradigms. Teacher involvement is very well integrated. Evaluation is thoroughly described, covering the actual project implementation and the pilots, as well as focusing on the impact in the tablet experimentation on 1:1 computing strategies of the participating ministries.
>
> However, while it may be implicit in scenario development, the articulation of specific questions or hypotheses to be addressed in the course of experimentation should be considered. For example:
>
> - it seems surprising that questions such as "laptop/notebook versus tablet" (both 1:1 solutions) are not explicitly referenced, given the opportunity to build on previous work undertaken specifically on laptops/notebooks.
> - usability factors seem to have been overlooked. It is not clear if experimentation will look at age/stage related differences or at questions relating to wider conditions, e.g. school leadership or whole-school integration of devices."

The project has responded carefully to the issue of "tablets versus notebooks" as raised in the initial assessment. At the time of the application, it was felt that netbooks were in serious and perhaps terminal decline and the current reality proves this to be the case – see http://blog.laptopmag.com/netbook-death-2015. Furthermore, the market is moving so rapidly anyway that doing a controlled comparative experiment would be extremely difficult. The assessment comments are acknowledged, but it seems clear that the tablet focus is an appropriate one.

With regard to the comments on "usability factors", the experimentation was set up based on the selection of classrooms by policy makers according to criteria agreed upon and set out in the protocol. It was agreed to focus on secondary education, but not to define a specific age group and also to include primary education in some cases if wished by the partner. The aim was to establish as much as possible a homogeneous set of classrooms. It is to be seen if any valid conclusions based on the overall analysis of the observation visit can be made as regards differences between levels/grades based on a sample of 45 classrooms. To study these issues in detail, this would also require a different research approach.

The main aim and objective of the project as presented in the application was to "... provide a pan-European, controlled experimentation involving 45 classrooms in eight countries on the use of tablets in secondary schools to inform and help steer policy development related to the implementation of 1:1 pedagogical approaches….There will be a particular focus on how practice is changed as a result of tablets being used for collaboration, personalisation and active learning, as well as on successful integration of tablets with classroom technologies already in mainstream use."

Concerning the development of teaching and learning scenarios, the project (as presented in the application) outlines two main specific objectives:

- "Develop innovative teaching/learning scenarios involving the use of tablets in and out of school by focusing on what is possible using 1:1 computing paradigms that have the potential to be mainstreamed during the project timeframe.
- Develop a number of 'leading-edge' scenarios that can be validated in a smaller number of classrooms as a 'proof of concept' of how tablets can be integrated with emerging technologies that may be a number of years away from widespread adoption in Europe's classrooms."

In the first year, the project has been focused on the first objective related to the development of scenarios that tackle the more immediate concerns regarding tablet integration and have the potential to be mainstreamed during the course of the project.

SCENARIO DEVELOPMENT PROCESS

According to the main objective of the project, scenario development and implementation plays a major role aiming to guide teachers in the innovative use of tablets in order to "support innovative 1:1 pedagogies and teaching approaches (involving personalized learning, collaboration, interactivity etc.) and be integrated in national ICT programmes" (as stated in the Project Rationale of the application). The project is divided in two piloting cycles, each including the development of Policy Maker Scenarios and Learning Stories (or pedagogical scenarios). Since the intention is to develop two sets of scenarios, each year the project follows the same scenario development process which involves project partners (policy makers), lead teachers and Pedagogical Board and associate partners.

Policy Maker Scenarios are developed based on a methodology developed in the iTEC project (http://iTEC.eun.org) where future classroom scenarios provide a vision for innovation and advanced pedagogical practice. Project partners use this approach to describe the types of learning and teaching activities and processes to be supported by the use of tablets during the national pilots. These scenarios serve as a reference framework for the Learning Stories (i.e. pedagogical scenarios) to be developed by the lead teachers and the policy makers of the project.

In the development of Policy Maker Scenarios a number of instruments are being utilised:

- On-line questionnaire which enabled project partners to provide information regarding
    - description of existing 1:1 tablet pilots in their country and
    - current priorities (low, medium, high) with 1:1 tablet initiatives;

The questionnaire is accessible only to partners on survey monkey via this link: https://www.surveymonkey.com/s/CQ6WK3M but is also added to D.7.1 "Report on first mainstreaming workshop."

- Template for policy makers to draft scenarios for the first round of pilots to run in October 2013 allowed project partners (until mid of May 2013):
    - to outline their current priorities regarding ICT and
    - to provide draft of a policy scenario according priority themes identified for their country;

- Innovation Maturity Model, developed in the context of iTEC project, enabled project partners (policy makers at the first Mainstreaming workshop in May 2013:

- o to identify stages of innovation in their school, from stage one "exchange" indicating localized use of ICT to stage five "empower" where teaching and learning processes are redefined and use of ICT is innovative;
  - o to place their schools into the respective level of the matrix and outline to which level they would like to move by implementing the tablet scenario; the stages of improvement aimed for is outlined in the beginning of each Policy Maker Scenario;

- The initial scenario template enabled integration of the essential ideas of several national scenarios and challenges provided by policy makers into a group scenario, thus reflecting the ideas of several (two to three) countries; the template required (as outlined in the first Mainstreaming workshop in May 2013):
  - o description of the key challenges the scenario will respond to,
  - o scenario narrative planning addressing who is involved and what are their roles, the core purpose of the scenario, where and when does the scenario take place, what type of technology is used and/or other resources needed) as well as
  - o scenario narrative presented as a story style narrative or a "day in the life" style narrative.

The project partners (policy makers) developed four Policy Maker Scenarios on the topics Personalisation, Collaboration, Content Creation and Flipped Classroom (first Capacity Development workshop in May 2013). On the basis of the Policy Maker Scenarios, project partners and lead teachers developed learning stories including learning activities together during a Pedagogical Scenario Development workshop (June 2013). The learning stories were finalised, taking into account the feedback of the experts of the Pedagogical Board. Finally, teachers started an implementation of the pilots in the first cycle of the project by adapting developed Learning Stories to their own school context (November 2013).

The finalized Policy Maker Scenarios, Learning Stories and support documents for each of these topics are available on the CCL web-site http://creative.eun.org/scenarios.

THREE POLICY MAKER SCENARIOS (2ND CYCLE)

Based on the experience and lessons learnt from the first year of the project, CCL Policy Makers (CCL partners) discussed their priorities regarding the use of tablets during the second capacity building workshop. As a result, three Policy Maker Scenarios, collaboratively designed during the workshop, revolve around three topics agreed by the Ministries of Education (MoEs) as national priorities: (i) Liberating Learners (Independent Learners), (ii) School-to-School Collaboration and (iii) iGroup (Collaboration & Assessment). The above-mentioned topics identified as national priorities were a focus of the second cycle of the project (May 2014 - January 2015) so the following three scenarios are developed:

1. CCL Policy Maker Scenario Liberating Learners (Independent Learners),
2. CCL Policy Maker Scenario School-to-School Collaboration
   (Use of mobile technology for engaging project work about remembrance education)
3. CCL Policy Maker Scenario Collaboration & Assessment

Following a good practice from the 1st cycle of the CCL project, each Policy Maker Scenario follows similar consistent format containing two main sections:

1. short background information regarding the CCL project lifecycle in general along with brief information addressing pilot implementations of scenarios followed by
2. details related to the particular Policy Maker Scenario which address specifics of particular topic: theme and title of the scenario; aim of the scenario; brief description including its objective, age level of the students and number of classrooms/ schools involved; features of the scenario as well as scenario narrative part (namely relevant example presents as a "story" or a "day in the life" style narrative).

Each Policy Maker Scenario is accompanied with valuable related summary documents which concisely present scenario goals (learning objectives, match to curriculum), description of each learning activity, learning environment(s), digital technologies and tools, roles of students and teachers, collaboration and individual work as well as scenario outcomes.

The Policy Maker Scenarios served as a basis for the creation of Learning Stories (originally also referred to as pedagogical scenarios) in a second Pedagogical Scenario Development workshop in June 2014. Learning Stories were the basis for teachers to draw up their lesson plans for the implementation of the use of tablets in the classroom. For each scenario policy makers suggested possible narrative called Summary Learning Story aiming to engage teachers, learners and stakeholders both inside and outside the school:

-   The Learning Story related to Liberating Learners (Independent Learners) turns ideas into concrete learning activities either in a series of lessons specifically on independent learning or embedded in a topic in the curriculum (mathematics, science, geography, language and a like);
-   The Learning Story linked to School-to-School Collaboration changes the scenario in a series of possible steps related to schools collaboration;
-   In the Learning Story associated with Collaboration & Assessment the scenario is turned into more concrete suggestions for a series of lessons making the most of tablets to support collaboration and new forms of assessment.

Additionally, each Policy Maker Scenario is accompanied with relevant and appropriately written supporting material:

-   What is the Liberating Learners model and how to use it?
-   What is the School-to-School Collaboration scenario and how to use it?
-   Collaboration & Assessment: Theory and Practice

The support documents guide and inspire the CCL teachers in the implementation of their own pilots. They provide definitions and explanations of the key concepts and terminology related to the particular Policy Maker Scenario. Although research papers and publications are used when preparing supporting documents, the material is not written in purely scientific way, thus presenting a helpful source of supplementary information. Besides, since scenarios serve as the basis for Learning Stories/ Activities and lesson plans guiding the use of tablets on the specific topic, certain guidelines /ideas are proposed in order to develop specific learning activities in seven core activities of the each Learning Story (dream, explore, map, make, ask, remake and show).

COMMENTS AND OBSERVATIONS

Under an umbrella of the Creative Classrooms Lab (CCL) project nine Ministries of Education (MoE) in Europe or organisations delegated to act on their behalf (AT, BE/FL, BE/FR, CZ, IT, LT, PT, SI, UK) have worked closely with a number of leading ICT vendors in order "to develop coherent strategies for how whole class implementation of tablets can support innovative 1:1 pedagogies and teaching approaches and be integrated in national ICT programmes" (as stated in the Project rationale of the application). In such context, scenario development and implementation played a major role aiming to engage and guide teachers in the innovative use of tablets both inside and outside the school. The project was conducted in two piloting cycles, each including the development of Policy Maker Scenarios and Learning Stories (or pedagogical scenarios) intended to describe the types of learning and teaching activities and processes to be supported by the use of tablets during the national pilots:

- 1st cycle development of four Policy Maker Scenarios: Personalisation, Collaboration, Content Creation and Flipped Classroom and

- 2nd cycle development of three Policy Maker Scenarios: Liberating Learners (Independent Learners), School-to-School Collaboration and Collaboration & Assessment.

In each year /cycle the project followed the same scenario development process which involved project partners (policy makers), lead teachers and Pedagogical Board along with associate partners. The seven Policy Maker Scenarios, based on a methodology developed in the iTEC project (http://iTEC.eun.org), provide a vision for innovation and advanced pedagogical practice.

Namely, technology can be both a benefit and a disadvantage to learning. If technology is used to engage students, to enhance or extend learning or to enrich the life of a community of practice, then it should be embedded in and closely aligned with learning theories and models of teaching. As already emphasized in this report, technology should be just the mean towards pedagogical change, driven by learner-centred approaches and practices that support "innovative teaching and creative learning", see for example (Bocconi, Kampylis and Punie, 2012). Moreover, the new pedagogies require students to create new knowledge and connect it to the world by using the power of digital tools (Fullan and Langworthy, 2014). On the other hand, considering Bring Your Own Device (BYOD) and the potential of 1:1 computing solutions, it is important to recognize that we are only at the beginning of understanding 1:1 pedagogical approaches.

The issue of emerging educational technologies and their impact has been explored and studied for years. In the following, some findings of a number of recent studies/reports will be presented with the intention to provide additional argumentation regarding the success of the CCL project, especially in its high profile position as a leading initiative on tablet use in the current state of the art. Several initiatives worldwide are aiming at investigating which digital technologies and how can be used for meeting the 21st century lifelong learning societal needs taking into consideration global as well as local challenges, see for example (Spector, 2013).

The US National Science Foundation (NSF) Roadmap for Education Technology report, focused on the role and impact of computing and technology in education, included research recommendations and a vision for education the year 2030 (Woolf, 2010). Eight major challenges for education technology were identified:

1. Personalizing education: customizing learning and instruction to match individual interests, knowledge, skills, attitudes and interests,
2. Assessing student learning: providing formative feedback during instruction as well as summative assessment after instruction that is clearly linked to desired outcomes,

3. Supporting social learning: engaging groups of learners in meaningful activities as this will be expected in many work environments and is likely to promote learning complex tasks,

4. Diminishing boundaries: making instruction more accessible to workers, parents, and others outside a traditional school-based environment,

5. Alternative teaching methods: as learners gain competence and confidence, providing more open-ended exploratory activities likely to result in deeper insight),

6. Enhancing the role of stakeholders: engaging decision makers at multiple levels to ensure that learning and instruction are adequately supported,

7. Life-long learning approaches: active recognition and support for learning that continues beyond the boundaries of formal learning programs and

8. Addressing policy changes: promoting evidence-based policies at a high level so that promising new technologies are not used simply as replacements for existing tools and methods but as tools to reform and promote deep understanding.

The New Media Consortium (NMC), a globally-focused not-for-profit consortium (http://www.nmc.org) established the Horizon Project to identify and describe emerging technologies that seemed likely to have a significant impact on a variety of sectors including on teaching, learning and creative inquiry as well. Each year, trends are presented along with new technologies likely to have a short-, medium- and long-term impact on learning and instruction. The NMC 2013 Horizon Report cited the following trends (Johnson *et al*., 2013):

1. Openness; open content, open data, open resources, easy access to data, transparency,
2. MOOCs as alternatives to traditional university courses,
3. Workforce demands for more informal learning experiences,
4. New sources of data for personalizing learning and for meaningful performance measurements,
5. Changing the role of educators due to vast resources available via the Internet and
6. Changing education paradigms (more online/ hybrid/ collaborative efforts).

These identified trends and themes are quite consistent with the previous NSF report; both Massive Open Online Courses (MOOCs) and personalized learning are specifically mentioned as representing trends.

The third source that is addressed with regard to new and emerging technologies is the European Network of Excellence for Technology Enhanced Learning, the STELLAR project (http://www.stellarnet.eu/), which is developing network of excellence in the area of technology enhanced learning. Consistent with the problems recognized, STELLAR identified a number of ambitious challenges and, in order to address these challenges (which have counterparts in the previous reports), STELLAR adopted the following guiding themes (Gillet *et al.*, 2012).

- People: Connecting Learners – networked learning and learner networks,
- Processes: Orchestrating Learning – roles of teachers, role of assessment, higher order knowledge and skills as well as
- Context: Strengthening Contexts – contextualizing virtual learning environments and instrumentalizing learning contexts (novel experiences and new technologies, mobility of learners and standards for interoperability).

The IEEE technical committee on learning technology curriculum report (Hartley *et al.*, 2010) is another initiative which has been considered in this context. The IEEE Technical Committee on Learning Technology (TCLT)

established a Working Committee to develop specifications for new curricula for advanced learning technologies as a response to the demands and potential of new and emerging technologies. The Working Committee adopted and developed a competency-based approach with regard to curricula and assessments to cover undergraduate, postgraduate and training contexts. Innovative and creative competence domain, as one of the five domains identified by TCLT, specifically recognizes that technologies will continue to change and that there is a need to be flexible and creative in making effective use of new technologies. This competency is especially consistent with the NMC Horizon Report challenge pertaining to the changing nature of education systems and the emphasis in the NSF Roadmap on enhancing the role of stakeholders and addressing policy changes.

The TCLT report underlines the consistency found in the NMC Horizon Report and the NSF Roadmap, another indication that there is broadly based convergence on a global scale of the represented ideas.

The specific near-term technologies discussed in the 2013 Horizon Report are Massive Open Online Courses (MOOCs) and tablet computing. MOOCs are receiving a great deal of public attention, but there are important missing aspects of MOOCs which suggest that this is not yet a mature technology. Specifically, while very promising, current MOOC models still largely mirror traditional lecture formats, not addressing critical pedagogical issues, in addition to interactivity and customization (Spector, 2014). On the other hand tablets have gained "power" in educational context because users can seamlessly load sets of apps and content of their choosing, making the tablet itself a portable personalized learning environment (Johnson *et al.*, 2013). Consequently, tablets are proving to be powerful tools for learning inside and outside of the classroom.

With more than 13 years of research and publications, the NMC Horizon Project can be regarded as the world's longest-running exploration of emerging technology trends and uptake in education (Johnson *et al.*, 2015). The NMC Horizon Report could be regarded as an external source of information that helps education leaders, trustees, policy makers and others easily understand the impact of key emerging technologies on education and when they are likely to enter mainstream use.

Consequently, it is interesting to see the convergence of the CCL project with findings in the recent NMC report (see Figure 1).
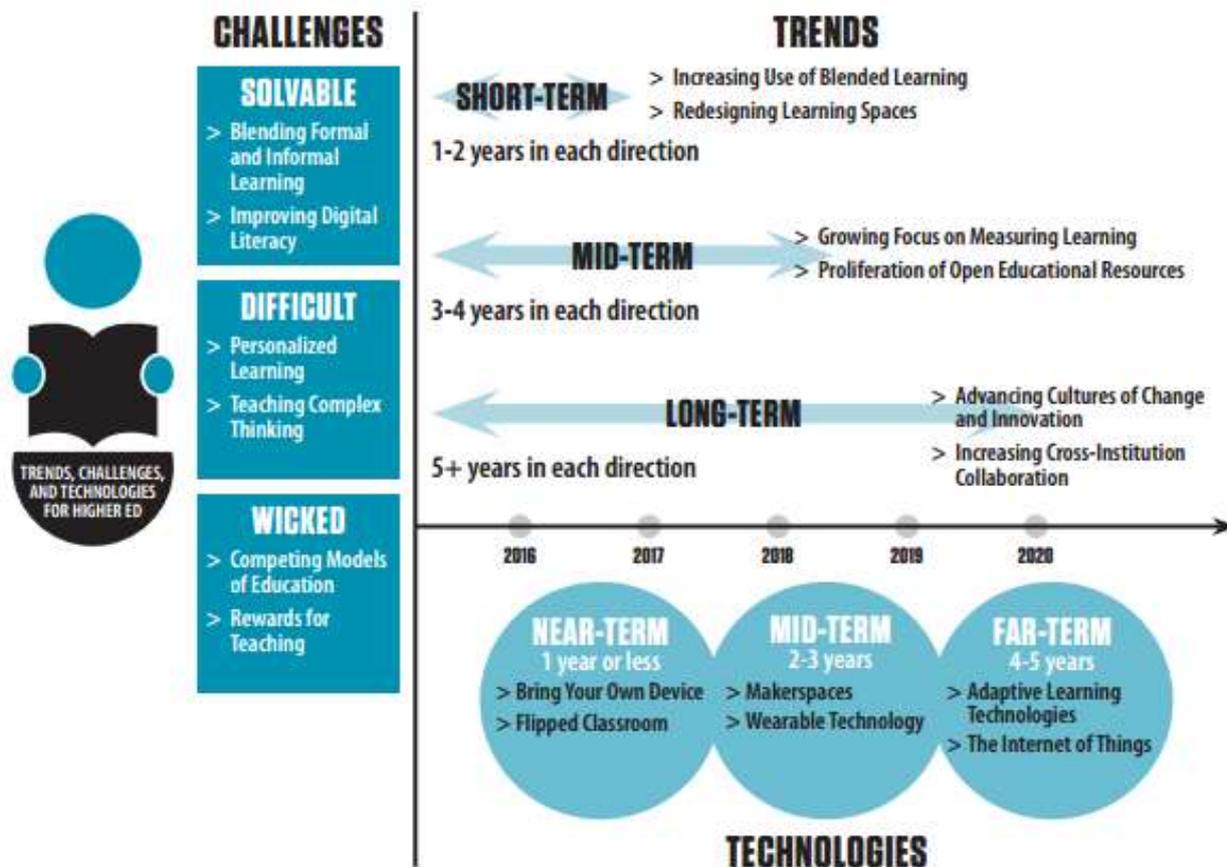
Figure 1: Topics addressed in the NMC Horizon Report: 2015 Higher Education Edition
(Johnson *et al*., 2015)

REFERENCES

1. Bocconi, S., Kampylis, P. & Punie, Y. (2012). Creative Classrooms: A Systematic Approach for Mainstreaming ICT-Enabled Innovation for Learning in Europe. In Cerone, A. *et al*. (Eds.): *Information Technology and Open Source: Applications for Education, Innovation, and Sustainability*. *Lecture Notes in Computer Science* 7991, 104-120.

2. Fullan, M. & Langworthy, M. (2014). *A Rich Seam How New Pedagogies Find Deep Learning*. Pearson 2014.

3. Gillet, D. (Ed.) (2012). *Achievements & Perspectives (2011-2012) in Building Next Generation Capacity*. Retrieved on 15th May 2015 from
http://www.stellarnet.eu/kmi/deliverables/20120803_stellar_d4.5_final.pdf

4. Hartley, R., Kinshuk, Koper, R., Okamoto, T., & Spector, J. M. (2010). The education and training of learning technologists: A competences approach. *Educational Technology & Society*, 13(2), 206-216.

5. Johnson, L., Adams Becker, S., Estrada, V., and Freeman, A. (2015). NMC Horizon Report: 2015 Higher Education Edition. Austin, Texas: The New Media Consortium. Retrieved on 15th May 2015 from https://net.educause.edu/ir/library/pdf/HR2015.pdf

6. Johnson, L., Adams Becker, S., Cummins, M., Estrada, V., Freeman, A., and Ludgate, H. (2013). *NMC Horizon Report: 2013 Higher Education Edition*. Austin, Texas: The New Media Consortium. Retrieved on 17th May 2015 from http://www.nmc.org/pdf/2013-horizon-report-HE.pdf

7. Spector, J. M. (2014). Emerging educational technologies: Tensions and synergy, *Journal of King Saud University – Computer and Information Sciences*, 26, 5–10.

8. Spector, J. M. (2013). Emerging Educational Technologies and Research Directions. *Educational Technology & Society*, 16 (2), 21–30.

9. Woolf, B. P. (Ed.) (2010). *A Roadmap for Education Technology*. Washington, DC: National Science Foundation. Retrieved on 17th May 2015 from
http://www.cra.org/ccc/files/docs/groe/GROE%20Roadmap%20for%20Education%20Technology%20Final%20Report.pdf

IMPACT ON POLICY AT THE NATIONAL LEVEL

A selection of key project stakeholders were contacted to gain their views on the impact of the CCL project on the stakeholders, including Ministries of Education, in terms of the manner in which policy on tablet use in schools has been and will be influenced - and this is a particularly important aspect of the report as it confirms the extent to which the project has been successful as an ECET B initiative under the KA1 action of the Lifelong Learning Programme. Through email and telephone contact, the views of some of the key players involved were recorded and are presented here. Essentially, the discussions took place around two key questions:

1. How has the CCL project helped to support capacity building within the Ministries of Education (MoE) at both national and regional level in order to mainstream and foster large-scale implementation of the identified innovative practices?
2. How has the CCL project enabled policy makers to make more informed policy decisions related to the procurement and implementation of tablets as part of their 1:1 computing strategies

and wherever possible the original views of the respondents are maintained as it was felt it gave the most insight into their personal and professional views after being involved throughout the CCL project and the aims was to record their perspective in an "open" way not always easily facilitated through the used of more "closed question" questionnaires.

HOW HAS THE CCL PROJECT HELPED TO SUPPORT CAPACITY BUILDING WITHIN THE MOE AT BOTH NATIONAL AND REGIONAL LEVEL IN ORDER TO MAINSTREAM AND FOSTER LARGE-SCALE IMPLEMENTATION OF THE IDENTIFIED INNOVATIVE PRACTICES?

It is clear that the regular school visits were a very important element of the project in this context to understand better the main considerations for tablet use; talking to ICT coordinators, teachers and head teachers helped a lot in understanding the tablet phenomenon and how best to utilise the students' enthusiasm for including them in the learning process.

Through this visiting process, a lot was learnt about tablet use at school and classroom level; the observation of so much positive and effective use promoted much reflection on current policy and led to ideas for new targets and processes. It should also be noted that some weaknesses were observed also, but this helped also in

formulating new policy in terms of real targets based on a better understanding of what works and what does not. One respondent summarised the review / approach as follows:

Learning gains are determined by the combination of didactics, quality of resources, pedagogical skills of the teacher, pupils learning style and curriculum. The use of tablets – like any other technology - must be based on a pedagogical vision and not the other way around; where the approach is the other way around, significant problems arise. There is therefore remaining significant opportunity for innovation, change and new practice. The value added of a tablet precisely lies in its mobility, in possibilities for collaboration and in the app-wise integration of multimedia. Tablets have the possibility to support collaborative ways of learning such as peer learning, group-work, project work, etc. (and as a precondition, these approaches require trust and belief from the pupils). Tablets are also powerful tools for using multimedia apps for information and media literacy skills, creativity etc. These offer possibilities which go far beyond using worksheets and digital textbooks.

Where disadvantages were observed, often these reflected the aforementioned issue of a lack of clear and universally understood pedagogical frameworks being established prior to the use of the tables, for example, some of the sessions observed were in fact extensions of very traditional methods. There was limited benefit in pursuing the same traditional processes with a tablet. Furthermore a tablet is not ideal for written assignments and potentially a distraction when having "traditional" lessons. Therefore a key stage influencing experimental introduction will be to think carefully about pedagogical methods. Only such a critical review of one's own practice can make the difference between an engaging and interactive education versus a controlling and more rigid way of teaching. Essentially this can be seen as policy support in the context of careful and pedagogically-grounded experimentation, rather than the promotion of a specific technology or device.

An identified advantage in the mainstreaming of the CCL project activities in Belgium Flanders was the already existing network of innovative schools in the region. This created a particular dynamic, as the CCL schools demonstrated their work to a wider group whilst also the whole network was involved in some work on content creation (e.g. a collection of favourite apps and their documenting in a guide (e-book and pdf forms) for primary schools and one for secondary schools. Both guides were disseminated through the educational portal and are a very positive example of exploitation and potential longer-term sustainability of the innovative collaboration and content creation approach.

Another aspect identified (for example in the UK context, although acknowledging variation between England, Scotland, Northern Ireland and Wales) was the challenge reflecting the lack of specificity with regard to the use of IT in schools and policy. An emphasis on IT and the requirements for its use are present, but schools are largely encouraged to adopt their own approach following on from a tacit assumption that most IT tools are the same or at least have the same requirements. This has relevance to the previous observations made with regard to the need for a sound, tangible and identifiable pedagogical framework (including initial self-reflection on teaching approaches) being in place on which the use of any technical tool must be based. Where there may be some policy guides in place, it is relatively rare for them to be fully and coherently implemented and as a result, effective monitoring is also a problem. In this environment it is up to the schools to make "experts" of themselves rather than to receive clear direction and the policy recommendations, scenarios, case studies and other outcomes of CCL can be vital in this respect as they provide schools with so much clear guidance on pedagogical innovation. In the UK context therefore, the process appears to be very much one driven by a bottom up approach where innovative schools create scenarios and examples that may ultimately inform policy at the Ministerial level. One advantage of this is that the CCL-related events in the UK were very well-attended

with many schools being the drivers of innovative processes themselves; there is therefore a clear significant momentum which again, the CCL outcomes will contribute to and help sustain.

The Italian perspective reflects the same aim for scaling-up and mainstreaming the CCL initiatives. There is very positive feedback about the innovative practices observed, but the traditional concern remains on how best to mainstream and scale-up such innovation. Presently, INDIRE is focusing and researching on this aspect. Lessons have been learnt from the past, i.e., that it is not possible to push innovation with a fundamentally top-down approach. Their approach has been and will be, to make available (documented, disseminated etc.) innovative practices from CCL and other initiatives to promote an easily-identifiable and tangible bottom-up approach, where expert and innovative schools can coach others and help them to exploit forward-looking networks.

From this perspective, shared by most of the participating countries, the philosophy of the CCL project is the right one and helped partners refine their national strategies on mainstreaming innovation in schools.

Specifically in the Italian context, the next step could be, as suggested by the OECD in their review on the Italian strategy for Digital Schools,

http://www.oecd.org/edu/ceri/Innovation%20Strategy%20Working%20Paper%2090.pdf,

to involve more directly head teachers in this innovation fostering strategy in order to scale-up practices dealing with the use of ICT. One of the approaches that best guarantee the mainstreaming of ICT-related innovative practices - such as those in CCL - is the BYOD and interoperability solutions associated with compatibility, both for national and regional policies.

From the Czech perspective, the timing of the CCL project was perfect as it coincided with a significant increase in the use of tablets in Czech schools. The Ministry of Education as well as regional authorities are trying to find ways of financing further extended use and the number of the schools equipped with at least one set of tablets for teachers and/or one group of students is rapidly increasing. In this context, the CCL project was timed perfectly to help map the situation in Czech schools in this field. Linked to the previous references to the pedagogical framework, a challenge for teachers was that they were missing methodological support. The CCL learning activities describe in detail the most effective way to use tablets, the role of the teacher, the students, the parents and other involved stakeholders.

Another benefit of operating within the CCL project environment was that exploitation at the national level was more easily facilitated; for example, in addition to the 5 pilot schools there were 23 associated ones with significant involvement in the experimentation and exchange of practices; the teachers at these schools were trained together with the pilot teachers and they participated in the CCL webinars and at a national Czech meeting. Supporting this process, the Czech project partners translated the scenarios and the brochure into their national language and all materials will be made available on their web-site (www.dzs.cz/eun). The translated scenarios will be published also in the national educational portal (www.dum.rvp.cz). Also, during activities such as e-Twinning seminars teachers were made aware of the scenarios and encouraged to participate in the final MOOC course, which was supported by the Czech CCL ambassador and Lead Teacher in the project, Petra Boháčková. The results in the Czech Republic were very positive clearly reflected what could be achieved when the teachers' main needs (methodological and technical support) were met and the CCL partnership – both in terms of the CZ participants but collectively as part of the CCL "family" achieved this.

HOW HAS THE CCL PROJECT ENABLED POLICY MAKERS TO MAKE MORE INFORMED POLICY DECISIONS RELATED TO THE PROCUREMENT AND IMPLEMENTATION OF TABLETS AS PART OF THEIR 1:1 COMPUTING STRATEGIES?

The CCL project made clearer all the issues associated with the introduction of tablets at school level: issues such as the needs for in-service training, e-Safety, infrastructure and telecom provisions, the search for high quality apps and other types of useful content. The ongoing processes associated with these issues naturally helped to inform the final policy recommendation, which were developed very effectively to embrace both general and quite specific aspects, including the need for institutional ownership of such initiatives, to help propagate the bottom-up approach. The strengths of the recommendations can be seen in both the general and specific terms as they influence future planning in the participating countries. For example, (and these can be cross-referenced to the CCL policy recommendations document) in Belgium Flanders, the Ministry is re-negotiating their telecom framework agreement and integrating many more services in the field of mobile learning, such as better Wi-Fi services, new router standards and the option to buy wireless access points at a reasonable flat fee.[1]

In terms of e-Safety, in Belgium Flanders, the e-Safety label has been launched and during the upcoming conference there will be a specific session on the particularities of e-Safety and mobile devices.[2]

At policy level it became clear that a more general integration of mobile devices has to go along with new types of in-service training. All ICT-coordinators involved in CCL provided in house in-service training and lots of support themselves. This system appears more effective than large-scale general ICT courses. This observation triggered a discussion at the Belgium Flanders Ministry of Education on the effectiveness of different in-service training systems[3]. In fact it has been decided to set up a general support service for ICT-co-ordinators especially in the field of mobile technology. The service should help them with particular issues such as BYOD, e-Safety, etc.[4]

Study days have been and will be set up around tablet use based on CCL and other experiences; one has already taken place concerning tablets and special needs[5] in January 2015 and there will be another in October 2015 on pedagogical scenarios[6] – as well as the policy influencing implications this clearly also has resonance with the sustainability of the CCL initiative.

In the period 2016-2017 there will be a new version of the ICT-monitor and the section concerning mobile technology will be considerably extended with specific indicators on infrastructure, pedagogical use, teachers' perceived competences and perceptions - all related to mobile devices and tablets[7].

Apps and specific CCL-content have been promoted in the educational portal (www.appsakee.be) and in the forthcoming months the translated scenarios will also be published there (see RECOMM. 4.2).

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[1] "Observation visits final report" http://fcl.eun.org/documents/10180/275738/CCL_Observation+Report_FINAL-for+web.pdf/603a278f-6c13-4911-a0a1-744913f1e6d0, "Implementation of Devices and Connectivity", recommendation 1, page 36
[2] Ibid "Resources, Applications and Content", recommendation 4, page 37

[3] Ibid "Whole School Issues", recommendation 1, page 36
[4] Ibid "Implementation of Devices and Connectivity", recommendation 2, page 35

[5] Ibid "Resources, Applications and Content", recommendation 3, page 37
[6] Ibid "Whole School Issues", recommendation 1, page 36
[7] Ibid "Pedagogy", recommendation 1, page 36

Of course, there remain areas for longer-term development; not all recommendations can be actively pursued in each context for each country, but nor was it the intention for the policy recommendations to be pursued wholly. There are "freedom of education principles" which are important structures in some national policy contexts and these lead to areas such as quality control of resources (RECOMM 4.1) and intervening in school curricula and timetables (RECOMM 3.3) being therefore beyond active alteration in the short-term in Belgium Flanders; even so recommendations in these areas can still be pursued at the grass roots level by individual schools and as already noted, evaluation and assessment using tablets already took place in some of the pilots and in one instance, even an examination.

Interestingly, the BYOD aspect arose several times in the project, and in Belgium Flanders, CCL helped determine the impact of increased BYOD and emphasised its imminent increasing importance. BYOD will change the way schools are equipped and will have impact on a lot of aspects of school life.

Again linking back to the importance of a pedagogical framework and the equal importance of it being embraced by teachers and learners alike, the scenarios developed in CCL and their use in Belgium Flanders is an effective model for how a process can evolve. In the first round they were not extensively implemented in the schools, so they were emphasised more in preparation for the second round. Working with such pedagogical scenarios was something teachers were not familiar with but they proved to be very helpful to structure and review tablet practice. Teachers need to be convinced that a scenario is not something that comes "on top" of all the rest but is in fact a guideline or a tool that can help them in shaping their lessons with technology. The different steps (Dream – Make – Evaluate, etc.) were well thought-out and the teachers could recognise their value and relevance, so there will be training sessions on using and creating scenarios with the first scheduled for October 2015 –again another positive example of sustainability.

Also as identified previously, the school visits were an important part of the CCL project for the partners. The discussions with experts, colleagues, lead teachers and participants of the CCL MOOC were all equally important. They have led to accessing valuable documents such as the m-learning policy handbook, the BYOD school guidelines from Kennisnet and to a lot of research and interesting blogposts, again these provide examples of the wider impact of CCL and its exploitation of existing valuable outcomes as well as the creation of its own that reflect absolutely the state of the art.

From the Italian perspective the CCL project facilitated knowledge of the different strategies that schools employ in order to provide students with 1:1 computing. The observation processes were both professionally useful and inspiring as they led to much greater knowledge of the different approaches, whilst also conforming that "one-solution-fits-all" policies are not in line with the different contexts in Italian schools; further confirmation of the bottom-up requirements. Furthermore, this led to the discussions with the Italian Ministry of Education where it was emphasised (based on the CCL project findings) that beyond the single technology used, the focus should be put on the methodology, i.e. the scenario approach that proved to be successful with the teachers.

In the Czech Republic, 2015 saw the Strategy for Digital Education Until 2020 being adopted and the CZ CCL partner was invited to be involved in its preparation and the CCL project was a significant influence in terms of their contribution and this is reflected in the content of the policy document.

MOOC: CREATIVE USE OF TABLETS IN SCHOOLS

Under an umbrella of the CCL project a massively open online course (MOOC) on the innovative use of tablets for teachers was developed. The course "Creative use of Tablets in Schools" aimed to inspire to use tablets to foster innovative teaching and learning. The development of the MOOC was a good way to reach out a high number of teachers who wished to work with tablets, additionally allowing making more effective use of the rich video material that has been created throughout the CCL project by teachers as well as partners.

The MOOC ran for five weeks, between 13th April and 17th May 2015, as part of the European Schoolnet (EUN) Academy programme (http://www.europeanschoolnetacademy.eu/). In four modules it provided a general introduction to the use of tablets in schools (Module 1) and then discussed how tablets can support new learning approaches such as content creation, collaborative learning, personalized learning and the flipped classroom model (Modules 2, 3, 4). Although the course was in English, it was supported by national course ambassadors who could provide support in national language throughout the course (unfortunately not ambassadors for every EU country were available). The course was followed-up with a briefing for policy makers from national Ministries of Education and it was therefore a great opportunity to provide feedback to policy makers on the kind of support teachers need to successfully integrate tablets in their teaching. Successful completion of the course was certified using digital badges and a digital certificate. The course materials will remain open also after the end of the course at the following web site http://www.europeanschoolnetacademy.eu/web/tablets-in-schools.

3491 people registered to the course, 2569 started it and 1009 finished the course - see Figure 2. Hence, the completion rate for participants who started the course is 39,3 %, which is higher than for any other European Schoolnet Academy MOOC and also very high compared to completion rates for MOOC courses in general. This is particularly noteworthy, as course participants were required to write a Learning Diary for the first time during the whole course (example Learning Diary), which is rather time consuming.

Statistics

Export statistics to CSV

There are 3491 users registered.
Started the course 2569 people and finished 1009.

Module	Start date	End date	How many Started	How many finished	Activities	Blockage
Course Introduction	13/04/15	31/05/23	2547	2210	5	No
1. Getting started with tablets at school	13/04/15	31/05/23	2062	1560	8	Course Introduction
2. Using tablets for content creation	20/04/15	31/05/23	1640	1355	8	Course Introduction
3. Using tablets for collaborative learning	27/04/15	31/05/23	1434	1210	8	Course Introduction
4. Using tablets for personalising learning & flipping the classroom	04/05/15	31/05/23	1344	1021	11	Course Introduction

Showing 5 results.

Figure 2: MOOCs in numbers

The details on the MOOC participants provided on the project web-site illustrate clearly that whilst there was a European focus, there was considerable interest at the international level also. An evaluation survey of the course was launched and although the results of the survey have not yet been analysed, according to the first feedback the overall value of the course was very good (at the time of this report, 491 people replied to the survey).

The on-line community during this course was particularly active and enthusiastic (for instance, the Facebook group at the moment has 2664 members). Course participants engaged in a very active exchange and initiated several own initiatives for example:

- participants created a YouTube playlist of all videos
  https://www.youtube.com/playlist?list=PLFOrlHDZHuQhE5o4IxdszKAkhra3wIBHq
- participants created different animations/ videos, for example
  https://www.youtube.com/watch?v=JMFSdD0vKVs&feature=youtu.be
- participants created their own web-site
  https://sites.google.com/site/creativetabletsinschools/home with a collection of all Learning Diaries produced during the course; each participant produced one example Learning Diary http://padlet.com/bensbel/LearningDiary

COMMENTS AND OBSERVATIONS

Overall, massive open online courses (MOOCs) have received their fair share of publicity in 2012 and were expected to grow in number and influence within the next year. Big name providers including Coursera, edX, and Udacity count hundreds of thousands of enrolled students, totals that when added together illustrate their popularity. One of the most appealing promises of MOOCs is that they offer the possibility for continued, advanced learning at zero cost, allowing students, life-long learners and professionals to acquire new skills and improve their knowledge and employability. MOOCs have enjoyed one of the fastest uptakes ever seen in higher education, with literally hundreds of new entrants in the last year; critics loudly warn that there is a need to examine these new approaches through a critical lens to ensure they are effective and evolve past the traditional lecture-style pedagogies. However, while extremely promising, current MOOC models still largely mirror traditional lecture formats (Johnson *et al.,* 2013).

Although there are clear differences among the major MOOC projects, it is important to note that their basic pedagogical approaches are very similar. For Coursera, edX, and Udacity, the three major players in the MOOC space, course materials are located in a hub or central repository and they all use automated software to assess student performance through quizzes and homework assignments. The social structures of the major MOOC projects are also similar, with students participating in on-line forums, study groups and in the case of Coursera and Udacity, organized student meetups.

Additionally, based on a critical discussion of policy documents by the US National Science Foundation, the New Media Consortium and the European Networks of Excellence (addressed in one of previous sections of this final report), it has been concluded that MOOCs can be used effectively to support existing teaching models, but at their current implementation, they lack learning guidance, formative feedback and overall assessment (Spector, 2014). It is emphasized that MOOCs, in addition to interactivity and customization, still do not address critical pedagogical issues.

The aforementioned assumptions and observations are indeed applied to MOOCs in general and in that respect are related to the "Creative use of Tablets in Schools" as well. The clarity of the CCL MOOC, especially in terms of the careful preparation and transparent presentation of the intended outcomes (these aspects are at least partially an explanation of the high retention rates in the MOOC) is clearly a strength and especially so given that the MOOC was a late additional outcome of the project.

Concerning the completion rate of participants who started the "Creative use of Tablets in Schools" MOOC, it could be emphasized the fact that is quite high compared to completion rates for MOOC courses in general. A recent report by researchers studying the impact of MOOCs (Ho *et al.*, 2014) found that few of those who sign up for a course complete it; for example just 5 percent of the more than 841.600 people who registered for edX courses earned a certificate of completion. The Harvard/MIT findings support data from another study conducted by the University of Pennsylvania Graduate School of Education of 16 Coursera courses (UPenn's learning platform) which found that completion rates averaged 4 percent across all courses (Pretz, 2014). However, it is also claimed that applying the traditional metrics of higher education to MOOCs is entirely misleading and simply not relevant (Devlin, 2013). Namely, since MOOCs are a very different kind of educational package, there is a need to apply different metrics, metrics that we do not yet know how to construct.

REFERENCES

1. Devlin, K. (2013). MOOCs and the Myths of Dropout Rates and Certification. Huffington Post. Retrieved on 23th May 2015 from http://www.huffingtonpost.com/dr-keith-devlin/moocs-and-the-myths-of-dr_b_2785808.html

2. Ho, A. D., Reich, J., Nesterko, S., Seaton, D. T., Mullaney, T., Waldo, J., & Chuang, I. (2014). HarvardX and MITx: The first year of open online courses (HarvardX and MITx Working Paper No. 1). Retrieved on 23th May 2015 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2381263

3. Johnson, L., Adams Becker, S., Cummins, M., Estrada, V., Freeman, A., and Ludgate, H. (2013). *NMC Horizon Report: 2013 Higher Education Edition*. Austin, Texas: The New Media Consortium. Retrieved on 17th May 2015 from http://www.nmc.org/pdf/2013-horizon-report-HE.pdf

4. Pretz, K. (2014). Low Completion Rates for MOOCs. *The IEEE Institute.* Retrieved on 23th May 2015 from http://theinstitute.ieee.org/ieee-roundup/opinions/ieee-roundup/low-completion-rates-for-moocs

5. Spector, J. M. (2014). Emerging educational technologies: Tensions and synergy, *Journal of King Saud University – Computer and Information Sciences*, 26, 5–10.

THE PEDAGOGICAL BOARD AND ITS IMPACT

The Pedagogical Board, its role in the project and its constitution are presented on the project web-site at http://creative.eun.org/pedagogical-board. As part of the quality assurance of the project, the aim of the Pedagogical Board during the whole project was to:

- ensure that the CCL Pedagogical Scenarios are well aligned with requirements from the CCL Policy Makers;
- provide input and feedback to the development of the Pedagogical Scenarios and the project validation process (validation protocol/ observation instruments);
- ensure that feedback and recommendations made by teachers are reflected in the policy recommendations.

The Pedagogical Board consisted of six independent experts, who were nominated by the project partners.

- Erich Herber, Head of the Educational Technology Research Centre (Department of Interactive Media and Educational Technology) at the Danube University Krems, Austria
- Fernand Mesdom, Lecturer at HUB Teacher Training College in Brussels, Belgium
- Martina Baseggio, Head of the Grammar School Hladnov and State Language School, Ostrava, Czech Republic
- Alvida Lozdiene, Supervisor at the Education Development Centre, Lithuania
- Nives Kreuh, Senior Consultant for E-Learning at National Education Institute, Slovenia
- Jeanette Harrison, United Learning, (at the moment of appointment working for NAACE), United Kingdom

The role of the Pedagogical Board has developed and evolved in parallel with the project itself in the second year. Its role was acknowledged as important in the interim external evaluation report but the concerns were expressed that a) the content and impact of its feedback (whilst clearly beneficial based on the feedback from project participants witnessed through participation in project meetings and workshops by the external evaluators) was not clearly identifiable to interested parties outside the consortium and b) connected to this, the role and purpose of the Board should have a higher profile in the "public face" of the project. Both of these have been effectively addressed by the CCL project management team:

- the Pedagogical Board is featured in the "about the project" section at: http://creative.eun.org/about;
- it has its own discrete space on the home web-site at: http://creative.eun.org/pedagogical-board (including a video featuring recommendations from several of the members of the Board);
- the feedback from the Board has been collated into a more tangible output in the form of recommendations for each of the second phase learning scenarios.

Through these means the role of the Board can be seen to have had significant impact on the second phase scenario development and this has been both in terms of ensuing high levels of pedagogical rigour are embedded within the scenarios (reflecting and providing a strategic overview of the experiences of the main project participants where they have consistently identified the importance of a sound, transparent and understood pedagogical framework) and ensuring coherence with the aims and objectives of the ECET B sub-action of the Lifelong Learning Programme.

The impact of the Board is therefore clear but it is also important to acknowledge it position within the overall strategic management of the project; in other words, it features as an important area of focus for the pedagogical specifics of the projects without the distraction of administrative or financial management, project coordination, internal monitoring or external evaluation. Each of these management and monitoring elements are present in CCL and have worked effectively, due in no small part to the fact that the existence of each has allowed each to focus on its specific area of responsibility and this confirms the validity of the strategic planning of the project presented in the initial application.

The Pedagogical Board is alluded to as an element of the project's Quality Assurance planning and as a result of the other management and monitoring bodies present within the project it has been able to focus exclusively on the specifics of the scenario development and therefore the feedback provided is succinct, specific to each scenario and planned and presented in a way that allows for easy understanding and response – there is no need to identify areas of relevance in a lengthy overall report as instead the project partners can immediately locate the recommendations specific to their scenario development. Very effective also is the format of the recommendations, which are based on a "strong recommendation" and "you may wish to consider" two-level approach. This allows the partners to identify the most urgent issues concerning their scenarios whilst also allowing them to consider and discuss wider aspects that can encourage and facilitate the further sustainable growth of the CCL tablet scenario initiative in their respective countries.

Examples of the effective role of the Board in pedagogical terms as well as in ensuring sustained relevance to the project aims and objectives can be seen in the summary of recommendations for the "Collaboration and Assessment" scenario undertaken in Austria, Slovenia and Italy:

1. Be explicit about how to use tablets.
2. Define the outputs and outcomes of each activity.
3. Illustrate how the suggested tools and technologies could be used.
4. Focus on new forms of assessing.
5. Enrich and innovate the reporting and communication channels for students.

Each of these are explained and substantiated with further text, including examples, links to other resources and encouragements to consider how the processes are best documented to encourage further transfer and exploitation beyond the consortium – this last element is a significant strength of the project generally with the role of the Pedagogical Board having a lead role and this role should be acknowledged and is emphasised here exactly for that reason. The explanatory and useful text provided for the recommendation concerning assessing is included here as a concrete example of just how important the role of the Pedagogical Board has been:

- "The most important thing in this scenario is the processes and procedures of assessment of _students.
- WHAT will the digital evidence be for assessing student participation/contribution?
- HOW will the teacher acquire their understanding using digital techniques?
- The impact that timely feedback has THROUGHOUT the project is enormous (see Hattie's work e.g. on visible learning http://visible-learning.org); building feedback opportunities at more points would be an improvement – and something that is possible because of the technology and which takes things further than in a non-tech classroom. The technology could certainly make the teacher assessments of the contributions of individual students more effective.

- Use more explicit language so that other teachers who then want to use this learning story in other contexts get the most out of using the technology. Give more examples of how schools could provide feedback (build up dialogue, not simply polls).

- Focus more on the continuous documentation and reflection of the whole process of learning instead of providing regular reports to the teacher. E.g. students continuously document important results in individual online diaries, group blogs or ePortfolio systems. They self-reflect and/or peer-reflect on their learning (e.g. through commentary functions or notes), they send invitations to the teacher only when they need feedback or guidance (instead of sending a regular report to the teacher).

- Assessment should focus more on HOW students learn rather than WHAT students produce. Therefore try to develop an "assessment for learning" approach rather than assessing interim results or final outcomes (e.g. the produced video). Both learners and teachers should become aware of the HOW than the WHAT. This contributes to "learning to learn" and important 21st century skills. Self-reflection, peer-reflection, online discussions, classroom discussions, etc. are useful for that purpose. Be more precise about how to design the assessment approach, as well as giving examples of qualified/quantified outcomes to measure the progress of learning. See http://assessmentreformgroup.files.wordpress.com/2012/01/10principles_english.pdf."

The feedback for the other two scenarios ("Liberating Learners" and "School to school collaboration") is likewise specific and detailed. The issue of being more specific about the use of tablets features in all three and again this reflects the balance between pedagogical justification and adherence to the aims of the initial application – the Board has played an effective role in emphasising the "this is what we said we would do" element which often can be problematic for partners in such a project when exploring new, innovative and exciting means of learning and its provision.

Issues of assessment and the need for definition and clarification of the roles of teachers also feature extensively in the feedback and therefore their inclusion in the final set of policy recommendations at the end of the project is further substantiated by being a recommendation of the Board as well as aspects identified as important by the project partners themselves. This is one reason why the previous external evaluation report encouraged a higher profile for the Pedagogical Board in the project; so that the final results have added gravitas when the outside visitor can see the rigorous monitoring and quality procedures that have been involved in their realisation – an aspect of special importance when the outcomes include policy recommendations.

PROGRESS AGAINST WORK PACKAGES

This section of the report provides a brief overview of the way in which each work package has developed in the second year of the project. The previous evaluation report addressed work package development in significant detail, with a view to providing an external objective view on the successes and challenges and the possible challenges to be faced in the second year, a second year in which based on standard transnational cooperation models, sees a largely preparation-based approach develop into a more delivery-based system. The first year of the CCL project witnessed some minor delays and variations, but with no significant negative impact on the project progress overall. The second year of the project proceeded well in terms of targets and also made clear the importance of the thorough approach in the first year in terms of the preparation and especially the attention to detail paid to the initial scenario development and their pedagogical application in the learning environments.

WP1 MANAGEMENT (MONTHS 1-24)

EUN continued its effective management of the project from its mid-point to its finalisation. As identified in the initial evaluation report, the external evaluators were engaged relatively late into the initiative – approximately 6 months into its duration and therefore the evaluation approach was adjusted to reflect this – a methodology was adopted to look back on the initial activities as well as to consider the potential progress of the project against the contractually agreed work packages of the application.

Partly as a result of the late engagement, the evaluators faced an initial challenge in understanding clearly the management structure of the project; an initial concern was that there appeared to be several persons from EUN involved in the coordination but also additional senior personnel with a key strategic role and these were persons who had contributed to the application. The reality in the CCL project was that the management – at coordination and strategic management level – has been outstanding especially in the second year when the project established a real momentum and dynamism that was of course of great benefit when realising such important and innovative results but which also can provide real overall coordination issues especially in a transnational initiative.

To further develop this consideration of the effectiveness of the CCL management, it is relevant again to refer to a concern expressed by the external evaluation team at times in the first year; that there was a tendency for a potentially excessive centralisation of the management and leadership of the project by EUN. It was always the case that the partners were encouraged to contribute and participate actively in meetings, the concern was more on the extent to which the partners were responding to the lead set by EUN rather than being actively involved in the approach and methodology of the project. This was more of a concern when it is remembered that several of the partners were Ministries of Education or their representatives and that a key outcome of the project would be the policy recommendations, reflecting the essence of an ECET B initiative. Again, it should be emphasised that this was a perception based on experience from the perspective of the external evaluators.

The reality of the management approach was instead one that was extremely effective and led to very committed contributions from the partners and consistent motivation on their behalf throughout the second year. A specific example of this was witnessed at the EMINENT conference /CCL peer exchange workshop in Zurich in November 2014 attended by the external evaluators. During the workshop, the project coordinator

(Anja Balanskat) provided excellent clarity on project progress to-date and the expectations of the meeting, the pedagogical expert leading on the scenario development (Diana Bannister from the University of Wolverhampton) led the sessions with clear and inspiring introductions and guidance and the lead teachers (Phil Spoors UK, Rui Lima PT, Daniela Cuccurullo (IT) and Simona Granfol (SL) led group activity (where country representation was "broken up" to encourage a genuinely transnational collaborative approach) and in one case the aim of the activity was to create a digital learning resource in a relatively brief time. The groups achieved some remarkable results which were especially impressive given the limited time and the fact that the participants were working away from their normal conditions. It was clearly evident that the workshop and activities themselves reflected a central ethos of the whole project; carefully, thorough, detailed and always pedagogically-responsive planning is essential to allow for innovative and creative learning processes.

The workshop concluded in a very positive atmosphere and it was clear that the participants were eager to return to their institutions to cascade further the results of the collaboration; further evidence of the effectiveness of the project management structure and the way in which the project results were owned by the participants after collective creation in a manner that motivated them to disseminate the results further. This is a single example but the reality is that it was replicated on several occasions in the second year and all involved deserve credit but particularly from the perspective of the external evaluators, Anja Balanskat and Diana Bannister led, managed and engaged with the partners faultlessly.

WP2 PEDAGOGICAL SCENARIO DEVELOPMENT (MONTHS 1-24)

The aim of this WP was to create pedagogical scenarios and learning activities on the use of tablets that can support innovative approaches to teaching and learning in and out of school. The scenarios were developed by MoE National Pedagogical Coordinators working with the associate partners and a focus group of teachers that would help to coordinate the pilots in each country. Again, it is important to emphasise the key role that Anja Balanskat and Diana Bannister played in this development process, especially with regard to ensuring coherence with what was foreseen in the application and ensuring pedagogical effectiveness and responsiveness respectively. The phase 1 scenario process was addressed in detail in the initial evaluation report and so is not re-visited here, except in terms of acknowledging how effective the first phase was in preparation for the second. The discussions between the external evaluators and various project participants featured extensively comment on the value of the two-stage process – to the extent that with hindsight an approach that adopted a third scenario process may have been beneficial, but the approach was a practical one in the light of the two-year duration. The feedback received certainly confirmed the considerable benefits of the extensive discussion and hard work in the scenario development; in essence it created a valuable "overlap" between the policy makers, lead teachers, teachers and associate partners in a rare opportunity to collaborate effectively in a very motivating environment. This is emphasised as it is an effective response to the comments and recommendations made in the previous evaluation report:

> "The main recommendation with regard to WP2 is to ensure recognition of the associate partners in the processes (the application stated "DGE, partners and Associate Partners will work with a small focus group of lead teachers (including in a scenario development workshop in M3) to develop an initial set of tablet pedagogical scenarios by M6 that can be validated in a first round of classroom pilots organised by WP3 that start in M8/9."). This recognition can be in the public outcomes, including the web-site and / or in the progress and final report to the EACEA. This is not important only in the

context of recognition, but also to reinforce the transparency of relevance to the identified ET2020 objective 4 ("a fully functioning knowledge triangle of education-research-innovation"). There is the potential again for the success of collaboration in this manner in CCL being a potential model for use by others."

The scenarios and their development were essentially at the heart of the project and it is a very positive aspect of the project that the pedagogical emphasis was maintained throughout, with the tablets being the tool and "facilitator" of the new learning approaches and environments rather than the driver. In this context, it is important to re-visit some of the earlier comments made by both the EACEA-appointed assessors of the application and the initial evaluation report, where comment was made on the 1:1 computer-based learning and tablet-specific emphases apparent in the application, including suggestions for comparison with other mobile devices and for example, netbooks. As the project evolved, and especially in its second year, the joint focus on the pedagogical frameworks and the use of tablets to achieve them and encourage innovative learner-led processes was realised effectively. This is important not only in terms of the project successfully reaching its outcomes, but also as a reflection of the requirements of an ECET B initiative. The resultant policy recommendations are in certain cases specific to tablets, but also reflect whole school modernisation issues and reviews and self-reflection on the part of teachers (and learners) on how more interactive, collaborative and student-led learning processes in an environment which is less time and place-constrained, can effectively be planned for and supported. The strength of the scenario development processes was the consistent and determined pedagogical and learner-responsive emphasis which still place tablet use at the centre of planning, rather than an approach where the tablets themselves were the drivers.

Supporting this process also was the Pedagogical Board, which provided additional and objective feedback on the scenario development processes and draft scenarios which reflected both their pedagogical effectiveness whilst also ensuring that the use of tablets within them was clearly and specifically described.

WP3 Organisation and Support of School Pilots (months 2-24) and WP4 Observation/Documentation of Innovative Practice (months 1-24)

As in the previous evaluation report, these WPs are considered together as there are clear links between the support processes and the results of the observations of the pilots at each of the school sites.

The school pilots and their observation were some of the most intensive activities of the project and in addition to the scenario development processes addressed previously, were the key activities of the project providing a bridge between the theory and the framework development and the longer-term transfer and exploitation of the scenario models as they provided on-site testing in a variety of environments numerous enough to provide meaningful feedback whilst controlled enough to ensure some level of consistency for effective cross-comparison purposes.

Previous mention was made of the effective management approach encouraging partners to experiment within the requirements and expectations of the project aims and objectives and the school pilots and observations are another example of very effective overall management. It is a very difficult task to gain feedback that is essentially holistic about project experience. Closed and open question questionnaires are

often employed and can provide some insight into experience but they are dependent upon the time and motivation of the respondents to complete them and achieving a balance between a survey style that gleans sufficient information and a style the puts off the targets when presented with a 10 page document is a significant challenge. An alternative is an interview approach which yields much more specific and personalised feedback but which is much more time-intensive and the very freedom it allows the respondents makes it very difficult to collate and re-present often very varied views and experiences. As a result of the very dedicated and committed approach of Diana Bannister to the pilots and visits, the CCL project can present reports on pilots that genuinely, extensively and intensively provide the interested party with a detailed view of the project. This cannot be emphasised enough and again, especially in the context of an ECET B initiative, where the longer-term impact of the project in policy terms is as, if not more, important than the results achieved by the project in its lifetime.

The outputs and deliverables associated with these work packages confirm this. What have impressed the external evaluators are the number, depth and specificity of the outcomes and deliverables of the project, not least in the context of these work packages. The 46 page PROTOCOL FOR POLICY EXPERIMENTATIONS (D3.1) is presented on the web-site and simultaneously provides the background data on planning for the pilots in the project whilst also ensuring that this is done in a way that can be picked up and used by other interested parties (refer again to the expectations associated with ECET). The document presented on the web-site is the final version (realised in February 2014) and is a significant project outcome in its own right. It is supported by three documents – the CCL lesson observation record, the CCL observation visit handbook and the whole school visit record – all of these are specific to the CCL project but again could be easily taken up and adapted for users beyond the starting partnership. The experience of Diana Bannister and her colleagues anticipated the whole school issues associated with the pilots and use of tablets and therefore the whole school record documents were able to provide specific insight based on the practical examples to the final list of policy recommendations. As the whole school issue was repeatedly identified as a major aspect in terms of policy, having the documentation in place to record the specifics of the pilots as they occurred was extremely effective and anticipatory planning.

This provides another example of how the longitudinal approach of CCL from project start to project finish features key milestones where real latitudinal scope in the context of providing the tools for practical uptake is achieved. This does not happen once or twice; essentially for each major milestone of the project this extensive additional information and toolsets for implementation on a broader scale are provided and this is a considerable achievement of the project and credit is due to all project participants.

The pilots and observation visits are concluded with two detailed and clear reports produced by Diana Bannister at the end of year 1 and year 2 respectively and again these are significant project outcomes in their own right. The feedback from the project participants makes clear how vital the observation visits were and how useful it was to implement the feedback and recommendations from the report; it was witnessed by the external evaluators that as the project evolved the partners almost wished they could go back and re-visit the first scenario cycle equipped with the knowledge they had gained by going through it. The various strands and issues that caused some initial confusion (e.g. achieving real learner-led or collaborative processes, understanding the need to change the classroom environment, addressing the need for whole school change, etc.) became clearer and the extensive preparation for the scenarios made the second cycle process much more straightforward, or at least clearer in terms of ensuring the aforementioned sound pedagogical framework was at the forefront.

WP5 QUALITY ASSURANCE (MONTHS 1-24)

Although finalised relatively late in the first year of the project, the overall strategy for Quality Assurance made clear that several mechanism had been in place from the project outset and were enhanced as the project progressed; the updated strategy for QA (finalised by EUN with the cooperation of the CZ partner, the Centre for International Services and the external evaluation team in April 2014) drew together the processes to make a coherent whole.

Essentially, there were three strands to QA in CCL:

- EUN's monitoring and accounting procedures (based on their effective management of numerous transnational cooperation projects) and which addressed partner performance, scheduling and meeting of deadlines, completion of deliverables, meeting management, project communication, etc.;
- the role of the Pedagogical Board, both in terms of the rigorous quality and suitability of the scenario development processes in the context of the policy making expectations and the pedagogical impact of the tablets use in the scenarios;
- the role of external evaluation, which included an overview of the other two monitoring strands as well as assessment of final outcomes and the processes that led to them. This was facilitated in part through the participation in 4 meetings and workshops by one or both of the external evaluators as well as an introductory meeting to clarify roles at the EUN offices in April 2014.

Perhaps due to the careful selection of partners at the application stage and / or the effective overall management by EUN, very few issues have arisen concerning the quality of partner performance or the progress towards the realisation of the outcomes. The minor delays and changes to schedules that took place in the first year were largely not repeated in the second year - in fact any change that took place was for positive reasons. A two-month extension was agreed with the EACEA to allow for the realisation of a significant CCL MOOC course that is addressed elsewhere in this report but which exceeded the planned course for teachers in both scope and target numbers of participants (as well as again being more likely to be sustained in the long-term).

This has allowed all three stands of the quality and monitoring strategy to be able to focus more on the actual quality of the processes and outcomes and one result of this is that this final evaluation report very much is able to emphasise the numerous and considerable achievements of the project rather than consider the obstacles and difficulties that can occur in transnational projects.

The only recommendation to be made with regard to the internal monitoring of the project is for the password-protected area of the web-site or Dropbox area be updated to record the data collected from partners on meetings etc., so that this can be accessible to the assessor of the final report in-line with the accessibility of the recommendations from the Pedagogical Board and the two main evaluation reports (one being this document) from the external evaluators.

WP6 DISSEMINATION (MONTHS 1-24)

The CCL project approach to dissemination has been an effective one; it features numerous project-specific activities and outcomes whilst also utilising fully EUN's existing networks of contacts as well as the partner contacts to combine to ensure maximum visibility.

The project web-site was established very early (in fact in month 1 of the project) and is very well and clearly organised and presented. The fundamental information was presented in the initial stages about the project, the aims and the partners involved as well as some contextualisation of the initiative in terms of how it builds from previous EUN activities whilst also making the project a clear discrete presence in its own right. As the project has progressed more and more specific information has been provided to the extent that at the project close, the amount of information freely and readily available to the interested visitor is very significant and it is worth emphasising again that this is positive for any such project but particularly impressive in terms of the expectations associated with an ECET B project, where maximum outreach and long-term sustainability are high-level requirements.

All of the appropriate project outcomes for public consumption have been included as soon as they have been finalised and furthermore updated when required – this process has included both the content-based outcomes such as the key scenarios development documents themselves as well as monitoring and evaluative outcomes such as the report from the external evaluators and the reports on the numerous school and pilot visits undertaken in the two years of the project.

Project newsletters are featured (eight in total, covering the period from April 2013 to February 2015) and these are augmented by the project brochure, leaflet and presentation all realised in the early stages of the project and further enhanced with the scenario brochure document created at the project's close and with the specific intention for momentum to be continued beyond the end of the funding period. The project benefited in this sense from another example of sound management whereby clear and easy to implement templates (e.g. for project presentations) were provided for partners to use to help encourage and establish the CCL "brand" in the transnational project field.

As identified in the previous report, another positive aspect of the site is the cross-referencing to other projects, not just in the newsletters, but also in terms of links; accessing additional information is very straightforward in the CCL site whether it is for supporting information on the scenario developments themselves or on more general information on EUN activities. This approach help both the process of contextualising the project idea as it sat within the state of the art in the planning and outset period and its momentum into sustainability and influence on other collaborative activities planned to continue after the project's end.

A very effective outcome of the project was the final webinar, joined by the external evaluators as well as by numerous project partners, participants and other interested parties. Reflecting the project as a whole, the final webinar was very well-conceived and encapsulated the whole project and in particular its "finishing velocity" very effectively, especially in terms of the policy recommendations. These were formulated in the most effective way possible – thematically and with clear insight and additional recommendations to be followed-up in the context of real-life pursuit of the best way to use tablets in the classroom environment (and the classroom environment itself is considered very carefully and thoroughly in terms of challenging traditional methods and perceptions). This webinar can be accessed at: http://creative.eun.org/news/-/blogs/5487339 but some summary points are featured here.

The policy recommendations were collated and presented in four key areas:

1. Implementation of devices and connectivity
2. Pedagogy
3. Resources, application and content

4. Whole school issues

And the consideration in terms of these themes is entirely appropriate both as a reflection of what took place in the project as well as providing clear guidance for those wishing to pursue more effective use of tablets in school s and / or experiment with new collaborative learning concepts. The "whole school issues" aspect provides the recommendations with a practical realism also, so that the interested visitor, whether driven by pedagogical curiosity of concerns about practical implementation issues, will find information of specific interest reinforced by significant detail, recommendations and models provided throughout the two years of the CCL initiative.

Each of the key themes is followed up with important and relevant sub-themes, for example for "Implementation of devices and connectivity" these are:

- Teacher training
- Wireless connectivity
- Policies and procedures
- Access and ownership
- Technical support

Furthermore, these are not left as lightweight observations which could have been foreseen at the project outset - for example, it is clear that technical support would clearly be an important aspect of any large-scale implementation of tablets in learning - instead the sub-theme is further explored with consideration of how the technical support is still significantly varied and can rely on the teacher as technician rather than the technicians being fully aware of the pedagogical requirements of the approach to their support work. There was also consideration of how the students themselves are going to play a more significant role in technical support issues which feeds back into the whole school issue concept of a re-appraisal of how the entire learning support structure is approached and maintained.

It was also useful that the policy priorities at the project outset in 2013 were re-visited and compared and contrasted to those at the project's close in 2015:

Policy Priorities (2013)

- Use of digital resources
- BYOD (Bring Your Own Device) strategies
- Supporting informal, non-formal learning opportunities (out of school use, home use of tablets)
- Lesson organization and classroom management
- Subject specific use
- Interdisciplinary use
- Cloud Computing strategies
- Exploring new forms of assessment
- Integration with other technologies: IWBs
- Investigating funding, ownership and access models
- Creation of digital resources
- Integration with other technologies: VLEs
- Engaging other actors in the process of learning (libraries, museums, local business)

Policy Priorities (2015)

- BYOD (Bring Your Own Device) strategies
- Investigating new forms of funding, ownership and access models
- Exploring new forms of assessment
- Creation of digital resources
- Use of digital resources
- Interdisciplinary use
- Supporting informal, non-formal learning opportunities (out of school use, home use of tablets)

It is interesting to note the shift to more practical and specific considerations that indicate a key step in planning for wider-scale implementation.

What stands out in the CCL project in terms of dissemination and exploitation is that essentially, these two elements were at the centre of all project activities; each were undertaken and presented as soon as practically possible to the public and in a way that was designed to ensure ease of understanding and an awareness of the steps necessary to become involved and to implement the use of tablets and the scenario concepts in schools. There was no separate process of project outcome finalisation and then its dissemination, the processes went hand-in-hand throughout the project and one of its strengths is that the use of the significant network of Schoolnet contacts was fully and specifically exploited in terms of the aims and expectations of the CCL project itself, rather than a general reliance on the network as a guarantee of effective dissemination based on newsletters or brochures or postings alone.