

# OECD/CERI ICT PROGRAMME

## A Case Study of ICT and School Improvement

at

### St. Fiachra's Community College

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## Contents

	Page
<b>Introduction</b>	3
	3
	5
<b>Overview</b>	7
Description of School .....	8
ICT in the School .....	9
The reform .....	11
	11
	13

<b>The Past</b>	16
	18
	19
History of the Reform .....	21
History of ICT .....	22
Barriers which were overcome .....	

<b>The Present</b>	23
	24
Description of the reform .....	
Description of ICT in the school .....	

## Hypotheses

Hypothesis 1 .....	
Hypothesis 2 .....	
Hypothesis 3 .....	
Hypothesis 4 .....	
Hypothesis 5 .....	

## Projections to the Future

Sustainability .....	
Transferability .....	

## Introduction

The research for this case study was carried out in St. Fiachra s [\[1\]](#) Community College from 4<sup>th</sup> to the 6<sup>th</sup> of December 2001 and the 26<sup>th</sup> February 2001. It was conducted in accordance with the methodology outlined in pages 8 to 15 of the OECD/CERI workbook using interviews, classroom observations, questionnaire and the collection of additional evidence from the school. The report focuses on the current reforms and initiatives adopted by the school and the part that ICT has played in the reforms.

## Overview

### Description of School

St. Fiachra s Community College is a large coeducational second-level school situated on the outskirts of a large town on the east coast of Ireland. It is managed by the local vocational educational committee (VEC) and developed out of the vocational school which was situated in the town centre. The new school was built on the current premises in 1980 to cater for the increasing numbers of students enrolling in the school. Although the majority of staff and students moved to the new premises at that time the old premises continued to operate as a vocational school for a number of years. It now solely caters for Post Leaving Certificate courses (PLCs). When

originally built, the school was located on the outskirts of the town with little or no development in the vicinity. Due to increased growth in the greater Dublin area the population of the town has steadily increased and the school is now surrounded by several housing estates, some of which are currently being built.

St. Fiachra s has a student population of over 1050 students. Although the school has a large catchment area, the majority of the students attending the school are from the town and its environs. Students entering the school are mixed by socio-economic backgrounds and academic ability. However a large proportion of the students attending the school from the neighbouring corporation houses, are from disadvantaged backgrounds.

There are over 70 teaching staff in the school. Along with the principal there are two vice principals, 7 year heads, two guidance counsellors, a home-school liaison co-ordinator, college chaplain and an examination secretary. Teachers have also responsibilities as heads of departments and a range of other responsibilities. These positions, according to the principal, are *essential to the running of the school* . Although the school is a large disadvantaged school there is a pleasant well disciplined atmosphere evident within the school.

**The school mission statement, which aims to *provide a just and caring environment in which we can learn and grow to our full potential* , is very much in evidence from the many initiatives and schemes adopted by the school. These initiatives include a buddy system for new students entering the school, the Literacy through IT (LIT) programme, peer teaching in the literacy programme, a Stay in School initiative, the appointment of a student welfare officer to target at risk students and a homework club for local students. The school also has two remedial teachers and has trained other teachers involved with remedial students. In general the school is very open to new initiatives that are of benefit to the students. Despite the effectiveness of these initiatives, they tend to be demanding on staff time and school resources.**

**The school is situated on a 21-acre campus. The campus contains playing fields, basket ball courts and other sports facilities. It has a strong emphasis on sport. This is evident from the many photographs in the main open area of the school where the jerseys and photographs of several famous past students are also displayed. The main entrance to the school building has a display of photographs of student s achievements and a trophy cabinet. Student art is also displayed throughout the school, particularly in the technical/Art area of the school. A large sculpture created by past students is situated at the entrance of the school and there are also several class group photographs around the school.**



**Pic. 1a. Student art displayed in corridors**



**Pic. 1b. Student art in main hall**

St. Fiachra's has several links with the local community. According to the principal these links have increased since the early nineties and have greatly benefited the school. It currently runs adult classes for parents in a number of different areas, these are very popular, particularly the IT classes for which there are more applicants than spaces. The school, which also has a home school liaison officer and runs parent-teacher meetings three times a year, is supported by a very active Parents Council which has contributed over £300,000 to school fundraising since the new school was built. The school has also been involved in the Peace and Reconciliation and the local area-based partnership and has formed links with several industries that have donated equipment to the school. Two teachers also write a weekly column in the local newspaper. This column informs the community of school events, competitions, and school achievements.

## ICT in the School

Computers have been included as part of the school curriculum in the school since the mid-eighties. The primary focus has been to equip students with basic computer skills. Since 1998 all students have also been assigned email accounts and all PCs within both cluster rooms have Internet access. Although the use of ICT is predominantly confined to the cluster rooms and to skills acquisition courses its use is beginning to permeate into other subject areas. According to the IT coordinator computers have been used for several years with the remedial classes and the remedial room has 8 PCs solely for remedial use. Its use is now also evident in other subject areas with a pattern of adoption emerging within the school. Many teachers interviewed recognised that ICT were now being used in Technical subjects, Science, Music and Art. There was also a view that Maths, Biology and Home Economics were beginning to integrate ICT. According to the IT coordinator these subject areas were *at the biting stage*.

The school has two main PC cluster rooms located side-by-side containing 31 computers in total. There are also 15 computers located throughout the school. 8 of these computers are located in the remedial classroom while the others are located in subject rooms and laboratories. All computers currently run Windows 95b or Linux. During the previous summer the school attempted to convert one of its computer labs to a Linux-based operating system however application software problems forced the school to reinstall Windows 95b. The computers in both PC labs are connected to a central server located in the principals' office. Several classrooms throughout the school also have internet access including the Science rooms, Engineering room, Art room and the Construction studies room.



Pic. 2a. Computer in Science lab



Pic. 2b. Computers in Woodwork Room

Technical support is provided in different ways within the school. As part of the IT2000 SIP project currently

running in the school a full-time technician has been allocated for one year on a pilot basis. The role of the technician is to maintain the computers in the school. In addition to his duties in St. Fiachra s, he also attends 2 local primary schools for 2 afternoons per week. His duties include addressing teacher s computer problems, installing software and hardware and upgrading. A second form of technical support is provided by the school IT coordinator. He is primarily responsible for on-site network support. While the technician is constantly addressing low level problems he does not possess the necessary skills to maintain a Linux-based network. A past student also provides technical support by maintaining the server remotely. These three levels of support within the school, although different in their focus, are all essential in ensuring the day-to-day running of the network and its peripheral devices in the school.

The school had two main aims for the future use of ICT in the school. Firstly it intended to change the computer network to a Linux-based network as constant problems have been experienced with the Windows 95 and 98 environment. Secondly it aims to attract more staff to the uses of ICT and to facilitate and promote the introduction of ICT and to further its use in other subject areas.

## The Reform

School reform at St. Fiachra s was described by many of the staff members as a constant process. No single large-scale reform was identified ahead of others however the school had adopted numerous initiatives which were currently running. These initiatives included a buddy system for new students, a welfare officer, a homework club, open access to IT during lunchtimes and after school, a discipline committee, a Stay in School programme, increased links with parents and the community and increased links with local primary schools. All reforms adopted primarily aimed to improve the school environment and to improve the learning experience of the students. This was also reflected in the interview responses from all teachers. The principal felt that all recent initiatives aimed to deliver;

*a quality education for all groups in the school, all levels in the school ... staff development, more awareness of the problems that we face with the students coming in ... [and] how to cater for the students in the year 2010*

The drive to improve the students learning experience particularly focused on weaker students. Concerns were raised by some staff members that the focus on the academically weak and the bright students tended to neglect the average student in the school. The principal was also aware that some staff were concerned that too many resources were allocated for the low and high ability students.

## The Past

### History of the Reform

As stated previously, school reform in St. Fiachra s was an ongoing and multi-faceted improvement of the school environment for all members and was not encapsulated by any one single initiative. School improvements were initially driven by senior members of staff and management. Towards the late eighties a hierarchy among the staff had developed which resulted in the larger body of staff having little input into school decisions. In order to address this a Communications Committee was formed to inform staff of management decisions and proposals. This proved successful in bringing staff members closer to school management.

*In the late 1980s we would have seen a problem in terms of a hierarchical set-up in the school evolving and therefore we had to overcome that ... there was also a demand by teachers that they wanted more of a say in the school,... [the communications committee] has brought the management much closer to the staff (School*

Principal)

All staff members now have the opportunity to become involved and have an input in school improvements. Issues and problems which arise are addressed by sub committees which report back to the staff. These committees have proven very successful in engaging staff in the school changes as stated by a teacher interviewed;

*there s an awful lot of committees , there s a committee for the corridor, there s a committee for discipline, there s a committee for PR, there s a committee for anything that comes up and a lot of teachers would be involved ... its not kind of just talking in a vacuum*

It is generally accepted that management initiate most reforms in the school but it is clear that the success of these initiatives is dependent on staff involvement. All recent initiatives engage staff, for example, all staff members were offered IT training for a number of years, teachers involved with the remedial students also received training in the area of remedial education.

## History of ICT

Computers were initially introduced into the school by the guidance counsellor<sup>[2]</sup> who became interested in the late 1970s in the use of the computer for maintaining student records. He first used the computer in the school in 1980 to maintain student records. During the early eighties a ZX 81 computer was purchased for school use which was loaned to students at the weekend. However no other teachers were interested in computers at that time;

*at that stage [mid to late eighties] there were no other teachers interested at all, it was probably a good five years before another teacher showed an interest (School IT coordinator)*

During the late eighties the school purchased BBC microcomputers and networked them in a classroom. Computers at that time had a very technical appeal. With students being taught programming their use was generally limited to boys of higher academic ability; *it was very much IT for IT sake or technology for technology sake* . The IT coordinator taught all computer classes, as there were no other teachers interested in the technology. When 386 and 486 PCs were purchased in the early nineties, the school began to focus on the use of word processing, spreadsheets and databases *purely as an IT class* .

Until the mid 1990s the use of the computer was limited to teachers that taught computer applications and was solely driven by the IT coordinator. The senior Science teacher became interested in the computer in the early nineties and began using it in Science however its use was not widespread by teachers. Staff-wide interest in the use of ICT developed with the introduction of email for every staff member. Three computers were installed in the staff room to promote interest. According to the IT coordinator this was the single most important step in the integration of IT among all staff members in the school as teachers that had little IT knowledge could access and experiment with the technology without exposing their inadequacies to students. Staff were also encouraged to take computers home during holiday times but this offer was only taken up by a small number of teachers.



Pic. 3. Computers in Staffroom

IT Training programmes were also offered to all staff members in the school. These courses, run by the guidance counsellor, took place during lunchtime and after school. Staff participation in ICT courses was subsidised by the local Vocational Education Committee (VEC). The Microsoft Breakthrough Project also provided staff training as part of a project in the nineties. Recently staff, with knowledge and experience of using the computer in their own subject areas, have begun to share their knowledge with some other less experienced teachers. This is particularly evident in the Science area.

## Barriers which were overcome

The school reforms outlined earlier generally did not face any resistance from the teaching staff as all reforms and initiatives adopted addressed specific needs of the school. Staff were also involved in the decision making through various committees and therefore had direct input into changes suggested and adopted.

In relation to ICT, which are currently being integrated into the many subjects within the school, it is difficult to determine whether any resistance to its use will arise. The IT-coordinator has recognised that up to 30% of the teachers do not use the computer facilities in the school, although this number is decreasing. He estimated that 10% of the teaching staff use computers regularly for teaching and learning purposes while a further 5% use them occasionally. Although the use of ICT within subject areas is promoted in the school, teachers are not **required** to use the technology. This means that resistance is not evident at this early stage when adoption is dependent on teacher interest.

## The Present

### Description of the reform

There are several initiatives currently taking place in the school. One of the major initiatives is the Literacy through IT (LIT) programme. This programme is aimed at the remedial students in the school. According to the principal approximately 10% of the students enrolled in St. Fiachra s require some form of remedial education. A great deal of effort is placed in helping these students in the school, for example they are normally assigned to smaller classes, ICT are integrated into the literacy programme using the 8 PCs in the remedial room. The transition year students are also involved in peer teaching on the LIT programme.



Pic. 4 Computer use in the LIT programme

The school also runs the Stay in School initiative and has appointed a student welfare officer to target students that are at risk of leaving school. A Homework Club has also been established as part of this initiative. The homework club runs from 4 to 6pm each evening for the participating students. The students have time to complete homework in a classroom and are free to visit the computer room for the final half hour.

The buddy system used in the school is another example of a recent initiative that the school has adopted. This initiative aims to smooth the transition from primary school to secondary school and in addition has formed greater links with local primary schools. Students in the school are invited to participate in the programme. Students who volunteer must attend training which focuses on communications and friendship. They are then assigned a student from a local primary school, which they meet before they attend the school.

There are several other initiatives and reforms being undertaken by the school. According to the principal all initiatives have proved successful since they are voluntary but these tend to place demands on management and participating teachers;

*Were open to all types of developments people with new ideas are certainly welcomed rather than frowned on .. the set back or drawback has been a huge demand on the management of the school ... expectancies are high ... [almost] reaching the stage of overload but its very hard to refuse ideas (School Principal)*

The openness of the school to try new initiatives was also expressed by another teacher who stated; *school has always been willing to give it a try and see how it works (School teacher).*

## **Description of ICT in School**

### **Student use of ICT**

All students in the school have an account on the computer network. 1<sup>st</sup> and 2<sup>nd</sup> year students are timetabled for a single 40-minute class per week in the computer room. Over the course of the two years they take courses in how to use the school network, the school's acceptable use policy (AUP), how to use email, the internet, MS Word, MS Excel, MS Powerpoint and MS publisher<sup>[3]</sup>. The weaker third year classes also have a single class per week in Computer Applications; they undertake a course of study similar to the second year course.



Pic. 5. Students working in Main computer room

Transition year students have three timetabled classes in the computer room per week. In two of the weekly classes the students study desktop publishing, web page design, and issues relating to the information age and information society. The third weekly class is devoted entirely to the students' project work.

A computer studies option exists for Leaving Certificate students. This option is timetabled alongside Physical Education (PE). The students opting for this course have 2 classes per week and study to complete the European Computer Driving Licence (ECDL) over a two-year period. There are also computer classes for the Leaving Certificate Vocational Programme students. The second computer cluster room is used primarily for adult classes and the Leaving Certificate Applied students.



LCA students working in computer lab 2

Students also have open supervised access to the computer labs at lunchtime and after school. This open access is very popular among all students. During an observation of this open access the majority of students accessed entertainment websites and chat rooms while some students used the time to complete project work.

## **Staff use of ICT**

Almost all members of the teaching staff have received IT training in recent years. This has resulted in all staff obtaining a good level of IT skills for personal use. According to the IT coordinator approximately 70% of staff use the computers in the school for personal use. Since all staff were assigned email accounts and access to the computer network the three staff room computers are constantly used.

As the use of the computer has traditionally focused on Computer Applications classes there is limited use of the computer cluster rooms by other subject areas<sup>[4]</sup>. Computers have been used in Science, Construction Studies and Engineering for several years. Although many subject areas now have computers in their classrooms, the use

of ICT tend to focus on project work and lesson preparation by teachers<sup>[5]</sup>.

The school also has a very extensive website and intranet containing information on all aspects of the school including student achievements, school events and past projects etc.

It is apparent that computer use is beginning to permeate into other subject areas. The head Science teacher used it in science for a number of years to show simulations and to prepare student worksheets and acetates. It is also used in the practical subjects such as Engineering, Construction Studies, Art and Music for project work.

## Hypotheses

### Hypothesis 1

*Technology is a strong catalyst for educational innovation and improvement, especially when the World Wide Web is involved. The rival hypothesis is that where true school-wide improvement is found, technology served only as an additional resource and not as a catalyst, that the forces that drove the improvements also drove the application of technology to specific educational problems.*

#### Evidence in support of Hypothesis 1

All teachers interviewed mentioned the positive effect the computer facilities had on the school. Open access times were used by a large number of students both at break times and after school but not for educational purposes.

The World Wide Web was used as a research tool in many subjects where students completed project work. This was most common in Science, Transition year, Construction Studies, Engineering, Art and Music. ICT were also widely used in the LCA and the LCVP programme.

ICT were also used in the Literacy through IT (LIT) programme. Its use in this programme was particularly successful with many staff members commenting on the impact and benefit ICT had on the students self-esteem and participation in the programme.

#### Evidence in support of rival hypothesis

Computers were initially introduced into the school as a Computer Studies type subject. Apart from the interest of a small number of teachers its primary use remained as a Computer Studies subject in the two cluster rooms. Although some teachers were beginning to use the technology within their own subjects this was at a very early stage. In these subjects the use of the computer tended to focus on its use in project work. Students in the Leaving Certificate practical subjects used the computer to produce their project reports and students in the LCA classes also used the computer to complete similar reports. An LCA teacher commented that reports/projects completed with the aid of the computer did not improve the quality of the content but dramatically improved the quality of presentation which had a positive impact of the students concerned.

The computer was also used in Science to produce students worksheets and to demonstrate simulations.

As outlined in previous sections, the school had adopted several initiatives all aimed at improving the environment and the learning experience of the students. Although the computer was used in the majority of these initiatives its use was most evident in the following:

- The literacy through IT (LIT) programme
- The Homework Club.
- Adult computer courses

These three initiatives exemplify the use of ICT as an additional resource rather than the catalyst for the reform. While the LIT programme was a very successful programme a remedial programme was in place before the computer were introduced into this area of the school. This would suggest that the introduction of IT into the programme was an additional resource even though it was used extensively by the students on the programme. The homework club also used ICT; However the use of the resources was again an additional resource in this

initiative as the students would use it towards the end of the evening as a reward for the work they had completed.

The computer room was also used to deliver computer courses for parents of the students. Adult classes were a very important initiative as it brought parents closer to the schools and extended the school further into the community. The computer studies course, although the most sought after courses on offer, was one of a number of classes run by the community college.

In many respects the computer facilities in the school are an additional resource for these initiatives and tend to serve all initiatives and reforms in the school that require their use. This would suggest that there is more evidence to support the rival hypothesis as the IT resources in the school are seen as an additional resource rather than a catalyst for educational reform as there has been little impact on teaching and learning to date.

## **Hypothesis 2**

*The diffusion of the innovation/improvement (and therefore of ICT) followed the traditional diffusion pattern for innovations, as outlined by Rogers (1995). The rival hypothesis is that technology functions differently from traditional innovations and that therefore different diffusion patterns occur.*

### **Evidence in Support of hypothesis 2**

The IT coordinator and the previous principal drove the initial use of computers in the school. The guidance counsellor introduced a computer into the school in the early eighties for record purposes and became interested in teaching the technology to interested pupils in the school. He has delivered teacher-training courses to the staff for a number of years and is generally recognised by all staff members as the main driving force behind IT in the school. As a result of the training programmes offered other teachers have become interested in its use and have begun to use the technology in their own subjects, most notably in Science, Technical subjects, Art, Music and Maths.

Although computer use for teaching and learning purposes is not used by all staff members approximately 70% of the staff use the computers in the staff room for lesson preparation, searching for information on the world wide web and using email. According to the IT coordinator 10% of staff members regularly use the computers as part of their lessons while a further 5% use it occasionally.

There is also evidence that teachers who had not previously used the technology in their lessons, but who possess good levels of IT skills, are beginning to investigate its feasibility, especially in the area of Maths and Biology.

### **Evidence in support of the rival hypothesis**

There is little evidence to suggest that an alternative pattern of diffusion exists within the school as the pattern observed mirrors the pattern outlined by Rogers.

In examining the evidence supporting both hypothesis 2 and the rival hypothesis it is apparent that there is more evidence to support hypothesis 2. A clear pattern of diffusion was observed in the school which follows the diffusion pattern outlined by Rogers. Within the school there appears to be two stages in the adoption namely personal use of IT (i.e. in lesson preparation etc.) followed by the use of ICT within the classroom. In examining the evidence the main hypothesis holds at this site.

## **Hypothesis 3**

*Successful implementation of ICT depends mostly upon staff competence in the integration of ICT into instruction and learning. This hypothesis assumes that teachers mediate ICT applications when they are successful, and that ICT academic value relates positively to teacher competence. The rival hypothesis is that the school technological infrastructure and student ICT competence rather than staff competence determine ICT implementation outcomes.*

### Evidence in support of hypothesis 3

The teaching staff in the school had attended several IT classes run by the IT coordinator. Some had also attended courses run by the VEC and Microsoft. This training was an important step towards integrating ICT across all subjects in the school as all staff had generally reached a sound level of IT skills.

The IT coordinator felt that there was now a need to run IT classes specifically related to the needs of the teachers in different subject areas. This had already begun in the school where the IT coordinator had demonstrated the *bodyworks* software to the science teachers.

The head Science teacher was also assisting other Science teachers and sharing information and knowledge with teachers after school.

One teacher (in the staff questionnaire) also mentioned that: *it would be useful if individual companies would come into the school to illustrate how software could be used in the classroom often one sees a CD ROM which could be useful but one is reluctant to buy without a demonstration.*

### Evidence in support of rival hypothesis

The school was continuously experiencing technical problems and without the enthusiasm and interest of the computer staff the network could not be maintained. The IT coordinator estimated that at the beginning of the year technical support was such a large problem that teachers spent as little as 30% in the classroom teaching as the other 70% was spent repairing and attending students' computer related problems.

The evidence above suggests that staff competence determines successful integration. However, the school had experienced several technical problems which had caused serious setbacks to the IT plan in the school. It is therefore difficult to prioritise either of these two important aspects of integration as they are of equal importance if successful integration is to be achieved. On balance however, there is more evidence to support the main hypothesis at this site.

## Hypothesis 4

*Gaps in academic performance between high and low poverty students will not increase when all students have equal access to ICT. The rival hypothesis is that equal access to ICT will lead to more advantaged students increasing the performance gap with disadvantaged (high poverty) students.*

### Evidence in support of hypothesis 4

Male students of high academic ability originally used computers in St. Fiachra's since the BBC computers had a BASIC environment which required users to have knowledge of programming, however with the introduction of GUIs all students now use the computers.

Many teachers questioned felt that students of both higher and lower academic abilities benefited from the use of the computers. Many mentioned the use of ICT in the LCA programme and the LIT programme of particular examples where students of lower abilities benefitted.

### Evidence in support of rival hypothesis

Many of the IT teacher who had experience of using ICT with a range of students felt that students of lower academic abilities and from lower socio-economic backgrounds tended to benefit least from the use of the world wide web as they would visit inappropriate sites or site with no educational value. They felt that this was due to the novelty factor of the web as they did not have access to the web at home.

Apart from the use in the LIT programme in the school all other use of the computer facilities by students of lower academic abilities was in the area of project work or IT skills courses which did not have a direct impact on teaching and learning.

Evidence to support this hypothesis or the rival hypothesis was difficult to find as ICT had not been integrated sufficiently into the teaching and learning process to examine the effects on students learning. Some teachers commented that all students benefit from the use of the computer but that students of different abilities benefit in different ways. It was generally accepted among the staff interviewed that students of higher abilities would naturally reap the full potential of ICT since they can achieve maximum benefit from it as a learning tool. Teachers also felt however that students of lower academic ability were motivated by the quality of presentation of their work and therefore also benefited from the use of ICT. This would tend to support hypothesis 4.

## Hypothesis 5

*Successful implementation of ICT will lead to the same or higher academic standards in spite of the low quality of many ICT materials. Academic standards are a function of teacher and school expectations and not of the standards of textbooks, ICT materials, and the like. The alternative hypothesis is that ICT use will lead to a lowering of academic standards as students spend more time on marginally beneficial searches and in browsing poor quality Web and courseware content.*

## Evidence in support of hypothesis 5

The school network and other ICT resources within the school were used as resources for many programmes, courses and initiatives within the school<sup>[6]</sup>. However as use in teaching and learning was not widespread its impact on teaching and learning could not be measured.

## Evidence in support of rival hypothesis

There was evidence to suggest that students using the WWW for the first time in the computer rooms for project purposes etc. tended to view entertainment sites rather than educational sites or sites relevant to the student s work. However this use, according to the computer teacher, was generally limited to students that were new to the world wide web and the novelty factor would wear off after 2-3 weeks.

During the open access times students primarily accessed entertainment sites and chat rooms while a very small percentage used the computers for educational purposes. However, it must be stressed that this use was outside of classroom time.

Evidence in support of this hypothesis or its rival hypothesis was difficult to identify as use within teaching and learning was not widespread. The majority of teachers had not integrated ICT (particularly the use of the world wide web) into teaching and learning to such an extent that it had impacted on the academic performance of the students. Although the school was integrating ICT within subject areas the majority of teachers within the school did not use it within their own classrooms. Therefore although it may have had an effect in some subject areas with particular classes its overall impact on academic performance would need to be measured within a school where ICT are integrated more within teaching and learning.

# Projections to the Future

## Sustainability

School reform at St. Fiachras was an on-going process. Although many initiatives and reforms addressed specific school problems not all were reactionary. The school also had a clear vision of its future direction. The overall vision of the school which aimed to deliver a quality education to all students, create an environment where students could learn and feel protected and to cater for the needs of the students in 2010 highlights the vision of the school and its forward planning approach. The evidence collected suggests that school reform will continue in St. Fiachras as it has previously adopted new initiatives and integrated them within the school. The involvement of all staff members also suggests that school wide support will continue for these reforms.

As previously stated the use of ICT in the school was not a major reform as they were used within the school for a number of years. However its diffusion into other subjects was an ongoing reform, which is currently in its infancy. Although many staff members were now using ICT for personal use or in teaching and learning the main drive and vision in the area of IT was from the IT coordinator. One of the main future aims in the area of ICT within the school was to facilitate the integration of ICT throughout the school in all subject areas. This was an ongoing drive within the school and the management and IT coordinator aimed to increase the levels of integration in the future. It is reasonable to expect that this pattern of diffusion, which was clearly evident within the school, will continue as there is school-wide use of the resources at many different levels from personal to integrated use.

## Transferability

The model of integration observed in St. Fiachras would not be easily transferable to other school contexts for many reasons. Firstly the school had a history of computer use; staff had been trained and had a good level of IT skills; personal use of IT by the staff was very high; staff members also had ready access to the technology in the staff room; the IT coordinator was highly motivated and had acquired good technical skills over the years; the school had adopted several initiatives and was very open to initiatives that benefited the students and staff; management had a clear vision of the future direction of the school; management actively sought donations and cooperation with the community and local business/industry; decision making within the school was a shared responsibility. The school was also in a unique position as it had an externally funded technician however this position was only funded for one year. All these characteristics of this school have played a vital role in attempting to integrating ICT within the school. It could also be suggested that these aspects are necessary for the level of success achieved in the school in the area of ICT.

## Appendix A

All fieldwork was undertaken between December 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> 2000 and February 25<sup>th</sup> 2001.

## Teacher interviews

Principal interview (Jim Gleeson) (90 minutes approx.)

1  
IT coordinator/guidance counsellor interview (Oliver McGarr) (1hr approx.)

English/History teacher interview (Keith Johnston) (45 minutes approx.)

Maths teacher interview (Jim Gleeson) (45 minutes approx.)

Maths/Biology teacher interview (Jim Gleeson) (45 minutes approx.)

Science teacher interview (Jim Gleeson) (45 minutes approx.)

Computer teacher interview (Oliver McGarr) (45 minutes approx.)

LCA teacher interview (Oliver McGarr) (45 minutes approx.)

Construction Studies teacher interview (Keith Johnston) (45 minutes approx.)

## **Technician Interview**

Technician Interview (Keith Johnston) (45 minutes approx.)

## **Parent interviews**

Parent interview 1 (Jim Gleeson) (30 minutes approx.)

Parent interview 2 (Jim Gleeson) (30 minutes approx.)

Parent interview 3(Keith Johnston) (30 minutes approx.)

Parent interview 4(Keith Johnston) (30 minutes approx.)

## **Student interviews**

Student interview 1 (Keith Johnston) (40 minutes approx.)

Student interview 2 (Keith Johnston) (40 minutes approx.)

## **Classroom observations**

LCVP computers(Jim Gleeson) (40 minutes)

2<sup>nd</sup> year computer studies (Keith Johnston) (40 minutes)

1<sup>st</sup> year remedial students (Keith Johnston) (40 minutes)

TYP computer studies (Oliver McGarr) (80 minutes)

3<sup>rd</sup> year computer studies (Oliver McGarr) (40 minutes)

TYP Science (Oliver McGarr) (40 minutes)

1<sup>st</sup> year computer studies (Oliver McGarr) (40 minutes)

3<sup>rd</sup> year computer studies (Oliver McGarr) (40 minutes)

1<sup>st</sup> year computer studies (Oliver McGarr) (40 minutes)

Note: The majority of classroom observations were conducted within the PC cluster room with Computer Studies type subjects.

### Outside classroom observations

Keith Johnston and Oliver McGarr

## Appendix B

Questionnaire distributed to all staff members (70 approx.) with 13 responses.

How comfortable are you with using a computer to do each of the following? Choices are:

1. Very comfortable
2. Comfortable
3. Somewhat comfortable
4. Not at all comfortable

	1	2	3	4
1. Write a paper	62%	9%	24%	5%
2. Search for information on the World Wide Web WWW	70%		30%	
3. Create and maintain web pages	10%	10%	24%	56%
4. Use a data base	10%	30%	22%	38%
5. Develop a data base	15%	17%	24%	44%
6. Send and receive e-mail	68%	32%		
7. Write a programme			32%	68%
8. Draw a picture or diagram	17%	40%	10%	33%
9. Present information (e.g., use PowerPoint or equivalent)	42%	8%	8%	42%

How important is each of the following computer-related skills for your teaching?

Choices are:

1. Very important,
2. Important,
3. So-so, and

1. Not important at all

	1	2	3	4
10. Write a paper with a word processor	30%	48%	15%	7%
11. Search for information on the WWW	22%	49%	22%	7%
12. Create web pages			22%	78%
13. Use a data base		10%	45%	45%
14. Develop a data base		10%	22%	68%
15. Send and receive e-mail	15%	15%	53%	17%
16. Write a programme		15%	15%	70%
17. Draw a picture or diagram with a graphing/drawing application	22%	11%	45%	22%
18. Present information (e.g., use PowerPoint or equivalent)	15%	15%	45%	25%

During the past school year, how often did your students on average do the following for the work you assigned? Choices are:

1. Several times each week
2. Several times each month,
3. A few times

Never

	1	2	3	4
19. use the World Wide Web	9%	15%	38%	38%
20. create web pages		7%	7%	86%
21. send or receive e-mail	16%	7%	45%	32%

22. use a word processing program	7%	33%	30%	30%
23. use a computer to play games		7%	7%	86%
24. use a spreadsheet			32%	68%
25. use a graphics program			40%	60%
26. join in an on-line forum or chat room		7%	7%	86%
27. use a presentation program (e.g., PowerPoint)			32%	68%
28. use an instructional program (including simulations)			30%	70%
29. other computer uses (specify)		7%		45%

30. How would you rate your ability to use a computer?

Choices are: *(Please tick appropriate box)*

Good	<u>45%</u>
Fair	<u>38%</u>
Poor	<u>17%</u>

Answer questions 31-38 based on experiences or policies from the last school year.

31. Was student computer use ever evaluated for grading?

*(Please tick appropriate box)*

Yes	0%	No	100%
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32. If you assigned World Wide Web searching, how much freedom did you allow students in locating sites to visit?

*(Please tick appropriate box)*

no restrictions	50%	some restrictions	18%	designated sites only	32%
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33. Did you create or modify a Web site with any of the classes that you taught?

*(Please tick appropriate box)*

Yes		No	100%
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34. What portion of the computer use in your classes was directly related to the course content?

*(Please tick appropriate box)*

all	10%	most	45%	some	10%	very little	35%
-----	-----	------	-----	------	-----	-------------	-----

35. What portion of the computer use that you assigned was done by students individually?

*(Please tick appropriate box)*

all	20%	most	42%	some		very little	38%
-----	-----	------	-----	------	--	-------------	-----

36. If you have a computer at home, how often did you use it for preparing for teaching?

*(Please tick appropriate box)*

Several times a week	38%	Several times a month	17%
A few times	38%	Never	
No computer	7%		

37. Did you participate as a student or instructor in a virtual course through the Internet/World Wide Web?

*(Please tick appropriate box)*

Yes	15%	No	85%
-----	-----	----	-----

38. Did you involve your students in collaborative learning over the Internet/World Wide Web with students from other classes?

*(Please tick appropriate box)*

Yes	15%	No	85%
-----	-----	----	-----

39. Are you currently using technology to collaborate with other teachers (professional chat rooms, forums, or the like)?

*(Please tick appropriate box)*

Yes	7%	No	93%
-----	----	----	-----

40. How many e-mail messages do you send each week on average?

*(Please tick appropriate box)*

More than 12		6-11	22%
1-5	68%	None	10%

How many of the following have you ever done?

41. Made changes to a computer's hardware

*(Please tick appropriate box)*

Yes	30%	No	70%
-----	-----	----	-----

42. Updated an application program (word processor, graphics program, etc.)

*(Please tick appropriate box)*

Yes	30%	No	70%
-----	-----	----	-----

43. Recovered a damaged file

*(Please tick appropriate box)*

Yes	30%	No	70%
-----	-----	----	-----

44. Created a web site

*(Please tick appropriate box)*

Yes	7%	No	93%
-----	----	----	-----

45. Developed a data base

*(Please tick appropriate box)*

Yes	22%	No	78%
-----	-----	----	-----

## Appendix C

### Use if ICT by head science teacher:

#### Science Department

- Workcards for students
- OHP acetates for use in class
- Schemes of work
- Revision schedules
- Assessments and exam results spreadsheet
- Stock taking and stock records
- Data-logging equipment on order for new courses in physics and chemistry
- Science software Redshift (astronomy) Bodyworks (Biology)
- Hand out of Sky this month from <http://www.hitbox.com/>

#### European Project

- Our comenius project Old themes, New dreams featured on school website. Partner schools in Finland and Sardinia.
- Email was a regular daily feature of project students corresponded on a regular basis with students in Finland.
- Chat with school in Finland
- Using Netmeeting with school in Finland.

#### School PR.

- School brochure
- School newsletter each term
- Welcome booklet for 1<sup>st</sup> year students
- Various other publications, notices etc.

### Example of student assignment in computer studies class

## Henry s magic sends Arsenal spirits soaring

Arsenal 1 Manchester Utd 0

**FA PREMIERSHIP:** Tomorrow is the anniversary of Manchester united s 5-0 defeat at Chelsea last season. All those that think that this result, taken with the midweek meeting at Eindhoven, is a sign of a club in decline would do well to remember that united won the premiership by a record 18 points in May.

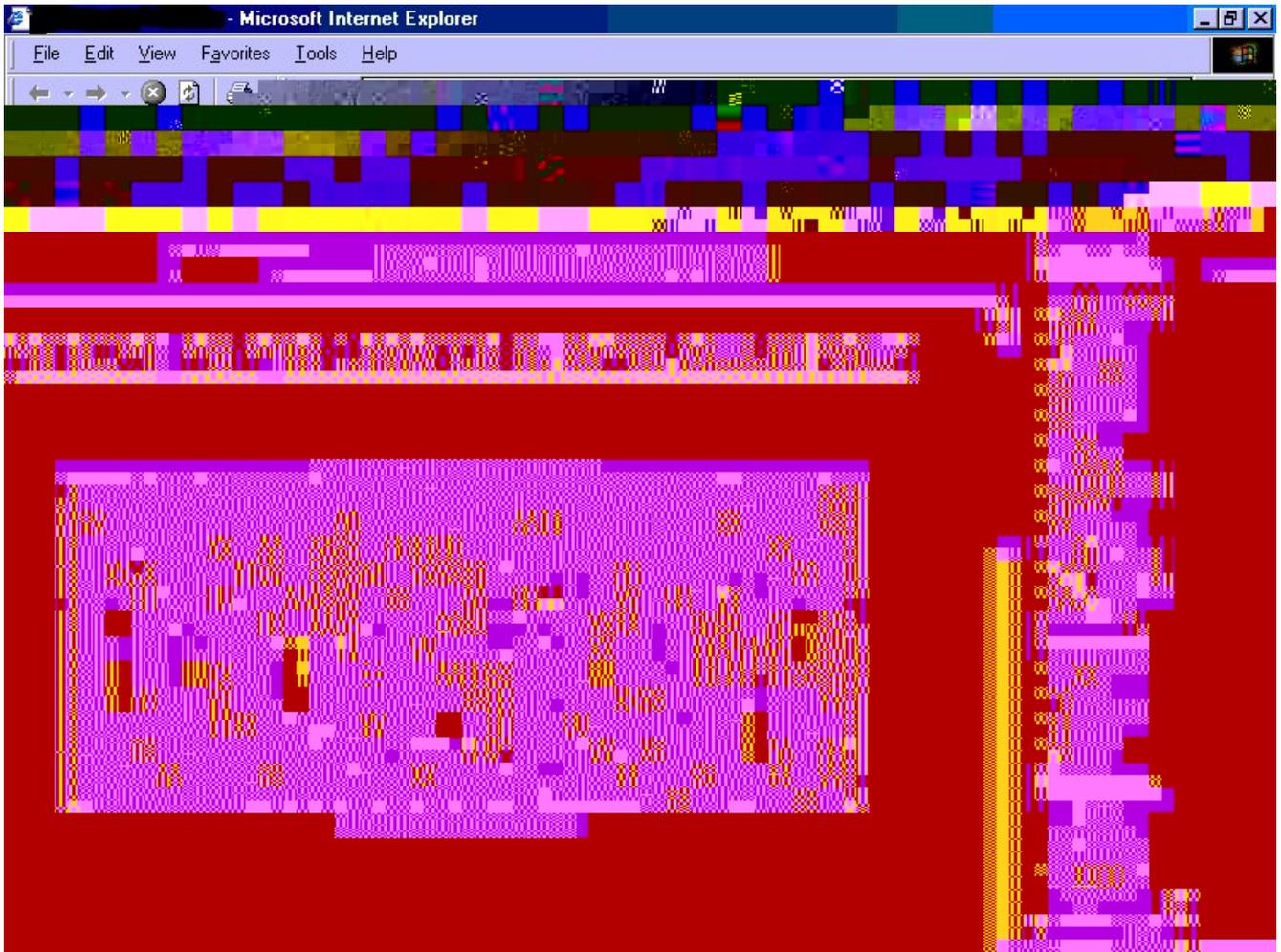
Perhaps this season will be different, yet it was due to a goal, so spectacular that it took the breath away according to Ferguson, that united did not leave north London with a point yesterday. This was United s first league defeat since February 12<sup>th</sup> at Newcastle.

### Computer room timetable

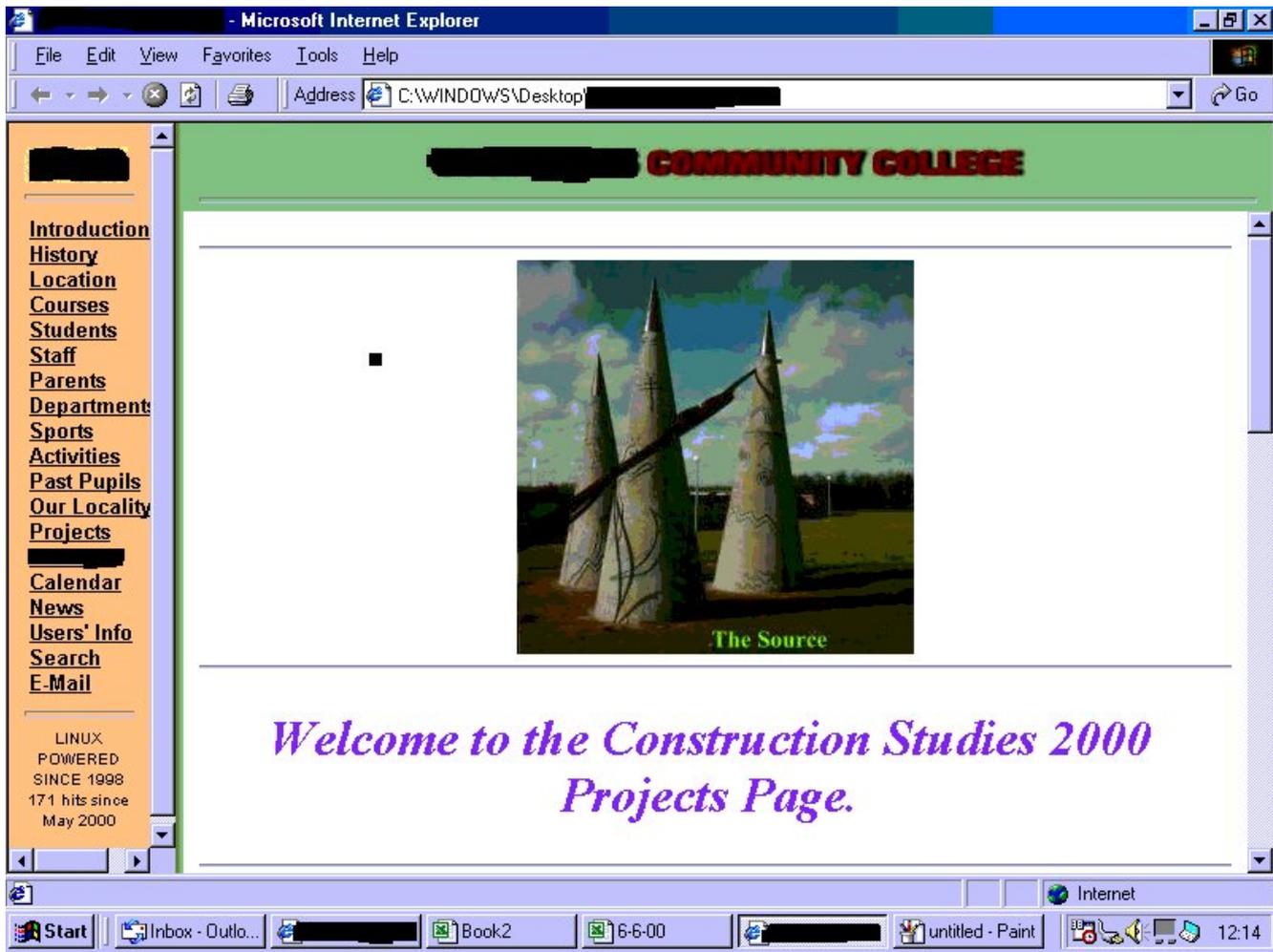
	Mo	TU	WE	TH	FR
1		C. Studies 6 <sup>th</sup> yr	C. Studies 2 <sup>nd</sup> yr	C. Studies 2 <sup>nd</sup> yr	C. Studies 5 <sup>th</sup> yr
2		C. Studies 6 <sup>th</sup> yr	C. Studies 2 <sup>nd</sup> yr		C. Studies 5 <sup>th</sup> yr
3	C. Studies 3 <sup>rd</sup> yr	C. Studies 1 <sup>st</sup> yr	C. Studies LCVP	C. Studies 1 <sup>st</sup> yr	C. Studies LCVP
4	C. Studies 1 <sup>st</sup> yr	C. Studies 2 <sup>nd</sup> yr	French	C. Studies LCVP	
5	C. Studies 1 <sup>st</sup> yr	C. Studies 2 <sup>nd</sup> yr	C. Studies 1 <sup>st</sup> yr	C. Studies 3 <sup>rd</sup> yr	C. Studies LCVP
6		C. Studies LCVP			C. Studies LCVP
7		C. Studies TYO	C. Studies 1 <sup>st</sup> yr	C. Studies 2 <sup>nd</sup> yr	C. Studies 2 <sup>nd</sup> yr
8					C. Studies TYO
9	C. Studies 2 <sup>nd</sup> yr	C. Studies LCVP	C. Studies 5 <sup>th</sup> yr	C. Studies 1 <sup>st</sup> yr	C. Studies 1 <sup>st</sup> yr

Sample material from School website

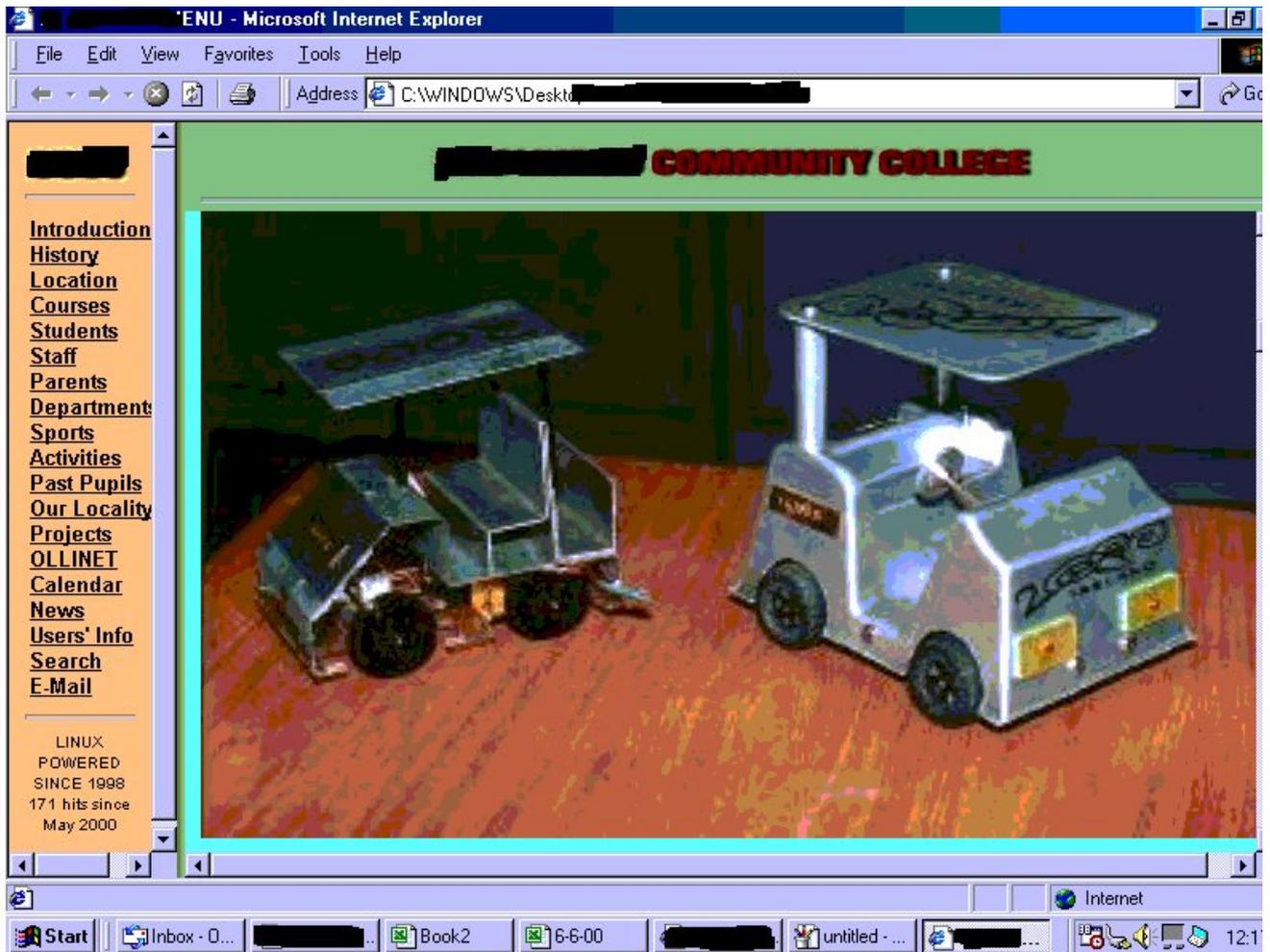
School Homepage



## Construction Studies Department Website



Sample Student work displayed online



- 
- [1] This name is a pseudonym for the school.
  - [2] The guidance counsellor is also the IT coordinator.
  - [3] See Appendix C for sample of students work.
  - [4] See computer room timetable in Appendix C
  - [5] See use in Science in Appendix C
  - [6] See Appendix C