



etanta



The **setanta** Project
(Schools, Education, Teaching and Technology Applications)
St Aidans CBS
School of Computer Applications, DCU
Schools Integration Project (SIP 042)

*A paper presented at the Schools Integration Project Symposium,
Portmarnock, Dublin, 1-2 December 2000.*

Ray O'Neill

Ray O'Neill

Schools and Information and Communication Technologies.

The introduction of information and communications technologies to post primary schools has been somewhat haphazard to date. Schools have had little support in the form of strategies for the introduction of ICTs or the resources to introduce ICTs. As a result many post primary schools have obtained hardware and software from within their own resources and have devised approaches and strategies to the introduction of ICTs on their own initiative.

On November 28th 1997 An Taoiseach, Bertie Ahern T.D. and Minister for Education and Science, Michéal Martin, T.D. in the presence of Alfie Kane, Chief Executive of Telecom Éireann (now Eircom), launched the Schools IT 2000 programme, in St Aidans CBS Dublin.

At the launch, An Taoiseach said

"We want every school in the country to achieve computer literacy..."

The Minister said:

"Ireland lags significantly behind its European Partners in the integration of information technologies in our schools."

and

"Helping teachers to develop the skills necessary to use information technologies has been shown throughout the world as being the key to successfully introducing them in the classroom"

St Aidans CBS

In response to these challenges St Aidans began developing a school plan for ICTs in January 1998.

A number of key challenges were identified:

- To date computers have been used in schools to teach computers. However, the primary occupation of schools is teaching subjects and ICT is not one of these subjects. It appears that ICTs are peripheral to most teachers.
- Commercially available software (courseware) is generally not adapted to the Irish market and as a result is not particularly useful.

The Internet provides a useful metaphor for teaching subject areas but it has its own problems.

- Appropriate content is often difficult to find, so we are dependent on what others make available on the Internet.
- Access speed is a problem, and this will continue to be the case until broadband technologies are rolled out.

The Setanta project was developed to address these challenges.

At the 1998 Teachers conference, Tom O'Dwyer, Director-General for Education, Training and Youth, European Commission delivered the keynote speech. In his address, he referred to the numerous studies which showed the educational benefits of ICT, and then outlined the recognised obstacles to the use of educational multimedia in schools:

- Lack of user-friendly multimedia equipment and software for teachers and pupils;
- Insufficient quantity of equipment, which is often technically obsolete, sometimes insufficiently used and rarely connected to telecommunications network;
- Insufficient quality and quantity of educational software adapted to the needs of users;
- Difficulty of integrating educational multimedia into teachers' educational practice; and
- Lack of teacher training and information.

Through the Setanta Project we hope to address these problems. We intend to do this by developing a school based Intranet for the support of teaching and learning materials.

- The Setanta project draws on the skills, teaching interests and needs of the students and staff of St Aidans school and merges these with the expertise, research interests and needs of the staff and students at Dublin City University School of Computer Applications.

The Setanta project will draw together

- the multimedia skills and technologies available in the School of Computer Applications.
- the programming and development skills of the undergraduate students in the School of Computer Applications.
- the pedagogic and curriculum knowledge of St Aidans teachers

to meet the needs of St Aidans School for real, usable applications of ICT using the internet in its teaching and the needs of Computer Applications for real world projects for its undergraduate students.

This project uses the strengths of both institutions to meet their various needs.

- The School of Computer Applications have skills, experience and research interests in the areas of Multimedia, Internet and Intranet technologies in their teaching.
- Undergraduate students in Computer Application do projects and the increasing numbers of students mean a greater demand for project specifications. The projects, in this proposal, have the advantage of being real and focussed.
- St Aidans school has a long record in innovating, promoting and developing technologies in post-primary education.
- St Aidans teaching staff have strong pedagogic and curriculum experience.
- St Aidans needs advanced multimedia and Internet and Intranet support and advice to continue its innovation.
- The concept of a subject based Intranet meets the requirements of relevant and interesting course materials with the advantages of no dial-up costs and high-speed access.

Project Goals

With these ideas in mind specific projects goals were identified.

- To develop a model for a school based intranet for the teaching of second level school subjects.
- The model will include a description of the necessary hardware, software and human resources required to implement a system.
- To use the model in school and evaluate its strengths and weaknesses.
- To make the technology available to other schools.

Project Objectives

- To increase the proficiency of a cross section of teachers in the use of PCs and the Intranet, not just as general skills, but specifically related to their subjects.
- The establishment of an Intranet of course materials.
- To make this Intranet initially available in the classroom, with fast access and tailored to the needs of the school and curriculum.
- To extend this Intranet to include a range of subject classrooms.

List of Proposed Activities to Achieve the Stated Objectives

- Post primary school staff training in the use of the Intranet.
- Post primary school staff training in the development of courseware.
- Reconfiguration of the existing network to facilitate the operation of a secure Intranet.
- Enlisting the expertise in DCU School of Computer Applications in the reconfiguration of the network.
- Enlisting the expertise in DCU School of Computer Applications in developing courseware.
- Devising projects to meet the needs of St Aidans for appropriate courseware which will be suitable as final year projects for Computer Applications students.
- Upgrading existing Internet access.

The Role of Students

In his address to the Third European Conference on ICTs in the Curriculum, David Katz (3Com Director, Global Education Markets) highlighted a number of key factors required for a successful ICT project, one was the development of specific content by students. A group of 20 students from St Aidans will be participant-contributors in this project. Following training they will be involved in developing content for the Intranet and maintaining the network. This will be accomplished by:

- Training in Web authoring.
- Training in setting up laptops, data projectors and connecting to the network.
- Organising task groups to carry out particular functions.

This will empower students to use ICT, it will increase their understanding of the technological world they live in and encourage ongoing participation in technological developments.

Developments to date - December 2000

Training

There have been five training courses to date

Course	Date	Participants
Basic computer skills	May 1999	12 teachers
PowerPoint	January 2000	5 teachers
Setup and use of data projector and laptop	January 2000	10 teachers
Computer Applications	February 2000	21 teachers
Web design	April 2000	14 students, 4 teachers
Setup and use of data projector and laptop	October 2000	7 teachers
Powerpoint and FrontPage	November 2000	16 teachers
FrontPage	November 2000	48 students

Infrastructure

The first two stages of hardware and software upgrades and reconfiguration has been completed. Dates have been fixed for the next phase of development.

Phase 1			Cost	Sponsor
Re-cable existing network	October 1999	Complete	£13000	St Aidans
Upgrade network server	October 1999	Complete		
Reconfigure network to provide robust, secure access	October 1999	Complete		

Provide email/internet access to computer room, staff room and main office	October 1999	Complete		
Two computers in the staff room	September 1999	Complete	£3200	St Aidans
Data projectors (2)	January 2000	Complete	£6400	SIP
Laptop (to use with data projectors)	January 2000	Complete	£1803	SIP
Digital video camera	January 2000	Complete	£1600	SIP
Digital still camera	September 1999	Complete	£1100	St Aidans
Computer for Careers office	September 1999	Complete	£1400	TESCO
Computer for careers room	March 2000	complete	£1500	NCTE- Careers
Phase II				
Cable every classroom in the school to provide access to the school network, Intranet, Internet and email	April 2000	Complete	£8500	St Aidans
Install courseware, videoconferencing software and hardware for use across internet	February 2000	Complete	£2500	St Aidans
Computers to two science rooms	October 2000	Complete	£2700	DES science grant
Computer for Music room	September 2000	Complete	£1200	Tesco
Provide second computer room	December 2000	In progress	£14000	St Aidans

Provide computers to 12 classrooms	December 2000	In progress	£14,000	SIP
------------------------------------	---------------	-------------	---------	-----

Content development

St Aidans		
Development of web site by students	25 students	complete
Science site	1 teacher, 3 students	In development
Geography site	1 teacher, 3 students	In development
Religion site	1 teacher	In development
Hisotry site	2 teachers	In development
School of Computer Applications		
Development of virtual art gallery	2 staff, 2 students	Complete

Current work

Development of additional subject content. RE web, geography web, history web, science web.	
Training in web design and development for St Aidans students.	complete
Public presentation of the project May 2000.	complete
<p>On Friday May 19, 2000 St Aidans CBS in partnership with the School of Computer Applications, Dublin City University and the National Centre for technology in Education presented its Intranet project <i>Setanta</i> to its students and parents.</p> <p>On the day there were presentations of <i>Setanta</i> which uses an Internet metaphor to provide teaching materials to students in the school. The materials include a virtual art gallery and support materials for teaching art along with an interactive web on science topics. The art gallery allows the viewer to walk around rooms within the gallery and view the painting on display. The gallery includes audio which is used to give the background to the painting and in some cases video which is a more satisfactory way of viewing sculpture.</p>	complete

Highlights

What is it really about?

One member of St Aidans staff took up emailing his son who is backpacking in South America. He is now developing content for teaching geography and junior science.

A teacher of Irish, whose own skills in IT are limited, had a difficult class for Irish. She took them to the computer room to write their postcards in Irish. After a couple of weeks she commented. "They know more Irish than I realised. The problem was I couldn't read their handwriting. When I thought they were wrong they were really right!"

Late in 1998 a computers was made available in the staff room for teacher use. This was an important development. This provided an IT environment in the staff room. Teachers could see IT in use. Comments were heard like: "If that eejit can use them so can I." On a more serious level teachers were exposed to IT. They began to see possibilities that they had never considered. They began to support and help each other. They time they gained access to the less obviously technical aspects of IT like digital cameras, scanning, video conferencing. All of these factors helped make ICTs an ordinary part of everyday life in the school. Staff and students were becoming used to an environment where these tools were ever present. Technology became familiar and easy to use.

This project is about changing the culture of schools. Frequently in schools technology can only be accessed with difficulty. Instead of making it difficult for teachers to use technology we have to try to make it difficult for them not to. Technology can have a librating and transformative influence in schools but the transformations requires equitable and effective access.

Equitable and Effective Access

Jones, Valdez, Nowakowski, and Rasmussen (1994) describe four indicators--connectivity, ubiquity, interconnectivity, and equity--that denote equitable and effective access to technology:

- **Connectivity:** "Connectivity refers to the technology's ability to access rich resources within and beyond the school because it is connected to those resources. Connections between a school and a telecommunications source must be in place if the school is to benefit from the wealth of free and low-cost resources on the information highway." (p. 14)
- **Ubiquity:** "In terms of ubiquity, the ideal situation would be for all students to have their own networked computer. Since that probably won't be the case anytime in the near future,

technology is considered ubiquitous when computer, printer, media technologies, and other equipment are easily and readily available to teachers and students for problem solving, communication, collaboration, and data exchange. Simply having a computer or multimedia lab in every school is not ubiquitous, because students and teachers have to physically go somewhere and perhaps wait for some length of time before they can use the equipment. Networks of computers and other equipment--especially printers--throughout the school indicate high technology performance." (pp. 14, 16)

- **Interconnectivity:** "Interconnectivity occurs when students and teachers communicate and collaborate in diverse ways (exchanging data in different formats and publishing, for example) using technology." (p. 16)
- **Equity:** "For a school to be connected and interconnected, and for its technology to be ubiquitous, means that everyone has access to the best and most extensive resources the technology has to offer. If a system has home-school connections but no connections to the local library system or to the Internet, or if only students in gifted classes or in magnet schools know how to use those connections effectively, the technology is not being used equitably. Technology in schools should be available to all students so that everyone has access to rich and challenging learning opportunities." (p. 16)

We must strive to achieve these features of equitability and effectiveness.

The energies of this project have been focussed on

- Training for teachers and students
- Hardware providing computers in classrooms and in computers rooms.
- Connectivity - cabling the school to the network.
- Development of the Intranet content.

It has really been about changing the culture of the school.

- It has allowed teachers to examine their practice and change it - often the first time in many years.
- It allows students to find something of interest in courses they often find boring and irrelevant.

This project is still at an early stage. Current indications are that significant steps have been made toward integrating technology into the life of the school. It is certainly true that much of this

progress has been achieved by empowering teachers around technology and enabling teachers to empower their students through their own use of technology within their own subject areas. At the start of this project there six teachers within the school that used ICTs in some way during their school day. There are currently two teachers who do not. We have gone some way to meeting the ministers objective of *"Helping teachers to develop the skills necessary to use information technologies"* so they can *"introduce them in the classroom"*

Bibliography

Jones, B.F., Valdez, G., Nowakowski, J., & Rasmussen, C. (1995). *Plugging in: Choosing and using educational technology*. Washington, DC: Council for Educational Development and Research, and North Central Regional Educational Laboratory. Available online: <http://www.ncrel.org/sdrs/edtalk/toc.htm>