



Erasmus+

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LOGGED-ON State-of-Art report - Ireland

1. Background & the National Picture

The use of ICT in the classroom as both a pedagogical tool and as a subject in its own right first became government policy in 1997 when the potential impact of ICT on teaching and learning was first addressed. By 2003, Ireland was a leading exporter of computer software and one third of all PCs sold in Europe were manufactured in Ireland. Yet, at this time Ireland ranked as only 24th out of 30 OECD countries when it came to broadband penetration.

In the early “Noughties” the Irish government established a fund to develop Ireland as a centre for world-class research excellence in ICT. The buzz-word at the time was the “knowledge-based society” and great emphasis was put on this at both government and economic levels.

In a 2002 report by the Information Society Commission, it found that Ireland lagged behind significantly in the application of ICT in education. It went on to recommend that ICT should become a core component of mainstream education. It included the priority for capital investment, establishment of broadband connectivity, provision of technical support, integration of ICT in the curriculum and introduction and expansion of ICT in teacher training. It also recognised challenges in the provision of Continual Professional Development, the demands presented by including ICT in a revised subject syllabus and the effect it would have in timetabling in schools.

Many initiatives were developed in Irish education during this time, starting in 1998 with the establishment of the National Council for Technology in Education (NCTE). Part of its brief was to implement the Schools IT 2000 initiative. Many initiatives stemmed from this, including

- The Technology Integration Initiative whose brief was to support schools in developing their ICT infrastructure;
- The Teaching Skills Initiative which recognised that there was little point in putting computers in schools unless teachers were trained in their use. This initiative was to provide teacher training in 3 distinct areas
 1. ICT skills and awareness
 2. Professional skills development in ICT, and
 3. Pedagogical skills development
- The Schools integration project which was concerned whole school development. This project investigated a range of teaching and learning topics with regard to ICT integration. 90 project schools were chosen and the projects ran between 2001 and 2004;
- The Scoilnet initiative which was primarily concerned with the promotion and use of the internet and ICT in education. It was to be the official portal for Irish education. This initiative was briefed with the development and maintenance of the NCTE website

Stemming from these initiatives, 21 ICT advisors were appointed to Education Centres (1 per centre) and their role was to provide leadership along with training and support to teachers, including on-line support, at a

regional level. As well as advising and supporting teachers, these advisors also built up a local knowledge base.

A 2001 report in the implementation of the Schools IT 2000 Initiative revealed a high level of satisfaction generally but also revealed 3 areas of concern

- The need for more teacher training;
- The need for more funding;
- The need for more support.

Also in 2001, a second policy document in education was published – “A Blueprint for the future of ICT in Irish Education”. This was a 3 year strategic plan designed to support the main initiatives contained in Schools IT 2000. Its main objectives were to

- Expand ICT capital provision;
- Increase access to and the use of Internet technologies;
- Further integrate ICT in teaching and learning
- Enhance professional development opportunities for teachers.

ICT in the curriculum

At primary level, ICT was seen primarily as a tool for facilitating teaching and learning throughout the curriculum rather than as a subject in its own right. The National Council for Curriculum and Assessment (NCCA) produced a set of guidelines to assist with this in 2004

At post primary level, “Computers” was first introduced as a course in 1980 as a module in Leaving Certificate Mathematics. This syllabus for this module was locally devised within broad parameters laid down by the then Department of Education and Science (DES) and not examined in the state exam although a certificate could be obtained for the DES if the students achieved a certain level of proficiency.

Anecdotal evidence suggests that the emphasis in this module was later to trend towards word processing and spreadsheets.

“Computers” was then introduced into the Junior Cycle in 1985 but was neither examined nor certified. Only 13% of schools took this subject on at this time, although that number was to increase later. “Computers”, since its introduction, was often seen as an independent subject and often took the place of Typing in the syllabus. More recently, however, a more cross-curricular approach has been applied and its use has been integrated into subjects such as Junior Certificate Science and Leaving Certificate Geography. Transition Year and Leaving Certificate Vocational programmes, which both have a significant amount of portfolio work and self-directed learning, have ICT as a core part of their curricular structure.

Neither course, Junior Cert nor Leaving Cert, were revised by 2008. However, the Leaving Certificate Applied (LCA) course saw 2 modules / courses added to it. One was a compulsory course called Introduction to ICT

In the social partnership agreement of 2006 (Towards 2016) it was stated clearly that “all children will have the opportunity to be ICT literate by completion of 2nd level”. However it also stated that significant investment would be required with much of that to come from state funds and some from private means. In 2006, expenditure on ICT in Ireland ranked 9th out of 15 EU countries per capita.

At this time the pedagogical rationale concerned with the use of ICT in teaching and learning focused on ICT as being a new tool for teachers to use in their classrooms and the potential it gave teachers to develop new teaching methods.

During the “Celtic Tiger” economic boom in the mid-noughties, the Irish Government invested a large amount of money in ICT in schools. Over 3 budgets, there was significant capital funding made available for investment in hardware and software with a per-capita investment in each individual school. However, there were certain limitations as to how the money could actually be spent and a hierarchy of spend items that school management had to adhere to. For instance, the first spending priority was to have a functioning modern computer in each individual classroom. The next priority was to put a data projector in each classroom and link it to the PC. There followed a list of priorities that schools had to adhere to in order to comply with the spending regulations. While this capital investment was certainly very welcome, it didn’t continue beyond the 3 years as Ireland became engulfed in an economic crisis and budgetary cutbacks began to hit hard in all sectors of the economy, and particularly in education.

The other difficulties ensuing from the capital investment included the lack of training for teachers in the use of ICT as a pedagogical tool. This led to a significant decrease in the speed at which ICT development within the curriculum and the classroom setting occurred. Another aspect to this lack of training revolved around what became known as the race for the “tablet”. Many second level schools tried to become the first school in the area to introduce tablets, be they iPads or similar devices. In many cases, they were only used as a replacement for textbooks (with the texts being uploaded). Initially it was thought that even this was a major step forward but, while some text providers supplied the licences for the Junior Cycle at a reduced or even no-cost rate, the cost of the licence for Senior Cycle proved prohibitive forcing some schools to revert to the textbook.

2. The Regional Picture (LCETB)

2013 saw the amalgamation of Co. Clare Vocational Education Committee (VEC) with Co. Limerick VEC and City of Limerick VEC to form Limerick and Clare Education and Training Board (LCETB). As Ennis Community College was a Co. Clare VEC school, it now comes under the new LCETB patronage (There are 18 secondary schools in the new LCETB). Prior to this each of the VECs had their own policies in relation to ICT in their schools, which were quite different in many areas. As some VECs provided more funding than others, schools within the different VEC schemes are at very different levels of ICT development, both from the point of view of infrastructure and training. Attitude of management to ICT in each of the schools has also played a role in the development of ICT in the region.

3. The Local Picture (Ennis, Co. Clare)

There are 4 secondary schools in Ennis – St. Flannan’s College, a co-educational secondary school with 1250 students, Rice College, a co-educational secondary school with 850 students, Coláiste Muire, a second level school for girls with 750 students and Ennis Community College, a co-educational vocational school which has 270 students taught through the medium of English, 135 students taught through the medium of Irish and 105 full time post Leaving Certificate adult learners (giving a total of about 510).

In approximately 2011, the race began to become the first school in the town to introduce “tablets”. Coláiste Muire introduced tablets in 2012 to much fanfare. However, the cost to each individual at approximately €700 student was, in many instances, prohibitive as they could not afford it. This was locally seen as more a ploy to be able to “choose” the more financially affluent students and restrict access to the less privileged students, including the Romas and Irish Travellers.

4. Ennis Community College

Ennis Community College has, for many years, been to the forefront of technological advancement and College management has supported this through policy formation and, in as much as was possible, through financial investment. There have been many initiatives of the past few years and there is general buy-in from staff. Obviously, as in any institution, there is a small level of resistance to change, but this is very much in the minority.

Currently, there are 48 teachers on the staff. When the school recently introduced VSware, over 95% of teachers embraced it immediately and currently 100% of staff are using it on a daily basis.

When the discussion on the introduction of tablets began in Ennis, management and key staff met on several occasions to discuss and weigh up the situation. As many schools seemed to be introducing the technology purely as a replacement for the textbooks, and as there was limited training available for teachers in their usage, it was decided that we would do things differently. We would begin by deciding what our requirements were, we would then train staff accordingly with a view to getting them comfortable with the technology available and we would then decide what devices would best fit our requirements.

Below is a list of the initiatives and projects currently on-going at the school:

Technology available to all staff

Hardware: 6 computer rooms x 146 pc's

47 Teacher pcs's & 10 office staff pc's

15 laptops (SEN, MGLD & RESOURCE)

5 Interactive whiteboards

47 Data Projectors – (5 Interactive projectors)

3 A4 Visualisers & 2 A3 Visualisers

Software: Windows 7 & Microsoft 2010 all machines (plus various applications)

School Website: – Word Press www.enniscommunitycollege.com

Staff Email: MS Exchange accounts utilising Outlook Web App

VSware: is a cloud and mobile based school administration platform which handles all core school data including attendance records, assessment results, positive/negative behaviour and much more.

(Since November 2013 VSware has signed up 400 secondary schools. This represents over 50% of the entire Irish market and this will grow to 75% market share by 2016 due to a recently awarded national tender to supply VSware to all Education & Training Board secondary schools and Further Education colleges.)

T4 Rooms (4 Technology Subjects)

- 24 Pc's
- Solidworks – CAD
- Circuit Wizard – Circuit and circuit board design and simulations
- Wordpress website - a living breathing and evolving website, not a brochure!
 - Continuous updating and adding of new material for students
 - Embedded Quizzes (Highly customizable & personalised for the user and creator). Results are immediately updated and easily viewed. Students can see the average result of others. We use the **Wp-Pro-Quiz Plugin**

- Live Surveys – Survey parents/students and view results on our server.
- Set Courses on our website uses **Namaste Plugin**.
 - Create courses for students that they have to complete at the teachers will, i.e. after another course has been completed etc.
 - Allows for student enrolment.
 - Award certificates/badges after course completion
 - Highly Customizable.
- Our own Social media Platform – a controlled and private social network on our own server. Students can create profiles, comment etc. – Uses **Buddypress Plugin**.
- Live forums - for students to interact, comment on videos/homework etc – Uses **BBPress Plugin**
- We're currently Building a LMS wordpress site that Supports Tin can/api See LMS below
 - Track student progress - We will be able to Track students on our own LMS Server to see who watched the videos and for how long.
 - Students will be able to upload and download files)

Technology room

CNC (Computer Numerical Control) machines:

- Denford Compact 1000pro
- Roland Camm- 1 Servo

Software

- 2D design V2
- Quickcam 2D design
- Quickcam 4D
- Quickcam Pro
- VR milling V5
- Circuit Wizard – design of circuits and circuit boards

PLC Rooms (For students studying at Higher Education)

3 x Computer rooms

Accountancy Software:

- Sage & Micropay

Flipped Classroom Implementation:

- Core team set up
- Training in progress

Software/hardware each member of core team has in their classroom:

- Smooth Draw – Drawing software to achieve 'Khan Academy style' videos
- Camtasia Studio – For Video Editing
- Snagit – For Screen casting and screen Capture
- Microphone/Headset – audio recording
- Smartphone – Video Recording
- Intiuitus Creative Pen & Touch Tablet & wireless kit– writing/drawing freehand digital lessons

Video creation and editing (plus web conferencing)

How we do it:

Method 1:

Khan Academy style – To achieve our very own Khan Academy Style video;

- We Use Smooth draw software with a Wacom tablet.
- We use Snagit software for screen casting
- We use Camtasia Studio for video editing & to Embed quizzes on Camtasia Studio (and track on our LMS Scorm compliant Server.

ECC lesson Example: <https://www.youtube.com/watch?v=qvQuF7xi-7w>

Method 2:

Complete **detailed scaled Drawings** or hand drawn Sketches from start to finish are recorded as a teaching aid in T4 Classrooms. This is achieved using a Visualizer while screen casting.

ECC lesson Example <https://www.youtube.com/watch?v=QTi2T28NN0U>

Method 3:

Live Video is Recorded with the teachers smartphone and edited on Camtasia. Option of borrowing a Video recorder from media room needs to be discussed?

ECC lesson Example: <https://www.youtube.com/watch?v=z6Ca921MFfc>

In Process - Media Room

Purpose

The purpose of the media room is:

1. **To familiarise staff with available technology** – The media room will provide a quiet area for staff training and familiarisation of all software and hardware available in the school.
2. **Recording Studio** - To have a place where teachers can record in a quiet room with all the necessary equipment and the latest software in place. Students can still record classes from their own classrooms but in the media room they can edit these videos and create higher quality output with improved audio etc.
3. **Creative Department**- give faculty the opportunity to work with graphics and visuals to enhance teaching methods such as flipped classroom teaching aids. Most audio, visual and graphic needs will be addressed utilising the available Adobe Creative Suite of applications in the media room.
4. **Access to software** - A place for teachers & students to access all the latest cutting edge software for animation, drawing, photography, web design etc.
5. **Access to hardware** – Access to all necessary hardware required to record or make videos.

Cutting edge Software:

- Camtasia Studio (Video Editing and screencasting)
- Snagit (screencasting), **CASE STUDY 3**
- Adobe Creative suite includes; Photoshop, light room, Flash (animation), Premiere Pro (Video), InDesign (page design and layout), After Effects (motion graphics and visual effects), Illustrator (art), Audition (Audio), Dreamweaver (web design), Muse (web building app)
- FadeIn – Script writing

Hardware:

- IMac & High Spec Windows Pc – to be bought
- Visualiser – Samsung – to be bought

- Intuous Creative Pen & Touch Tablet
- Yeti Microphone for Professional recording
- JVC stereo headphones
- Knox audio Pop Filter
- Option good quality Camera?
- Option Video Camera?
- Cintiq 27QHD + GRATIS Ergo Stand 3D Animation, Drawing & Painting, Image Editing

QR Codes

What are they?

A QR code is in effect a barcode that can be scanned using your phones camera. We use them in ECC to open URL's with links to videos, quizzes etc.

How they improve learning for students – AFL

These are used as AFL (Assessment for learning) tool where students can self-assess their own work. QR Codes will be printed and placed around the classroom. Students can check the correct solution to a question/project against their own. For example if students are wondering how to assemble the pieces for their project they can scan a QR code in the classroom and watch a short video of how it's done. (This is a Work In Progress)



ramonamccarthy.com/qrcard

Example QR code being used in ECC

Scan the QR Code here by downloading the QR Reader App on either the App Store or Google Play, to see a video of a 1st year ECC student completing a technical drawing.

How it works:

1. Students can see a completed exam question on the classroom wall with a printout of the QR code shown here placed on the same page.
2. They can scan this QR code with their app and this will immediately take them to a video link of a student completing the drawing.
3. They can watch the video to see how the drawing was done from start to finish

Plan:

1. Have QR cards around the school building with links to videos showing student work, promotion of school, explanations etc

Plickers – CASE STUDY 2

(Plickers has been demonstrated to staff and is currently being used by 2-3 teachers)

What is it?

- a) Teachers can ask a quiz with up to 4 multiple choice answers a, b, c or d.
- b) The question (media allowed) is displayed on the white board.
- c) The student holds up a QR card with the correct answer positioned at the top.
- d) The teacher can quickly scan each card with an app on her phone.
- e) A graph of all the answers is immediately displayed on the whiteboard.
- f) Teacher has the option of displaying/hiding individual student answers

How they are used to benefit teaching and learning

- Quite often in class it's the same students that answer all the questions. Teachers can't possibly ask every single student what they think the correct answer should be. But with Plickers the teacher can see every single students answer in just a few moments.
- **Start of class:** - 3 Question quiz. Quick way to assess did students watch the flipped classroom video – determine class groupings for lesson
- **During class:** - to gauge if students are on track with the lesson and to reinforce knowledge & recap the learning.
- **End of class:** AFL - Plickers can be used as a self-assessment tool. Plickers can be used instead of exit cards. Ask a question and quickly gauge if students understood the lesson.
- Motivates student when privacy is turned off as they can compare their answers with others in the class and they can see where they are against the class curve.
- Exploratory learning typical in a flipped classroom is where students are given the opportunity to generate their own questions. Students can generate these questions on plickers to deepen their understanding & mastery of the topic being covered.