

## How can I use video to improve teacher engagement with my school's abundant ICT equipment?

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### **Abstract**

This paper examines how video can be used to enhance teacher engagement with ICT as a teaching tool. The Connect School Project, South Dublin County Council's ubiquitous computing initiative, equipped St. Aidan's with a vast amount of information and communication technologies (ICT). A review of appropriate literature indicated that the use of such technologies in class could lead to effective teaching and learning environments, increase student self-esteem and could bridge the 'digital-divide' that might exist between students in disadvantaged areas and those in more affluent communities. Through two cycles of enquiry, I planned and produced a video which modelled how the laptops and associated hard and software could be used effectively in class. The video aimed to represent all stakeholders in the school: management, teachers and students. In this way a top-down endorsement of the use of ICT as a teaching and learning tool was communicated. I feel that if teachers are to embrace the use of technology in class, pedagogical as well as technical support must be provided. Using video to model effective practice could be an ideal way to provide such support.

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**Key words: Ubiquitous computing; Technology; Video; Action research**

## My Educational Context

Since 2005 I have taught English and Religious Education in St. Aidan's Community School, a co-educational secondary school in Tallaght, Dublin. St. Aidan's has 485 students, 50 teachers and 8 special needs assistants (SNAs). The school community is a diverse one with a significant minority of students from the travelling community and a number of foreign national students, many with English as their second language. St. Aidan's is a category 1 DEIS (Developing Equality of Opportunity in Schools) school and therefore among one of the most disadvantaged schools in the country. There are many supports in place for students including a Home School Liaison Officer (HSLO), School Completion Project (SCP), a traveller teacher, a care team, counsellors and an Accessing College Education (ACE) programme. There is a strong caring ethos within the school and good relationships are established between staff and students.



Video 1. [St. Aidan's: An I.T. School](#)

## The Connect School

The Connect Project is a South Dublin County Council initiative that seeks to integrate technology into the community. In 2006 St. Aidan's was chosen as the Connect School. The project aims to provide the school with a range of technologies to enhance teaching and learning. In May 2006 there was a roll out of laptops to teachers and the initial installation of

data projectors, which are now in every classroom. During February 2007, laptop computers were delivered to all first years for school use. This roll out continued year on year and the SCR is now 1:1. The provision of this hardware was complemented with the establishment of the school's Virtual Learning Environment (VLE), Moodle (<http://connect.learnonline.ie>). The project is supported within the school by the core group; a group of 10 staff members identified as having high ICT skills. The core group design and deliver training to the rest of the staff and meet on a fortnightly basis to discuss and offer advice on the project.

The Connect School Project set out to “develop a student centred technology” that supported an “innovative learning culture in the school” ([www.connect.southdublin.ie](http://www.connect.southdublin.ie)). Since the implementation of the project the school has seen a fall in days missed through absence and suspensions. Although the Connect initiative is simply one of the supports and programmes in place which led to this improvement (Galvin, 2010).

**Table 1.** School attendance statistics 2004-2009 (NEWB)

Year	Total Number of Days Lost Through Absence	Total Number of Students Absent for 20+ Days
2004/2005	9,310	197
2005/2006	na	na
2006/2007	11,496	154
2007/2008	5,149	137
2008/2009	3,875	97

**Table 2.** School suspension statistics 2004-2009 (NEWB)

Year	Suspensions
2004/2005	68
2005/2006	na
2006/2007	91
2007/2008	65
2008/2009	42

As a result of the project, St. Aidan's now meets all desired levels of ICT for schools, as laid out in the Minister's Strategy Group Report Investing Effectively in ICT in Schools: 2008-2013 (DES, 2008, p26). Teachers have also experienced a positive change in the learning environment, which is now multi-sensory (Galvin, 2010).

## The National Context

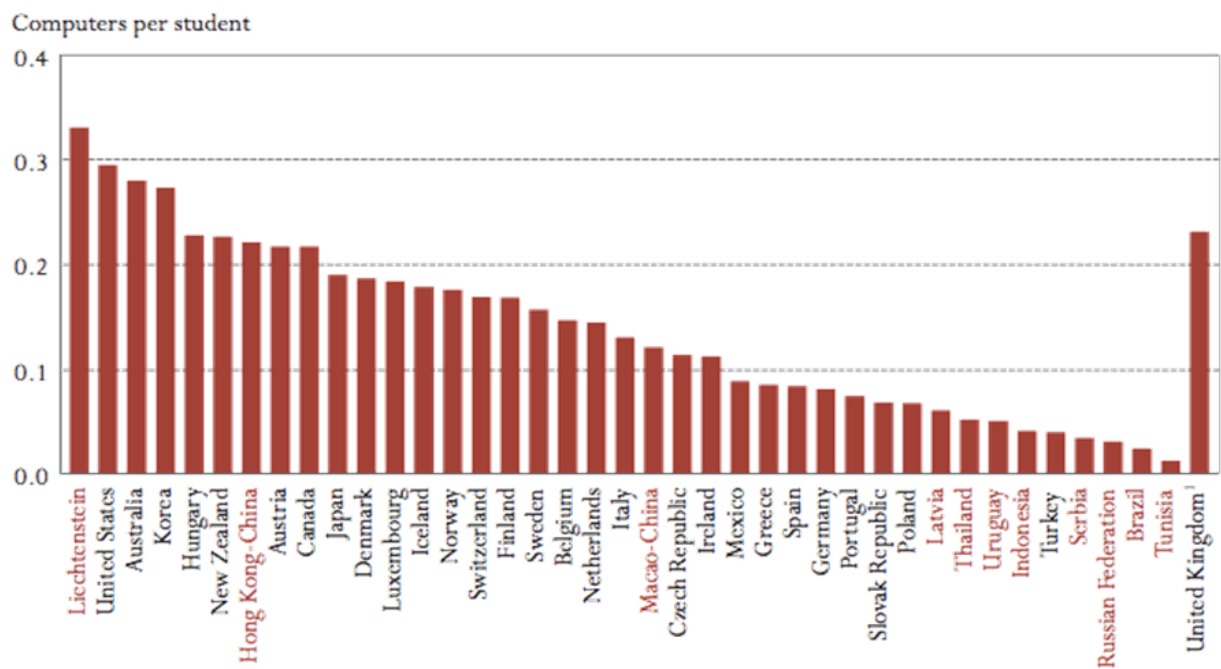
Since 1997 the Department of Education and Science (DES) have put many initiatives in place in an effort to integrate ICT into Irish schools. Central to these initiatives was the establishment of the National Centre for Technology in Education (NCTE), whose primary aim was to “ensure that every pupil at primary and second level education had the opportunity to achieve computer and Internet literacy and be equipped for full participation in the information society” (NCTE, 2006). They sought to achieve this by providing schools with computers and Internet access, training teachers in the use of ICT and developing a support infrastructure that supported teachers and the curriculum with the ‘Scoilnet’ website and other multi media tools.

A considerable amount of funding has been invested in upgrading schools’ ICT facilities and the knowledge and skills of both teachers and students.

**Table 3.** ICT in education initiatives - funding

<b>Initiative</b>	<b>Year Begun</b>	<b>Funding</b>
Schools IT 2000: A Policy Framework for the new Millennium.	1998	€52m
Blueprint for the Future of ICT in Irish Schools	2001	€78m
Networking Schools	2004	€23m
Schools Broadband Programme	2005	€30m
	<b>Total</b>	<b>€183m</b>

This investment has seen a decrease in the student to computer ratio (SCR), from 11:1 to 7:1 in post-primary schools; however, according to an OCED report (2004) this ratio fell far below international standards.



**Figure 1.** International student to computer ratio

This investment in ICT in schools is still insufficient and seems to be out of line with a government whose policy espouses the virtues of a knowledge economy (DES, 2009) and seeks to have “an education system that equips our young people with the critical skills to play an active role in the 21st century’s economy” (ibid). It is heartening to see that since the completion of this research that the NCTE have announced an ICT infrastructure post primary grant scheme (NCTE, 2010).

## My Concerns

Although St. Aidan’s more than meets the government’s desirable levels of ICT in schools, the initiative it is not without its problems. An evaluation carried out in 2010 noted that over a two month period, on a day-to-day basis up to 20 percent of pupils did not collect their laptops (Galvin, 2010). If a significant minority of students do not bring their laptops to class, it impacts negatively on the teachers’ planned lesson and they are reluctant to use them in the future. The use of ICT in class can be a motivational pedagogical tool, it can provide a “fun” alternative to “chalk and talk” (Cope and Ward, 2002; Prensky, 2001; Dwyer, 1994) and equip pupils with some of the skills necessary for the highly prized knowledge economy (DES, 2009).

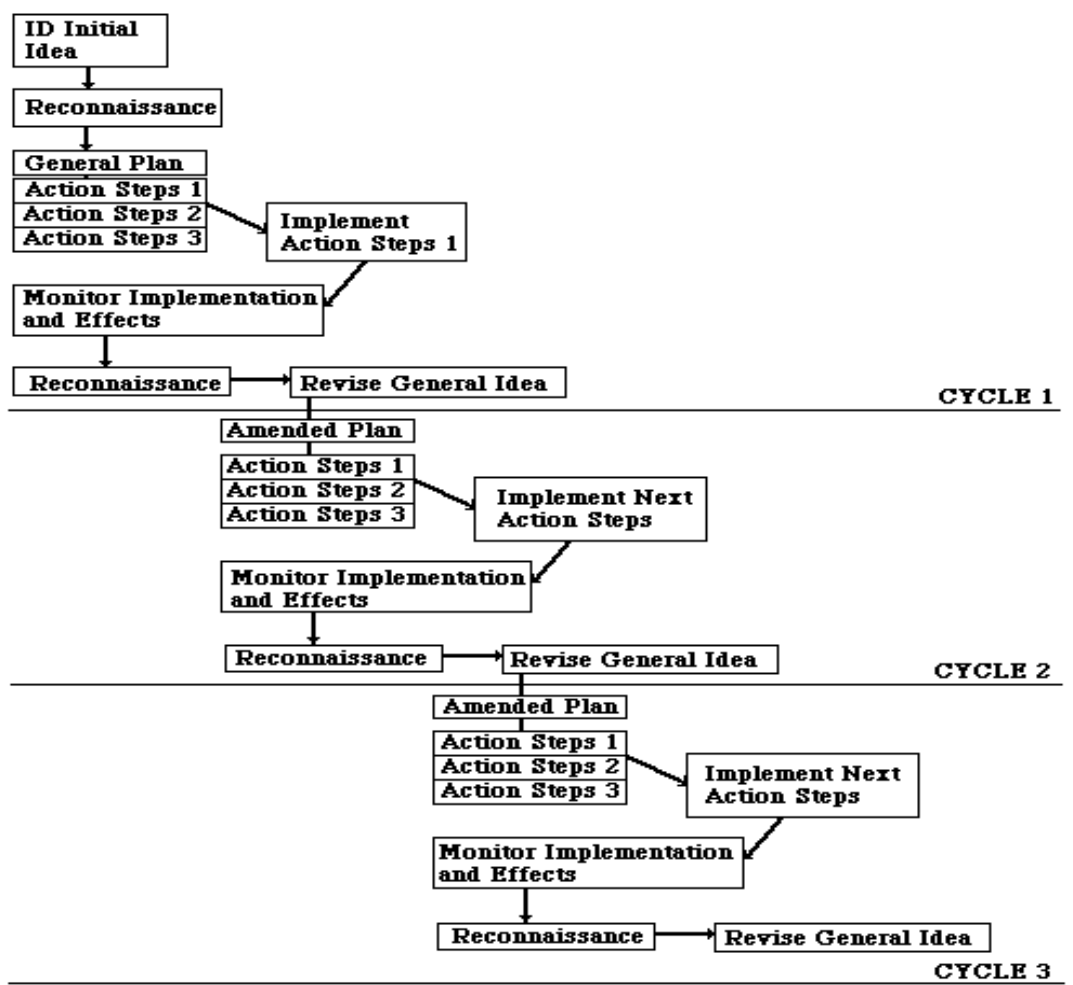
My main consideration when undertaking this piece of research was to identify an action I could carry out that might encourage further use of ICT in classes. From core group meetings and discussions with pupils it became clear that good practice, with regard to the use of ICT, was taking place in St. Aidan’s - unfortunately, it was in the solitary confines of the classroom, unobserved by colleagues. I decided that videoing this good practice and making it available to all in the school would be a simple way to disseminate these effective ICT based teaching practices within the school and give teachers, who may not be comfortable in using ICT, practical models and examples of how it might be used in class.

This decision was informed by a study of relevant literature, which advocated the use of video to examine our own and other teachers' practice. Such opportunities allow the viewer to respond to the video with less immediacy than is needed to respond to things in class, allowing time for careful reflection on practice (Gamoran-Sherin, 2000; Loudon et al, cited in Newhouse, Lane, & Brown, 2007) findings that it is "helpful to provide pre-service and in-service teachers with the opportunity to carefully observe and reflect on the complexity of the work done by effective teachers in their classrooms. This might be done by reviewing videos of effective teachers. It was also found that the viewers' familiarity with their peers on the video allowed them to relate to the content in a way that would not have been possible had the teaching examples been provided by a stranger.

Thus, my principal aim when undertaking this piece of research was to encourage reluctant ICT users to make greater use of the ICT facilities available to them in the school, using Elliott's model of action research.

## Methodology

In an effort to answer the research question, “How can I use video to enhance teacher engagement with my school’s abundant ICT equipment?” I used an action research methodology based on Elliott’s model. Elliott’s model of action research calls for systematic cycles of identifying an idea, fact-finding and analysis, formulating a general plan (which may involve more than one action), implementing these actions and monitoring the implementing and effects. Further fact-finding and analysis may be necessary to explain any failures/effects of the actions, after which the general idea may need to be revised (Elliott, 1991, p. 70). Elliott’s model offers flexibility as it stresses the importance of reconnaissance that informs a changeable idea.



**Figure 2.** Elliott’s Model of Action research\_ (<http://cslsrv.ice.ntnu.edu.tw/LabNews/Minutes98/981215yen.html>)

### **Concerned with practical problems**

A fundamental aim of action research is to improve practice. This involves dealing with problems found in what Schön (1995) calls the swampy lowlands where the problems of greatest relevance to the practitioner lie.

### **Draws out tacit knowledge**

Often, as professionals, we do things instinctively, solving problems almost subconsciously as they arise, if asked to describe how or why we took certain actions we may be unable to as “we know more than we can tell” (Polanyi, 1966). According to Hopkins (2002) this tacit knowledge is “knowledge we cannot articulate”. Elliott’s model of action research requires reconnaissance (observation) and careful monitoring of the implementation and effects of our actions (reflection) as a means of making our knowledge explicit.

### **Collaborative**

Among the St. Aidan’s community there are a number of teachers and students who are enthused about using ICT and computers to benefit teaching and learning and do so to great effect. Action research provides an opportunity to work in collaboration with colleagues and pupils in order to uncover and disseminate this good practice.

### **Qualitative Research**

Qualitative methods of data collection were used to gather data for this study. In contrast with quantitative procedures, qualitative methods “rely on text and image data” (Creswell, 2003, p.179) and take place in the natural setting of the participants. In line with Elliott’s model of action research, a qualitative approach is “emergent rather than tightly prefigured” (ibid.) allowing a certain amount of flexibility with regard to the research question.

### **Reflective Journals**

Throughout the Masters programme, Crotty (2009) promoted the idea of regular journaling through the stages of planning, acting, observing, and reflecting. For this piece of research I kept weekly journals, containing personal accounts of “observations, feelings, reactions, interpretations, reflections, hunches, hypotheses and explanations” (Kemmis, 1981, cited in Elliott, 1991). This afforded me the opportunity to reflect-on-action and allowed the recording of, not only data obtained by other methods (participatory observation, interviews, etc.) but also reflections on said data and my own role as researcher



(Altrichter et al, 1993, p. 11). Regular journaling documented the progress of the research throughout the cycles of observing, planning, acting and reflecting.

## **Interviews**

During the cycles of action and reflection, interviews were conducted with my colleagues in order to garner information as to how they used ICT in the classroom to enhance learning. Initially, interviews were unstructured in order to “remain as open as possible on the question of what information is relevant” to the interviewee (Elliott, 1991, p. 76). As the research developed a semi-structured approach was taken towards the interviews, as appropriate topics for discussion were identified in previous unstructured interviews. However, a degree of flexibility remained throughout.

## **Video Footage**

According to Creswell (2003) one of the advantages of video recording as a method of data collection is that it allows participants to directly share their reality. It allows the researcher to repeatedly review the reality that has been captured and track any patterns of progress that may arise over the period of research.

Throughout my research, video was used to record best practice of the use of IT to enhance teaching and learning within the school, as it allowed “the teacher to observe many facets of his/her teaching quickly and provided heuristic and accurate information for diagnosis” (Hopkins, 2002).

## **Validating my Claim to New Knowledge**

Action research, though not validated in the traditional sense using empirical evidence, quantitative data, etc., can be validated in different ways.

My claim to new knowledge is firstly validated against my own “personal criteria and standards of judgement” (Whitehead and McNiff, 2009, p. 25). I feel that my research exemplifies my personal values of inclusiveness and using information technology to enhance learning. As a result of this, I am prepared to stand by my claim of knowledge avoiding being, what Whitehead and McNiff (2009) term, a living contradiction.

My work has been further validated through regular feedback and critique from my supervisor, Yvonne Crotty as a consequence of her constant use of Skype, quick response to my online journals, emails and constructive criticism at the many validation meetings. This along with my critical friend and the eLearning MSc group in Dublin City University (DCU) also played an invaluable part in the process. Feedback from my colleagues in school equally helped to shape the research throughout the process.

McNiff (2002) cites Winter’s (1990) six criteria for assessing action research reports as a means of validating research. I have endeavoured to demonstrate these principles

throughout the action research process in order to ensure a thorough and accurate presentation of my findings.

- **Reflexive critique** - I reflected on my actions in order to generate and amend, where necessary, my research question.
- **Dialectical critique** - “subjects all given phenomena to critique, recognising their inherent tendency to change” (McNiff, 2002)
- **Collaboration** - I collaborated with colleagues, students and classmates during my research journey.
- **A plural structure** - I sought to include a “multiplicity of perspectives” in my action research report.
- **The transformation and harmonious relationship between theory and practice** - I aimed to draw on my own practice as a teacher to develop my understanding of how engaging teachers with ICT based methods of instruction.

## Ethical Considerations

A key element of this research was to observe good ethical practice throughout, in line with ethical research policies laid down by the DCU Research Ethics Committee (REC).

I obtained parental permission from all students involved in the making of the video in school. I ensured that parents were aware of the purpose and focus of this study and were aware of the ways in which the video material produced could be distributed within the educational community.

Elliott (1991) warns that teacher researchers do not have an automatic right to “collect, document or report insider information”. With this in mind, I maintained transparency with regard to the purpose and processes of the research with management and colleagues. Before accessing documentation I obtained explicit authorisation from participants. I secured written permission from, and distributed ethics statements to, all participants. Recordings/transcripts of all interviews were openly available to all participants, as were progress reports to any interested parties.

## Research Structure

This action research enquiry was undertaken between October 2009 and April 2010. It involved two cycles of enquiry in line with Elliott’s model of action research. The first cycle of enquiry focused on identifying student beliefs about positive aspects of the use of ICT in their learning and encouraging their involvement in the video making process. The second cycle saw a shift in emphasis from students to teachers. It involved planning and producing a video that highlighted and modelled good practice in using ICT for the benefit of teaching and learning throughout the school.

## The First Cycle of Enquiry

Throughout the course of this research I examined my own use of the abundant equipment at my disposal in St. Aidan's as a result of the Connect Project. Recording my reflections in an October journal I conceded that: "Researching and presenting information is definitely the primary application [of the laptops] in my class<sup>1</sup> and is something that pupils enjoy... it's more interesting doing it [schoolwork] on the laptop rather than in a copy" (L. Sloyan, personal communication, October 26, 2009).

Reflecting on my practice in this way led me to consider new and innovative ways to use the Connect Project facilities. I began to integrate new ICT based methods of instruction into my teaching, for example, using sites like [www.bitstrips.com](http://www.bitstrips.com) and facilitating activities such as podcasting.



**Figure 3.** Sample of students' bitstrips work A retelling of the biblical story of Abraham

However, as I noted in a November journal, I found that these activities were often thwarted by what I considered was my pupils' lack of engagement with the available ICT resources, reflected in the significant number of students who did not bring their laptops to class on any given day.

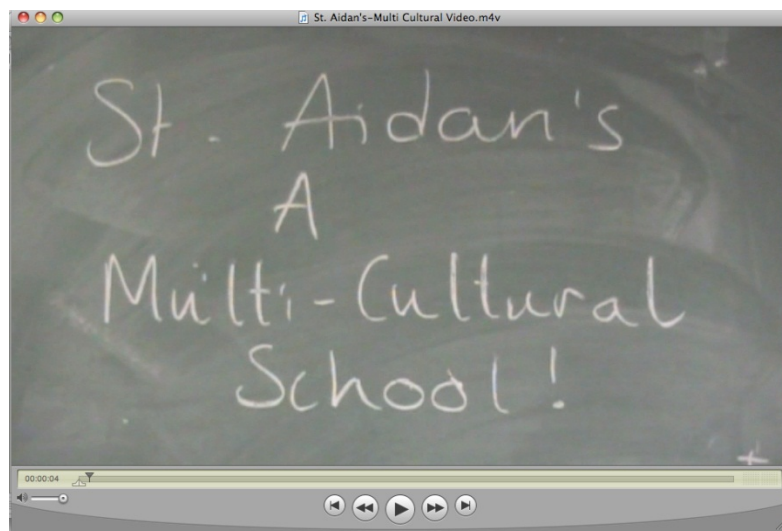
I counted in each class that I intended to use the laptops, how many pupils did not have them in class. Numbers ranged from 6- 16 ... This not only makes it difficult to implement the

<sup>1</sup> Module entitled Collaborative Online Enquiry takes place on in the second year of the Masters in Education Management and Training (eLearning strand).

project within the school, but also undermines the project as a whole. (L. Sloyan, personal communication, November 9, 2010)

As a vital precondition of action research is a desire to innovate and initiate change (Elliott, 1991). I decided to attempt to initiate change by promoting the idea of ICT as a valuable learning tool among the more disengaged students. Drawing on the action planner Whitehead and McNiff (2006) I felt that the most pressing concerns were students' lack of engagement with the 1:1 laptop programme and the apathy and lack of use (of ICT) in classes that surrounded it.

During the previous academic year I, along with a number of students in the school, produced a video celebrating the multi-cultural nature of St. Aidan's. This was a project that the students embraced wholeheartedly and making the video affirmed my belief that video production can be used to promote positive ideals within the school. As a result of this experience I decided that as part of my action research I would make a video that showed the school and the 1:1 project in a favourable light adding that I would involve the students in the production process so that their input and experiences of ubiquitous computing would be represented. In this way my research question emerged as: How can I use video to enhance student engagement with my school's abundant ICT equipment?



**Video 2.** [St. Aidan's: A Multicultural School](#) (Sloyan, 2009)

## Observations

Initially I set out to identify a class or year group of students to work with on the video. I observed my students when participating in computer-based activities and documented my observations in an online journal.

They [a second year group<sup>2</sup>] are a middle band class with numerous general learning difficulties and below average academic performance... when it comes to computers they really shine... Students are proud to have their own computers and relish the opportunity to use them in class. (L. Sloyan, personal communication, October 19, 2010)

As a result of these observations I chose my second year religion and computer classes as the participants in my study given that they already had a year's experience with the project and that many of the students, particularly non-academic boys, showed a great aptitude for computers.

## Student Questionnaire

Once I had identified the two classes with whom the video would be produced, I conducted a short questionnaire with the students from these two classes in order to ascertain their views on using ICT, especially the laptops, in class. Fifty students from my second year Religion and Computers classes were asked six questions:

1. Do you like having your own school laptop?
2. What are your two favourite things that you can do on the laptop in class time?
3. What are your favourite things to do with during break time or at home on your laptop?
4. In what ways do you think the laptops help you learn?
5. Do you think that the laptops make St. Aidan's a better school? In what way?
6. Do you have any good ideas for using the laptops in class to help you learn? What are they?

Student responses were overwhelmingly positive (ES550 Journal- 16th November 2010). It was clear that students liked having their own laptops and felt that they, and the school itself, benefited from having a 1:1 student to computer ratio (SCR). Students consistently conveyed the opinion that the laptops had made St. Aidan's a better school, marking it out as unique from other schools and attracting new students:

- People come in early to collect them.
- We have great technology in our school.

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<sup>2</sup> ES550 is a module entitled Digital Creativity in the Workplace and takes place on in the second year of the Masters in Education Management and Training, eLearning strand.

- Students in other schools don't have laptops.
- Everyone comes here because we get laptops. (Students, personal communication).

Many respondents indicated that using laptops made classes more interesting and exciting and that having access to the Internet's vast source of information was a boon that facilitated learning:

- We can find a lot of information there.
- It's more exciting.
- You can type in a question and it will have the answer.
- You can catch up on work on Connect. (Students, personal communication)

However, students strongly indicated that the laptops could be used more frequently in class and that teachers should "find more subject based games and activities":

- Find games suitable for that class.
- Using them more frequently would be good.
- Sometimes doing subjects in game form helps us to remember. (Students, personal communication)

## Reflections

Reflecting on the data gathered through class observations and student questionnaires I felt that my initial beliefs about students' lack of interest and engagement with ICT as a learning tool were somewhat misguided. After all, these students are Digital Natives (Prensky, 2001), part of the Net-Gen (Tapscott and Williams, 2007). They are used to the seamless integration of computers into a society where technology is used with natural ease (Weisner, 1991). Students enjoyed using the laptops in class for tasks such as researching and presenting information, communicating with others or drill and practice tasks like typing, science or maths games; the types of activities that can lead to effective learning environments (Bransford et al 2000; Dunleavy et al, 2007).

Students also expressed a desire to use the laptops more frequently in class. I felt that this was a desire that could only be met by teachers, a view that was compounded by numerous studies, which advocated the need for teachers to embrace technology as a pedagogical tool before students accepted it as such (Levin and Wadmany, 2005; Cope and Ward, 2002,; Cuban et al, 2001).

Teachers must engage with the technology first and then their attitude can influence the students... Within St. Aidan's I don't see how student engagement will improve until a greater number of teachers are using ICT in class on a much more regular basis. (L. Sloyan, personal communication, November 9, 2010)

During this cycle of enquiry I considered why students, who express such an interest in computers neglect to bring them to class. I felt that the problem was a progressive one,

described as such by a colleague: “If you have a class of twenty and ten [students] haven’t brought them [laptops] in then you can’t use them and each time you don’t use them another student drops out of the loop” (C. Shortall, personal communication<sup>3</sup>).

This view of the problem supported my previous assertion that teachers play a pivotal role in the integration of ICT into school life. It is necessary that teachers perceive the use of ICT as a teaching tool as positive and advantageous if there is to be successful implementation of learning technologies (Peneul, 2006; Levin and Wadmany, 2005; Bitner and Bitner, 2002; Cope and Ward, 2002; Cuban et al., 2001; Fuller, 2000). Teacher attitudes towards educational technologies have a direct impact on student attitudes.

In light of these findings, I decided that it was necessary to amend my research idea. I changed the focus of my research from enhancing student engagement to enhancing teacher engagement, thus altering my question to: How can I use video to improve teacher engagement with my school’s abundant ICT equipment?

## The Second Cycle of Enquiry

Having reassessed my research idea I embarked on my second cycle of enquiry. This involved investigating the effective ways in which St. Aidan’s teachers were using ICT in their teaching and subsequently planning and producing a video that modelled this effective practice for less ICT literate teachers.

In order to gain greater insight into the reasons that teachers might be reluctant to use ICT class I conducted in-school interviews. The first took place on 25<sup>th</sup> November 2009 with Mr. Frank Moran, the principal of St. Aidan’s. The Second took place on 2<sup>nd</sup> December 2009 with [Mr. Conor Shortall](#), a teacher and regular user of ICT in the classroom. Both interviews were recorded using Garageband software.

What emerged from these interviews was a sense that certain challenges needed to be overcome before the ICT could be integrated into teaching and learning in a meaningful way.

- The traditional classroom structure is not conducive to effective 1:1 computer use. Teachers may need to rethink their classroom layout in order to be aware of what students are accessing on their laptops. Indeed, Butzin’s (2004) ‘Project Child’, illustrated how changes in class structure, layout, timetable and teachers’ planning methods and time, can lead to the successful implementation of 1:1 computing, with participating students shown to be on-task, disciplined and most importantly highly engaged with the curriculum.
- Teachers may have to take on a more facilitative role in helping students to critically assess the wealth of information they now have at their disposal (Dunleavy et al., 2007; Levin and Wadmany, 2005; Butzin, 2004; Bransford et al., 2000; Mouza, 2008).

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<sup>3</sup> [Interview with Mr. Conor Shortall.](#)

- As teachers have a curriculum to cover, exams looming and possibly students with learning difficulties they may not feel that ICT based approaches are the most suitable. Teachers who are in doubt about the use of computer-based activities to achieve their educational aims are unlikely to use them (Fuller, 2000).

It seemed apparent that for teachers to embrace the use of laptops, and technology in general, as a pedagogical tool, it would involve a reassessment of the traditional teacher role. Many studies in this area have highlighted the need for training teachers in the use of ICT in order to bring about these changes. Such training must focus on incorporating the new technology into specific subject instruction rather than the technicalities of using the hardware and software (Klieger et al., 2009; Peneul, 2006; Levin and Wadmany, 2005; Mulkeen, 2003; Bitner and Bitner, 2002; Cope and Ward, 2002; Cuban et al., 2001; Fuller, 2000; Carr-Chellman and Dyer, 2000). It is imperative that teachers are able to conceptualise how the use of various technologies can facilitate teaching and learning before they can be used successfully in class (Bitner and Bitner, 2002).



## Identifying the benefits of ubiquitous computing

### *Identifying good practice within the school*

Despite my concerns that the ICT equipment in school was not being used to its potential, I was aware that many teachers were using ICT in ways that enhanced their students' learning. Using Bransford et al's (2000) four criteria for effective learning environments as a guide, I spoke with my colleagues in the core group, a group of ten teachers identified as having high ICT skills about how they used ICT in class. In this way I identified the following as being successful teaching and learning activities:

### *Activities were knowledge centred*

Teachers were facilitating students in researching topics using the internet, students were using their critical faculties to select relevant information and then using sites such as [www.bitstrips.com](http://www.bitstrips.com), [www.wordle.net](http://www.wordle.net) (Figure 4), [www.blabberize.com](http://www.blabberize.com) or [www.voki.com](http://www.voki.com) or software such as Open Office Writer (Figure 5) or Presentation or Comic life (<http://plasq.com/comiclife/>) to present their work.

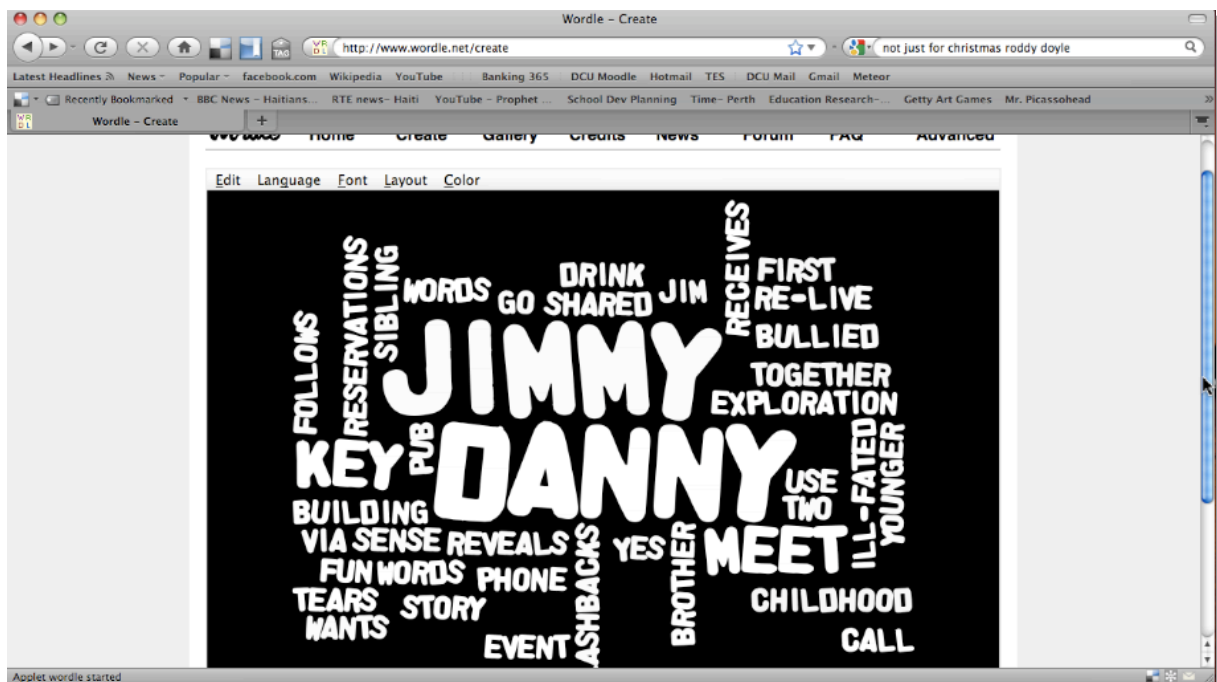
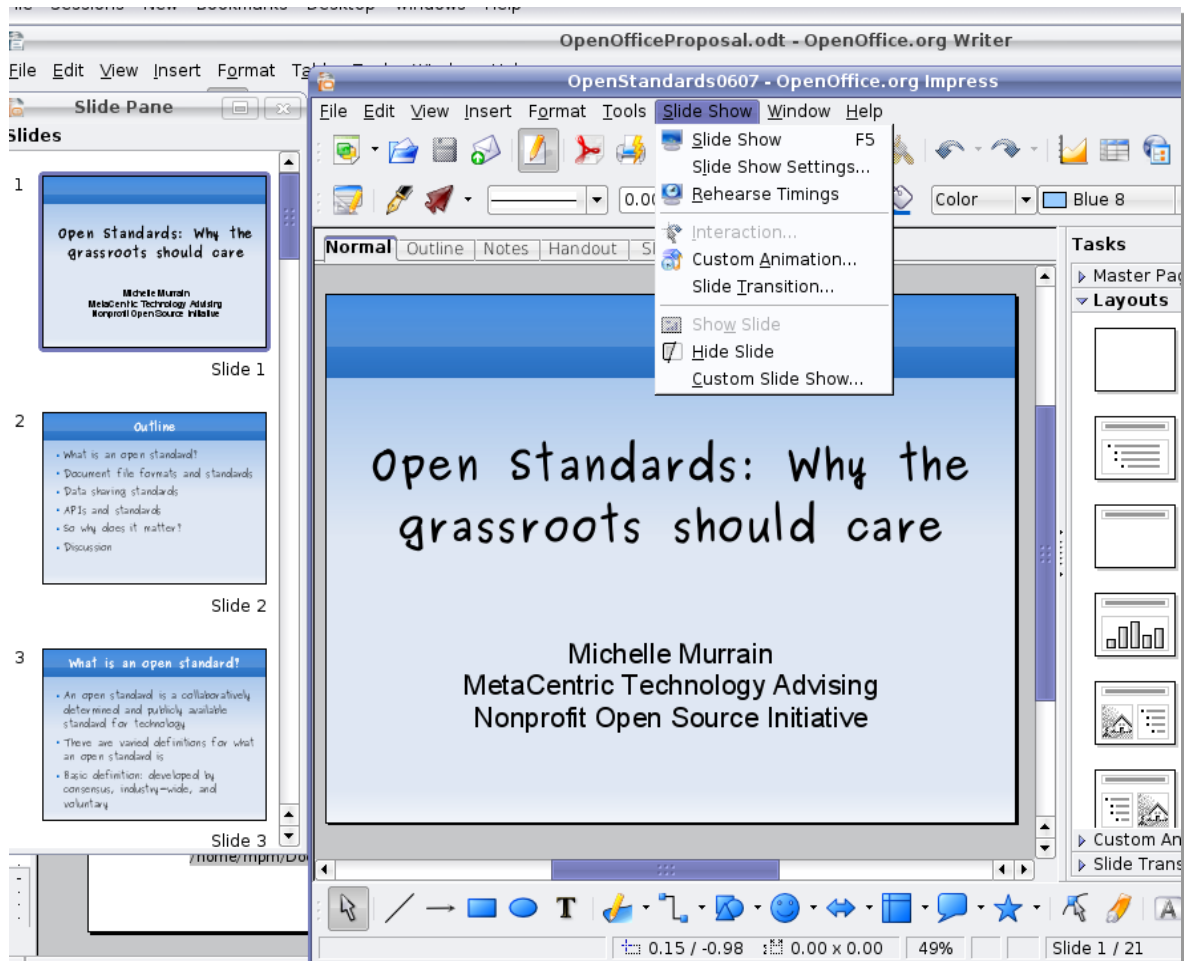


Figure 4. Using 'Wordle' to create key word clouds



**Figure 5.** Using [Open Office](#) presentation software

### *Activities were learner and assessment centred*

Many teachers identified learning games and activities available on the Internet as useful learning and revision aids for pupils. Not only did they make classes more interactive, but they also offered immediate feedback for students using them. Offline games such as Buzz quizzes engaged students in entertaining and competitive revision exercises.

### *Activities were Community Centred*

Moodle, the school's virtual learning environment (VLE), was mentioned by both students and teachers as a way of communicating with others in and out of class. Moodle has created an online community where teacher-teacher, student-student and teacher-student interaction can take place. This facilitates sharing of, and access to, school resources. Group activities such as podcasting or collective research projects encouraged peer mentoring. Student/teacher mentoring and friendly competition: all characteristics of technology enriched learning environments (Dunleavy et al, 2007; Bransford et al, 2000, Mouza, 2008).

## Developing the video storyboard

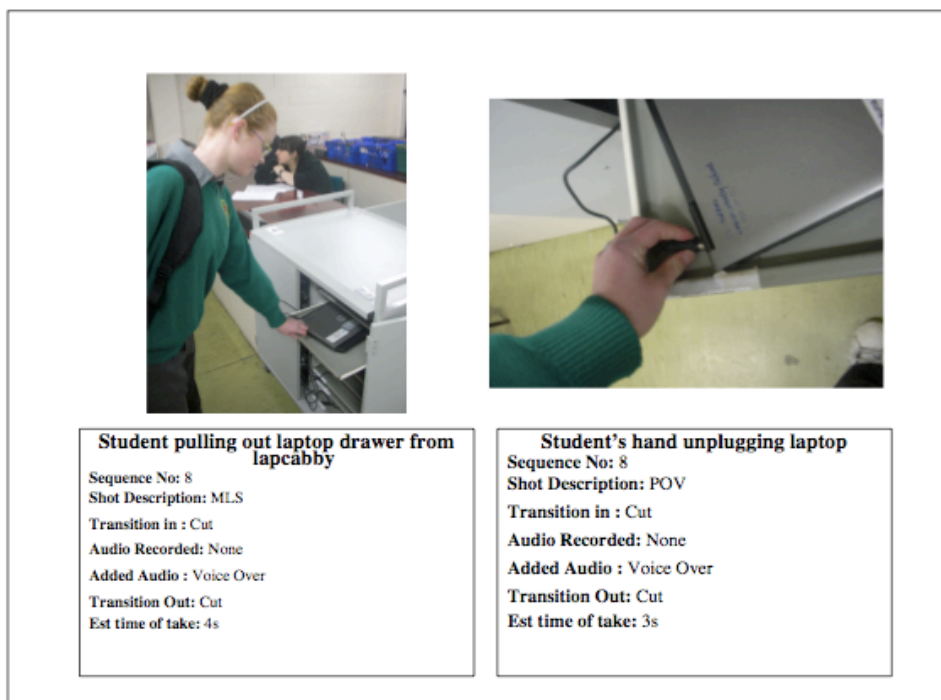
It was my hope that the video would not only model good practice but would also depict the benefits of a ubiquitous computing initiative- that is to say:

- A quality digital learning environment (DES, 2009).
- Up-skilling of staff.
- Increased student engagement (Dunleavy et al, 2007; Levin and Wadmany, 2005; Butzin, 2004; Bransford et al, 2000; Mouza, 2008).
- In a disadvantaged school, such as St. Aidan's, a quality digital learning environment bridges the digital divide (Page, 2002; Mouza, 2008).

In order to emphasise these possible positive outcomes, I divided my storyboard, and subsequently my video, into distinct sections:

- Introduction
- Visual Aids
- Researching and Presenting Information
- Learning Games
- Basic Skills.

Based on the feedback from my supervisor Yvonne Crotty and the validation group at DCU, on my previous multi-cultural video I was aware of the need for a steady pace throughout the video in order to hold the viewer's attention. On reflection, I felt that simply showing teachers at work might not be visually stimulating viewing and that the video would need to be interspersed with screen-shots of relevant websites and software programmes, as well as interviews with management and students.



**Figure 6.** Sample section from storyboard

In terms of planning for the production of the video, I composed a rough draft of the script and used it as the basis for my storyboard. The storyboard consisted of photos of staff and students involved in ICT based classes and was completed using Powerpoint.

## Making a Video to Encourage Teacher Engagement

### *The Filming Process*

Having established a storyboard for the video, I began shooting the footage in February 2010. The filming took place over a two-week period and was filmed mainly in free classes and during the second year classes identified in the first research cycle. I sought to make the video as inclusive as possible, representing the main stakeholders in the school: students, teachers and management.

### *Students*

I developed a four-week scheme of work with ICT integrated into almost every aspect for my second year religion class. I then secured parental permission for students to be in the video and simply filmed them at work. This gave me ample footage of pupils doing laptop based learning activities and effectively portrayed the high levels of engagement with their work.

I wanted to record students' positive attitudes towards using laptops as learning tools and so conducted a number of short, informal interviews with them. The questions asked were:

- What do you like using computers for at home, or in your free time?
- What do you like using computers for in class?
- How would you like to be able to use computers in class? Any suggestions for teachers? (L. Sloyan, personal communication, February 25, 2011)

Some students gave specific examples of ICT learning activities they had done in class, (Video 3: 2m 35s, 3m 00s, 3m 25s, 4.18s, 4m 53s, 6m 08s). I felt that this indicated how enjoyable the activities were for students. However, most students spoke in generalities about using their laptops in class, saying they liked to “Go on games” and “Look stuff up”. This, I believed, was a clear indicator of the need for teachers to take the lead in using ICT in class (Cope and Ward, 2002) and highlighted the importance of providing teachers with specific examples of how they can do just that (Bitner and Bitner, 2002).



**Video 3:** [Student Interviews](#)

### *Management*

On 24<sup>th</sup> February I conducted and recorded a second, unstructured interview with the school Principal, Mr. Frank Moran. Throughout the interview Mr. Moran discussed what he believed were beneficial aspects of the school’s 1:1 SCR. Central to this, the bridging of the digital divide which he ardently believes is likely to develop between student’s in a disadvantaged area such as Brookfield and students in more affluent areas if not promptly addressed through projects such as Connect (Mouza, 2008; Page, 2002; Zhang, 2000). Such views are supported by Page’s 2002 study which shows that a student’s technology use and

self-esteem are complementary; increased self-esteem is a precursor to liberation from poverty and therefore technology usage from a school going age is important if students of low socio-economic status are to be raised up from that poverty.

Mr. Moran holds that the skills that pupils develop as a result of high exposure to technology are of great benefit to them in later life (Video: 7m 43s). He also highlighted the uniqueness of the project and expressed the view that teaching and learning had been enhanced as a result of the widespread availability of ICT resources in the school.



**Video 4:** [Second interview with Mr. Frank Moran](#)

## The Editing Process

### *The Initial Edit*

The video was edited using iMovie software. In order to illustrate the many websites and programmes I had seen in use while filming, I used a screen capture programme called ishowu. This programme captures the user's mouse movements and interactions with the computer and exports them as high quality .mov files that can be imported into iMovie. (ES550 Journal- 1<sup>st</sup> March). These clips demonstrated the user-friendly nature of the websites and programmes and provided virtual examples of how they could be used for educational purposes (Video: 1m 50s, 2m 24s, 2m 49s, 3m 42s, 4m 31s, 4m 45s, 5m 36s, 6m 33s, 7m 37s, 7m 44s, 8m 10s).

On the first of March a validation meeting was held in Dublin City University (DCU). My classmates and I showcased our videos and gave and received constructive criticism from our supervisor Yvonne Crotty and each other. In light of this criticism, I reflected on the changes that would need to be made to my work. I noted my thoughts in a March journal. I clarified a number of changes that needed to be made in order to make the video more engaging for the intended audience:

- The length of the video was about double its appropriate length. At over 13 minutes, it was too long and slow moving to hold anyone's attention.
- I wanted to include a section on languages as the French and Spanish teachers in the school are regular users of ICT. However, I determined that adding extra footage at this stage would be counter-productive as I was also trying to shorten the length of the video.
- The titles needed to be more exciting. I had attempted to create inserts that looked like they were being typed, however, my classmates and I felt that these were dull and I needed an alternative.
- The video was lacking music. The general consensus was that a background song was needed to link the footage together. (L. Sloyan, personal communication, March 5, 2011)

Overall the feedback indicated that the video did not hold the viewer's attention and thus, would not motivate teachers to use the suggested ICT activities in class.

### *Re-editing*

In order to shorten the length of the video I removed over a minute of footage from the beginning sequence that portrayed general school life and activities. While this sequence showed the school in a positive light, it was unrelated to the topic and therefore unnecessary. I proceeded to shorten the length of each shot by half, leaving most of them between two and three seconds long. This greatly improved the pace of the video making it much easier to watch. The screen captures however, were still too long. I increased the speed of these clips using the iMovie clip adjuster. This resulted in much shorter clips, without losing any of the footage. As the clips were quite quick moving I included a list of suitable websites or programmes that teachers could access in their own time at the end of each section.

The improvements to the pace of the video were confirmed by further feedback from my supervisor, Yvonne Crotty, and my classmates via a Moodle Forum (Figure 8):


Your shots are really good and there's a great variety of shots throughout. Breaking up the interview with your Principal worked really well.

You've given me some ideas to take on board. The pace is very good and I think the length is perfect for presentations.

From viewing it myself I'm motivated to look into those websites and educational games, so I'd imagine your staff will react the same way. It really shows off your school well. Finally, there's a good pace to it - maybe in some places a little bit too quick though? (personal communication)

To make the titles that appear at the start and during the video more visually appealing I used a website called animoto.com. This site allows the user to upload photo, video, text and music to its server. The site then generates a short .mov file using this

uploaded content. I used a short section of the song “Technologic” by Daft Punk to accompany the title at each insert and used an instrumental version of this song as the backing track for my video. However it became “clear that this didn’t work. It became very irritating very quickly” (L. Sloyan, personal communication, March 16, 2011). I felt that while this techno song might appeal to the students in the school, it might be off putting for a more mature audience. My own opinion was echoed in feedback from my classmates and thesis supervisor, Yvonne Crotty: “To be honest, that music was wrecking my head at the start but by the end it wasn't bothering me at all. That’s just because I'm old.... I'd say kids looking at it will love it” (Y. Crotty, personal communication).




Re: IT School Video  
by [Jerome Westbrook](#) - Monday, 5 April 2010, 08:42 AM

Laura,  
Well done. Like Paraic, I love the variety of shots and you've given me some ideas to take on board.

The pace is very good and I think the length is perfect for presentations.

[Show parent](#) | [Reply](#)



**Grainne Ni Mhordha** 2 months ago [Delete](#)

Hey Laura, well done on your video. I think your voice really suits the voiceover. I liked the way you chopped up the bit with your principal into two smaller parts. From viewing it myself I'm motivated to look into those websites and educational games, so I'd imagine your staff will react the same way. It really shows off your school well. Finally, there's a good pace to it - maybe in some places a little bit too quick though? I didn't catch one title at the start (researching and presenting information) because I was distracted by the quick moving pages. All in all it was really good.

[Reply to this comment](#)

**Figure 7:** Feedback via Moodle discussion forum

I reassessed this song choice and chose a slower electronic song with a Creative Commons licence, “Nothing is Impossible”, by DEUS as the backing track. This song reflected the technology theme of the video but had more widespread appeal.

## Reflections



On completion of the second action research cycle I felt that it was important that teachers, rather than students were central to my enquiry. A number of St. Aidan's staff display exemplary practice when using ICT to enhance students' learning. Their methods developed through trial and error as they deal with the problems found in the swampy lowlands (Schön, 1995) of the classroom. However, although I had decided not to involve students in the planning and production of the video, I found that while making the video many students were eager to get involved. I was surprised at this given their initial reluctance to be involved in the project. Rather than having to force students to take part in interviews or to help behind the scenes, students offered their assistance on a voluntary basis. Students' involvement in the video was an organic occurrence and a very positive aspect of the video making process. I noted an example of this involvement in a journal:

In one of my 2nd year classes, one student in particular took a great interest in the filming process and appointed himself my helper while I was taking footage in the class. As he is also a computer whizz, the film seemed to hold an even greater appeal to him. This pupil is not particularly academic, so it was great to have an opportunity to encourage him in something he is clearly interested in. (L. Sloyan, personal communication, February 10, 2010)

My overall intention was to create a video that encourages teacher engagement with the schools' 1:1 laptop initiative. Yet, I feel that the video could promote increased interest among both staff and students due to its inclusive nature, representing the managements', teachers' and students' desire to embrace the use of technology in order to benefit teaching and learning.

## Reflection on my Research Journey

Today's digital native students are generally adept at using technology for purposes that appeal to them: texting, gaming, social networking, etc. Students in St. Aidan's Community School displayed positive attitudes towards using their laptops and other technologies to enhance their learning experiences, reflected in their expressed desire to use them more frequently in class.

Often when teachers are being trained in the use of ICT for educational purposes the focus of the training is on the technicalities of using the equipment. Research shows, however, that this is insufficient and if teachers are to embrace technology as a teaching and learning tool they must be provided with not only the technical know-how but also solid examples of how hardware, software and web-based resources can be used effectively in day-to-day teaching practices (Klieger et al., 2009; Peneul, 2006; Levin and Wadmany, 2005; Bitner and Bitner, 2002; Cope and Ward, 2002; Cuban, 2001; Fuller, 2000; Carr-Chellman and Dyer, 2000). If the current governmental plan to develop quality digital learning environments within Irish schools (DES, 2009) is to be recognised then it is necessary for teachers to be given training and support that has a pedagogical focus and encourages greater use of ICT in the classroom. Teachers' primary objective is to impart knowledge to their students and they will only embrace new innovations in the classroom if they can be shown that they are truly beneficial.

As with any organisation, there are varying ICT skill levels in schools. Some teachers, the early adopters (Rosenberg, 2006) will embrace, and become proficient in, new technologies more quickly than others. These early adopters can be enlisted and encouraged to “influence, explain and show what they are doing so that others can come onboard.” Unfortunately, teaching can be an isolated profession, with timetable restrictions that seldom allows time for observing the work of others (Dunleavy, 2007). The use of video can help to overcome this problem. The widespread availability of digital video cameras and free video editing such as iMovie or Windows Movie Maker means that teachers can record their best practice with a view sharing it with colleagues, facilitating peer-to-peer learning with little disruption to the school day.

Central to action research is the notion of reflective practice. Throughout the course of this research regular journaling meant that I was consciously looking at my own practice in an effort to draw out my own tacit knowledge. Reflecting on what constitutes effective practice and how I could improve my own work was highly beneficial. I was forced to consider my own use of ICT as a pedagogical tool, realising that despite my espoused value of student-centred learning, my approach was still very much teacher-led. Reflecting on my practice has encouraged me to live out this value in my own practice.

Having had little experience with video production prior to starting the Masters programme and before embarking on this research, I found it to be a hugely worthwhile experience. Producing the video allowed me to observe my colleagues at work, an inspiring experience that furnished me with new ideas and approaches to using ICT in the classroom. Management, staff and students were engaged in the video making process making it an inclusive endeavour, representative of my values (Crotty, 2010). This interaction between management, staff and students for the express purpose of documenting and promoting effective uses of ICT in teaching and learning encouraged open discussion that focused very much on the positives aspects of the 1:1 SCR rather than the problems that can arise as a result of it; an experience which itself promoted the use of ICT before the video was produced.

### **Approaching Further Cycles of Enquiry**

Moving forward, I would suggest that the resulting video be made accessible to staff via the school’s Virtual Learning Environment (VLE), Moodle. Using Moodle’s forum facility teachers could pose questions and offer help, advise and support to each other using the video as a discussion prompt. This implementation should be carefully monitored and if considered successful further videos could be produced and shared as staff develop new ICT based strategies and activities.

It became apparent during the course of my research that teachers sought ideas and materials that were relevant to their own subjects, as well as generic examples of classroom ICT use. With this in mind, a long-term goal should be to develop videos depicting subject specific practices. Such videos would not only be applicable on a school-wide level, but on a national level. Ireland’s current economic troubles have seen funding for the Second Level Support Services (SLSS) slashed, limiting in-service training for teachers. The medium of video could prove to be an ideal way to provide training and support for teachers who,

despite a dearth of formal training opportunities, are required to prepare their pupils to be key players in Ireland's 'Smart Economy'.

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