DÁIL ÉIREANN

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AN COMHCHOISTE UM OIDEACHAS AGUS COIMIRCE SHÓISIALACH

JOINT COMMITTEE ON EDUCATION AND SOCIAL PROTECTION

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Dé Céadaoin, 13 Feabhra 2013

Wednesday, 13 February 2013

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The Joint Committee met at 1 p.m.

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MEMBERS PRESENT:

Deputy James Bannon,	Senator Fidelma Healy Eames,
Deputy Ray Butler,	Senator Marie Moloney,
Deputy Jim Daly,	Senator Averil Power,
Deputy Charlie McConalogue,	Senator Mary Moran.
Deputy Aodhán Ó Ríordáin,	
Deputy Jonathan O'Brien,	
Deputy Brendan Ryan,	

DEPUTY JOANNA TUFFY IN THE CHAIR.

The joint committee went into private session at 1.05 p.m. and resumed in public session at 1.15 p.m.

Digital Literacy: Discussion

Chairman: Our agenda for 2013 is heavily influenced by Ireland's Presidency of the European Council, and the topic of digital literacy is expected to feature strongly in our Presidency of the European Union. The Minister for Jobs, Enterprise and Innovation expects to chair a major conference on digital literacy and there is a role in education in preparing Ireland's workforce for the digital age and the digital marketplace. In that regard, approximately six meetings of committee chairs from each of the Parliaments will be held over the course of the Presidency. The issue to be examined in the June meeting is digital literacy, which involves this Joint Committee on Education and Social Protection, the Joint Committee on Transport and Communications, and the committee on communications and energy. The digital agenda crosses the boundaries of those three Departments and one of the things the Presidency will do is have those meetings of committee chairs from all the Parliaments in the EU and also the European Parliament. This meeting is a precursor to the meeting in June to allow us examine the issue as a committee.

I welcome the officials from the Department of Education and Skills who will brief us on the role of the Department in this area. In that regard, we will welcome at a future meeting representatives of Hibernia College, which meeting was requested by Senator Power, and *schoolbag. ie* to hear the views of practitioners in the discipline. Digital literacy is extremely important in terms of education. We talk about numeracy and literacy in general but digital literacy is part of all of that.

With us today from the Department of Education and Skills are Eddie Ward, Pádraig Mac Fhlannchadha and Anne O'Mahony; Jude Cosgrave from the Educational Research Centre; and Sean Gallagher, Professional Development Service for Teachers, PDST, Technology in Education.

I wish to draw the attention of witnesses to the fact that, by virtue of section 17(2)(*l*) of the Defamation Act 2009, they are protected by absolute privilege in respect of the evidence they are to give to the committee. If they are directed by the committee to cease giving evidence on a particular matter and they continue to so do, they are entitled thereafter only to qualified privilege in respect of their evidence. They are directed that only evidence connected with the subject matter of these proceedings is to be given and asked to respect the parliamentary practice to the effect that, where possible, they should not criticise or make charges against a person, persons or entity by name or in such a way as to make him, her or it identifiable. I advise the witnesses that their opening statements will be published on the committee's website after the meeting.

Members are reminded of the long-standing ruling of the Chair to the effect that they should not comment on, criticise or make charges against a person outside the Houses. I invite Mr. Eddie Ward to make his opening remarks.

Mr. Eddie Ward: I thank the committee for the opportunity to talk today about digital literacy. I head the ICT policy unit in the Department, which deals with teaching in schools. It works closely with the teacher education section of the Department. I am accompanied by Mr.

Pádraig Mac Fhlannchadha, an assistant chief inspector in the Department. He is responsible for the literacy and numeracy strategy and junior cycle reform. I am also accompanied by Ms Anne O'Mahony, who works in the qualifications, curriculum and assessment section of the Department, Dr. Jude Cosgrave, a researcher in the Education Research Centre who looks after the Irish input into the OECD's Programme for International Student Assessment, PISA, and Mr. Seán Gallagher, who works in Professional Development Service for Teachers, PDST. Mr. Gallagher is responsible for continuous professional development in the use of ICT for teaching and learning in schools. The PDST now includes the former National Centre for Technology and Education.

Digital technologies now form part of everyday life and are used in the way we work, rest and play. They are also increasingly part of the way we approach teaching and learning. Education leaders, teachers and students are actively exploring the many opportunities and challenges that such technologies present.

Traditionally, we have thought about literacy as comprising the skills of reading and writing but today our understanding of it encompasses much more. It includes the capacity to read, understand and critically appreciate various forms of communication, including spoken language, printed text, broadcast media and digital media. Using digital technologies requires new skills in the management, presentation, analysis and interpretation of data and information. It is a key concern of the Government and Department that young people have mastery of the skills necessary to function in a society that is increasingly technology driven.

The focus on digital literacy in the Department is evident in a number of key strategies, the first being the national literacy and numeracy strategy. The second is recently published junior cycle reform framework. There is an ongoing programme for supporting ICT in schools.

The literacy and numeracy strategy has clear actions and targets aimed at improving literacy outcomes among primary and post-primary students. The actions focus on supporting parents and communities in promoting children's literacy and numeracy, the development of teacher skills, improving the curriculum and learning experience at both primary and post-primary levels, and improving the use of assessment and evaluation. The strategy covers the full continuum of education, that is, from initial teacher education and induction to continuous professional development. The aim is to ensure that all teachers in the system have a better understanding of the current strategies and methodologies in digital literacy and how ICT can best be used to better support and enrich learning in schools.

The recently published framework for the new junior cycle was launched in October and it will be implemented on a phased basis, commencing next year.

The learning outcomes we want students to achieve in post-primary school are described in 24 statements of learning. Digital literacy is referenced in three of those statements. The new junior cycle also provides for the teaching of short courses within schools. Schools have discretion in the selection of the short courses under the guidance of the templates issued by the National Council for Curriculum and Assessment. The council is preparing a course in digital literacy which will cover topics such as information literacy, personal safety online, digital storytelling and online privacy. Under the ICT programme for schools, the Department has made significant investments over recent years to promote the use of ICT in teaching and learning. These have included significant grants. Over €90 million has been paid to schools for the purchase of equipment for classrooms. Each year, some 12,000 continuous professional development spaces are made available for teachers. Increasingly, quality broadband for schools is

being rolled out. By the end of 2014, all post-primary schools will have access to broadband of 100 MB, which represents a top-quality connection in today's environment.

There has been significant investment in digital content. There is a dedicated website, Scoilnet, that provides access to quality-proofed teaching and learning resources. These are available to both teachers and students.

Early indications from the rolling out of broadband of 100 MB is that there is a high take-up and much interest among schools. This is very positive from the Department's perspective.

The Department monitors progress in digital literacy through the work of the inspector-ate, special surveys on the use of ICT in schools and international studies such as the OECD's PISA and Eurydice. There is evidence that the increased investment in recent years has shown positive results in terms of school equipment, competence levels of teachers and the learning outcomes of students. For example, Irish students' ability to read computer-based texts such as e-mails and websites is significantly above the average among 19 OECD countries according to one of the most recent OECD PISA reports. Last year's Eurydice report shows that the student-computer ratio in Ireland compares favourably with that in Europe.

With a view to looking to the future, we are working on a new ICT plan for schools. The plan will take account of the progress we have made to date. The census exercise will be under way in that regard shortly. From it, we will have some insight into what is happening in schools and their needs. We will also take account of the emergence of new technologies and devices. The plan will have regard to international standards and best practice. We hope to have this strategy completed by the end of the year.

My colleagues and I will be happy to answer questions of members.

Deputy Charlie McConalogue: I join the Chairman in welcoming the officials from the Department of Education and Skills to discuss this issue. I thank Mr. Ward for his opening statement.

The digital environment has changed massively over the past three or four years, even in the past two years. I see children of two and three who are very *au fait* with iPads. If the way in which we do business is not up to speed and too traditional when these children enter the education system, we will have severe problems trying to keep their attention because they will be on a different plain outside the classroom than inside it.

Mr. Ward stated a new ICT plan for schools is being worked on. He hopes to have it finished by the end of the year. Have there been plans in this regard in recent years? Mr. Ward stated €90 million is being invested in IT. What will it achieve? What is it being spent on and what is the level of technology in schools in different parts of the country? At second level, there will be broadband of 100 MB by the end of 2014. What is the position in the primary school network? What are the current statistics on the level of connectivity in primary schools? What is it hoped to achieve at the upcoming conference on digital literacy? Where are we at from moving from book and blackboard to a tablet and new technologies learning system? Developments in this area move very quickly and it is important the education system keeps pace with it. What challenges are there to ensure our education system is not out of touch with new technologies? What type of investment would be necessary to achieve this? There have been some pilot projects, particularly in secondary schools, in introducing tablet technology. Is there a plan to roll these out and introduce schemes similar to the book rental schemes which would

enable schools to make the switchover?

Deputy Jonathan O'Brien: A figure of €19 million was mentioned. With the cuts across all Departments and with more pressure on parents to pay for the running of schools, I do not want to see schools in disadvantaged areas put at a disadvantage when it comes to investing in technology. What steps are being taken by the Department to ensure there is equality across all schools?

It was stated the National Council for Curriculum and Assessment is preparing short courses. If schools do not have the technology resources, they will not be able to run those courses. The OECD figures are interesting. Is there a breakdown on a State-wide basis on the varying demographics? Is there a higher level of digital learning and understanding among particular areas? What about the demand it will make on teachers having to upskill? How will the cuts to grants for courses and allowances affect teachers being incentivised to upskill continually?

Senator Fidelma Healy Eames: Our future is digital. At a presentation recently by the European Commissioner for the Digital Agenda, Neelie Kroes, she pointed out that by 2015 Europe will have 700,000 IT posts that cannot be filled because the skills are not available. I am shocked that we are doing as well as eighth out of 19th in the OECD league table of ratios of computers to classrooms because I believed we were a long way behind.

We know students are not applying for IT courses at third level because they do not have the confidence in their own abilities. What is new at second level that will encourage take-up of third level courses? I have a boy in leaving certificate and a daughter in first year but I have not seen anything new in this respect in their curriculum. Nationally, we are relying on CoderDojo, a voluntary movement, to teach the languages of Scratch, HTML and others. These need to be taught in our schools. Will they be part of the programme described by Mr. Ward? What will be the outcomes and will the Department be measuring it against the take-up of third level IT courses? IT companies in Ireland are looking for the Government to issue technology work visas because our young people are not coming out with the right qualifications to take up the posts. We know we are failing in this regard.

If we want to show children and parents about this switchover, then homework should be put on an Internet platform. Are there any plans in that regard? The future is digital and I am glad it has been recognised as a literacy. We really need to make serious progress here.

Mr. Eddie Ward: We are operating to a plan which has been out there for several years, the Smart Schools, Smart Economy report published in 2009. That set out the roadmap of investment for schools. That scheme would have been completed towards the end of 2011. As part of that strategy, which expires at end of this year, there was significant investment to be made in CPD, continuing professional development, and the upskilling of teachers. There was also an emphasis on digital content. In other words, resources would be made available which would be suitable for use at primary and post-primary level.

There has been a sea-change in the technologies and devices available and young people's competence and comfort in using devices. It is a challenge for the schools to keep up with that. Part of our work, in looking into the future and the evidence gathering for the upcoming strategy, is that we see what is happening in schools, what are the needs of teachers and how best to equip them in the future, bearing in mind that, as has been remarked, resources pose a challenge.

A significant amount of investment has been put in place. A key challenge around that is how that technology is being used. Major investment has been made in broadband and the quality of connections, in particular, the 100 Mb connection. Significantly, that will equip schools to access open education resources, allow for peer learning and allow for sharing of materials between schools. We will try to map what is going on at school level but the early evidence, from the first schools to have access to it, is that there is significant engagement happening. At this stage, I might hand over to my colleagues, Pádraig Mac Fhlannchadha and Ms Anne O'Mahony.

Ms Anne O'Mahony: Senator Healy Eames asked about what was happening at second level. I appreciate, her children being in first year and sixth year, it is perhaps not the ideal moment in the sense that, as she will be aware, junior cycle reform is coming down the tracks.

In the context of today's discussion, I want to highlight that junior cycle reform will be introduced on a phased basis from 2014 but from September 2014 the NCCA's short courses in coding and programming will be available to schools to offer to their first year students. It is a matter for schools to look at their own resources and what they have available before they offer those. I note what Deputy O'Brien stated earlier, but those will be available from September 2014.

Mr. Pádraig Mac Fhlannchadha: All planned curriculum developments will reflect the need to promote the use of ICT in teaching and learning. For example, a new integrated language curriculum is being prepared. It is expected that the section of that curriculum that relates to infants up to second class will be available for use in schools from 2014. That will also include a focus on the development of digital literacy skills.

As Ms O'Mahony pointed out, junior cycle reform will also reflect the need to ensure that there is development of desired ICT skills. Each of the key skills that underpins all the subject areas for the new junior cycle has a connection with digital literacy, for example, using digital technology to communicate and working with others through digital technology. In addition to the short course on coding and programming referred to by Ms O'Mahony, there will also be a short course in the area of digital literacy which will include topics such as information literacy, personal safety online, digital story telling and online privacy. This will continue.

The sciences at senior cycle are being reviewed. The provision of those syllabi at senior cycle will also take account of the need to provide for the development of ICT skills and the inclusion of ICT in teaching and learning.

Mr. Seán Gallagher: I will address a few issues on CPD, which is the focus of the Professional Development Service for Teachers, PDST.

First, on Deputy McConalogues's opening remarks on engaging students on the prevalence of new devices, our focus is still on active learning methods for teachers. The key messages we are getting across is that we want teachers to engage in active learning methods. It is true there is a range of new devices but we must be careful not to be sucked in to the idea of "edutainment". We cannot lose sight of the key message that teachers are trying to get across. Often the device can be more a distraction, not a tool to assist teaching and learning. As a teaching profession, we merely need to be clear on that from the outset.

PDST technology in education will continue to produce good practice videos which show that the art of teaching is not lost. These are accessible for all teachers and parents through our

website. In terms of learning outcomes, every teacher needs to be clear on what he or she wants to teach. Then the device is the tool that can be used afterwards, be it for the teacher to explain what he or she is teaching or for the student to engage with the learning activity.

The roll-out of broadband was the next query that I can answer. In 2006, 47% of schools were on satellite broadband whereas now that figure has been reduced to 5.5%. On the roll-out of the 100 Mb programme to post-primary schools, 273 schools currently have a 100 Mb connection with a remaining seven to be connected from last year's plan. Some 216 will come on stream this year and the remaining post-primary schools will come on stream in 2014.

There is no plan for 100 Mb connection for primary schools at present. That was the question asked.

In terms of fully utilising tablet technologies, we must be careful. Tablet technologies are the new technology, but very interactive websites, blogs, etc., have been on the scene for a long time and in many cases, they are still as valid a teaching and learning tool as the tablet devices. It is a merely a matter of having a measured approach. The important point is that there would be leadership at school level in the deployment of e-learning in a school. With the amalgamation of the various services that now make up the Professional Development Service for Teachers - there was a stand-alone service, Leadership Development for Schools, and there was a stand-alone National Centre for Technology in Education, NCTE - the work that was developed by the former NCTE on e-learning planning is now a module on courses that are delivered to every principal who is part of the leadership development service. Even in the early days, we can see good integration of services.

On CPD, Deputy O'Brien made the point about providing incentives to upskill. All ICT courses are provided out of hours for teachers to attend. They attend in their own time. The exception are summer courses for primary teachers where there is an incentive in that there are extra personal vocational, EPV, days for teachers to attend those. Our challenge, in the Professional Development Service for Teachers, is to have elements of ICT integration in all our professional development. The course might address literacy or numeracy, but there should be elements of effective use of ICT in that despite the title being literacy or numeracy.

On Scratch, there is a course that has been rolled out by the former NCTE on Scratch for primary teachers where the focus is on the use of Scratch for literacy and numeracy development. Rather than the focus being on the programming language itself, the focus is on how Scratch can be used to teach mathematical skills, such as shape and space, by being able to programme Sprite in order to follow certain shapes and spaces, and that gives one a better understanding of lines and angles.

Senator Fidelma Healy Eames: How widespread is that course? How many teachers would be rolling that out? We are seeing good practice in some places and nothing being done in others. Is that universal right now?

Mr. Seán Gallagher: The Scratch course for primary teachers was offered as a national course through the Education Centre Network last summer.

Senator Fidelma Healy Eames: Was it mandatory?

Mr. Seán Gallagher: No. It was one of the summer courses. It will be offered again as one of the summer courses this year as well, with a view to its content will be made available to teachers online thereafter. None of those courses is compulsory.

There are primary teachers using Scratch but the emphasis is still on literacy and numeracy benefits of it, not as a programming discipline *per se*.

Chairman: Although the officials may have them listed, there were a couple of questions raised that have not yet been answered. Deputy O'Brien asked about whether the Department is looking at disadvantage and the possibility that there might not be balanced coverage of technology in schools.

Deputy Jonathan O'Brien: One of the answers related to short courses. Ms O'Mahony mentioned that it will depend primarily on schools' own resources. If we are relying on schools' resources, there is a significant danger that one could end up with a two-tier system in terms of digital learning. What is the Department doing to ensure this does not happen?

Mr. Eddie Ward: Does Ms O'Mahony wish to speak?

Ms Anne O'Mahony: In terms of looking at schools' resources, I meant not just the physical infrastructure. In respect of post-primary schools - I defer to my colleagues in ICT policy and the NCTE in terms of the physical infrastructure in schools - we are also looking at schools' resources in terms of their teaching cohorts. There will not be many new teachers replacing the teachers who are there so there must be a continuing emphasis on continuing professional development, CPD, for teachers to assist them. In the context of the roll-out of the new junior cycle, a significant suite of CPD is planned for all second-level teachers.

Deputy Jonathan O'Brien: I presume this is true even in terms of equipment and technology. A school in a disadvantaged area that is barely balancing its books will not have its own resources to invest in extra equipment. A school in a more affluent area may have higher voluntary contributions and may have that extra financial clout to invest in its own equipment. The question is how the Department will address that.

Chairman: One school in my constituency is in the black in terms of its accounts and the parents' association will be buying extra whiteboards while another school will be in the red and obviously cannot do that. It is breaking down into a case of more affluent areas versus more disadvantaged ones, which is a real issue.

Mr. Eddie Ward: We outlined a package for schools in terms of what the grants were designed to do. They were designed to equip classrooms in the main. We were quite prescriptive in terms of digital projectors and other things that could be purchased. Schools had some discretion if there was money left over after the equipment was purchased. Equity of access to a variety of aspects of learning will always be a general issue across schools because of the socioeconomic profile of the area. The Department has invested significantly in DEIS schools recently and has poured significant additional resources into each of them. Schools enjoy tremendous discretion as to what they see as the local priorities. The Department gathers evidence on how schools deploy the investment at school level. It is a challenge. A considerable amount of money has gone to schools in recent times. It is a challenge to see how that new equipment is being used in schools. We are into the phase of examining what that take-up is.

Change is a slow process and must be mediated at a number of levels. Our strategy covers the full continuum. In respect of initial teacher education, there is a piece regarding the outcomes for newly qualified teachers. They must have a competence in the use of technology and ICT in teaching and learning. It is also a very clear part of the way CPD is delivered. We have restructured our support services internally so that ICT is a strand cutting across all delivery in

terms of the Professional Development Service for Teachers, Project Maths and the new junior cycle support service, when that programme is rolled out. Much is happening. In respect of having data about how to equalise access, it is a much larger question than can be addressed by education alone. It is a significant socioeconomic challenge for the country.

Chairman: I will bring in Senator Moloney and Deputy Jim Daly.

Senator Marie Moloney: I welcome the panel. Most of the issues I was going to raise have already been raised, particularly that of disadvantaged schools. I would go a step further and say there are disadvantaged pupils within these areas. We all know it is great and there is no doubt it is the way to go, but one must take into account that some of these students may not have a computer at home or an iPad or tablet. One can get a virus on a computer at home, and they are at a disadvantage because they cannot afford to get it fixed. I dropped my iPad and it cost me an arm and a leg to repair the glass. I know many parents would not have that kind of money. If one has two or three pupils in the house, it cannot be a case in which one child does his or her work first, followed by the next child and then the next child. Each student will need his or her device at home to pick up the homework so some students will be at a disadvantage in respect of this. I hope we have plans to address that problem.

The delegation spoke about the roll-out of broadband, which is excellent. I know the Department does not have plans to roll it out to primary schools. I come from an area that is a black hole for broadband because we cannot get high-speed broadband no matter how hard we try, and we have tried every company. My local school is next door to me so I know the problems it encounters. That will also be a problem.

I am concerned that students are losing the art of handwriting and spelling. Many teenagers are atrocious spellers because of texting and mobile phones. They have their own language and are falling down on spelling so we cannot afford to take our eye off the ball in that regard. We must keep up the skills of handwriting and spelling in schools. A member of my extended family who is a young child and very intelligent cannot hold a pen or write and is falling behind because he cannot write down homework. It was suggested that he go digital and use computers, which has brought him on in leaps and bounds because he has the intelligence but could not get it down on a piece of paper. I know it will be a great advantage to people who have those problems. I again thank the delegation for coming before us on this matter.

Deputy Jim Daly: I reiterate the welcome extended to the delegation from the Department. In respect of Mr. Gallagher's comment, it is all very well to move with the times and engage new media, but I remember how video-conferencing was the buzz word when I was teaching some time ago. I remember taking a lead on it in west Cork. We were engaged in providing special needs education to the islands via video-conferencing. It was hailed as the future but it very quickly became the past and I would say it is now non-existent in schools. A measured approach to this new technology is wise under the circumstances.

Scratch was referred to and Senator Healy Eames mentioned CoderDojo. Policy is too strong a word because if I had my way there would probably not be a policy, but what is the approach of the Department? Are there any plans to endorse that movement? I engage with it on Friday evenings and take my sons to sessions in Clonakilty. As a former educationalist, I have no doubt its value is immense. As Senator Healy Eames stressed, it is a voluntary movement. I am particularly lucky because Mr. Harrington, who is the principal of the school my sons attend in Clonakilty, is very proactive on digital literacy, is very supportive of CoderDojo and uses the school's e-mail to e-mail parents encouraging them to engage in support of it. Obviously, there

is no directive, but are plans afoot? I know my colleague, the junior Minister at the Department, is very supportive of the project. Are there any plans for the Department to offer encouragement to primary school principals to engage or assist with it, possibly by providing premises?

My next question is more for the building unit. I visited a school this Monday that recently benefited from a devolved grant. I was admiring the works carried out and the exceptional good value. A professional person was with me who would appreciate the value of building and the school got significant value from the devolved grant so it is definitely good news. I asked the principal whether any building specification was given by the Department for building a new classroom and I was somewhat surprised to see that there was none. I know it may not be necessary with wireless technology but in respect of the future of interactive whiteboards, are there any plans for a building specification for classrooms which looks to the future and bears digital literacy in mind? Education centres will be key to future developments and it is important to ensure they are supported. Continuing professional development and secondary school teachers who do not get to course days were mentioned. We in the primary sector used to refer to them as "course days" and enjoyed them very much. God be with those days. Secondary teachers do not get them. Education centres are doing great work and are key to this being addressed. This area is very daunting for teachers my age and the tendency would be to keep away from it rather than to embrace it. It is perfectly understandable.

Is digital literacy a feature for the inspectorate and whole school evaluations? Are moves by schools on digital literacy recognised and rewarded? The obvious role of teacher training was referred to by Mr. Ward.

Senator Mary Moran: I apologise for missing the start of the meeting. I was held up at another meeting. I welcome the witnesses and thank them for attending. I have several questions and observations. My background is in secondary teaching. I taught until I was appointed to the Seanad in May 2011. I have had more years than I care to remember in the classroom. Digital literacy is something for which I have strongly advocated for many years.

I was a teacher of music, which was the only subject that offered technology as part of a leaving certificate course. I have advocated digital literacy since it was introduced in 1999 but have had one problem after another in trying to implement it. When I left school in 2011, I did not have the Internet in my classroom. I am sure that is replicated all over the country. There were one or two computers available which were hand-me-downs someone else had finished with. That is what one used to try to teach. I have always felt strongly that in a subject in which 50% of the overall mark could be in respect of music technology, we were left behind. Unless a teacher has an interest in the technology, it is abandoned, rightly or wrongly. I understand that younger teachers are more willing to take it on, whereas someone with more experience would tend to shy away from it. That is not true in all cases, of course. I was one of those older teachers. I examined it from 1999 when it was introduced as part of the new course. I appreciate that Internet access has been rolled out, but there is still an issue.

I undertook a masters in music technology a few years ago. As part of my thesis, I compared the use of technology in education in Northern Ireland with that in the South. We are 30 years behind. I visited a classroom in Newry, which is eight miles from where I live, and saw a full technology suite dedicated to music. Classes were not dependent on when a computer room was free. There was a complete music technology suite with every state-of-the-art piece of software. To install the software in the South was astronomically expensive. In the South, teachers rely on students bringing in laptops because one cannot have five students working on one computer. It is not feasible. As my colleague pointed out, many students did not have

access to laptops. We also had problems trying to overcome the software issue. From speaking to teachers who were training in this area, I heard it was easier to not touch the technology end of it as it made things much more difficult. One really needed to be dedicated or to have a huge interest to get it across. The computer, digital and software facilities available in the North leave us reeling. More funding is definitely needed. While I acknowledge that the witnesses said change is a slow process, the pace here is drastically slow. Unless we sit up and take note of this, we will remain miles behind.

Another area I studied separately was assistive technology for people with a disability. Sometimes access to the assistive technology is very difficult to come by but, even where it exists, teachers are not trained to teach pupils how to use it. Reference was made to continuous professional development and the 33 hours provided for under the Croke Park agreement whereby time is set aside for teachers' meetings. Could provision be made under continuous professional development? A great deal of professional development in technology takes place at teachers' personal expense and during their own time. Every teacher taking this subject must have access to his or her own computer. It is pointless doing it with somebody looking over somebody else's shoulder in 2013.

The skills of the person delivering the skills must be checked to ensure that he or she understands and knows what he or she is doing. There are areas in which the teacher is only one or two steps ahead. Digital literacy is relatively new, but this should be considered. I campaigned to get an interactive whiteboard when they were first introduced. The first time there was a problem with it, I had a huge problem trying to get someone who understood what was wrong to fix it. That is very important. I have seen other teachers using my room who avoided using the interactive board because the blackboard was easier to use. While I appreciate the point that this is part of the training for national school teachers, is there any facility for secondary teachers? While younger teachers will do it, people who have been teaching for years are more reluctant. We are all a bit nervous of things we do not know.

I am a great advocate of tablet computers and their use by pupils. We have long had arguments over heavy schoolbags and lost books. It is an area we need to look at. The book rental scheme was mentioned and there is a possibility there.

Deputy Ray Butler: I thank Mr. Eddie Wade and his team for attending. I want to follow on from Senator Fidelma Healy Eames's comments on third level. There used to be a show years ago whose tagline was "Points mean prizes". I speak now as a parent whose son is in Maynooth studying computer science. In 2011, 350 points were required for entry to computer science at Maynooth while 400 points were required for the same course in Trinity. In 2012, Maynooth was 400 points and Trinity was 450. Between 2008 and 2011, 325 points would have got one in anywhere to study computer science. Given that points mean prizes, is it that there are not enough spaces available in colleges, and do we need more? Companies cannot find enough people to work in this sector. Some of these young people are being snapped up by companies in their third year. We really do have to look at third level education. Many of my son's friends thought they would be able to get into the likes of NUI Maynooth on 350 points but unfortunately the points went up to 400 so they had to go back and do another year. Boys will be boys. They will do just enough to get the points and many of them were very disappointed because they thought they had enough points to get into college. Will it be 500 or 550 points to get into Trinity College next year when companies are crying out for a level pitch. I echo Senator Healy Eames' sentiments. As parents we have to examine this. Where are we going?

Chairman: I call Mr. Ward. There are a few questions there.

Mr. Eddie Ward: There are a good few questions. I will deal with some of the more general ones. Pádraig will talk about the whole-school evaluation and literacy. Jude might talk about the international comparisons and then deal with the issues raised about school level.

Many sensible comments have been made about how we run our CPD services and ensure that the people giving the courses are upskilled or at a level where they can do their job competently and well. We in the Department are very aware of this and that is why we have restructured our support services. In future there will be a turnaround of people more often than in the past and the people designing and delivering the CPD will review the skill needs much more often than they used to. Such is the pace of change in the curriculum for the junior cycle and literacy and numeracy that we must review the skill needs of the support services to ensure that they can meet the needs of teachers in order to do their job well in the classroom.

We are also very aware of the poor levels of access in some parts of the country. Senator Moloney referred to this. Much of what we do about this depends on the capacity of the market, of companies. We go to tender regularly, outlining the spec that we require. We try to put the spec as high as possible and expect people to come in to provide the service we require and we give it to the people who will give the highest spec possible to schools. We are coming to the end of a recent one and as a result most primary schools will have improved access. A small but decreasing number will continue to have poor access.

Education centres are at the centre of our work in teacher education, getting teachers to come in their own time and to say what courses interest them, and locating suitable teachers to work in the support service. I acknowledge their role in supporting the Department and the promotion of high quality teaching.

I am not sure that I can answer the question about third level because I do not deal with that side of the house. I am aware that there is a national skills strategy and the Department has an important part to play there to ensure that there are enough people with skills to meet the needs of the economy but I would not be an expert on that and will not say any more about it.

Some of my staff are involved in the building unit which has a spec for schools. As far as I am aware there is a standard spec for how all new schools should be equipped for digital technology and the kind of wiring needed to facilitate broadband and so on. A member of my team is working with a working group of the building unit who are making site visits and comparing schools across the spectrum. There is a standard spec and new schools all receive the top notch for wiring. They are future-proofed. Such is the pace of change the spec needs to be reviewed fairly regularly. Now I will hand over to Pádraig.

Mr. Pádraig Mac Fhlannchadha: In response to Senator Moloney's point about the danger of traditional writing and spelling losing out to new technologies, the national literacy and numeracy strategy prioritised literacy in all its forms including those related to printed and digital texts. It assumes that the different forms of literacy are complementary and that the development of skills in one should complement their development in the other. While there are skills common to both there are different skills too. That is why they are specified, to ensure that literacy in all its forms is developed in a coherent manner and that all students get the opportunity to develop their literacy skills to the highest level possible.

Our inspection process focuses on the use of ICT and other media in planning and how

they support teaching and learning. We would not look specifically at digital literacy but at the teaching of literacy which might include making a comment on digital literacy if a school is focusing on that. Digital literacy has been highlighted in the literacy and numeracy strategy and there is some work to be done in our curriculum frameworks to ensure that it is duly acknowledged. The language curriculum at primary level is being revised. The English syllabus at junior cycle level is being revised to take greater account of digital literacy and our evaluation processes will evolve in accordance with that.

Ms Jude Cosgrave: Thank you very much and good afternoon to everybody. I will open by making four or five points about research and hope to reply to the questions that came up about research using international and national studies. There is more tension between research and policy when it comes to digital literacy than in many other areas relating to education because digital literacy is evolving quickly and policy relies on solid evidence. There is a real need for running research that attempts to measure a moving target and to build policy around the most recent research available. This tension is particularly acute when it comes to digital literacy. I will not cite individual studies and details but from the evidence I thought about in preparing for this meeting it seems that the intelligent use of technology is the key to many of the issues.

I will speak about a study finding that will hopefully illustrate this point. Ireland recently participated in an international study of reading, mathematics and science at fourth class level. The children in the study were around ten years old. Secondary analyses conducted by the Educational Research Centre focused on children's achievement against several background characteristics at school and pupil level. We found that approximately one in eight ten-year-olds had a smart phone, which was more than we expected, and we found, surprisingly, that those children did significantly less well on the reading test. This is after adjusting for socioeconomic and gender differences and other home background characteristics. This suggests to me one cannot give a child, teacher or a person a piece of technology and assume everything will be grand. What is important is how it is used.

Continuing professional development, CPD, has been discussed today and it can make a real and substantial change. I will cite a research result which supports this claim. We are all familiar with the roll-out of Project Maths and the very difficult and challenging circumstances it created in schools. This was coupled with the extraordinary willingness and professionalism of teachers to try to embrace these changes because there is widespread recognition that changes are needed in maths education. As part of the roll-out of this project significant investment has been made in CPD, including CPD in using ICT for active teaching methodologies and problem-solving skills. Emerging findings from our comparison of 23 Project Maths schools with other schools which participated in PISA 2012 show the teachers in schools with targeted CPD on ICT already use ICT much more than teachers who have not benefited from this CPD. These are early findings, but they are extremely encouraging, particularly when the overall climate is a willingness to embrace change.

The research also shows that computer-based assessment appears to be more equitable for students from disadvantaged areas. We found less of a socioeconomic gap in PISA 2009 on the electronic or digital tests of reading compared with the paper-based tests. These are only emerging findings because we are still awaiting the results of PISA 2012 which will show results of computer-based assessments not only of reading but also of mathematics and problem solving. We will have these results in December which will allow us to work out more with regard to what is happening.

I wish to highlight forthcoming research which will be very important, and researchers and

policymakers must use the results intelligently. The ICT census was overseen by the National Centre for Technology in Education, NCTE, and is now being overseen by the Professional Development Service for Teachers, PDST. The Education Research Centre and Saint Patrick's College will look after analysing and reporting on this. These data will come from all schools throughout the country, including primary, post-primary and special schools. It will give us good, up-to-date and detailed information on individual schools. It is important that schools are willing to respond, complete and return the surveys. PISA 2012 and PISA 2015 will provide more data on computer-based assessment.

A question was asked about the ICT resources available on a State-wide or regional basis. PISA is not designed to provide this information, but it certainly can be used to examine inequities in access usage and related issues with regard to important demographic groups such as boys and girls, more and less advantaged students and newcomer students.

Mr. Seán Gallagher: Senator Healy Eames asked about changing the school environment and online Internet fora. The former NCTE, now the PDST Technology in Education, has provided a Scoilnet blog service for every school. If a school wants to blog, the service is there. We are examining a range of online tools to be available for teachers. The issues of teacher and student authentication to have parental access is being explored.

Senator Fidelma Healy Eames: Will there be a cost to schools for this?

Mr. Seán Gallagher: It is hoped there will not because there is a range of online secure forums, some of which are commercial and others that are free, and we must balance these sensitivities in compliance with procurement law.

Chairman: Deputy Daly raised the issue of CoderDojo. Is this being endorsed in any official sense? Senator Moran asked about music technology.

Senator Mary Moran: I also asked about who is responsible for the repair of equipment. Why must one wait for two weeks to have fixed a computer or interactive whiteboard which breaks down during class?

Mr. Seán Gallagher: I can take the question, but my response is that PDST Technology in Education is responsible for ICT in teaching and learning and not for fixing technology. We have advice sheets for deployment but not for technical support.

Senator Marie Moloney: Surely they should go hand in hand. One cannot install something without having a backup service.

Mr. Seán Gallagher: We do not install it in the first place; it is devolved locally to schools.

Senator Mary Moran: Yes, but my point is that the people who install an interactive whiteboard which breaks down within the first two weeks will tell the school it was their job to install it and one can find nobody to fix it. Given its cost and that of computers, there seems to be a huge gap if a problem arises. Where can a school go?

Senator Marie Moloney: An IT helpdesk should be established.

Mr. Seán Gallagher: There is a broadband helpdesk, and at one stage a technical support helpdesk was mooted but the cost was outlined and it has not been progressed.

Senator Mary Moran: It existed in the past with the NCTE.

Mr. Seán Gallagher: In terms of advice, yes.

Senator Mary Moran: It took ages to come down. If a school computer breaks down a week before an exam, there is no point in being told it is hoped it will be fixed by September.

Mr. Seán Gallagher: Technical considerations are covered in e-learning planning when advising a school's leadership, and they must be considered. One must look at the total cost of the outlay and not only the unit price of the machine. The cost of technical support should be built in. The term I am searching for is "total cost of ownership". This must be considered by the school from the outset so it has a proper maintenance structure in place.

Senator Mary Moran: This is the point I am making. It is vital.

Mr. Eddie Ward: There is an ongoing issue on the degree to which the Department can support schools on their individual needs. The Department makes available maintenance grants to schools out of which they are run. With regard to the purchase of ICT equipment for classrooms, there was an issue with regard to what degree we could prescribe centrally what a school needed. We put in place procurement frameworks so schools could get value for money. Schools wanted access to what has been described by the committee members, but they wanted it at local level and the Department could not do this. My colleague is correct to state that providing such a service to every school is not on in the current economic circumstances. At the time schools made a major point of negotiating their own local arrangements with a technical provider, and we gave guidance on what they should look for, ensuring they considered the entire cost and that they dealt with quality people and had in place appropriate warranties. There is tension around this issue. When the previous strategy was considered, the idea of technical support for schools was discussed. It was decided that schools would take their own advice, as they do in respect of many of the other matters involved in running and managing a school.

My other colleague wishes to address-----

Senator Mary Moran: The upskiller needs to know what he or she is doing and must have the skills.

Mr. Eddie Ward: Yes. We see our role as making available to schools information that they might need when negotiating new developments, for example, e-books and emerging technologies. We look to the expertise of the Professional Development Service for Teachers, PDST, in sending information leaflets on that subject, in providing information or in making an input at teacher and principal forums. It is a question of trying to keep abreast of events, which we manage to some degree. Obviously, some local issues in individual schools are beyond our reach in terms of management.

Chairman: Senator Healy Eames and Deputies O'Brien and Daly wish to ask questions. I will also ask a quick question before I revert to the witnesses.

Senator Fidelma Healy Eames: I welcome the fact that online privacy will form part of the new programmes. This is important. Although we discuss the issue with our children, they do not fully understand it. The issue is overlooked. Cyberbullying creates a terrible environment. Teacher education is undoubtedly the key in this regard, just as it is in fixing problems.

Witnesses are picking up the frustration that exists around the table. It relates to a matter raised by Ms Cosgrave, namely, research versus policy versus practice that is good in some areas and non-existent in others, the consequence of which is people being disadvantaged. We

must face up to the fact that, if support is lacking when something is broken, everything can fall down. Sometimes, teachers telephone me asking for help getting something fixed. As educators, teachers are interested in educating. As Mr. Gallagher stated, the job is about teaching and learning.

Mr. Seán Gallagher: Yes.

Senator Fidelma Healy Eames: However, there is a missing piece. Can the Department examine ways to address this issue? It may be a question of resources, but a solution that can then be devolved must be found.

Ms Cosgrave mentioned that the Programme for International Student Assessment, PISA, will release the results of computer-based assessments. What are these exactly and how were children assessed?

Deputy Jonathan O'Brien: I will address a comment made by Mr. Gallagher. If I heard him correctly, he stated that his organisation had examined the cost of providing technical support. What was that cost?

Deputy Jim Daly: My question is on CoderDojo again. It seems to be the trend that dares not speak its name, because I have not received an answer.

Senator Fidelma Healy Eames: The elephant in the room.

Deputy Jim Daly: I was interested in Ms Cosgrave's mention of one in eight ten year olds having a smartphone, but I am unclear as to her subsequent point. She mentioned that she had noticed something about the educational standards or attainment levels of those children. Will she elaborate?

Chairman: Mr. Gallagher mentioned a website containing information for teachers and parents. What was it?

Mr. Seán Gallagher: It is *scoilnet.ie*.

Chairman: I have noticed that third level institutions are interconnected. In America and Open University in Britain, there is a large move into the area of open learning. Open University calls it OpenLearn. One can watch lectures online. A major example in America is *edx.org*, through which people can study courses from Harvard, MIT and so on. One such course teaches how to create computer graphics. Institutes of technology and universities could co-operate in providing materials for use by people, including primary level teachers.

We are being broadcasted by UPC, but what is the public broadcaster doing to help this agenda?

Mr. Eddie Ward: Ms O'Mahony will take the question on CoderDojo.

Ms Anne O'Mahony: CoderDojo is like Cinderella waiting in the wings. The Department is aware of it and, as has been mentioned, the Minister of State, Deputy Cannon, is interested in it and its work. Irish society is lucky, in that there is a large range of voluntary movements in which people give their time freely to help young people. The GAA is a prime example. We must consider how to support such movements. In this respect, there is a great deal of positivity at political and official level. Internally, we have had contact with a number of colleagues on the question of CoderDojo and how we might support it in terms of the kinds of issue the

Deputy has identified, for example, premises. That conversation is ongoing internally, but we have not reached a decision yet.

I will deal with the question on what RTE is doing in the context of the literacy and numeracy strategy. The National Adult Literacy Agency, NALA, has been doing a bit of work for us and has developed a website, *helpmykidlearn.ie*, which promotes literacy and numeracy. There will be a television series that will support literacy and numeracy in the general context of the strategy. We hope it will air in May.

I am sorry, but I have forgotten the final question.

Mr. Eddie Ward: I will make a general point on CoderDojo. Its background differs from that of most of the programmes that are brought to the Department's attention. Industrial and commercial interests regularly bring programmes to our attention. For obvious reasons of procurement and so on, the Department cannot and does not endorse them.

We are aware of the availability of the massive open online course, MOOC, resource. There are courses on maths, physics and so on and we are determining whether they are suitable for use in the restructured support services.

Ms Jude Cosgrave: Two questions were asked. First, what is PISA 2012 doing in terms of computer-based assessment? Approximately 5,000 students took part in PISA. Each student took a two-hour paper-based test of mathematics, reading and science. The focus was on maths. A random subset of 15 or so students in each participating school, amounting to approximately 2,000 students or two fifths of the total number, went on to take a 40-minute computer-based test on a laptop provided by inspectors from the Department, who were the trained test administrators. Unfortunately, laptops needed to be provided last year, which still may be the case, because of significant variations in schools' infrastructure. The assessment required a certain specification. The students logged into the laptop and took part in a 40-minute assessment of mathematics, reading and problem solving. It could have been a mixture of the three domains or one or two of the domains.

Ireland took part in the computer-based element of PISA 2012 alongside 40 or so other countries. In 2009, we had comparative data on computer-based reading for 19 countries. In 2012, we have comparative data on reading, maths and problem solving for 40 plus countries. It is a potentially fruitful database to which we will have access.

Second, a question was asked about the trends in international mathematics and science study, TIMMS, and the programme in international reading literacy study, PIRLS, findings on ten year olds. We undertook multi-levelling modelling, which considered school and pupil characteristics simultaneously. Regardless of that, descriptive statistics show that approximately one in eight children has a smartphone. We do not know what children are doing with smartphones or how often they use them. After adjusting for parental employment status, parental education, home educational environment and student gender, however, students with smartphones did significantly worse by approximately 30 points - three tenths of a standard deviation - in the international test on reading, maths and science.

Deputy Jim Daly: Crazy.

Ms Jude Cosgrave: This suggests to me that it is not a question of having the technology, but of using it intelligently. The developmental point at which the child is also suggests it is important. Cross-sectional data can only tell us so much.

Deputy Jim Daly: This was an international study carried out in Ireland.

Ms Jude Cosgrave: Yes, it was an international study but the analyses to which I am referring were based only on the Irish dataset.

Chairman: Could it also be the case that something passive such as YouTube was being looked at?

Ms Jude Cosgrave: Yes.

Chairman: Would Mr. Gallagher like to respond to Deputy O'Brien' question on tactical backup?

Mr. Seán Gallagher: I do not have the exact figure with me. It is outlined in Investing Effectively in ICT in Schools 2008-2013.

Deputy Jonathan O'Brien: I am surprised to hear the ratio was 1:8. I would have expected it to be higher. Two of my children, who are aged ten and 13 years, have smart phones. All of their friends also have smart phones. I do not know many ten to 13 year olds who do not have a smartphone or some other mobile phone, or at least access to some type of technology. I am surprised the ratio is that low.

Ms Jude Cosgrave: I think the reference was to iPhones and the children concerned were ten years old. The results, regardless of the types of phones to which children have access, suggest we need to think about how children are using technology.

Deputy Jonathan O'Brien: When my daughter sends me a text, I am often unable to understand it. For me, text messages are gobbledygook but they make perfect sense to someone of my daughter's age, which is frightening.

Chairman: Another aspect of digital technology is film-making. My nephew makes movies on a VTech camera. A large part of digital literacy is making films, which is another area that needs to be considered.

Deputy Jonathan O'Brien: There are huge advantages also. My son who is eight has an active learning device. We have seen a huge improvement in his ability to use technology and to read and write. What is important is not the device but how it is used. While there are huge positives in this regard, there are also huge negatives.

Mr. Eddie Ward: On film-making, one of the initiatives run by PDST Technology in education is the Fís film festival for schools, which encourages schools to make their own short films and submit them for adjudication as part of the national final which is held every year in The Helix. The quality of film-making is a joy to behold. What is important is not only the film but the process employed by the students in making it, including scripting, editing and production, complementing it with a variety of media because often it is the children acting and other times it is animation. It complements the writing process which is done with pen and paper and shows children that they can express themselves by a variety of means.

Another initiative is the Fís book club which involves children writing book reviews. They take a video clip of themselves reading the review which is uploaded for their classmates to view. It encourages reading and online book reviews.

We know that we are in a learning space in terms of the use of ICT for teaching and learn-

ing. This requires a multifaceted approach covering the full spectrum, which we are conscious is a challenge.

Chairman: I thank the witnesses for their presentations and thank members for their contributions.

The joint committee adjourned at 2.45 p.m. until 1 p.m. on Wednesday, 20 February 2013.