# ICT TASK 3

## HOW IS ICT IN USED SCHOOLS AND EDUCATIONAL INSTITUTIONS TODAY AND BEYOND?

## INTRODUCTION

In this project, I plan to study the uses of ICT and computers in Britain today. I will be focussing my study on four different educational institutions in North London. Three of these come under the umbrella of the Mill Hill School Foundation. These are Grimsdell, the pre-preparatory school, Belmont the junior school, and Mill Hill School, which is the main part of the foundation. I will also study Middlesex University. I feel studying these three different institutions will give me a wide cross-section of the educational system to analyse, as ICT is used in different ways at different levels.

### What is ICT? – A Brief Outline

ICT stands for Information and Communication Technology, and is technology used to handle information and aid communication. ICT systems are often of much benefit to our everyday lives. We cannot go to the bank or supermarket without avoiding an ICT system in one form or another. Companies and organisations often implement ICT systems to help them go about their business, as well as their customer's or client's, more efficiently and increase their productivity. Barcodes are a classic example of an ICT system being implemented to make a business run more efficiently. Instead of having to price each item individually, shops and supermarkets had the price, and product details already printed on the packaging, meaning a lot of time and money was saved.

### What is ICT in education?

Since the development of the first microprocessor in 1972, computers and technology have evolved rapidly. As we have become more dependent on this technology, we have felt it necessary to teach the masses about it. Hence, in the mid seventies, computer systems were gradually introduced to schools and other educational institutions. As systems developed, more and more students took an interest in the subject, as well as the realisation of these educational institutions that computers could aid teaching and learning in more than one way.

Nowadays, in almost all schools, colleges and universities today, there are ICT systems in place that are used to aid education in one way or another. Many have networks, with access to the Internet students, which give students access to vast quantities of information, which is an immense study aid.

However, so many different pieces of technology are used in schools, colleges and universities today, that it is hard to define what is used for education, and what is not. You could say that any piece of equipment that can be used by the students, to their benefit is ICT being used in education. Examples of this could be a network of computers in a school, allowing students to type essays, and do research on the Internet. ICT in education could even stretch to the use of a digital camera by an art student. It is anything that aids the student in its education, whether it is a word processor or a digital camera.

Sources of Information

Most of the information that I use will come from my sources of primary information, that is The Mill Hill School Foundation and Middlesex University. I will however, be using some secondary information. This is information that I will get from the Internet, books, news articles, television programs, etc. The two will be used in conjunction to from the report.

The sources stated above will be those I use for obtaining Primary Information. In writing my report, I will also use some Secondary information. I will get this information from the following sources:

- The Internet
  The Internet and its search engines will provide endless amounts of information on previous studies done, and other information.

- Books/Magazines
  Up to date books and magazines would be able to add another dimension to the report, as they would tell me the latest developments in technology, and possibly how they could be used in the classroom.

Angles of Approach

In writing the report, there are many angles of approach that must be considered in order to create a coherent and reason account of what I have found. These can be sorted into the following categories:

- Why is ICT used in education?
- What is the current situation? – How is ICT currently used in the classroom? What technology is used and how?
- Use of the Internet
- Performance – How does the use of ICT in education affect students' performance in school? Have the rises in pass rates over recent years been due to computers being used more and more?
- What is the future for ICT in education?
- Education at home – how do students use ICT available at home to help them study? Learning through digital television?

All these Key Issues will form the structure of the report, and will be the basis for all my findings.

# HISTORY OF INFORMATION GATHERING

| Date | Event | Outcome |
|---|---|---|
| 5th September 2002 | Contacted Lauderdale Montessory Nursery in Woodside Park about using them as a subject for the project. | They would be perfectly happy for me to use, although they say they do not use much technology. |
| 8th September 2002 | Contacted Grimsdell Pre-prep in Mill Hill, for the same reason. | They also would be happy to be used in the project, and said that they do use some forms of technology. |
| 10th September 2002 | Decided against using Lauderdale Montessory in favour of Grimsdell, as there is more opportunity to do a better study there. | |
| 13th September 2002 | Spoke to Rosie Sinden - Evans in the Learning Resource Centre in the Trent Park campus of Middlesex University, about analysing them for the project. | She also said that the university would be willing to participate. |
| 16th September 2002 | Searched the internet for websites related to "Uses of ICT in Education and UK" | Found a study done in Holland about whether using ICT in education actually improves students' performance. |
| 16th September 2002 | Also found the website www.becta.org.uk which is dedicated to ICT in education. | Found some information, but nothing extremely useful. |
| 25th September 2002 | Contacted Holy Trinity primary school in East Finchley about using them in the project. | The principal regrettably said that she would not be able to allow me to study them, due to other commitments. |

| | | |
|---|---|---|
| 4th October 2002 | Drew up a questionnaire for the students of Middlesex University to answer. Gave 5 out at Trent Park Campus | Received only 3 back. |
| 10th October 2002 | Found the website www.ictineducation.org | Found several articles related to the use of ICT in education, some of which are helpful. |
| 14th October 2002 | Phoned Mr DePutron, Head of IT at Belmont Primary school about using his school in the study. | He said he could not confirm anything, but would get back to me. |
| 17th October 2002 | Spoke to Mr DePutron | He confirmed that I would be able to study Belmont in the project. |
| 22nd October 2002 | Had an interview with Mark DePutron over the phone. | Gathered some useful information. |
| 1st November 2002 | Drew up a Questionnaire for students and teachers at Belmont. | Decided to give questionnaire to 5 pupils at Belmont and 5 teachers. Received 4 of the 10 questionnaires back on a second trip to Belmont on 7th November. |
| 12th November 2002 | After much consideration, I decided I would include Mill Hill School in the study, as I needed a secondary school to speak about. | Spoke to Mark Northen who said he would gladly contribute. |
| 18th November 2002 | Conducted an interview with Mark Northen, Head of ICT at Mill Hill, over the phone. | Got a lot of information for various sections of the report. |
| 22nd November 2002 | Searched the www.google.com for information on the | Found various reports on the BBC website about this |

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|---|---|---|
| | future of ICT | matter. |
| 1st December 2002 | Browsed the Becta.org.uk website | Found some information sheets on various subjects. |
| 9th December 2002 | Spoke To Juliette Adler, headmistress of Grimsdell over the phone and asked her a few questions. | Got a few of her opinions and quotes on ICT in education. |
| 11th December 2002 | Went to www.becta.org.uk to find information on ICT affecting performance. | Found a lot of information about a study called ImpaCT2. |
| 12th December 2002 | Searched google.com for articles about the use of the Internet | Found a website on this subject at: www.gre.ac.uk called The Internet and its effect on education |

# REPORT

## Why do we use ICT in education?

When writing a report about the use of ICT in education, I believe it imperative to firstly consider why ICT is used in education. Therefore, this is my first angle of approach.

To consider this angle of approach, I must first think about the educational system before any ICT systems were introduced. Until the 1980s, schools, and most educational institutions, apart from some universities were relatively computer free environments. Teaching methods, including the discipline were much the same as the Victorian era until the 1970s, even if the standard of teaching was not. ICT as a subject did not exist at this time, as the concept of computers were foreign to most people.

However, when ICT systems began to be introduced their value as an educational tool was seen. Even though uptake was slow, schools became very keen to show that they were taking the initiative to introduce computer systems. Early on there would only be one or two, as they were very expensive, but numbers soon grew. From here, ICT's role in education has grown and grown until we have reached the point where almost every school and education institution has some sort of computer system in operation. But why is this?
There are several reasons:

- ICT combines the full range of media through which successful learning takes place: sound, picture and text, as well as the ability to repeat.
- Teachers are able to do things they were not able to do before such as visual presentations incorporating video and sound, which help them convey the message more clearly.
- A computer can hold a student's interest much more than a teacher can because there are endless possibilities.
- Through using tools such as the Internet, students now have a vast library of information at their fingertips, any time of the day or night. This means that research techniques are improved, and could possibly mean that their work is of a higher standard.
- Communication is improved between the teacher and the student, through the use of email, for example.
- The possibility of distance learning exists. Students can do their work online, and send it to their teacher.
- Through the use of private networks, schools are able to share resources, and communication links are improved.

- There are many benefits to the administration side of the school – all data can be stored on computer, as well as using other types of ICT system such as electronic registers, which improve the school's efficiency.

However, it must be said that there are disadvantages to using computers in education:

- If ICT is used heavily in school, it is likely that the students could become dependent on it, and not be able to work without it.
- A computer is no substitute for a teacher – a computer is not able to teach you raw, basic facts like a teacher can.

It is believed that the advantages to using ICT in education far outweigh the disadvantages, and hence the reason why schools are still using ICT. If the use of ICT was inefficient, then I doubt that they would still be in use in schools and educational institutions.

## How Is ICT Currently Used In Education?

Mill Hill, and its partner schools, Belmont and Grimsdell, are schools that pride themselves on having excellent computer facilities. The principal school in the foundation, Mill Hill, has 3 computer laboratories, as well as computers in the Art and DT departments, and some in the library. The school, as would be expected, is on a Client/Server network, which every student and member of staff has access to. On this network, there are roughly 80 computers, and a 2mb leased line which gives access to the Internet.

Belmont, Mill Hill's junior school, also has exemplary facilities. It has two computer suites, totalling 42 PCs and 8 laptops, and a similar 2mb leased line. Grimsdell, the pre-prep only has a small network of 5 computers, but have access to the Mill Hill Intranet.

Middlesex University has by far the biggest network out of all my sources of primary information. Over the space of 7 campuses, they have over 3500 PCs, 700 Apple Macs, 600 printers and several servers. Connecting 5 of the largest campuses is a 34mb/sec line, while the two smaller ones have a 2mb line.

All these facts and figures suggest that ICT is being used in a large way in education, but what is it used for?

There are an awful lot of general uses for ICT in education, some of which are student orientated, where as others are to do with administration.

The general uses of ICT for students are fairly obvious, but still important. However, theses uses do vary according to age group. For those under 7 years old, using ICT probably involves learning to use the computer on a basic level. They could even be using some interactive type programs to help them in subjects like Maths or English. These are often very helpful to young children, as they contain, attractive displays combined with voice and video, which helps keep their attention.

For children who are slightly older, using ICT would involve more complex tasks. It is not inconceivable that they look up information for a school project on the Internet, or on an interactive encyclopaedia such as Encarta. Also, at this level they are probably extending their knowledge of computers even further, so they would probably learn skills such as typing.

Once they reach the secondary school, they are expected to be able to type essays, have a good working knowledge of word processors, and research information on the Internet. These skills would be needed at university as well.

There are also specific uses for ICT in certain subjects.

In Maths and the sciences, using spreadsheets has become increasingly common, certainly in coursework. The benefit of this is that a spreadsheet does not only perform calculations for you, but you are also able to create graphs from figures, and automate a lot of mathematical routines.

In English and Modern Languages, there are a lot of applications available, such as dictionaries and internet translators. Microsoft Word itself contains a thesaurus and a translator.

In less academic subjects, such as Art, ICT has been a benefit to it. Art students are now able to use digital cameras/camcorders to incorporate into their projects, as well as using the scores of graphics editing packages available such as Adobe Photoshop.

There id, of course, the study of ICT itself, which at GCSE level teaches students to use all sorts of applications, from spreadsheets to word processors. When they go to a more advanced level, they start learning to program, using applications such as Microsoft Visual Basic.

One increasingly common use of ICT in terms of administration is Management Information Systems (MIS). This is computer software that is implemented to improve the store and use of information by schools, so that it can be readily accessed easily, and even over the Internet. Becta, the government's agency responsible for the use of ICT in education says 'A well-designed and well-maintained MIS will allow information to be entered once and used many times. An effective MIS should be accessible to both staff and parents. By fully utilising e-mail and internet access, a school can really benefit from improved internal and external communications'.

The advantages of this system are as follows:

- The quality of information available to both the school and the parents is improved.
- Schools are able to keep track of their students' activities better.
- Speeds up the movement of data between establishments when children move schools.

The government has now recognised that this system is extremely efficient, and the DfES has now introduced the Information Management Strategy, which says that an MIS should do the following:

- minimise demands on schools
- collect only essential information
- collect information once and using it many times
- store and transferring information electronically
- automate information collections - one-button solutions
- improve the value of information returned to schools
- achieve compatibility between systems from different suppliers (interoperability)
- improve and maintaining ICT infrastructure
- Set high standards for training and technical support.

These Management Information Systems are an improvement of average school databases that are now starting to be replaced, as they are much more efficient, and make the movement of data much easier.

The Use of the Internet in Schools and Educational Institutions

As has been well documented throughout the past 5 years, the effects of the Internet on our society as we know it have been immense. The educational systems and institutions have not escaped this rapid change, and the introduction of Internet has affected the way we learn in a tremendous way. However, what is the effect of its introduction? The answers to this question are endless. However, its educational benefits must be discussed.

Schools started to integrate the Internet onto their school networks in the mid to late nineties, and it was hailed as the future of education by most, but a mere fad by some sceptics. However, there must have been some initial reasons why schools caught on to the trend, and why there were such high expectations.

The first major benefit was improving research facilities for students. This was first noticed by the universities who saw that writing an analytical essay could be a process greatly improved due to the fact that the Internet is the biggest library on earth, available 24 hours a day, 7 days a week. The reasons why this is so are as follows:

- Better research facilities means that the work can be of a higher standard.
- Students have the ability to find as many facts and figures as they need much more easily.
- Discussion forums mean that they have the ability to exchange opinions, which would give more balance to their work.
- They are able to find, although sometimes through considerable research, experts in the field with which they are concerned, and contact them.

These factors were then noticed by schools, and the technology was gradually integrated into schools up and down the country. Now the Internet is commonplace in schools, as it is considered an essential educational tool.

Rosie Sinden Evans, Head of Learning Resources at the Trent Park Campus of Middlesex University hailed the arrival of the Internet at the University. She says 'Having the Internet here [Middlesex University] made life so much easier, not just for the students, but for me too. The students could get so much more information for writing essays than just using ordinary books.' Rosie identifies that before the Internet was in place, the students used to complain that they could not find a book about the subject they wanted. 'It still happens sometimes, but nowhere near as much as it used to. I

think it's because the information they can find is so much vaster in its quantity. Even if they can't find what they want on the Internet, and we don't have any books on it, they can check the University network to see if a book on that subject is in any of our other libraries. And for some students who have British Library reading tickets, they can check their website for the book.

However, are the educational benefits of the Internet constricted only to those in higher education? No says Tim DePutron, Head of IT at Belmont school. He has been working at Belmont since 1991, well before the Internet was implemented in the school, and has noticed that it has helped immensely in sustaining children's interest. 'If they have work to do in other subjects that involves using the Internet, say looking up some information for history, they love doing it'. He also believes that there needed to be a change from the traditional blackboard and classroom view of school, and he thinks that the Internet has done it.

The Internet also helps the students at Grimsdell pre-prep. Juliette Adler, headmistress of Grimsdell says that even though they only have a few computers in the school, the children do take some benefit from it. 'There are a lot of websites that are very child friendly, and have good educational content', says Mrs Adler. She goes on 'Some of the BBC's websites are wonderful for kids, and actually teach them something'.

The benefits of the Internet in education could further increase in the future, with an online digital curriculum, for example, a distinct possibility. This will be dealt with in more detail in the 'What is the future of ICT in education' section of the report.

However, as there is in almost everything, there are some disadvantages in using the Internet in schools. One major drawback of using the Internet in schools is the cost. In 2000, state schools in this country spent £21m on phone bills and/or line rental charges due to use of the Internet. For some of the schools, this is draining their budget, and they have to limit the amount that the Internet is used in their schools. This amount increased to almost £1bn in 2002, an increase in cost of almost 500%, which is unquestionable evidence that shows that the Internet is being used more and more.

There is also the question of the extremely easy availability of unsuitable material. There are over 50 million websites on the Internet, and it is believed that between 10-12 million of these are either pornographic or illegal in some sense, for example, gambling or mp3 websites. In having the Internet in schools and universities,

these institutions are leaving themselves open to abuse of such material.

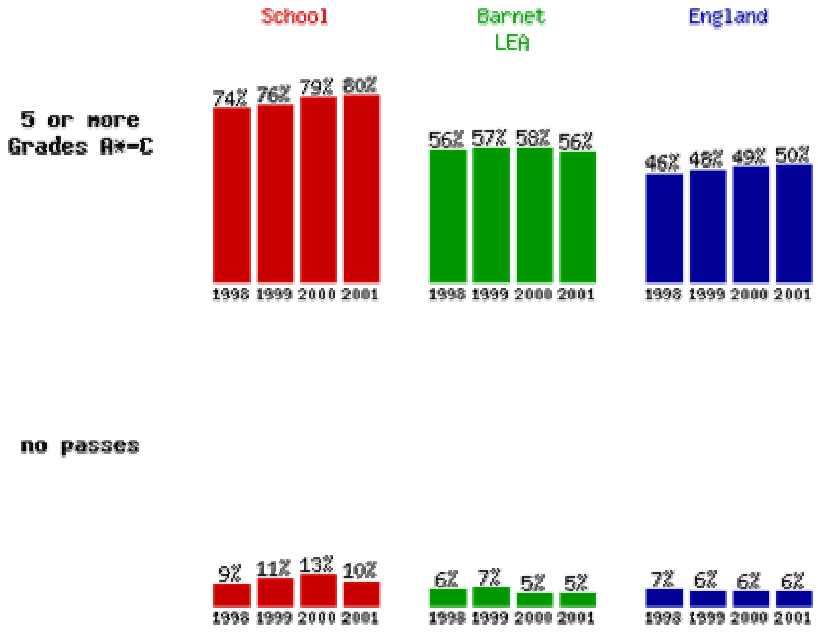
Mark Northen, Systems Administrator at Mill Hill School told me of several instances when pornography was found on students' user accounts. He says it usually happens on a routine random check of the network, making sure that no-one has that type of material on the school computers. Students who do this often have their parents called in, and are either suspended or expelled, according to the severity of the offence.

One other disadvantage of having the Internet in schools is the possibility of being infected with viruses. With so many students in a school, and nowadays, with sufficient enough knowledge to access their email in school, or download some sort of file, there is the possibility that they will infect the network with a virus. The danger in this is that it could severely damage the network and cause major technical problems.

How does the use of ICT in education affect students' performances?

Now that we have established how ICT is currently used in education, I must now analyse what affect this has on the performance of students. To do this I will compare the performance of the Mill Hill School Foundation with other schools in the Barnet LEA. I will also compare two students at Middlesex University, one uses computers fairly regularly and one does not.

Many people would say that the best way to measure a schools performance is by using league tables. Therefore, using these league tables, I will first analyse the performance of the schools that make up The Mill Hill School Foundation.



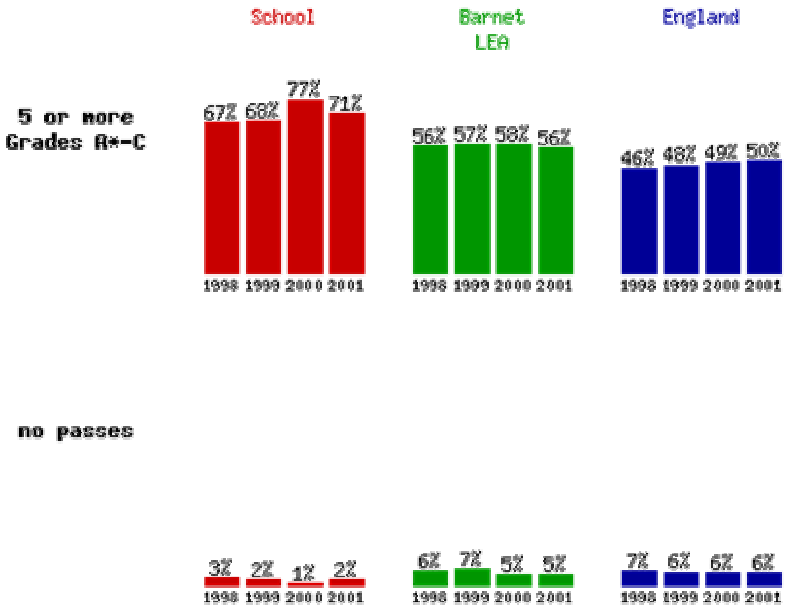

This diagram shows the performance of Mill Hill School in GCSEs from 1998 to 2001. These figures are compared with the rest of Barnet LEA, and the rest of England. As is shown, the statistics for 5A*-C grades has increased every year for four years. The figures for this are much higher than that of the average for Barnet LEA and for England. However, the statistic for the amount for no passes, has both increased and decreased in the four years, and is higher than the average for Barnet and England.

However, given that the ICT facilities at Mill Hill School are much better than the average school in Barnet, is their bettered

performance due to the fact that they have supreme facilities, or that it is simply a better school than others?

To answer this question, I will have to compare their performance with a school that does not have as good computing facilities.

Mill Hill County High School is very near The Mill Hill Foundation, but unlike the latter is a comprehensive school, that does not have as rich resource of computing facilities. Below are the schools figures at GCSE:




However, is the fact that their computing facilities are not as good as those of The Mill Hill School Foundation they only factor in its less fruitful performance? I asked Mark Northen to find out.

'Of course it's not the only factor, but it plays a part in all the others. IT can help in every area of study, not just in particular subjects, but it can help you in organising your study as well'.

This opinion seems to be supported by studies that have been conducted, which asked if ICT in schools did anything to improve or worsen students' performances, if anything at all. One study called ImpaCT2 set out to find the relationship between the use of ICT and performance of students in national tests such as GCSEs, it drew the following conclusions:

- In all but one of the cases studied, ICT had a positive impact on performance.

- There was no statistical difference in the performance between students with a lower working knowledge of ICT than those with a higher working knowledge.
- The effects of ICT on performance were not evenly spread between the subjects.

The effects on performance, however, differed between age group, and national exam that they were preparing for.

The most positive impact of ICT on performance in Key Stage 2 was found in English, and to a less extent, in Maths. It is predicted that through the use of ICT, the standard of English can be raised by 16% over two years, and Maths by 6.1% over the same period.

In Key Stage 3, the biggest benefit that ICT gave was to the Sciences, and it is predicted that the standard can be raised by 21.4% over two years.

In Key Stage 4, the age at which students are preparing for GCSE, there was very strong evidence to suggest that the science subjects and Design Technology benefit enormously from the use of ICT. There was also proof to show that Modern Languages and Geography benefit from ICT, although the evidence to support this was not as statistically strong.

However, it is not only schoolchildren that benefit from the use of ICT; a large proportion university students at Middlesex University say that the ICT facilities at the university help them with their study. There are no official figures that would help me support this argument or not, but speaking to the students, and chatting to Professor Dr François Evans, I got the distinct impression that the ICT facilities of the university were greatly appreciated. Dr Evans said 'Although I am a professor of music, and do not have much involvement with the IT department, without it, I think the students would be stuck. The amount of research they do over the Internet is phenomenal'.

From this, I can draw the conclusion that in the majority of cases, ICT does better the performance of students in every age group in the educational sector. However, this is not to say that every subject benefits from ICT. The ImpaCT2 study showed that English only benefited in Key Stage 2, and no others. While in every Key Stage of the study, Science, or Science related subjects benefited.

## What is the future of ICT in education?

On interviewing Tim DePutron, Head of ICT at Belmont school, I questioned him on his opinions of what is to come in terms of ICT in education. His immediate response was that we have barely seen the tip of the iceberg, and that it will become an integral part of each and every classroom, no matter the subject.

At the moment, the use of computers in schools is mainly confined to the ICT laboratory, where students learn how to use a computer. Tim DePutron says that at Belmont, he has to teach the computer basics from the age of seven. This is, in his own terms, 'allowing the child to be able to use the computer at a basic level, which lays the foundations for further study'.

However, Mr DePutron predicts that within the next ten years, computers will be involved in every part of a child's education, whether they are in a maths lesson or a P.E. lesson. For example, he believes that by the year 2012, art will not be taught using traditional paint and brushes, but that they will draw using graphics tablets, and use specialised graphics packages to edit them.

These theories of Tim DePutron are somewhat substantiated by some of the projects the government is hoping to implement. In November 2001, it was announced by the Department of Education that the use of computers is steadily rising, with a 24% increase in the amount of computers in primary, secondary and special needs schools on the previous year. Even though there has been a decrease in the reported use of computers in schools in 2002, which some would say is due to the wording of the questionnaire, the government still have radical plans for schools and the use of ICT.

In December 2001, the first of their plans was for an online curriculum that would allow students to work at their own pace. This system would be an online database of all the possible topics and lessons that could arise. This would allow the student to download a lesson as and when they wanted, and cover the topics at their own pace. The system would be made up of 5 core elements:

- A "Shop Window" on the Internet, which would include the online curriculum, a library, and some learning resources.
- Access to products for schools, including teacher guides.
- "e-Learning credits" – money for schools to buy more resources on the curriculum.
- Software to help the teachers
- A "watchdog" panel of experts to make sure that resources are available for all subjects on the curriculum.

This is obviously a vast step forward, if it can get off the drawing board and become reality. The government is very keen for this to happen though. This is evidenced by the fact that since September they have made £50 million to fund this project. However, there are some questions that should be answered about this project before it gets everyone's backing. Firstly, what difference will this make? Will it just be the same old textbooks, just on a computer?

According the vice-principal of Greenwood College in Essex, the school where they are planning to launch this scheme, this is not the case. 'This is not just about putting text books online, it has got to be interactive – with video clips and sound files, and responses that can be given to the students'.

Another of the government's plans is upgrading the equipment in all schools so that classrooms look more like a science laboratory than a conventional classroom with desks and chairs. At the beginning of 2002, the former Minister of Education, Estelle Morris unveiled this computer-generated model of the classroom of the future. The classroom contains vast open spaces, as well as areas filled with laptops, palmtops, plasma screens and electronic whiteboards.

This is the government's proposed view of how classrooms will look in the future.

In achieving this aim, the government will have to put a lot of money into schools over the coming decades. This was why they announced a £100m investment in laptops for schools, although, this will still leave a deficit of schools without laptops.

An integral part of this plan is the online curriculum that was announced earlier, because it enables students to learn at their own pace.

However, it is not only in the classroom that computers will be used in the school. Professor David Thomson of City University has now developed two pieces of software that were primarily designed for optometrists, but there are now plans to use them in schools. The first is for the school nurse to screen children's vision. Traditionally, if a child were given an eye test in school, it would be a very long and laborious process for the nurse, and on many occasions, the results would be wrong. However, using David Thomson's software, many stringent tests have been developed to measure all aspects of a child's eyesight, which are both appealing to the child, in that they keep its attention, but also clinically accurate. Each test only takes three minutes, and the computer does most of the work for the nurse. It speaks the instructions to the child, analyses the results, and creates a referral letter to the child's optometrist if needed, as well as a letter to the parents, and a hard copy of the results for the school. Although this is not specifically an ICT system designed for an educational institution, its implementation will benefit education in general.

When asked why he developed the software, he replied 'My daughter had her eyes tested at school, and I was sent a letter. Not only were the results of the test completely incorrect, the equipment she was assessed with was 30 years out of date. I then thought 'Why not do it via a computer?'. Professor David Thomson then developed the software that tested children's eyes, and went on to produce many more eye related pieces of software.

The second piece of software is called the City Coloured Overlay Screener. This program was developed after research was conducted, concluding that children with reading difficulties who often complained that the words moved, 'jumped about' on the page, or the page was too bright, could be helped by changing the colour of the page by placing a coloured overlay on top of the text. A manual test was developed, in which the child would choose the colour that gave the best results. Now that David Thomson has developed a computer software equivalent, the system is much more efficient. Although it is still quite similar to the manual test, it is much easier for the optometrist to conduct. It also brings about other benefits. If the child finds it much easier to read with an aqua blue background, for example, the computer will give them the exact RGB number of their overlay, and gives them instructions as to how to change the back colour of windows on their computer.

The educational benefits this brings about are innumerable. Firstly, it improves the reading ability of the child, whether it be only slightly, or dramatically. This improvement would help a child in every way possible, not only in areas where they have to read off

paper, but also when using computers, thanks to the Microsoft Windows environment, as they can change the background colour of windows.

This software has only just been developed, and has just gone through the beta stage of testing. Therefore, it would be a couple of years before we saw it in schools. There is also the question of getting government funding to implement the software into state schools.

In conclusion, I think that in years to come we will see much more ICT equipment in schools, affecting more subjects. The facilities will be of a higher technical standard, and we will see further integration of the Internet, which will play a much bigger role.

Education at home – how do students use ICT available at home to help them study?

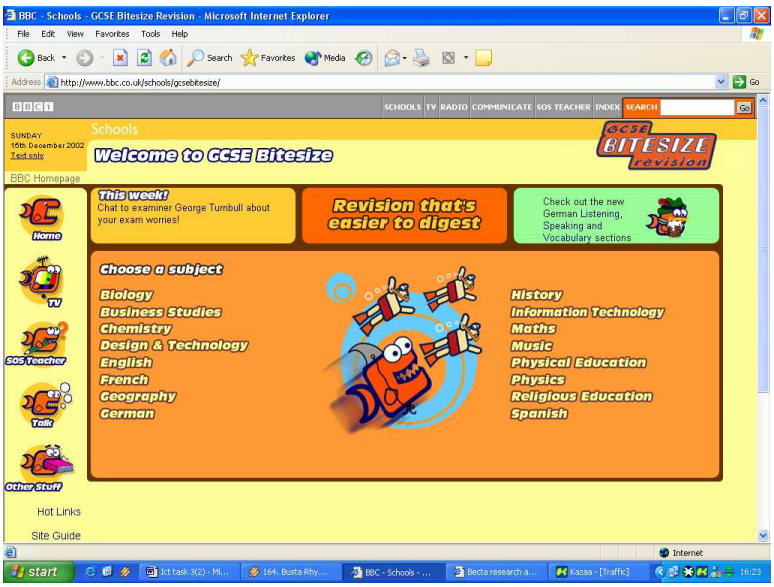
The growth of ICT did not stop when it reached schools; ICT or related applications are now in almost every home in the country. It is very common to see a family with one or more Internet-ready computers. It is also quite common to have digitally enabled televisions, whether it be through satellite or some means of cabling. However, through the use of such technology, how are students, if at all, educating themselves at home?

The Use of Computers

Nowadays, 65% of British families have a computer at home, whether it be a PC or an Apple Mac. This means that the majority of schoolchildren in Britain have access to the technology that is believed to improve their performance.

With so many young children encountering computers from a young age, it is no surprise that they are so comfortable using computers at home for educational purposes. It is also no surprise that there are many education websites designed for children and teenagers on the Internet. One of the best examples of this the BBC service called 'Bitesize'.

Bitesize is for GCSE students and offers a range of information for students that are about to take their GCSEs. It offers a list of subjects, which when explored, give useful 'bitesize' bits of information, that allow the student to allow the facts to be digested easily.




Here we see the homepage for Bitesize, which is bright, attractive and appealing for students.

This service also allows students to talk to other students, so that they can help each other. If they are really having trouble, then they can talk to a teacher online who will answer their questions.

A similar service is offered to students studying the other Key Stages.

The Use of Digital Television

The educational use of digital television has also been pioneered by the BBC. However, unlike the Internet service for GCSE students, at the moment the educational uses of digital television are only really for young children.

While watching programs such as 'Tweenies' or 'Teletubbies' (which are supposed to be of educational value on their own), children can turn on the interactive service, which takes the to the BBCi home. Here they can play games, and find information that is supposedly of educational value.

This system has not taken off yet, and sceptics would say that it is not of any educational use to the children using it. However, what this system does show is that the technology is in place for interactive education to come through the television.

In summary, ICT is being used more and more at home for educational purposes, whether it is through a computer or through a television. The technology exists for children to be learning at home just as much as they do at school, if not more.

## Conclusions

In writing this report, I have found out a lot of things about the use of ICT in education. Through considering my Angles of Approach, I have drawn the following conclusions:

- Firstly, ICT is used in education for several reasons. It is in place to improve communications and students performance. It is also there to keep students interested.
- We use ICT across the majority of the educational spectrum, whether this is an efficient use or not. We also use it heavily in the administration side of education, through Management Information Systems.
- The use of the Internet in schools has revolutionised communications, and is an integral part of most schools ICT systems because of all the educational possibilities, even though there are a few disadvantages to the Internet.
- Students' performances are affected by the use of ICT, as many studies have indicated. The performance of all students at all levels is affected, although it is in different areas.
- ICT has a very bright future in education, with the possible introduction of an online curriculum, and more and more money being injected into the system. ICT will hopefully be used for more than just teaching, with medical technology being used in schools.
- A lot of students learn at home, either through computers, or through digitally enabled television. These services are of an invaluable help to students, although those on digital television could be improved somewhat.