Unit 12

Helen Williams 11Y

Centre 20017
Candidate 9343

11 IT 6

Helen Williams 11Y

Unit 12

Contents

Helen Williams 11Y

How is ICT used in schools and what are the effects?

Introduction

I have chosen to do a report on the effect on schools and colleges. I chose this topic because I attend school every day and I can find out a lot about schools. I can also find out about the use of ICT in colleges because my mother works at a college. I will be able to find out information to include from many sources. I think finding out about the development of ICT is very interesting and I can compare the ICT facilities. I will also be able to find out information about how ICT is used in schools.

To do this I am going to use a range of sources, for example, books, the Internet and people.

How has ICT changed over the last 30 years?

Computers can be changed for interactive learning, unlike 30 years ago. The only disadvantage to this is the pupils will not be as motivated as they would with a teacher.

Computers have changed dramatically over the last few decades. Computers started appearing in schools in 1983. At this time there were very few, they were called Caltext Word Processors. They were larger, slower, had less memory, the programs were not advanced. Now there are hundreds of machines, printers, scanners etc. Modern computers have more processing power than the larger, room-sized computers, which were around in the 60's and early 70's.

How has ICT changed in schools?

ICT is used in schools for many purposes, for example, recording grades and attendance. All the information for attendance is input into the computer and a spreadsheet is made. The percentage is calculated by the computer and a new monitoring system phones parents at regular intervals during the day to enquire about absences. It keeps phoning until there is a reply.

School libraries use ICT for bar code readers and the librarian can access data about who has which book, the book on loan and the return date. It can also be an efficient form of identification. For example Hillcrest, our card system is an efficient way to but dinner. The cards can also be used for library cards because they have a photo on them. This is taken from a digital camera and was input into a computer and put on to a card. This is useful because they can be used as identity, because the coloured stripe shows which year each pupil is in. The black stripe along the back of the card stores information about the name, year and the amount of money on the card. An advantage to this system is it doesn't show who has free meal, the information is not available to other pupils.

As well as ICT being available to other pupils, it is also useful for teachers, because a database can be kept of all the details of the pupil such as the date of birth, emergency contact numbers, and progress in lessons and behaviour.

Unit 12

With ICT help can be given in other subjects. Programs such as Encarta, The Way Things Work, and especially the Internet. The Internet is helpful because pupils can access any educational site and web page filters such as The Birmingham Grid For Learning, stop offensive pages being shown. The Internet also has a useful site for teachers, where they can input students work into the site and it tells them how much has been copied of the Internet. This helps to prevent Plagiarism. Teachers can also access prepared lesson plans and schemes of work.

Students can also save their work on the network, in their own area. Which can be accessed from any network computer and it is also secure because each persons account is password protected.

Schools can use Digital Cameras to put a photograph into the computer to put photographs on to the website, art students can include graphics into their work and the photographs can be used for swipe cards or identification cards.

What are the historical aspects of the changes in ICT in schools?

Years ago, computers may only have been used in computing, but now they are used in many other subjects, for example, Maths software, Science software, homework and revision programs, and business forecasting tools.

Computers have become more developed, e.g. when computers were first put into the education system there may not have been printers in schools, but now there are many in each classroom. Computers are also much more advanced, the old dot matrix printers have been replaced by Ink Jet and Laser Jet printers which give a much better quality, are better value for money because printing off large amounts of paper is cheaper. It also has a higher resolution, which means the print out is better.

What are the technological breakthroughs, which have helped in schools?

Breakthroughs in ICT are helpful in schools for a number of ways. Bar Code Readers are useful in the school library to check out books; Voice Recognition could be useful for teachers who do not want to type a worksheet/handout. This is an advantage for disabled people who find it difficult to use a keyboard. They could dictate a worksheet into a program called Voicepad. Scanners are a breakthrough and any picture that is input into a computer can be edited, changes in colours, change the size etc. Also, Smart Cards are a breakthrough and are used in schools as identity cards as well as library cards.

What technology is used and what is available for use?

What is available to buy?	Is it available in schools/ colleges?	Who uses it?
Scanners	Available	Might not be available to students
Printers (laser and colour)	Available to teachers and	Students and teachers,

Unit 12

	students, although some schools may have to restrict printing to save on resources which is an environmental issue	because they need to print their work.
Photocopiers	Available	Students may have to ask a teacher to photocopy for them
Computers	Always available, though the ratio between schools may vary	Teachers and students will need to use them for work
A school network	Available to every computer in the school	Teachers and students will need to have an account
Internet	Available to most computers	Will be limited for students because of the web page filters put in place by teachers
Joystick	May not be available in schools, but may be available in colleges	May only be available for older pupils or teachers use
Touch Screen	May only be available in schools for children with disabilities.	Would only be used with children who can not use a keyboard
Light Pen	May not be available at all	May be available for teachers only

What effect has ICT had in schools, and how would this be done without the use of ICT?

ICT has had a big effect in schools and colleges for example e-mail is sent through the phone lines and is very quick. In my mothers' work the students e-mail their work to the lecturers and have a reply with answers and their mark. The students with an e-mail account can contact the teachers and other students even when they are on study leave. In universities, worksheets, course details/notices and other important notices are e-mailed to group e-mail addresses, for example, all first year business students or all of first year computing rather than addressing it to each individual student. Tutors set up group e-mail accounts. All university e-mail addresses can be forwarded to home e-mail accounts.

If ICT were not available pupils would have to go into college to find the teachers when they could be using that time to study. They would have to keep checking noticeboards for important information.

The Intranet is useful because anyone who has a username and password within the school or college can find announcements, messages and company documents. Most universities have a program called "Blackboard" where the students can find notes assignments, web page links, and past exam papers. They can also find information from off-campus. This is very important for 2nd and final year, and also placement year students.

Unit 12

How has ICT improved facilities in the area?

Interactive whiteboards enable teachers to demonstrate and not have their backs to pupils. Touch screens can be used in education centres, not necessarily just in schools. Tests should be completed on touch screen computers because they will also tell you how much time you have left and they allow you to change an answer as many times as you like. It will record the answers you give. They use these on driving theory tests.

How has ICT affected the way people work?

ICT can affect the place where you work because with e-mail and Intranets you can work from home. The pupils could use distance learning. This is also available for adults who enrol on Learn Direct courses. Also, working from home is convenient because you can change the hours you work, and where you work to what is more comfortable for you. This benefits you because your stress load will decrease because you can e-mail work to the person in charge. This would be useful for someone who is unable to attend school/college and needed to make up the work with homework assignments because they can e-mail the completed work to the teacher. Although, working from home would cut off contact with people you see everyday at work. Learning in school means people have advantages when they go into work, e.g. having word processing skills means people need less training in basic skills. Teachers can carry around mobile phones and laptops to keep in contact with other colleagues when they are not at work because they are on courses.

Students can type up homework, coursework and revision notes. They can research on the Internet. They can also back up pieces of work, and if the first version was lost, they could retrieve the backup copy and continue to work from that. They can also carry between home and school, this dramatically reduce the amount of paperwork the pupils have to carry to and from school. Although, they must remember to take care of the disk and not subject it to extreme heat (by putting it near radiators) or magnets because they could destroy the disk.

What rules and regulations need to be put into place to use ICT ?

Teachers will need to restrict Internet usage and put filters on offensive pages. This prevents them from being shown to students. The Internet can be useful for students work and revision, e.g. finding past exam papers. Although using copyright material is illegal, security is not always good on the Internet because people can hack into the Internet and find anything.

Using computers for a long period of time can have health risk: radiation, backache, wrist pain and eyesight.

The codes and practise rules must be identified for use with software, for example, the copying of software is illegal (computer misuse act). Schools admin systems and files to prevent damage to files, and the anti virus program needs to be updated regularly because viruses are being updated. There are many viruses which can be transferred to your computer by:
- E-mail attachment

- Floppy disk
- CD ROM drive
- Off the Internet

So, schools in particular need to be aware of these and put virus checkers on automatically.

The viruses can be activated in several ways: -
- By the internal clock, some viruses are activated by a certain date e.g. Friday 13th.
- Or they can be activated when certain combinations of keys are pressed.

Viruses destroy the files on the hard drive and can destroy the inside of a computer. If viruses are put on the Internet, they can be spread world-wide.

What are the legal issues surrounding use of the Internet and computers in schools and colleges?

The Data Protection Act was designed to prevent the misuse of personal details. The Data Protection Act was introduced in this country in 1984, but was updated in 1998. It relates to the data held on computers. It gives rights to the data subjects. Data subjects are people who have information about them stored on computer systems. Schools have to keep the to the Data Protection Act, which means they have to be very careful with the information they store on computers. If a school breaks the Data Protection law they can be fined and made to pay compensation to the data subject. The Data Protection Act was introduced because information held on computers can be passed from one computer to another. The main points relating to schools are, the school must be registered with the Data Protection Registrar and say what the information from the pupils will be used for. It can only be kept as long as the pupil attends the school or college. It must also be obtained legally and not used for any other purpose. If the data is irrelevant to the purpose, it can't be kept. It also can't be given to any other people. The pupils are entitled to know what information is held about them and they have the right for it to be changed if it is incorrect. The data held about pupils must be correct, Data can be damaged or deleted in many ways:
- Breakdown of hardware
- Mistakes by staff who use the computers where the data is stored
- Not backing up the files
- Hackers getting into the system and deleting all the information
- Data being changed to benefit the students, this is known as computer fraud
- Theft of computer equipment
- Equipment being ruined, by using it wrongly, or spilling something on it, because it can get into the computer
- The computer where the data is stored being infected with a virus
- Deliberate attempts to damage the equipment

The Health and Safety at Work Act (1974) restricts the amount of work done on computers by teachers and pupils. When pupils are using computers, backache can be avoided by suitable chairs, they must be:
- Able to swivel
- Have a moving base (e.g. castors)
- Have adjustable backrests
- Having a footrest

- Screens should be able to tilt and swivel

Repetitive strain injury is damage to hands and wrists from moving the same muscles for a long period of time. It can be avoided by having a five minutes break from typing every hour. The pupil or teacher should not be expected to sit at a computer for hours without a break.

Eyestrain happens from staring at a screen for long periods of time especially in bad light or with a screen with a glare. This can be prevented by having a screen filter to remove most of the harmful rays from the screen. Taking regular breaks from the computer and using suitable blinds to reduce glare.

People should be sitting at least one metre away from laser printers because of ozone emitted from the printers and be in a well-ventilated area.

Also, in computer rooms there should be no trailing wires, food or drink near the computers, electrical sockets must not be overloaded, there should be space around the machine, suitable heating/air conditioning, strong benches that can support the computer and have lighting with no reflections.

Copyright laws apply to schools and they can be fined for breaking any copyright regulations. They can not copy software for pupils, or sell a copy of any software. The school can also be fined for using software without a license, e.g. if a school only has a licence to use a word processor on a stand alone computer, but it is installed on a network, the school will be fined.

Downloading text or pictures from the Internet without receiving the owners' permission is also against the law. This is due to the copyright and patents act (1989).

The computer misuse act was introduced in 1990. It made three things illegal:
- Unauthorised access to your computer material (hacking). This means accessing anything on a network you do not have permission to see, or software piracy.
- Getting unauthorised access to a computer to carry out crimes such as fraud.
- Unauthorised changing of computer files, e.g. planting viruses onto systems or disks and deleting files.

If anyone is found guilty of breaking this law, they will receive a five-year prison sentence.

Summary

Overall ICT is an efficient way of communicating and making education easier for everyone. It helps teachers because they can make worksheets and handouts for students and they can work on laptops, which means they could work at home. The use of interactive whiteboards mean they do not have to have their back to a class.

It helps pupils because they can word process work for better presentation. They can use the Internet and other educational programs on computers, which will give them more resources.

In the future there may be more distance learning packages being used, and a greater use of e-mail, to send and receive work, laptops for pupils who do not have access to a computer and there may not be video conferencing being used. This would mean that pupils do not have to come into school; they can be seen by their teachers on a computer. This could reduce software piracy. The licensing agreement is printed on the back of software packaging. The Federation Against Software Theft will prosecute anyone breaking copyright laws.

References

	Student handbook of Information Technology
	CGP GCSE IT
PM Heathcote	A level IT

Web Sites	www.ngfl.gov.uk
	www.bgfl.gov.uk
	www.bbc.com/bitesize

Unit 12

Evaluation

I think I have worked well on this unit and included necessary information. If I were doing this task again I would include pupils opinions on ICT lessons, how they use them and what they think should happen in ICT lessons. It would be interesting to hear students comments about whether they would want to complete work at home and e-mail it to teachers rather than coming into school everyday.

I think I have included details to every point I made and backed it up