Pan-European policy experimentations with tablets

http://creative.eun.org

D.4.2 INTERIM REPORT

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INTRODUCTION

This interim report is based on the findings from year one within WP4 - Observation and Documentation of Practice of the Creative Classrooms Lab project, led by Diana Bannister, University of Wolverhampton, UK.

Section A of the report summarises initial interviews conducted with a representative from the Ministry of Education or responsible organisation from each of the nine partners within the project. This was to gain an understanding of the current picture at a national level and to look at the priorities within the Creative Classrooms Lab project at the beginning of the project. The report captures the considerable differences concerning the implementation of technologies that exist not only between the different countries, but also within the countries at a national level. At present, across the different countries represented within the CCL project there are no examples of large scale strategic implementations of tablet technology. However, there are examples of other large scale ICT implementations including PCs, laptops, netbooks, interactive whiteboards and technologies such as visualisers. Currently, there are various levels of implementation of tablets, varying degrees of use and varied access to content. Much of the ‘innovation’ is being led by individual schools. Furthermore, there are significant differences in terms of types of professional development available with regard to the use of ICT and in some countries there is very little evidence of specific training to use tablets. However, for the purpose of the CCL project each Ministry of Education/responsible organisation involved identified five teachers to participate who are implementing tablets in their classrooms. Within the interviews at the beginning of the project, the Ministries were asked to confirm how the CCL project teachers were chosen.

Alongside the implementation of the technology, the ultimate aim of the project is to create opportunities for policy makers to address their priorities for education by working directly with CCL lead teachers to implement new scenarios for learning. As part of the observation and documentation of practice, it is therefore essential to collate evidence from the first pilot to provide feedback to the different stakeholders. At the heart of the project is the aim to increase the teacher’s awareness of the work that they are doing by engaging them in the research process.

Section B of the report summarises some of the themes that have been discussed by the CCL project teachers as part of their reflective blogs completed after each webinar. In this report, the first three webinars are described; Project Expectations (M2), Project Ideas: Early Achievements & Goals (M6) and Project Challenges (M10). The webinars provide an opportunity to bring the teachers from across the eight countries together with a common template. This structures the progress of the work being undertaken, but also means that the teachers themselves are reflecting on their tablet implementation at regular intervals in a similar way.

Section C of the report documents the main findings from the first four Link Observation visits to the CCL partner countries/regions including the United Kingdom, Slovenia, Belgium Flanders and Austria. It describes the methodologies used to collate evidence and analyses the emerging themes. Each Link Observation visit includes lesson observations in at least two CCL project schools using tablets; interviews with the teachers and the opportunity for discussion about the scenario process within the project. The visits to the remaining countries will take place during the second year of the project and will form part of the final report.

The final section highlights some conclusions and makes recommendations for the second year of the project. The content of this report has been used to inform the discussions during the Policy Makers’ Mainstreaming workshop and the Scenario development workshop for year two with the CCL lead teachers.
The final report will cover the details of the webinars, the key themes and areas for discussion arising from the teachers’ blog and both phases of visits to schools including case studies from across all nine partners; this will be published at the end of the project (March 2015).
SECTION A: INTERVIEWS WITH LEAD REPRESENTATIVES

At the beginning of the project, an interview was conducted with a lead representative from each Ministry of Education/responsible organisation. The purpose of the interview was to document the current picture for the use of tablets at the beginning of the project. Prior to the interview, each partner was given a framework to outline the areas that would be covered. This was to ensure that all participants had the opportunity to consider the key points that they would wish to discuss during the interview. However, the full questions were not given prior to the interview. The interviews were conducted as a discussion via Skype or telephone and each interview lasted approximately one hour. Whilst all interviewees had the same framework and broad headings, the specific questions were dependent on the discussion.

1. About You – Participants were asked to give their name and role within the organisation that they work in.

2. Context - Participants were asked to describe the current ICT policy context and describe the use of technologies in schools at a national level.
   a.) National Projects - Participants were asked to share any knowledge of existing 1:1 projects at a national level, both past and present. Are there any national evaluation and research projects that look specifically at the use of 1:1 technologies, 1:1 learning or the use of tablets? Are there any other projects which you think we should document/reference within the report? Participants were asked to include knowledge of any agency that exists to support ICT in school and knowledge of any specific ICT training that is given to teachers in schools.
   b.) Local Leadership for ICT – Participants were asked to discuss regional support that may be available to schools and to share how this can be accessed.
   c.) School Leadership – Participants were asked further questions about how 1:1 projects are being implemented at school level. This section gave the opportunity to look at who is responsible for developing the use of ICT in school and how is this done.

3. Resources and Content – Participants discussed the types of resources and content that are available to schools and how have these been implemented at a national level. What currently influences the types of resources that are available in schools?

4. Training and Professional Development – Participants discussed the types of training and professional development that are available to schools that are implementing 1:1 projects. Who provides training courses? Who funds the courses? What support is available from the commercial suppliers?

5. CCL Project – Participants discussed more about the starting point for the schools within the CCL project and outlined the overview of the priorities for the project at a national level.

Other Areas – Finally at the end of the interview, participants were given the opportunity to share any other information that was considered relevant to the work of the CCL project.

All of the details which follow represent a summary of the online interview discussion between the interviewer and interviewee. Any references to projects or commercial suppliers detailed within the discussion are not endorsements.
AUSTRIA

MoE Representative  Bernhard Racz

Role Secretary General, ENIS¹, Austria

Context
The Ministry of Education has an initiative called “efit21” which sets out the major ICT initiatives. In 1998 Austria embarked upon the first notebook classes. All provision is now achieved through the Bring Your Own Device Model. Every school has a computer lab with approximately 20 computers. In 2009, there was an initiative to cluster the use of mobile devices with a learning cluster. When this was initiated, the reference to mobile devices usually meant netbooks, but now means tablets.

At a national level, most of the research on the use of educational technology is undertaken by the Danube University in Krems (Professor Baumgartner and his team, including Erich Herber.) These studies happen on a regular basis. There is also a STEM initiative called “IMST” (Information, Maths, Science and Technology) which addresses the pedagogical issues.

In most regions in Austria, there is a local education service providing advice. (bildungsserver.com)

There are the following services:

- http://lms.at
- Upper Austria: http://schule.at
- Tyrol: http://tibs.at

Resources
In 2013, there are between 1500 and 1800 classes with notebooks or netbooks in Austria. There are 50-60 classes with tablets, and these are mostly iPads.

At a local level, support to purchase further equipment is always dependent on additional funding. The school can request additional funding from the Mayor. If families cannot afford to buy a device, the parent association will usually buy some spares. In some areas the local banks give 0% credit to let parents pay per month. On the home page of the MoE, there are offers from particular retailers for the schools to be able to buy devices at a cheaper price to be able to lend to students².

The schools are very autonomous. Parents are usually informed in September about the need for each student to be equipped with their own device, and this means that students can have them as a Christmas present. At a national policy level, there are currently no recommendations provided to schools. Decisions are usually made at a regional level. Austria has examples of a few content platforms, the biggest one is schule.at³; this is divided by subject and for every subject there is a lot of reviewed quality content which has been growing since 1998.

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¹ www.enis.at
² https://www.bmbf.gv.at/schulen/it/it_angebote/index.html
³ http://schule.at
In essence, there is content available for the tablets, however, during the CCL project the schools will be looking at how this needs to be adapted.

**Training**
Training is provided by the teacher training universities for initial teacher training and continuing professional development. There are thirteen Pedagogical High Schools that can provide CPD; four of these are Church owned, whilst nine are owned by the State. Training is funded by the MoE, the teacher registers at the University with an access code. Schools have to pay the travel costs. Theoretically at this stage, there is no specific 1:1 support but there is a teacher in the schools who is identified to provide training and technical support.

**CCL Project Schools**
Austria sought deliberately to identify different types of schools (primary, vocational, general secondary) to be part of the Creative Classrooms Lab project.

1. **Dr. Petra Traxler** (lead teacher)/ Michael Atzwanger, Private Pädagogische Hochschule der Diözese Linz
2. **Gabriel Jauck**, BG Zell am See
3. **Hannes Thomas/ Sigrid Muller/ Erhard Schwarzl**, Informatikhauptschule Jennersdorf
4. **Peter Stöckelmaier**, Neue Informatik Mittelschule Stockerau Os
5. **Wolfgang Ölzant**, Schihandesakademie und Schihadelsschule Schladming

All schools are members of the ENIS network in Austria. This is a network of innovative schools in Austria that have applied to be part of the network for their use and application of technologies within learning and teaching.

1. **Private Pädagogische Hochschule der Diözese Linz** - Petra Traxler identified as the lead teacher because she already provides the teacher training in e-learning. Petra Traxler is currently the Head of E-Learning in the teacher training university where there is a Primary/Secondary school on site. There will be 18 iPads to be used in class. Michael Atzwanger will also work on the project with Petra Traxler.
2. **BG Zell am See**, Lower Austria – this school has 4-5 years of experience; it is well equipped with nearly all classes having a mobile device. For the purposes of the project, this school will have Samsung devices.
3. **Informatikhauptschule Jennersdorf** - this school has iPads.
4. **Neue Informatik Mittelschule Stockerau Os** - Vocational School in Economics – this school will have a class set of Microsoft Surface tablets. They are experienced with notebooks, but have not used tablets before. The school has substantial experience of providing online distance learning.
5. **Schihandesakademie und Schihadelsschule Schladming** - Gymnasium – Microsoft Partner School - this school will have Microsoft surface – They have rebuilt some of the classrooms.

**Priorities**
1. To find out the use of the tablets
2. How can the students use the display?
3. How do the tablets compare to the use of notebooks?

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4 [www.enis.at](http://www.enis.at)
4. The MoE also wants to test the functionality and technical specification of some of the equipment.

**What would you like to achieve?**

1. Is it a good idea to use tablets in school?
2. To understand the different approach to education
3. To provide information on Future Classrooms
4. To review the technical specification and functionality (understand the weight/display)
5. To understand how the devices can be used in the education process
6. Can we get rid of textbooks and move towards digital content?

**Staffing support within the project:**
Reinhold Hawle- Head of Pedagogy in schools
Robert Kristofel – Head of Content, Hardware and Infrastructure
Bernhard Racz – MoE Representative and National Co-ordinator for CCL Project

The first national workshop - 14th October 2013, the objective of this workshop was to allow the teachers to discuss and develop the CCL scenario.

Bernhard Racz suggested that internet access will be a challenge for the schools in the project because many schools do not have full broadband access. Robert Kristofel will address this as part of his role within the project. In some schools, beyond the project, internet access will need to improve.
**BELGIUM FLANDERS**

**MoE Representative**  Kurt Klynen (identified for the interview by MoE lead Jan De Craemer)

**Role**  Lead teacher in the Creative Classrooms Project

Class teacher in a Primary and Secondary school

Kurt Klynen is also a teacher trainer in the creative use of multimedia, tablets and 1:1 technologies.

There is a network of innovative schools, 17 Secondary and 9 Primary schools. Each school receives 1000 euros. This is coordinated by Kurt Klynen. (13 using iPads; 2 using tablets from Samsung; 2 using tablets from Acer)

**Context**

In the Flemish part of Belgium, teachers use “ICT diamond”\(^5\) to evaluate the school competencies in using ICT; which includes goals to tackle the creative use of ICT. This was established by the Department for Education and there is initial pilot testing.

Schools decide about training themselves. There is a certain amount of funding that is allocated for training. In the past there has been funding directly for hardware and software. There are 3000 schools of which 1000 schools are starting to use 1:1. There is just one Secondary school, called Sint-Jozef Sint-Pieter School\(^6\) in Blankenberge, Belgium Flanders where parents had to buy the iPads for every student and every teacher is also equipped with a device (This is not a CCL project school.) There is no structural funding of schools, schools are autonomous and can decide what they want to buy.

There are smaller projects in individual schools. There is a local project in the Province of East Flanders, this was followed up by the University of Ghent but has not yet been officially published.

**Resources**

In Primary schools there are typically seeing 10 or 20 iPads or devices, e.g. 575 students with 20 iPads.

In Secondary schools there are still only seeing 20 devices for the whole school.

There is a reservation system through the principal and demonstrating what kinds of learning are taking place e.g. station work, group work, field trips, exploring the environment.

Teachers are sceptical about the quality of content available in Dutch. Some publishers have made interactive apps or PDFs. Some materials have also been made for IWB and the smaller screen. The teacher cannot book the devices in school for the whole school year in advance and then not use them. The school has to demonstrate that it has been a meaningful investment to parents.

Language can create a challenge for schools because many of the apps are available in English. “The quality of publishers’ materials is also varied. Some of the content is based on drill and practice and lacks creativity,” says Kurt Klynen. The Sint-Jozef Sint-Pieter School in Blankenberge is creating its own material, iBooks, and iTunes U.

It can be more difficult for Android devices.


\(^6\) [http://www.demare.be](http://www.demare.be)
Training

ICT advice is usually provided by the Department of Education publications. Four Schoolnets all have their own pedagogical advice. Third parties organise training, for example use of social media, 1:1. Most of them are non-profit making. In previous years, teachers have been seconded out of school to deliver training. At a local level, events have been organised by Samsung, Microsoft or Apple. The Principal then invites the company representative to the school to talk to the Senior Management team. Some schools just buy tablets without having a development plan.

The Department for Education used to have regional technology experts but this is no longer funded. Schoolnets do training and hire third party trainers from schools.

Samsung and Microsoft have not provided training in schools, but they have provided open days.

Apple provides training and there is a specific programme called “Apple Professional Development. There is also subject specific training available.

The Sint-Jozef Sint-Pieter School in Blankenberge did open days to showcase and teachers were able to go and view. Schools get a certain budget or CPD and training and they can choose training days. The average price of a course is typically 100 -120 euros per teacher or for a full day in school; for a team of staff it is 1000 euros.

Most questions are about iPads. Step by step guides are available, but these have been produced by a third party. There has been nothing from the Government or DfE. However, a publication is due to be released in September 2014.

CCL Project Schools

Schools had to be able to demonstrate excellence. Schools were also identified from the different Schoolnet clusters. It depended on how far they were developed in the use of tablets and technology in general.

Priorities

What would you like to be able to achieve from the project?

- To look for creative ways of using the technology across the whole school and not just one subject area
- Sustainability
- To make connections
- To understand good uses
- To understand good transferable training between kindergarten and college
- To learn good training to be able to provide support
- To gather good examples from across Europe
- Good classroom examples
- Good use of investment and to keep the project going
Planned activity:

Teachers were given access to the scenarios for the first cycle.

There are three planned face to face meetings for the five CCL schools.

There is a Google online community with a FAQ section which is being advertised to answer practical questions. There is a closed Facebook group. Other Belgian Flanders schools will be able to join after the first year.

**Staffing support within the project:**
National Workshop – at the time of the interview the date of this had not been decided.

**Ongoing support from CCL Lead teacher**

Challenges for schools in the project

- Communication
- Dates and meetings
- Online community will help
- Teachers will be more able to move forward with finalising their learning activities in October when they know their timetable.
**BELGIUM WALLONIA**

**MoE Representative**  François Brixy  

**Role**  Works at the Ministry of Belgium Wallonia Federation within the ICT in Education Department  

François Brixy is responsible for:  

- Promoting the use of ICT in education including the provision of online resources  
- Data management of the website  

Within the ICT in Education department, there are a team of nine people.  

**Context**  
Within Belgium Wallonia, whilst the Ministry can set a framework for education, they cannot impose a way of teaching. The federal state and the ‘Freedom of Education’ have an impact on ICT. In 2002, there was a strategy developed with the main objectives to look at ICT in teaching practices and to train young people to use ICT “in an efficient and responsible way.” This has been revised and reinforced since this time. In 2011, the Wallonia Region and Wallonia Brussels established the “Plan École Numerique: “Digital School.” The aim of this was to:  

1) fund innovative pilot projects from all levels of compulsory education and from University colleges e.g. to develop pedagogical scenarios  
2) disseminate the work – the idea of this was a general call where any school can participate.  
   a. Ministry selects innovative projects and evaluates the projects, most are individual projects.  
   One hundred projects have been funded since 2011 to identify good practice. This is then used to design the forthcoming equipment cycle. The idea is to meet the needs of the teacher and let them choose, rather than enforcing what schools should have. These projects must be about ICT.  
3) help teachers to support students to develop ICT skills (Primary and Secondary schools).  

There is a conference every 2 years for ICT teachers to share and exchange good practice.  

**Resources**  
Schools themselves are leading the initiatives. There is no obligation for schools to use specific devices. There are no large scale implementations at present. Schools have the freedom and therefore the Ministry cannot impose what the schools should use. A teacher is free to design and use resources. The Wallonia Brussels Federation has resources approved by the Ministry available on the website. Teachers can send resources to the Ministry for approval.  

A few schools are equipped with tablets, but at present this is only 1 or 2 classrooms in the school. Schools purchase their own resources and the administration does not necessarily know about what they have got.  

Within Belgium Wallonia, there is typically a “Cyber class model,” this is where there is a dedicated computer lab which usually has 1 PC per 2 students.  

There have been examples of pilot projects where students are equipped with tablets, but teachers need more support with the effective use.
Training
There are notable differences between the technical and pedagogical provision. The training centres differ according to the organising support. The pedagogical courses are paid for by the Ministry, but funding for technical courses must be requested from the region. The Institute of Continuing Professional Education provides courses, but at present these are more about the use of ICT in general, not just 1:1.

Private organisations have made some training available for specific hardware or tools. Commercial suppliers go through training centres and individual schools.

CCL Project Schools
Criteria for the schools selected to be part of the CCL project in Belgium Wallonia:

1. Secondary Education
2. Already equipped with tablets
3. General interest in developing the use of ICT
4. Well distributed geographically
5. Teacher identified to speak good English to participate in the project at a European level

The Ministry ICT in Education team identified the schools and asked them to participate.

Priorities
Belgium Wallonia wanted to participate in the CCL Project because of the pedagogical scenarios and to develop the best practice for other schools at a national level. “The exchange between partners from different countries is essential.” Mr François Brixy

The priorities were identified as:

1) To help the teachers who have tablets
2) To have the teachers have a clear idea of pedagogical added value
3) To evaluate if the tablet can support student progress
4) To disseminate initiatives

François Brixy commented that the challenge for schools is “to use tablets with a 1:1 model – not the technical, but the pedagogical level.”

Staffing Support within the Project
Belgium Wallonia will mainly provide support to their schools through the website. There are 3 teachers in administration who go into schools.

A National workshop was held in September 2013 to look at the objectives for the project and to explore the forthcoming first pilot. This gave the Ministry the opportunity to meet the CCL teachers from their schools.

A second workshop was scheduled for April 2014.
CZECH REPUBLIC

MoE Representative Pavla Sabatkova and Barbora Grecnerova

Role Head of School Department at the Centre for International Cooperation for Comenius, E-Twinning and EUN

Context
Schools make their own decisions about ICT. The regional and local authorities connect with the school. Every school is responsible for its own curriculum. The use of ICT can vary according to the headteacher. There is no national agency for ICT. The Ministry of Education is currently establishing a group to look at the strategic development of ICT in school. Barbora Grecnerova will be a member of this group representing DZS.

There are no national evaluations for 1:1. However, the Czech Republic has contributed to the report by EUN on the Overview of 1:1 Initiatives. In this report, only one project is referenced and this was led by a commercial company.

The DZS is currently trying to build its own network of schools. This will mean that although five schools have been identified to participate in the project, other schools will be able to access the support to be provided.

Resources
Schools can now buy ICT equipment from the European Structural Fund and schools are buying tablets through this. There are interested teachers working together in online teacher communities.

At a local level, schools have to go through the regional authorities to buy devices. Schools are dependent on Advanced Practitioners for additional knowledge.

In Prague, the Regional authority has given money to buy tablets for 40 schools.

“Schools buy the tablets, but they do not understand the changes that 1:1 will bring. Schools are trying to find their way.” Pavla Sabatkova

The most common situation is to buy enough tablets for one class first.

There are 2 or 3 publishing houses with e-books for schools e.g. “Fras”.

Training
The headteacher is responsible for making sure that ICT advice is available for staff and it is necessary for him or her to have advanced understanding. The local teacher association at the University offers ICT training.

There is no official training, but some companies will provide training or at least a technical induction to get teachers started. This induction is very basic and does not involve pedagogical training.

Apple has provided some training.

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7 Overview and Analysis of 1:1 Initiatives in Europe. Balanskat, Bannister et al 2013
CCL Project Schools
CCL schools were selected through an open call. There were ten applications; five were selected as most suitable. The other five were told that they could be associate partners for the project. There are also a further three that will be approved as associate partners.

Criteria
- From different regions
- Primary/Secondary level
- Range of brands of devices
- Mainly STEM subjects
- Willingness to participate
- Already having tablets

Priorities
- To create a network of schools

Staffing support within the project
National Workshop - 15th OCTOBER 2013
- Topic - Personalisation
- The scenarios and learning activities will be introduced
- Activities in groups
- Lead representative schools and associate schools will be invited
- National expert in the use of tablets will be invited
- “The biggest challenge for schools at this time is the initial implementation of 1:1 in education and we consider this to be the first step.” Pavla Sabatкова
LITHUANIA

MoE Representative Eugenijus Kurilovas

Role Head of International Centre for Technologies in Education

The institution is managed by the MoE of Education and Science and is responsible for ICT in Primary and Secondary schools.

National Co-ordinator for CCL in Lithuania

Context

In Lithuania there has been an ICT policy since 2000. There have been three strategies and programmes for ICT implementation. Each strategy lasts four years and the last strategy finished in 2012. The new strategy is not signed because the Ministry has changed following the election in 2012. There is going to be new developments for 2020 and one of the biggest priorities is Initial Teacher Training, and professional development and ICT training in schools. The policy also states that there will be the development of the educational portal and a repository for learning resources linked to European Schoolnet’s Learning Resource Exchange, which will be developed further.

Every school is responsible for their own ICT implementation strategy in their school and for the implementation of an ICT development strategy.

All schools should have priorities taking into consideration the ministerial strategy.

Every school is quite independent; funding is based on a fixed sum of money for every student called the “Student basket”. The Ministry is responsible for the curriculum, strategy and enhancing technology in schools. Schools get support from local authorities and municipalities.

Apple provides in-service training with the purchase of iPads, 40 or more teachers were given training.

In 2011, 20 schools were equipped with a single class of 25-31 tablets.

Within a previous project, Lithuania equipped ten schools with Android devices.

Lithuania is currently trying to equip more than 100 schools through a tender, but this is being led by an institution separate to the MoE.

Information is provided to teachers through several channels. The education portal has 4000 registered active teachers provided with up to date news and research. There is a tool called “all schools” to send out mail to everyone.

The International Centre provides information to schools through European Projects because they want to learn about funding.

“One of the most important support methods is to involve the most interested schools.” Eugenijus Kurilovas

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8 [http://lreforschools.eun.org/]
Resources
5000 resources are available, however not all resources are suitable because they do not provide support specifically for Mathematics, Physics or ICT.

Training
Teachers are asked to participate in in-service training and information development sessions delivered by the education development centre. This can still be problematic in schools because on courses devices are available, but in school there are no devices or less devices available.

Some teachers come back to school to find it is difficult to implement the use of apps in a particular subject. All in-service training is delivered on iPads, but this can be a problem if the school is using Android.

All the courses are funded by MoE. In the CCL project, the International Centre will provide training.

The company (reseller) who sold the iPads also provided the training.

Samsung is active in Lithuania providing training and seminars in their latest technologies.

CCL Project Schools
- Schools had to apply to participate, signed by the headteacher
- Schools should be selected if they have all equipment including tablets, interactive whiteboards, general and specialist equipment.
- Support from the headteacher
- Speed of mobile internet in classes
- Experience of school in international projects
- English speaking schools/teachers

The project involves 2 Physics teachers, 2 ICT informatics teachers, 1 Mathematics teacher

The personalisation scenario has therefore been planned for these different subjects.

The lead teacher Virginija Bireniene has designed a list of apps that the teachers can use relevant to the different learning styles. There are two lists suitable for both iPads and Android.

Personalisation is the general approach. All the students will pilot in four groups according to their learning styles\(^9\).

- Activist

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- Reflectors
- Pragmatist
- Theorist

The teachers will use this to establish which learning style each student is linked to. The lead teacher will help the teachers to decide which resources the teachers should use.

**Priorities**

- Implementation of personalised scenario
- The challenges are technological and pedagogical:
  - Technological – there are different devices being used
  - Pedagogical – grouping the learners and to connect knowledge and skills

**Staffing support within the project**

National Workshop - end of September or early October 2013

The scenarios will be distributed to the schools who are working on Physics, and Mathematics and will then be developed further.

Virginija Birenienė has formulated the activity for Physics.

Two proposals – either to do this as 2 seminars with a gap between or 1 x 2 days

1. Information Support
   - What is CCL?
   - What is our scenario?

2. Technical Support
   - How to use tablets at what stage of learning activity

Online support will be available from the lead teacher
**PORTUGAL**

**MoE Representative** Fernando Franco

**Role** Fernando Franco is an ICT teacher in school who has been seconded to Direção-Geral da Educação (DGE) to work as a full time adviser. He is the National Co-ordinator for the CCL project.

**Context**

Between 006-2009 in Portugal, there was significant investment in ICT. Schools are well equipped with interactive whiteboards and laptops. Fernando Franco outlines that due to the economic recession there is a need for the schools to “maximise the current investment.”

Schools do not have financial autonomy, this is with the Ministry of Education.

In 2009 the Magellan initiative provided laptops for families for students from 1st grade - 4th grade at a very low price for three years, and in some cases the equipment was free.

Support is provided by the ICT team within the DGE and the ICT co-ordinator in the schools. School libraries are important and most of them work with students on ICT skills.

Budgets are given by the state. At a school level, the headteacher’s role is pivotal to the strategic development, supported by the ICT team and the ICT co-ordinator.

**Resources**

The majority of schools are well equipped with IWB, computers and projects. There is a repository of content provided through a Moodle platform at a national level. (Portal das Escolas)

At this current time, CCL will be the first specific national tablet project, one of the main goals is to collect resources and put these within the platform.

**Training**

Continuous training and skills are accredited by the University of Minho. Training is mandatory for teachers in Portugal. Teachers have to undertake 25 hours per year and many of them choose to do this with ICT. The DGE is responsible for the training, and also for technological and pedagogical support. This is provided through nine pedagogical centres and through a Moodle community of practice.

**CCL Project Schools**

All the 5 schools that have been identified are fully engaged in CCL. None of them have previous experience in tablets.

1. Two of them have a partnership with Microsoft (Windows 8.1) for tablets

2. One – Samsung identified this school and wanted this to be near Samsung headquarters to ensure that the school could receive adequate support

3. One – Promethean

10 [https://www.portaldasescolas.pt](https://www.portaldasescolas.pt)
The headteachers are very much involved in the implementation.

**Priorities**

- Schools within the project are currently receiving their equipment. (week commencing: 9th September 2013)
- Teachers will be given basic training.
- Tablets will be distributed to students.
- Microsoft and Samsung will deliver a technical induction to students. The DGE will support and provide ICT competence training.
- Victor Manuel Gonçalves (DGE) will give eight webinars to all the teachers involved. This can be replicated to students and delivered by ICT competence centres.

Challenges for the schools within the project:

All of the schools are anxious because this will be their first tablet implementation.

The learning scenario on the Flipped Classroom has been completed. The schools will need to set goals for the use of the tablets within the school and at home.

At this time, the headteacher and the lead teacher have asked students involved about access at home, and this will be sorted for those who do not have it.

**Staffing support within the project**

- Fernando Franco - Direção-Geral da Educação (DGE)
- Viera Cristina Martins - Direção-Geral da Educação (DGE)
- Victor Manuel Gonçalves - Direção-Geral da Educação (DGE)

**National Workshop**

- The date of the National Training Workshop has not been decided yet.
- Telephone and face to face support will be available for the CCL schools.
**SLOVENIA**

**MoE Representative**  Simona Granfol – Lead teacher in the Creative Classrooms Lab Project identified to undertake the interview by Anita Poberznik, National Education Institute (NEI)

**Role** Lead Teacher in CCL Project. Simona Granfol teaches German in her own school, the Highschool Gimazija Jožeta Plečnika in Ljubljana. She is also in a team for evaluation and projects in school.

In school – the Pedagogical ICT manager is responsible for the digital literacy project. The school has been using netbooks for three years. This year 8 schools in Slovenia are working on 1:1 together. Simona Granfol is part of three teams for Curriculum Development and ICT; Teacher Education and Sharing Good Practice from the Classroom.

**Context**

In Slovenia, the systematical approach for introducing ICT started with the modernisation of the curriculum in 2009. All curriculum has been modernised and this included digital literacy and e-competence. This was carried out by the National Education Institute. There are great differences in how ICT is used across the subjects. The E-Competence school project is a 5 year project which finished in July 2013. Schools did not have to do it, but it was a national project and many schools did because they got a support person for ICT technical infrastructure.

**Highschool Gimazija Jožeta Plečnika Ljubljana**, the high school where Simona Granfol teaches was the first high school to have one netbook per student and 12 teachers in 2010. (This was for 33 students.)

In 2011, another school worked in cooperation with Microsoft and also one Primary school on the use of ICT. Then in 2013 the project innovative pedagogy 1:1 was initiated. There are four high schools and eight Primary schools, but each time this is restricted to 1 or 2 classes and every school has different equipment.

There is a private company making a programme for school administration. This company has financed and organised 1:1 in a classroom. There are some individual classrooms doing 1:1. In terms of finance, the Ministry of Education has in the past made announcements to support schools to purchase ICT equipment which are half paid by the MoE and half paid for by the school, but this has now stopped. Schools now have to try and do official projects. Advice is given by the National Education Institute Adviser.

**Resources**

Schools get money per student, the more students in school means the school gets more money. Schools can decide individually which tablets they want to purchase; some have Microsoft, some have iPads. There has been some research to identify things that could not be done if the schools only had tablets. In Primary schools, the funding is partly from the local community and they there is money for staffing and students. Secondary schools do not depend on the local community.

Teachers use materials in other languages e.g. English and German.

**Training**

E-Competence is not mandatory, but the guidelines for the ICT curriculum were obligatory, though teachers had autonomy. There are big differences in schools because training is not mandatory. Some schools use ICT for administration, but not necessarily in the classroom.
Schools established an E-Team and worked together on technical infrastructure. Teachers could attend free seminars on ICT use and application e.g. making use of digital resources, learning specific programme. At the same time, the national agency for education had development groups e.g. E-German, E-Geography and advisers from the institute and teachers also made guidelines for use in school. They had to make programmes for seminars. This project is now ending, but some seminars will still be offered to schools. There are other E-projects e.g. innovative pedagogy which is only for 10 schools. However, there is big potential because they are developing guidelines for ICT.

There is a second project called E-School bank – Schools had to apply to be part of this project and this means the school gets tablets for one class which is equipped with E-school books for some subjects. Schools have to evaluate and say how they used it in the curriculum.

**CCL Project Schools**

Schools were selected with a background in 1:1 and where the head teacher (Director) could support motivated individuals who had some existing knowledge.

There have been two meetings with the teachers after the webinar and one on 19th August 2013 with a national training workshop on the scenarios. There are two members from Microsoft who will be partners and will help with technical guidance and pedagogical support and examples. All schools are using Moodle. All schools have at least one other teacher in the school to use the tablets and to develop resources. The teachers are going to introduce the learning scenario to at least one other teacher in school.

Simona Granfol’s school started with netbooks. Some schools in the project have tablets with keyboard.

**Priorities**

The National Education Institute is going to help. The priority will be to implement ICT for higher order thinking skills. Scenarios are on collaborative work. Teachers are going to introduce their examples for the next few weeks. Teachers are going to find a way to evaluate. The teachers are looking closely at exactly what they are going to do with the digital materials.

**Staffing support within the project**

A national workshop was organised and the Ministry Representative and the CCL Lead Teacher provide ongoing support.

For the collaborative work the teachers are using Socrative, Padlet and SMART’s Extreme Collaboration. It is important to look at the school work where each student takes a role and they depend on each other for co-dependent learning.

In the last workshop, teachers asked if subject advice would be available for languages and the implementation of tablets.
UNITED KINGDOM

MoE Representative Valerie Thompson

Role Chief Executive, E-Learning Foundation

Context
The E-Learning Foundation was asked by the Department for Education in UK to manage the CCL project on behalf of the country. They were asked to co-ordinate the project which involved managing the teachers and contributing to the overall progress of the project. The E-learning Foundation has also undertaken some of the literature review for the project.

There is no national agency for ICT – this was closed in May 2010. (Formerly BECTA)

There is no ICT Policy Unit; this was closed in spring 2013. Broadly speaking, decisions are made by schools. Some schools look to their local authority, particularly at Primary level. There is also a development of Multi-Academy Trusts mobilising support for schools. Valerie Thompson: “The number of working computers in UK schools has fallen dramatically since 2010.”

There are a lot of schools experimenting with the use of tablets. Jigsaw 24\textsuperscript{11} loans the school 40 devices for a term, this includes 1 class set, and devices for the Senior Leadership team and class teachers.

Resources
The E-Learning Foundation model is intended to enable parents to make a donation or contribution to support schools ability to implement 1:1.

“There are hidden costs to the implementation of BYOD with infrastructure and specification of what students bring. There are notable complexities around electric material testing, insurance, appropriate warranty and viruses.”

A number of teachers have developed 1:1 projects through “Pupil Premium” funding. Some of the policies that existed previously around computer to pupil ratio to improve the level of access have now disappeared.

There was a requirement to have a VLE, whilst these are in place in most Secondary Schools; this is with varying degrees of success. Some Primary schools did not implement them.

There is no real policy on WIFI and broadband, but schools recognise that they need to do something. There used to be a Regional Broadband Consortium, but this has now gone.

Local authority schools support each other. Secondary schools support Primary schools. Schools with experience of 1:1 run open days. “This is ok as long as it is a de facto centre of expertise and not blind leading blind.”

Some academy trusts are providing local support.

\textsuperscript{11} \url{http://www.jigsaw24.com}
Resources are supplier driven. There are no central resources. In the UK, there is the Education Endowment Fund\(^\text{12}\) and there have been collaborative projects tackling the development of 1:1 learning.

Some schools think the agenda is important regardless of the funding formula for training, CPD and WIFI.

The content is quite mixed; there are examples through websites such as TES Connect \(^\text{13}\) where teacher resources have been assimilated.

There are small “One shot, one app” content providers, and these can find it hard to market their products.

Alongside this, there is subscription based content such as ESPRESSO, SAM Learning, FROG, but this does not always work with FLASH. 20% of all apps are based on MATHS.

Wales, Scotland, the Channel Islands and Northern Ireland are all different to England. In Scotland, the local authority derives the agenda, schools have no independence, and there is much more central support. Scotland has a VLE for all schools called GLOW.

“The E-Learning Foundation deals with bigger implementations. Usually, a single class tries it out and then there is a phased implementation. The UK is still in the first third of the adoption curve. It is not just the financial costs, but the running costs including insurance.”

The E-learning Foundation is keen to make sure that products are fit for purpose. “Products are not always designed around education.”

“There are a lot of competitive head teachers, and subject specialists have emerged as champions. Schools appoint a Director of E-Learning. There is not much being driven by Governing Bodies.” Valerie Thompson

**Training**

Suppliers are all offering training. Apple has distinguished Educators and their training is usually free if you buy enough devices. Resellers are selling CPD.

In the UK there is “The Tablet Academy”\(^\text{14}\) providing CPD to schools.

There are examples of training beginning to go on line. Training can be very expensive.

**CCL Project Schools**

Schools were chosen because they already have 1:1.

It was an open competition. Schools were asked to put forward an exceptional teacher. The E-learning foundation approached Scotland and Wales to provide a nomination. Scotland responded to the call, but Wales did not respond.

Schools were chosen that had specific experience of using tablet devices.

Phil Spoors – lead CCL teacher - Cramlington Learning Village, Northumberland

\(^{12}\) [http://educationendowmentfoundation.org.uk/](http://educationendowmentfoundation.org.uk/)

\(^{13}\) [http://www.tes.co.uk/teaching-resources](http://www.tes.co.uk/teaching-resources)

Craig Bull- Skinners’ Kent Academy, Tunbridge Wells, Kent

Jonny Else – Grace Mount Primary school in Edinburgh
Lisa Cowell – Penwortham Priory Academy, Preston

Priorities
- To understand the pedagogical changes that teachers need to make
- To enable the 5 teachers to adopt a consistent approach
- Main Topic: Personalisation
- Objective is to close the attainment gap
- Can disadvantaged children achieve better outcomes?
- Can underperforming children do better?

Staffing support within the project:
Continued support will be provided through Skype by Valerie Thompson and Phil Spoors jointly.

National Workshop - 25th September 2013

In this session, the five CCL teachers were introduced to the scenario and had the opportunity to plan some of the ideas for the learning activities together.
SECTION B: WEBINARS FOR CCL PROJECT TEACHERS

As part of the first year of the project, the University of Wolverhampton has provided three webinars for all 45 CCL project teachers. It was agreed at the beginning of the project that Ministries of Education and responsible partner organisations could invite other teachers to attend as part of ongoing support offered at a national level. The purpose of the webinars is to give the teachers the opportunity to receive ongoing support with the project online. All of the webinars have been delivered using the CISCO WebEx system and held during the early evening just after most school’s teaching hours. After each webinar, the teachers have been encouraged to write their own on-line reflective blog. This information is publicly available via the CCL project website within the teachers’ community of practice. This means that anyone can access the information that the teachers have written. This has led to other non-CCL project teachers using the templates to support their own professional development.

In the section below, the outline for each of the templates has been included followed by a brief analysis of the responses given by the teachers. Further detail of individual responses is available on the project website.15

1. PROJECT EXPECTATIONS (M2)

Creative blog 1 - Project expectations

1. INTRODUCE YOUR SCHOOL AND YOUR ROLE

This gave the teachers opportunity to give a brief introduction to their role in school. Across the 45 teachers, there are a broad range of subjects being taught across the curriculum. Some teachers have additional responsibilities in school including being part of the leadership team. The responses show that the size of the schools vary and there are also differences with regard to access to other technologies in the classroom apart from the tablets.

2. I AM/WE ARE CURRENTLY ... (DESCRIBE THE KIT/EQUIPMENT YOU ARE USING AND THE AGE GROUP OF STUDENTS AND HOW MANY? ETC.)

This gave the teachers who were new to the use of tablets the opportunity to see what their colleagues within the CCL project were doing. It led to some teachers sharing examples of useful websites and apps for specific subjects.

3. WHAT WOULD YOU LIKE TO ACHIEVE FROM THE CCL PROJECT?

Teachers have shared in the blogs that they want to work with and learn from their peers at a national and European level. Teachers also want to work in new ways with the students. At month two of the project, several teachers prioritise getting the students to use the devices regularly.

15 http://creative.eun.org
4. **What do you think will be your biggest challenge?**

At this stage, teachers recognised that the challenges were both technological and pedagogical. Some teachers identify that it will be hard work trying to work on the project at the same time as being a full time class teacher. Some teachers raise discussion about implementing the scenario because this is a new way of working. Several teachers state that the challenge will be related to classroom management with all students having access to a device.

5. **Identify 2 key questions at this stage that you are asking in school about the use of tablets within 1:1 learning.**

It was very important to ask the teachers to identify their key questions that they were asking about the use of tablets because this helped to identify some of the concerns and how realistic the teachers were with what they wanted to achieve from the project. Examples of questions included:

1. Are we able to engage students more by using 1:1 tablets? (Czech Republic)
2. How can we get all colleagues interested in tablets? (Austria)
3. What kinds of new learning scenarios and technologies using tablets could significantly improve learning results? (Lithuania)
4. Will our created learning story lead to a satisfactory result? (Slovenia)

Some of the teachers were specifically interested in the technical aspects of introducing tablets, whereas other teachers were more concerned with pedagogical aspects. Equally, several teachers raised questions around engaging more staff across the school in professional development. There were also teachers who were keen to evidence added value from using the tablets. This was to provide the teachers with the capacity to develop their own questions at a school level, but also to inform the project about the areas that the teachers wanted to address.

Two examples of responses were:
Hello, I am Wolfgang and like to tell a little about our school. The Ski-Akademie Schladming is a private commercial school/college (secondary level) for students from the age of 14 (9th school year) to (usually) 18. The students come from the different provinces of Austria (Styria, Salzburg, Carinthia ...) and some of them come here from abroad. One reason for them to attend this school is the opportunity to expedite their sports career (alpine skiing, cross-country, snowboarding, biathlon), because the Ski-Akademie supports them with training facilities, coaches and an especially designed school curriculum: Normally, a student attends a commercial school for three years, in Schladming they have four years to finish the school. Besides daily lessons they have training units and some weeks are set aside from school to go on training courses.

From their second year on the students are using their own notebooks. Each classroom is equipped with a PC, a data-projector and a wireless-access-point. Internet access is available in the whole school and is restricted via open-dns blacklists. Additionally, the school is using www.ims.at as a learning management platform.

I have been working in the school since 1997, teaching Geography, German, IT (Web Design, Computer Graphics) and Multimedia. I am also the network administrator, responsible for eLearning, process quality management and international projects.

I am/We are currently ... (Describe the kit you are using and the age group of students and how many? etc.)

As mentioned above, all students in their classes - beginning from the second year – have their own notebooks. We also have 3 computer labs and one “Übungs firma” (a simulated company set up especially to teach the children the inner workings of a business). In this firm students are learning how it is to work in an enterprise. They are selling and buying from other Übungsfirmen in Austria, doing their own marketing, etc. The Übungs firma is equipped with 15 PCs, a data-projector, a webcam and LAN-access.

What would you like to achieve from the CCL project?

We are very interested in an exchange of ideas on how to use tablets in the classroom. We would also like to get ideas of how and if it is possible to re-organise and re-structure our Übungsfirmen by using tablets.

What do you think will be your biggest challenge?

The co-operation with other teachers in the Übungs firma, the implementation of the tablets during regular lessons and the use of a “cloud” will be the biggest challenges.

Identify 2 key questions at this stage that you are asking in school about the use of tablets within 1:1 learning.

How can students profit from the use of tablets while they are using also notebooks?

Will there be any added value for pupils and the Übungs firma when using tablets and PCs at the same time?

By Wolfgang Ölzant, Austria
Hello,

My name is Maja Vičič Krabonja and I am working at the Secondary school of Economics (Srednja ekonomska šola Maribor, Slovenia) for 20 years. I am a history teacher, but also an ICT coordinator, that means that I coordinate different activities involving (and promoting) ICT at our school. It is a Secondary school, our students are form 15 to 19 years old. We have approximately 550 students in two programs: one aims to help students to prepare for further studies and the other prepares them to find a job or become an entrepreneur.

Our school has an ICT implementation strategy where a wide and diverse application of ICT across the curriculum is envisaged. Technology has been integrated into most of the subjects for the last 10 years. We also invest a lot of time in the training of teachers. Our school is also a member of the e-school project in Slovenia.

We have 7 fully equipped computer classrooms and about 80 lap tops, that we are lending to teachers and students. Four years ago we were the first school in Slovenia that integrated notebooks into one of our classes. Students in this class were then in first grade and now they have just finished the third grade.

In the CCL project, I will work with 17 (or 15) years old students of the 1st or 3rd grade - sorry but I still dont know which classes I am going to teach :-(. We are planning to use different tablet devices brought by students themselves. (BYOD system).

Through using ICT in the progress of teaching and learning, I would like for my students to develop more some competences (including digital literacy, 21st century competences like collaboration, life-long learning, creativity and critical thinking). As for me, I would like to learn and explore some innovative approaches and strategies, methods of 1:1 pedagogy.

The biggest challenge, as I see it, will be the efficient and effective use of ICT (tablets and apps) that will serve our goals and will help students in their process of learning. It should become a natural part of the learning process.

Key questions?

- Can the use of tablets reach out to people, that are not so interested in school or in certain subject?
- What are the real benefits in educational achievements by ICT learning?

By Maja Vičič Krabonja, Slovenia
2. **PROJECT IDEAS: EARLY ACHIEVEMENT AND GOALS (M6)**

Blog 2 - Project Ideas: Early Achievements and Goals

14 October 2013 08:53

Use this template to write about your **Project Ideas: Early Achievements and Goals**

1. I am going to use the learning scenario to...

2. Describe a little about one lesson you have taught so far using the tablets...

3. My three top tips for the teacher using tablets in the classroom are:

   Within this section, the three top tips proposed by the teachers have been analysed and the following themes have emerged:

   - **Technical:** Teachers recognised the need to make sure the wireless network is adequate. Accept that you will not be able to solve all of the problems.
   - **Apps** - comments were made with regard to having a smaller number of apps and to remind teachers to know the apps that they are going to use. Install apps ready for use.
   - **Training** – stay up to date, finding someone in school to work with.
   - **Issues for Staff:** do not be scared; know what you are doing and test it out; students may well know more than the teacher.
   - **Issues for Students** – make classroom rules, set expectations, give students targets.
   - **Be Creative** – there were several tips reminding teachers to focus on the pedagogical changes in classrooms.
   - **Mobile** – It is a mobile device – this needs to be explored further.

   Consider in advance what you want to achieve. A tablet has certain advantages, but also disadvantages. Sometimes it is better to use laptops/computers.”

   Jan Thoelen, Belgium Flanders

4. The two most useful apps that I have tried in my classroom so far...

5. Two useful apps that students recommend...

   This led to many different apps that were mentioned by the CCL teachers. However, there were some apps that were mentioned frequently, these included:
6. Two goals for teaching and learning in the next 8 weeks are:

The aim of this section was to encourage the teachers to look more directly at what they needed to do immediately. There were several who referred to familiarisation, there was reference to ensuring regular use of the tablets, but equally acknowledging that it may not be appropriate to use them for the whole lesson, therefore one goal had to be to understand when and how the tablet could be used. At this stage, some teachers were more concerned with creating new materials, whilst others were focused on assessment of student work. Some teachers were more focused on trying to do new things with the tablets, whilst others had progressed to understanding how to address the individual needs of the students.

One teacher suggested the importance of training and suggested implementing the role of an “e-buddy”:

“One experienced teacher helps another colleague for 8 weeks to start teaching with tablets.”

Gabriel Jauck - Austria
3. PROJECT CHALLENGES (M10)

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### Challenges

The purpose of this blog post was to try and enable the teachers to structure some of the challenges to enable all project partners to be able to see the common topics affecting the CCL teachers, but also to identify issues that might become challenges in the future. In preparation of this interim report, the blog posts have been analysed and some of the main issues highlighted. Further comments can be found on the CCL Project website. It is important to note that some teachers have made comments about their specific learning story whereas others have referred to more general challenges.

**1. Organisational**

- Equipping every student with a mobile device is not easy. It takes a great deal of planning, preparation, organising and ongoing maintenance.

- In our case we had to think about who would look after the tablets, where would they be kept, how would they be charged, how would we make sure all the necessary apps were on, how would we manage distraction, etc.

- Traditional classrooms are not always set up in a way which encourages best use of mobile devices. We had to make sure that our pedagogy, learning spaces and IT provision was all effective and in place before deciding to go mobile.

  Phil Spoors, Cramlington Learning Village, UK

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16 [http://creative.eun.org](http://creative.eun.org)
D.4.2 Interim Report

33

Creative Classrooms Lab project | http://creative.eun.org
This project has been funded with support from the European Commission.

a.) **The timetable** – teachers realised that the scenario may be difficult to deliver within standard lesson times of approximately 50 minutes.

b.) **Access to devices** – The blog provides evidence that most of the CCL schools take responsibility for charging the devices and making sure that they are ready for use. Schools have made sure that there are some spare devices available. However, there is not always one device per student, teachers have approached this in various different ways, for example dividing the students into groups. One teacher recognised the value in an after-hours club to allow students to continue to access devices beyond lesson times, particularly where they may not have access at home. Within the blog posts, there is one teacher who says that the school reservation system can be a big task to organise; there are clearly advantages to students having access to their own device regularly, and schools need to consider this when they are implementing tablets for student use. The teachers emphasised the importance of staff having access to devices too. Some schools have supplied the devices, but in other cases teachers have bought their own.

c.) **Appropriate apps** – teachers felt that some apps could be available in other languages apart from English; there were those who felt that subject specific apps needed to be further developed for subjects such as Engineering. Schools have recognised that it can be costly to add apps to a number of devices, and this means that some have only installed free apps.

d.) **Evidence** - teachers recognise that it can be difficult to organise how to store students’ work, particularly when work has been completed in a number of different applications. This raised the importance of consistency between staff at the same school, and the need to decide where the students will save their work.

e.) **Change to the classroom layout** - the implementation of tablets leads to the consideration of changing the learning space. The traditional classroom does not work easily where students are required to collaborate.

f.) **Understand individual student profile** - further to allow the teacher to meet the aims of the scenario. E.g. Scenario on personalisation looking at the individual needs of the student will mean that each student has access to a tablet.

g.) **Motivation** – teachers reported that some students may be demotivated from work that does not involve the use of the tablet.

2. The implementation of the scenarios

At first sight [the] scenario seemed to us a little bit complicated. Right understanding what to prepare for the lessons at first sight was not so easy for us.

Daniel Tochacek, Czech Republic

a.) **Individual Student Needs** - Teachers have recognised that there can be a need to prepare different content for different students.

b.) **Preparation** – teachers raise concerns about the amount of preparation that could be involved in preparing content to be used as part of the scenario. However, this is likely to change as the
teachers use productivity tools for the students to create content, rather than using the tablets to complete a digital version of a previously paper based task.

c.) **Independence** – teachers have commented in various ways that one of the challenges of working with the tablets has been ensuring that the students are able to cope with some of the freedom that comes from having access to their own device.

It just can’t just be seen as something fun, but they have to know and experience that it improves their learning.

Marc Deldime, Belgium Flanders

d.) **Decision Making** – some teachers recognised that it was difficult to allow students to make decisions about which apps they should use. This is partly because it can be hard to let the students choose the appropriate tools, but teachers may find this challenging if different students want to access other apps.

e.) **Student Centred** – teachers have recognised that the scenario process encourages a more student centred curriculum, but it can be a challenge for the teacher and students to adapt to this new way of working and it takes time. Students can become more responsible for the pace of their learning and the teachers need more support knowing how much guidance to give the students.

f.) **Homework:** “The students don’t always do their homework at home and this can make the implementation of the flipped classroom more complicated.”

g.) **Training** – CCL Project teachers have commented that it is difficult trying to explain the scenario process to other teachers in school. It is easier when they are actually involved in the process of planning together.

h.) **Access** - Students must be at ease with their accounts (Google, Microsoft, Evernote, Dropbox etc.). Teachers need to know the apps that are appropriate to use with their learning scenario.

i.) **Phases of the Scenario** – whilst teachers liked the ASK phase of the scenario building process, there were a number of teachers who commented that this should have been earlier, recognising that it can take time to establish contact with an expert.

j.) **Existing Curriculum and Test Preparations** – teachers acknowledged that it can be challenging to implement the scenario process with an existing curriculum and with the obligation to ensure that students have prepared for the examinations. This emphasises the need for CCL teachers to consider how to implement the scenario and to match the learning outcomes to the curriculum.

One teacher identified that the Scenario process has enabled him to ensure that the tablets are focussed on learning.

We need to have a better use for it than merely supporting the classic lessons.

Kris Motmans, Belgium Flanders
3. Continuity and Progression (Sustainability)

We must convince teachers that they have a role in making this new experience a success, even if it means for them to reconsider their daily practices and the time they spend preparing their courses.

Gabriele Jauck, Austria

a) **Access** - One of the challenges identified by some teachers is how the school has to plan for continuity because at present if there are a limited amount of tablets, this may mean that some students only have access for a short period of time. Schools need to ensure that staff and students have access to the same technologies. Some schools have chosen to let the tablets move with the year group to ensure only particular students have access to the technology. As the speculation around Bring Your Own Device schemes continues, parents need to be given choices and access to schemes that address pricing efficiency.

b) **Isolation of Staff** - CCL teachers have recognised that it can be hard in school if they are working in isolation; there is a direct need to encourage other staff to use the tablets.

c) **WIFI Stability** - Some schools have found access to wifi unreliable, or readily acknowledge that it may only be sufficient because it is not being tested to its supposed capability. This may need to be reviewed as schools increase their access to devices.

d) **Dissemination** – there is a need for all CCL teachers to take responsibility to disseminate their work at a national level as this will help to ensure sustainability of the work around tablets.

4. Assessment/Evaluation

The self evaluation is also very difficult because pupils see good behaviour as the most important aspect of the evaluations and sometimes they don’t consider that leadership and participation [in the] initiative as [an] important aspect of the work.

Rui Silva, Portugal

a) **Access** – Teachers have commented that having access to the tablet only in school can create a problem for teachers who want the students to be able to continue their work beyond the lesson time. Students need to be able to take the tablets home to be able to exploit the full advantages of the tablets.

b) **Standardisation** – it can be a challenge for teachers to assess students’ work if they are creating different outputs individually, but equally, it can be a challenge to assess collaborative tasks to reflect the personal achievement of students.
c) **Examinations/Inspections:** Teachers believe one of the challenges of implementing tablets is system-wide. Neither the examination system nor the inspection systems at a national level are ready for this kind of innovation. There is a need to showcase the possibilities to different educational stakeholders. Teachers expressed concern that it can be difficult to keep evidence of the students’ progress with the tablet and at present some teachers also feel that because students are using a variety of tools, it is also a challenge to be able to know where the evidence is stored.

d) **Feedback:** Tablets have enabled students to share work more quickly in class and to provide opportunity for the teacher to give more instant and regular feedback.

5. **Professional Development**

I do a 'show and tell' every week to give staff ideas and we regularly organise sharing sessions at staff meetings to help each other.

Lisa Cowell, UK

a.) **Access** - One of the immediate hurdles for schools is to make sure that staff have access to their own device. Some schools have chosen to only provide professional development on using the tablets to staff who will access them regularly.

b.) **Fear** - some of the CCL teachers have identified that other teachers in school may be fearful of using new technologies, and this will need to be addressed as part of their professional development.

c.) **Responsibility** – teachers comment that one of the challenges for the professional development in this area is knowing who will take responsibility for delivering it. As with other technologies, there is a significant difference between knowing how the tablet works and knowing how to make best use of it within learning and teaching. Teachers need professional development that addresses the pedagogical innovation that comes with tablets and not just the technological innovation.

d.) **Scalability** – CCL teachers have commented that at a national level there is a lack of professional development generally for ICT, not just for the use of tablets.

There are suggested solutions including:

**Sharing practice** – teachers need to find opportunities to share materials formally and informally. One teacher suggested ‘show and tell’ opportunities for staff on a regular basis.

Students may provide professional development for staff.

Teachers recognise the value in internal professional development that occurs within their own school by other colleagues, but also external professional development that allows teachers the opportunity to see what is happening elsewhere.
Beyond the professional development, it is significant to note that teachers need time and space to implement new ways of working and this can create an even bigger challenge, particularly when the implementation is not part of broader school discussions.

We also have a pupil genius café whereby pupils support and help each other (and staff).

Jonny Else, UK

6. Resources

a.) **Time** – it takes time to explore different apps

b.) **Use and Application** – teachers need information about how resources are used and not just lists of Apps. The scenario process can help to focus the pedagogical use of Apps. Teachers would benefit from working together in school to review apps and to share examples of effective use.

c.) **Creating** – it is a challenge to create materials for tablets and not all teachers feel appropriately skilled to do this. This can be due to the teacher not having access to the same device as the students. It is also because the types of activities that the students are able to do are different to those in textbooks. Teachers need experience to know how to prepare a lesson for the students that structures the tasks and learning activities. This is different to creating materials for the interactive whiteboard where the teacher can control the pace of the activities; using the tablet with individual access can more readily mean that the teacher can provide different resources for different students.

d.) **Cost** – it can be a barrier to provide apps for all the devices in school.

e.) **Choice** – there are lots of apps to choose from, particularly in English and it can be difficult to decide which apps to use.

f.) **Language** - It can be a challenge to find apps that are in other languages apart from English. This is potentially a growing problem as the use of tablets spreads to the wider school where not all staff speaks fluent English and students require resources in their home language.

g.) **Funding** – this is an ongoing challenge because schools need to know now that the new students will also have access to tablets.

h.) **Infrastructure** – it is not just about the implementation of tablets, but wireless access. Schools have realised that there is a challenge as the number of tablets in school increases, the wireless has to be able to accommodate the amount of devices.
**SECTION C: ANALYSIS OF PHASE ONE LINK OBSERVATION VISITS**

In the first year of the project Link Observation Visits have been undertaken to four countries/regions: UK, Slovenia, Belgium Flanders and Austria. All of the countries were given a range of dates to select from and were able to identify whether they preferred the visit to be in phase one or phase two of the project. Almost all of the countries were offered their first choice of preferred date. Each Link Observation visit is scheduled to take place over a maximum four day period including all travel. The Ministry Partner/responsible organisation and all CCL teachers have been given an observation handbook that outlines the main aspects of an observation visit and the proformas that have been created have been made available to all teachers.

The Link Observation Visit Handbook\(^{17}\) is offered as a guide to the project and whilst the Ministry Partners are encouraged to follow this, it is understood that there may be slight variations in proceedings because of the organisations within each country and the timing of the Link Observation visit.

In this report, the feedback from the visits has been outlined by emerging themes. Where appropriate, specific examples refer to a particular country that was visited.

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Schools Visited</th>
<th>Theme of Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>3 Schools</td>
<td>Personalisation</td>
</tr>
<tr>
<td>Slovenia</td>
<td>2 Schools and National Focus Group</td>
<td>Content Creation</td>
</tr>
<tr>
<td>Belgium Flanders</td>
<td>5 schools</td>
<td>Content Creation</td>
</tr>
<tr>
<td>Austria</td>
<td>2 schools and National Focus Group</td>
<td>Collaboration</td>
</tr>
</tbody>
</table>

- All dates for the other visits are scheduled from Oct 2014 – February 2015

\(^{17}\) [http://creative.eun.org](http://creative.eun.org)
Purpose of the Observation Visit
The main purpose of the Link Observation Visit is to observe and document the classroom practice to record the ways in which the teacher uses the tablets with the students. This can then be used as a common independent insight into the classroom practice, but also to collate practice from across the nine partners to inform future thinking. In the Link Observation Handbook, the purpose of the visit is defined as follows:

- To look at classroom practice with the use of the tablets
- To observe the implementation of the Learning Stories developed from the Policy Maker scenarios
- To look at practice in at least two of the CCL classrooms (this will be depend upon the location of the schools)
- To help define exemplary practice for the project
- To consolidate leading examples
- To interview practitioners
- To share European practice at a national level
- To provide the teachers with the opportunity to share practice (opportunity for optional National Focus Group).

The aim of the Link Observation visit is to capture the “real use” of the tablets.

Each Link Observation Visit has included at least:

- two full lesson observations within each country with the CCL project teachers
- Interviews with the CCL teachers

Lesson Observation Record
A lesson observation record\(^\text{18}\) was developed for the first cycle of scenarios. This was used to capture the main details within the lesson and also to ensure consistency for the CCL project teachers and observer.

In the following two examples are the lesson descriptions written in the observation blog. This is available online\(^\text{19}\) and highlights the different aspects of the lesson using the devices.

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\(^{18}\) [http://creative.eun.org](http://creative.eun.org)

\(^{19}\) [http://creative.eun.org/observation](http://creative.eun.org/observation)
Personalisation: Penwortham Priory Academy, UK

CCL Project Teacher: Lisa Cowell

At Penwortham Priory Academy, all students have been equipped with iPads. Lisa Cowell is assistant vice principal and the CCL project teacher. Her focus with this work is on the year 7 nurture group. These students have been identified because it will allow the school to address how to look at personalisation of individual learning needs. In this lesson, the teacher is focusing on developing the “ask” section of the scenario.

The teacher introduces the students to different roles within the feudal system. Prior to the lesson, the teacher has spent considerable time preparing videos using Aurasma that bring each picture to life with a voice describing the main description of each role. Whilst this set of videos may have taken a little while to prepare, it is well worth the end result to see the students engaged in the activity. Some of the students may struggle with writing simple sentences and the teacher has used the technology to make the content of the lesson accessible and fun.

The teacher has also prepared a Keynote file for a student who has English as a second language. This will allow the student to visit each part of the classroom – listen to the Auras in the same way as the other students and then do a drag and drop exercise to label the different roles in the feudal system. This activity allows the individual student to be able to access the content at his level.

Although this school has been using iPads for some time, there is still the clear expectation that the students will do some written work in their books. In this lesson, all students are expected to write down the learning objectives and the teacher also asks them to do a short written activity. This means that the teacher the student has something to refer back to; it also means that the teacher is able to assess the written progress as well as the practical progress. The written work also quickly reveals the level that the student is working at.

The teacher gives the students an envelope containing the different roles within the feudal system and the descriptions. The students have to go around the different Auras and listen to the description and then decide which one matches the individual. “Lord, Baron, Peasant etc.”

The teacher allows the students to move around at their own pace and the students are keen to hear the voices behind each picture. This gives the teacher the opportunity to work with the students to establish how much they have understood and also to suggest how they can extract key information when listening to the video.

The teacher ends the lesson by revisiting the learning objectives and talking to the students about the key vocabulary within the lesson. It takes the students a significant amount of time during the lesson to listen to each video, but they do this independently. Aurasma appears to help the teacher bring the learning to life. The teacher also takes a photo of the students work and this is stored in the students’ file on Showbie. This is now recognised as the evidence portfolio for digital work across the school.
Collaboration: High School Gimnazija Jožeta Plečnika Ljubljana, Slovenia

CCL Project Teacher: Simona Granfol

My first stop in Slovenia was in Ljubljana to High School Gimnazija Jožeta Plečnika Ljubljana where CCL Lead teacher Simona Granfol teaches German.

In this classroom, the 25 students do not have tablets, but they do all have access to a netbook.

Simona begins the lesson with a quiz on Karl Benz that she has prepared and saved on the school VLE. As part of the CCL project, the teachers in Slovenia have been working on a scenario on collaboration. Simona has shared all the stages of the scenario with her students. Today she revisits the “Dream” part of the scenario and shows where the students’ initial ideas came from.

The teacher shows the students a video about German inventions; Aspirin, BMW, Beer, Levi Strauss and Haribo to name but a few. It is fascinating when you start to think about what has been invented in a particular country. The teacher then shows the students a second video about Karl Benz and how he developed the car and the brand. Although this is a language lesson, it is clear to see the transferable skills that the students are developing by collaborating with their peers.

The teacher then divides the students into groups with three or four students to undertake their own research and create a presentation on a German invention. This is the “Make” part of the scenario process. The students are allowed to decide the software application that they want to use for their presentation. Some of the students choose PowerPoint, or Prezi, but the teacher also introduces the idea of Glogster or a Wordle too.

Each group will also have to make a questionnaire with a set of questions so that other students can watch their presentation and then answer the questions. The teacher also asks the students to allocate roles within the group.

- 1 person is responsible for a slogan/advert
- 1 person will find the information or the invention and collate it in a google doc
- 1 student will write the quiz
- 1 student will create the presentation

The teacher has found that a standard 45 minute lesson is not enough to create something and has therefore used a double lesson for this part of the scenario. However, the students soon get to work as they know there is a lot to do. The double lesson allows the students time to think and discuss their ideas. The teacher is able to go around and support each group. One of noticeable advantages of this task is that not all the students are doing the same; the students know that they have to remain focussed on their task as the teacher will be looking at their individual outcomes. The information that is collated in the Google doc is accessible by the whole group and this will mean that the students can all see each other’s work.
The following issues have been highlighted through the Link Observation Visits, either through the observation of lessons, the interviews with the CCL teachers or from discussions within the national focus groups. These have been grouped under the emerging themes of technology, the scenario process, teaching and learning and professional development. These will be revisited further during the final report.

1. TECHNOLOGY

Varied levels of Access and Ownership
Across the CCL project, the students have varied levels of access and ownership of their tablets. Some students own their own tablet, either through a purchase made by the parents in agreement within the school or of their own accord. The maximum time that tablets have been in school is three years. At Cramlington Learning Village, UK, the students have access to their own devices throughout the school day and also take them home. This means that they can continue to work on ideas introduced in lesson time. However, in some CCL project schools some students have only received access to tablets because the school is involved with the Creative Classrooms Lab Project; in these cases, most students are not allowed to take the tablets home. Some devices are accessed by more than one student, and therefore the device is only accessible within the lesson time and for a defined period. In these cases, this is only for one or two lessons per week. This is an important consideration when schools are looking to implement tablets for the first time, because the students will use the device differently depending upon the types of access available. For example, is the student able to install applications, does the student have somewhere to store materials and can access them beyond the lesson time? Is the student able to continue learning beyond the lesson time using the tablet? Undoubtedly, schools need to consider this as part of their implementation of tablets. In Belgium Flanders, one teacher does not have access to tablets for students; however there are 1:1 computers in school. During the observation visit, it was agreed by the Ministry Partner to ensure that the school would have tablets in place by the beginning of the second cycle of scenarios.

Teachers are using several different kinds of tablets including iPads, Samsung 7” Galaxy Tab, Samsung 10” within Samsung School solution, Prestigio 7” tablets, Acer netbooks and other brands of netbooks not specified. Within the first phase of observation visits, all of the lessons have taken place within an indoor classroom and there is little evidence of teachers using the mobility of the device to affect the learning and teaching.

Apps
During the observation visits, teachers have highlighted that it was initially challenging to determine which apps should be used within the project. CCL teachers should refine the number of apps that they are using within the Learning Story. It would help the teachers if the CCL lead teachers could suggest apps that are appropriate for certain scenarios. Across the project teachers have realised the benefit of refining the number of apps that are used by staff and students. This does not mean that the staff or students cannot use a wider range of apps if they chose to, it simply means that staff can be reassured that training will be available for an identified number of apps and students will be aware of the list known and used by staff. It means that where the devices belong to the school, students will need to ask if they require access to additional apps. This encourages consistency between staff and ensures that the teachers have considered the most appropriate apps to use as part of the scenario implementation. Some schools have also expressed a concern at the cost of apps and have therefore chosen to install only free apps.
**Learning Platforms**

A further challenge students and teachers face is the lack of consistency in learning platforms in schools. Some schools do not have a standard learning platform implementation across the school and therefore students are readily expected to use several different learning platforms. Access to a consistent learning platform may be helpful to schools implementing tablets because there is a single place for lesson content to be made available. In Slovenia, the CCL lead teacher says the schools are offered support and encouraged to get the teacher to put their content on the Virtual Learning Environment (VLE). During the lesson observation, the teacher is able to demonstrate how materials used in other phases of the scenario are readily available for the student to access to support their continued learning.

**Specific Testing**

Some schools within the project have been provided with access to specific equipment or licenses by Associate Partners within the project e.g. Samsung School/ NEC DisplayNote. In one of the observations in Belgium Flanders, the teacher had received a display screen from NEC and a license key for DisplayNote. At the time of the observation, the teacher was beginning to explore the potential of the hardware and software. In a science lesson, the teacher took photos of the students during an experiment and was able to send these to the students immediately. The teacher annotated on the photograph and encouraged the students to add in their own additional comments. The photograph was saved on Dropbox and this meant that the students could add this into their own work. In one of the CCL classrooms in Austria, the teacher had been equipped with the Samsung Smart School Solution. This enabled the teacher to distribute different activities to individual students in the class. The teacher was able to undertake formative assessment with short quizzes and provide instant feedback to the students.

This project is focused on the use of tablets in 45 classrooms. However, some of the observations show that decisions need to be made at school level about the implementation, e.g. influence the choice of management system, VLE Impact upon numbers of staff involved and training required. Wireless networks have been upgraded by schools, particularly where the technology has been implemented for more than two years. Schools have not necessarily thought about the strategy for the implementation of 1:1 devices because they are too dependent on funding. CCL schools should begin to identify the main challenges that will affect them if there is a growth in the access to 1:1 technologies in school.

**2. Scenario Process**

- Twelve formal classroom lesson observations with CCL project teachers and additional lesson observations from other willing teachers in CCL schools.
- Only four teachers from the twelve observed have formally implemented each stage of the learning scenario and communicated the process to their students. In addition, one teacher has followed most aspects of the scenario. Three teachers have followed the theme of the scenario, but not gone through the sections of the learning story.
- Four other teachers had not implemented any aspect of the learning scenario, but are using tablets or net books within their lessons.

During the interviews, a CCL teacher in Slovenia highlighted how implementing the scenario had enabled the teacher to introduce the students to more collaborative work. In a mathematics lesson on exponential growth,
the teacher trained six students to use a new app “Algeo” within the lesson. It was then their responsibility to show the other students how to use this.

At a national level, Slovenia has identified some additional teachers in each school who can be awarded a certificate which is recognised for career promotion. The creation of a team has helped with promoting the work of the CCL project across the school. One of the benefits of implementing the Learning Story identified by the CCL lead teacher in Slovenia is that it can encourage more staff to make regular use of technology. In turn, this gives the students cohesion within their work in school.

During the visits, it became apparent that within the scenarios there had been various interpretations of project themes. “Collaboration” had been loosely defined by some as students working side by side, rather than working together to produce a single output. This emphasises the need for definition and clarity within the second cycle of scenarios and to understand how the teachers can address the overlap between the scenarios.

In Slovenia, the CCL lead teacher says, “the relationship with the teacher and student changes. The teacher now tries to understand their learning strategies and habits, rather than just delivering the content and subject knowledge.”

In the UK, the CCL lead teacher highlighted that one of the challenges is that each phase of the Learning Story is not necessarily one lesson and it is necessary to think this through to ensure that the timing is appropriate to the student timetable.

During the first phase of observations, teachers felt that they needed to continue to work on the same theme for the second cycle of scenarios. Some teachers also felt that the scenarios needed to be organised differently. “Ask the expert needs to be earlier, because by the time the students get around to this it is too late for the rest of the scenario.” (UK teacher)

There is little evidence from teachers during the Link Observation Visits that they have used the checklists produced by the University of Minho, and some teachers did not even know that they existed. Those teachers who have referred to them need something more than what is available, particularly when trying to work with teachers in their school who are less confident. For example, in Slovenia, the lead teacher said that the teachers would benefit from more concrete examples of lesson activities.

3. Teaching and Learning

It is important that teachers consider within this project how far the school is trying to address either 1:1 technologies or 1:1 learning, the response will undoubtedly be different for the various partners and in fact may be different for some schools in the same country. After the first year of the project, some of the teachers who are new to using tablet devices are more readily concerned with ensuring that each student has access to a device. However, there needs to be further consideration to how the device can provide an opportunity to give students access to individual digital learning materials.

Curriculum
In Austria, one school demonstrated an interest in exploring the possibility of using augmented reality within their digital content. The observations have highlighted that some of the teachers feel “constrained” by the curriculum and the continued pressures of everyday school life; this can mean that it is challenging to implement
new scenarios. Ministry Partners and responsible organisations will need to be aware of this and explore opportunities at a national level to trial innovative and new ideas together.

In Penwortham Priory Academy, UK, the CCL teacher highlighted how the use of tablets had encouraged transparency across the curriculum. This is because the school has introduced the use of “Showbie” which allows the student to build a digital portfolio to evidence the work that they have been doing on the tablet.

This also means that teachers in other departments can have an overview of the work being done by the students in different subjects.

There have been several discussions around how can we encourage independent learning, and in a similar way, there are some teachers who want their students to be more self-organising and to take more decisions. This perhaps suggests there are opportunities to consider project management apps for students.

At present, within the observations, there are teachers who are directing the content and the workflow within the lesson, for example, go to “xx” app, take 2 photos, use “xx” search engine, find an image, make a “xx” presentation directing and instructing the students to produce an output. Ultimately, this does not lead to creativity as all students are guided to produce something similar. We now need to explore further ways to encourage the students to make their own decisions about the outputs that they produce.

During the observation visits, project based learning has been raised as an option to allow teachers to engage other colleagues in school within their work. However, given the amount of time it will take to coordinate colleagues in schools, there needs to be consideration to whether or not the schools are ready. In the second year of the project, it may be appropriate for some of the CCL schools to explore project days and deliver the scenario over a number of defined days.

Length of lesson times
Whilst lessons are often 50 minutes in secondary classrooms, this can create a challenge when using tablets. Where lessons are 90 minutes, this can give more time for student dialogue, planning and creating. Teachers and students like the longer lessons to give time for thinking. In Slovenia, the CCL lead teacher joined two lessons together to create a “double lesson” to enable the students to have more time to create their products.

Outcome v Output
The learning scenario is largely focused on a larger output e.g. a video or a presentation, this does not take into consideration the smaller outputs that may be needed to achieve the learning outcomes for the learning scenario. In the lesson observation of the UK scenario on personalisation, the teacher invites each student group to present their video whilst the other students review content. During the interview, the teacher emphasizes the importance of the smaller outputs in earlier phases of the scenario to show that the students E.g. to produce a quality video may involve lessons on producing storyboards, text analysis, research into the background context for the video, mind mapping, all of which would be outputs in their own right, this is particularly important as the teacher builds up a portfolio of evidence for the students as individual learners.

Learning Spaces
Whilst some teachers have given a lot of thought to the organisation of learning activities, there are still lots of desks laid out in rows and the teacher at the front of the classroom ‘delivering the lesson’. It is pivotal that the
technology is not just added in to a traditional environment as an extra layer; there needs to be some understanding of how the role of the teacher and student can change with access to tablet technology. In turn, this will potentially affect the layout of the traditional classroom. In Belgium Flanders, the teacher benefits from working in a large space where the students start off in a horseshoe shape, they move seats to create content at smaller tables that enable them to collaborate easily. In a lesson on content creation, the students have to prepare an instructional video using the app “Explain Everything”, by working in smaller groups the students are able to take photos and make voice recordings without interrupting other students.

**Paperless classrooms**

There is still much evidence of paper worksheets for students even though the research is being done on the tablet. Whilst it is readily understood that the student will probably work with a range of paper based and digital tools, during the observation visits, some teachers were only using the tablet device as a research tool, but recording findings on paper. Inevitably, this leads to questions about how the student is able to collate digital information and paper based information. However, it was demonstrated in one mathematics lesson in Slovenia; although the student may know how to put the right calculation into the graphical calculator on the tablet, it is still necessary for them to understand how to draw the anticipated output, in order that they can recognise when there has been an error.

**Team Teaching**

Whilst not every country or school has the luxury of additional adults within one classroom, this is something that needs to be explored further. Are there benefits to grouping two classes together to allow the teachers to share the students and support each other further? Classroom space may not allow this, but for some this might present a viable option to be considered. This was evident in Austria where a physics lesson was delivered by two teachers using a Samsung Smart School solution. The presence of two teachers allowed one teacher to demonstrate the measurement of force in newton using equipment, whilst the other teacher showed how to predict what might happen using a drawing on the Samsung large display screen at the front of the room. The teacher then distributed a question to the student screens whilst the first teacher continued with the physical experiment with half of the students. In this lesson, all of the students had to record their findings on the digital worksheet that had been sent to their device. During the interview after the lesson, the teacher expressed that having access to digital responses from the students is a great advantage. However, at present the work cannot be easily exported from within the Samsung solution.

4. **Professional Development**

During the interviews, teachers were also asked about access to continuing professional development. There are examples of CPD that have been provided within the school and there are also courses available in each country at a national level; however at present these are largely focused on introducing the devices and learning about specific apps. There are also courses offered by commercial suppliers as an introduction to a specific device.

In Slovenia, the CCL lead teacher describes how the National Education Institute delivers a workshop on the pedagogical use of tablets. This is provided free for teachers funded by the Ministry and European Social fund. During the interview with one of the other CCL teachers in Slovenia, the teacher emphasised that “the CCL project has enabled us to share the things we have learnt with the rest of the teachers in school.”
In Austria, one of the CCL teachers who is also a headteacher emphasises the importance of regular professional development for staff in school. The pedagogical institute provides 15 hours free of charge. The headteacher says that all teachers in his school must attend three mandatory sessions. However, the headteacher has calculated that over the course of the year, the average number of hours given for CPD to learn to use the iPad is in excess of 60 hours. This is because teachers know that the students have access to the technologies because their parents have bought them and they will expect to use them as part of their learning in school. Teachers want to upskill. The headteacher also provides information and training evenings for parents.

In the UK, one of the schools has introduced a five minute "Show and Tell" session every Friday morning at the staff meeting. This encourages staff to share apps that they have been using and to demonstrate examples of practice from different departments.
CONCLUSIONS FROM YEAR 1 AND RECOMMENDATIONS FOR YEAR 2

This interim report outlines the work of WP4 Observation and Documentation of Practice in year one of the Creative Classrooms Lab Project. Throughout the report there are some key aspects that have been summarised and these will inform the developments for the second cycle of scenarios and year two of the project.

The initial set of interviews was undertaken in the first four months of the project with the Ministry Partner/Responsible Organisation lead representative. The interviews show that there are considerable variations in the existing implementations of tablets at a national level across the nine project partners. There is also a clear agreement that everyone is still learning about the effective use of tablets in the classroom, and perhaps more importantly how to mainstream the practice across the whole school. This project will provide a platform for future decision making.

CCL project teachers have commented that the webinars within the project have been helpful and important for encouraging them to keep on track. As these are held regularly, it encourages the teacher to reflect on the work of the project and enables them to exchange practice with colleagues from across Europe.

The blogs, which form part of the community of practice is fully open and accessible across the internet and provides a wealth of advice. The advantage of this is that many other teachers, researchers and education professionals have benefitted from being able to read about the work being undertaken in school. The disadvantage is that this may have led to the teachers not completely revealing their own situation. However, the analysis shows that teachers have been able to set their expectations for the project and discuss the challenges that have arisen. Across the different countries there are clear commonalities and there are some issues that remain the same regardless of where the CCL teacher is located. Teachers have also suggested practical solutions and these have helped colleagues make progress by learning from each other.

The Link Observation Visits have provided a valuable insight into practice within the classrooms and in addition have given CCL teachers the opportunity to ask questions at a national level. This has helped to give a clearer picture of the learning activities that are being implemented at this stage of the project and to document the classroom practice. The five Link Observation visits for year two of the project will receive new observation proformas matched to the scenarios in the second cycle.

At a national level, CCL teachers should be seeking opportunities to share the work of the project and their examples of tablet implementation. This will enable others to learn more about the Learning Stories. Equally, CCL teachers should seek to engage their colleagues to show that it is not just about implementing the technology, but looking how the pedagogy needs to change. The observation visits have highlighted that there is a bigger role for the CCL lead teachers in an ongoing capacity to support the other teachers and to share practice further across each school.

Teachers who have fully adopted the scenario process believe that it has helped them to consider how the tablets should be implemented within learning and teaching. However, teachers have made suggestions about what could be changed between the first and second cycle. This includes using alternative phases in the scenario and moving other phases in the process, in particular, teachers have requested that the "ask" phase is earlier.

All CCL teachers should be encouraged to fully engage with the scenario process to enable them to understand the importance of analysing and changing their practice, rather than just adopting the broad theme of the
scenario. The CCL lead teachers show the benefits of keeping their students involved in the scenario process. This enables the students to understand that they are trialling new ways of learning.

During the Link Observation Visits, teachers have commented upon the length of the lesson, suggesting that the standard 50 minute lesson in Secondary school is not long enough to allow students to collaborate and produce digital outputs. In the second cycle, Ministry Partners/responsible organisations and the CCL lead teachers will work with their schools to look at alternative ways of organising the scenario cycle. At this stage, a project based approach over a number of days or longer lessons are also being considered.

Across the project, students have different levels of access to tablets and CCL teachers will need to explore how to give students increased access to the device, particularly where future scenarios suggest access beyond the lesson time or to encourage independent learning. In the second year of the project, schools should explore opportunities for students to have access to the devices beyond the lesson and at home. Students need goals, expectations targets and routines with tablets just like any other aspect of their education. Schools also need a strategy for the implementation of 1:1 devices. Teachers now need to give consideration to how the learning space may need to be adapted to allow students to make effective use of their device.

In the first cycle of scenarios, teachers have been largely concerned with ensuring the all the students have had access to a device, with an emphasis on 1:1 technologies. There is still significant opportunity for further exploration of 1:1 learning, and some CCL teachers are in a position to take a closer look at this because of the focus of the scenario and also because they have had the tablets longer, they can perhaps now focus on the individual student learning more readily.

In the second cycle, CCL project teachers will benefit from identifying a refined number of apps to work with prior to starting the scenario. This does not prevent from new apps being explored, but encourages teachers to not feel pressured to continue trialling the latest apps. Within the second pilot phase, there is still opportunity to exploit the mobile aspect of the tablet device more. This will mean that the new scenarios should present opportunities for students to learn outside the boundaries of the classroom.

Professional development is a challenge at a national level because teachers know that they need technical and pedagogical support. Commercial suppliers are delivering training, but this is largely technical and does not readily address the pedagogical implementations of tablets.

At this stage of the project, schools have already identified potentially problematic issues as the number of tablets grows: a potentially unstable wireless connection; storage and charging of devices; access for student beyond a defined period; access beyond the school day. The CCL project is focussed on one classroom in school, but there are significant areas that impact on the whole school; this is not just about the technical implementation, schools have to consider the curriculum changes, learning spaces, assessment and how digital evidence is collated. Some schools have reported that the wireless network that they have is inadequate and can be unreliable. This issue needs to be addressed at a national level by the school in partnership with the Ministry Partner/responsible organisation to understand the issues that may arise if and when the use of 1:1 technology is scaled up.

The final report will share the findings from the remaining five Link Observation Visits and the webinars for CCL project teachers. It will also document interviews from Month 22, with lead representatives from each country.
to document the main achievements of the project and to look at the recommendations and next steps for each country within the final report.

The CCL project has enabled project partners to acknowledge that innovative teaching is far more complex than simply introducing the next technology; it requires understanding of learning and the learners, but it also demands an ongoing consideration of how to build and improve the creative classroom.