Richmond Park School -Chips with everything
A case of integration

The report on this school differs somewhat from those on the other British schools. The environment within the school differs. There is a long history of using computers, off-line, to support curriculum delivery. The school is already organised and managed in a way suited to the integration of work with the computers. This has occurred largely because the children in the school are different; Richmond Park pupils are physically disabled and need special help to access the curriculum. Computers have proved to be liberating for many of these children. The school's use of computers in class has already been well-documented elsewhere (e.g. article in Context magazine special issue Comenius 1 January 1997 DGXXII, BBC/NCET television programme, 1997 and see also Annex 1). I have not tried to repeat the whole picture. This report concentrates on the use of new communications technologies, how they blend with existing use of computers, and what they add to teaching and learning in the school.

The successful integration of all information and communications technologies makes it hard to describe any particular aspect without describing the whole educational experience. There is also such a variety of different experience, making it hard to select material for this report from the mass available. I have tried to highlight some of the lessons that can be drawn from the school's long and intensive experience with ICT, as well as new insights.

The second Annex reports on an interview with two boys who are ex-pupils, now completing their secondary education. It adds a new dimension to MAILBOX reports on secondary schools.

One overall comment: the teachers talked to me quite a bit about learning from the children. And so they do. But to an outside observer the process has a certain symmetry. While the children tend to take the lead in coping with the technology, the teachers are in control of the educational content, helping the children organise what they discover, guiding them, pointing them in new directions. It is a partnership where the teachers have to some extent handed over part of the process to the children. What effect this joint endeavour has on learning styles and outcomes is a fascinating issue.

Local Context
Glasgow is in part a fine old city. Recently it was European City of Culture. But it is a city of contrasts - there are areas that are very poor.

The school is in the Gorbals area of Glasgow. This used to be a notorious slum. The old tenements were cleared some years ago - but some of the buildings that replaced them are already collapsing. The school lies in an area that has yet to be redeveloped, rather bleak. There is a park nearby.

For further information see the School Web Pages, particularly their Glasgow project.

The school
Children are all primary age (5-11). They either have great difficulty accessing local school or need regular therapeutic intervention. About 90 pupils, from Southern Scotland. The school building incorporates medical facilities and is designed to allow the children to develop the maximum physical development as well as intellectual, social, emotional.

Further information is in the School Handbook and on the web pages.

The technology

From the 1997-8 school handbook:

> **Microtechnology**
> The development of skills in Microtechnology, (computers), is considered one of the most important educational features in this school's challenge to meet the educational needs of its pupils and so the highest priority is given to the use of technology to access the curriculum. All the pupils are expected to use the computer daily and even children at the age of 5 are taught how to use word processors and databases. The integration of the computer into the curriculum has enabled many pupils to gain a high level of expertise in Information Technology….
>
> The use of this medium to exchange information, to communicate on equal terms with the wider world, and to develop IT skills gives the pupils of Richmond Park School realistic opportunities in developing the important skills of communication, of reading, wordprocessing, listening and talking and working together

Computers are also increasingly used for individual records of achievement. Each child has a technology profile with targets set at case conferences. This coupled with annual progress report charts curricular access and achievement. The school is now starting to keep records of achievement on OMEGA Zip drive - a child carries round their own disc.

The school Quality team on microtechnology sets target, monitors progress, identifies need and supports staff.

Equipment: the school now has 1 computer to 3 children - all are Macs except for the PC used for videoconferencing. Most are relatively new, there are still a few old ones. Macs are often used in conjunction with CDRoms. Digital cameras are also used. A mix of LEA and private funding is used to purchase equipment.

The school prefers what they call "content free" software - software which enables children to be creative and develop range of learning skills. "Both teachers and pupils enjoy and benefit from the shared learning experiences that using computers in classrooms allows." There is a clear pattern of learning together - the teacher has become "the guide on the side."

Since June 1996 "developments in the use of Computers as an aid to Communications have accelerated - almost beyond belief!"

What they do in the school - philosophy

The present Head of the school was formerly the first teacher in charge of computing. When the first computer arrived 10 years ago she was at first afraid to unpack it. But very quickly she recognised the immense potential for computers to help children with disabilities. Right from the start she got children to help her with the technicalities because they remember better, learn quicker.

Curriculum delivery: "ahead of most other educational establishments in integrating technology into he curriculum in such a way that it is viewed as part of the teaching and learning process." The school has ongoing system for evaluating and reporting on technology to support learning needs and to equalise opportunity.

Progression notion: Technology shifts down a year each year. e.g. this year only top classes do video conferences, next year, year five may be doing video conferencing. The children are very confident in moving from one application to another.

Some ways these children benefit from ICT:

〈 More able - fast track, removal of "glass ceilings"

- 〈 Motor function - big key and concept keyboards
- 〈 Software enhances communication skills by removing motor co-ordination demands of paper and pencil.
- 〈 Weight: small children can handle modern light weight equipment, e.g. cameras. Encyclopaedia on disk more accessible than big book
- 〈 The pupils of this school face a different kind of isolation from others. Electronic communication creates a community for them

Teachers: teacher staff development central; Staff development "Computers are not the bolt-on extra after the hard work. They are the hard work"

The Head comments: “Computers make learning fun. How can people fail to see that?”

First impressions

First arrival Very fast moving - everyone is active, busy.
How quickly you stop noticing that the children are strange - this is a place where children can be normal
How quickly you accept that the computers are part of the school furniture
"If we can do this with our children, just think of how the able-bodied could take off"

First tour
I am taken round the whole school. Each class is small, less than 10 children. This is what I saw:

Little ones first. Class 1. 2 computers, 1 child at each, rest round table working with paper. Basic number skills - one child using big keyboard, with its letters in alphabetical order.. These children have individual profiles on disk with them

Class 2: Lily is using Cowriter. She is 6, is writing a story; she dictated, teacher wrote down the story she dictated, now Lily uses Cowriter to find the words - the software lists 2000 and responds to a typed letter with a list of 5 on screen - she chooses and clicks.

Class 3: Another story. Bob uses a concept keyboard with 30 or so words. He presses the word he wants for his story, and it comes up on screen. Teacher can compose overlays according to themes in class.

Class 4 works on Burns - three boys show me. A boy and a girl made a "slideshow" of Robert Burns life. It took them 3 or 4 days, working each afternoon. Used several picture sources including encyclopaedia on CD ROM. Did entirely alone except for help with tape recorder for music.

Class 6 is keen on whales. The 9 year olds have done stories in groups using Story Weaver - new software only in school since September. Process started with stimulus material on whales found on the Internet. Main problem is children generate too many ideas - they pick up expressive language from each other and from the teacher - for example "hanging on for grim death"

Class 7: Living books - reading for information. Human Body. 2 girls. Children patient and confident - motivates them - can take at their pace - evens up children with difficulties.

Class 8: Peter, 10, had started the day by downloading information from the Internet for a new class project - he explained how he went into Netscape and did a search - he couldn't remember which search engine he had used - made a bookmark and then downloaded the material.

Morris took a photograph of Peter and me. Morris has found his métier, very recently. A quiet and somewhat withdrawn boy, he was at first very shy about taking photographs. Now he takes good photos with the Quick Take digital camera, then loads them into the computer, adds text, prints. Very happy about it. I go up to look just as he's finishing the layout, with just the lower part of the image visible. I comment that I thought for a moment he'd cut the heads off - he laughs and says he never cuts the heads off. How relaxed these children are!

Class 9 and 10: **Hyperstudio** a sort of multimedia design studio. Children bring along ready made texts, perhaps pictures too, and they are combined with sound. Daniel leads the way. A Project about aliens who arrive on earth and want to know how we live. Each member of class has drawn themselves, the pictures are on screen. If you press the child's picture, you get them speaking about themselves. Teacher comments that with Hyperstudio you can evaluate what has been learnt very clearly.

Email group about 8 children have responsibility for mail - they check daily, download, print, decide if reply needed, file. Various in-trays on hang on the wall. Teacher keeps a folder of hard copies.

1 girl and 2 boys on today. They are sending a letter to Annabel. Email extends their language and social skills as well as search. Children normally do letters in class and bring them along on disk. Often do Email early in day while still relatively easy to get dial up connection.

The Internet computer: In central area which also forms corridor between two parts of school - so people stop and look as they go past. Normally another computer stands beside the Internet one, so letters etc. can be prepared on that without tying up the computer on-line. Or texts are prepared on disk in class. Children cluster round the computer - it has a big screen. Behind is a screen with pockets hung from it, providing email files. Higher are press cuttings about the school, copies of songs etc. - Part display, part notices. Opposite is another display - a World map with lines from Glasgow to places Nettie has been. (Nettie is the local swan who flies away and sends back stories - see Web pages). Then the various Nettie stories are hung on the wall, each with a nice cover. Material downloaded is often saved onto disk and then reformatted to make it more attractive.

Specific activities observed

Videoconferences

Videoconference 1: with Ashcraig School

Ashcraig is the local secondary school for children with physical disability. Most RP children continue on to it on completing Primary.

They call it the Alligator project. Daniel explains why:

> "We started our alligator project when we were learning to use video conferencing because we said "See you later alligator" whenever we finished speaking to the other schools on the computer. We found out all about alligators from books, the Internet and from television programmes. We learned lots and it was all very interesting."

Richmond Park now has regular video conferences with the secondary school which takes most of its pupils. At present the two schools are planning a joint magazine. Today the conference is between 5 children - 3 girls and 2 boys including Daniel - from the top class at Richmond Park and perhaps a group of 30 at the secondary school. The teacher helps with advice, sometimes adjusts camera direction, otherwise the children control everything. Lynette on controls.

Both groups of children have separately been brainstorming and identifying key words for editorial guidance for the magazine. They exchange and discuss words, ending up with 19 key words.
Then the primary children have a video to show the others - a 13 year old girl interviewing a government Minister. This will help them prepare for interviews as “journalists” for their magazine. All listen and watch carefully. They will prepare comments and questions for discussion next time.

Videoconference 2: working with children from an island school

11.15 am Today's group: Keith, Lynette, Jemma, Edwin, Lucy and Stuart. The video conference is with a school in the island of Islay - Portnahavon. It has about 10 children. E first at the controls. Needs a bit of prompting - teacher explains the term Icon. E turns the miniature camera on to self-view so they can check that everyone is in view. A lot of manoeuvring. The large camera is being set up by the teacher the while - she sets herself on the floor so she does not obstruct the view. E, with teacher prompting him, gets the big camera turned on and starts on the dial up process. The teacher first runs through the greeting process - E should say Hallo and then announce everyone, each person to wave when they hear their name. Then she runs through what they are going to talk about - the theme is pancake day.

E clicks into "phone book". He selects the school phone number.
Teacher asks: How does it make the call?

L: It puts the camera on the dialling
E. continues. Ringing sound. Teacher: "Hello, they are here!" *Excitement* - "Hi Helen"
H *introduces another girl with her in Islay*: This is Kirsty
Teacher: Have you been on before?
K: Yes.
The two girls are on their own - the teacher must be with other children in the background. The sound isn't very clear. J takes over controls. Asks if they are ready. They reply yes.
Teacher prompts J with questions: Islay children answer:
J: What day is it today?
I; Pancake day
j: What do you know about pancake day?
I: A little
J: Tell us...
I: Its the first day of Lent.
T: Is it? J, tell us what you know
J: Pancake day is the last day before Lent. *She goes on to talk about eating pancakes.*
They all discuss having a party to eat up the good things like flour and sugar before Lent starts - the old name mardi gras comes up. The Islay children say they made some pancakes this morning.
T: We're going back to class to make some
All: Yes, Yes! *(very excited)*
... but before that, how do we do it?
J opens the document on the screen and reads. The teacher has prepared a puzzle. But the children at the other end can't see clearly. The local group reads aloud:
"Unscramble the letters to find the ingredients you will need to make pancakes"
The word "ingredients" is explained. It's a game - an interactive game. There's a list of 4 numbers and below, four jumbled words. Each team is supposed to take turns to unscramble a word and drag the letters into place beside a number. Islay go first. J. tells them what to do:
J: Drag one letter up at a time
I: Oops! *(letter drops back)*
J: Go right up to number 1. Can you move it over?
Teacher at other end comes on - a panicky voice - she wants to alter the screen layout and improve the picture. RP teacher gives her instructions, the problem appears to be sorted out.
L, *to Islay*: Right, you can take control of the mouse now.
Silence.
L: What are you doing? Are you going to move the word "flour"?
K: you told them!
Silence
L: Do you want us to do it first?
I: You can do it.
L makes some adjustments to the arrangement of the screen so they can all see better then all spell F L O U R as she drags the letters up. This is quite demanding manipulation and takes a while.
L *(to Islay)*: Do you know what this word says?
I: Flour!
L: *(prompted by teacher)* Did you use flour this morning for your pancakes?
I Yes
L: What kind of flour?
I: Plain flour
L: Do you want to do it now?
I: OK, we'll try
L: You have to click on the arrow to get it. *(nothing happens).* You must bring the arrow to the top of the tool box.
I: Pardon
Julie: You must put the arrow at the top then you can do it. Do you want me to do it?
I: OK
J: We don't have control of the mouse. ...Look at the left hand side of the page *She points, showing them where they should click. Islay still don't give control*
Teacher: Girls, can you see where we are pointing?
I: No. There's a big box on top where we can see your picture.

Teacher: It is the white arrow sitting on the black arrow. Can you see the arrow now?
I: we can see the arrow at the bottom
Teacher: Have you got a tool box at the side?
I: No
Teacher: That's what the problem is if they can't see the tool box.
I: Have we got control now?
Teacher: Yes
J: Can we take control over now please? *(She gets the tool box up)* Have you got the tool box now? *L now tries to get the toolbox so they can see it.*
I: Yes but now we can't see the letters.
L: Does it make any difference now?
Teacher: We'll drag the words, you tell us the answers. We'll need to have to work on why you're not having this toolbox.
The RP children finish the exercise. K takes the lead for the next game.
Another word is done: SUGAR - the girls in Islay spell and Lyndsay does the dragging. The girls are a bit
K: Is that the ingredients you used this morning?
I: Yes
K: How did you make them?
I: In the bowl we got flour, made a wee well in the flour, took an egg, mixed it all together, took the milk, mixed it together with water, put it in, then mixed it all together.
Teacher: Right K move up the page and tell them how we are going to make ours.
K scrolls up.
K: This is how we're going to make ours this afternoon.
The instructions are on screen but have to be put in order.
K clicks on "mix the flour and the milk".
K: what do you think we're going to do next?
Silence. Then "We can't see"
K drags up and tells them each line, then reads it all out. "Did you hear all that?"
K: How did your pancakes taste after you made them?
I: Delicious
K : We hope ours will be as well. *(Prompted)* Have you got any funny stories to tell us about pancakes?
L is fidgeting - the problems with communication make it all a bit long drawn out
I: When Mrs P was tossing her pancake it hit the window!
Lots of laughter.
I: It left a big mark.
Teacher: Who cleaned it?
I: The dinner lady
Teacher: did you eat it?
I: No . We threw it in the bin after it hit the window.
Teacher: was Mrs P the only one to toss her pancake?
I: We were all tossing pancakes. One girl tossed one and it landed on her head!
Great hilarity.
Teacher enquires about pancake tossing experience at Richmond Park and reports: No-one here has tossed pancakes.
E: I'd love to
Teacher: Should I give them a chance?
All: Yeeees!
L: I can imagine it falling on my head
K: I can imagine it stuck to the ceiling!

Comment Interesting to observe what happened at both ends over managing the technology, and its effects on the “lesson”.

Electronic mail

The daily mail - first session

Today's email group: Jemma, Keith and (later) Lynette; all 10-11, from Top Base. This is a mix of children from year 6 and 7.

The teacher leaves Jemma and Keith to write their letter. They are going to reply to a letter from Dennis in South Africa. They have discussed the response beforehand and have some notes to work from.

K: I can write it, you tell me the spelling.
J dictates, K types slowly: D e a r   D e r e k ,
J: We wonder
K: I know how to spell "we"
J: w o n
K: d e r and the other word e d. What's on the paper Julie? Look on the paper.
Teacher returns
K: Mrs N, what shall we say?
T: What would be a more polite way to start?
The children propose - "Thank you for your letter. It was nice hearing from you because we had not been in touch for a while". It is K who comes out with the flowing sentences. They decide they will write something like this and then ask their questions. One question is about why Table Mountain has that name. There is a lengthy debate with the teacher on why it might be - they compare, using sketches, the usual shape of mountains and of a table. J draws a rectangle as a table top. Much talk of rectangles and squares. They eventually decide the answer might be to do with mountains being bumpy and table being flat. They decide they will look it up in a book or better still the encyclopaedia (on the computer) later - they might find a picture.
The teacher leaves the children to get on with the letter.

J. *takes keyboard*: I can type it very quickly.
*Lynette joins the group. J types: "*Thankyou for you letter we are gald.."
Then they get a bit stuck. Another teacher passes and helps them to identify and correct all the errors. L is good at spotting the mistakes. When J sees "gald" she says "I'm bad at doing that". She continues typing and dictating
...w e h a v e
L: ...heard from you
J: Could we say "we are wondering why...
K: the Table Mountain *(J joins in - they speak as one)* is called Table Mountain?
Much discussion of wording. K comes up with a proposal: "We are glad you enjoyed your holiday in Cape Town."
J types: D i d   y o u e n j y e d
K and J work together till this is correct.
Mrs W: What did he see on the way up the mountain?
All: Baboons!
Mrs W: What are they?
K: They are kinds of monkeys.
They decide to look up baboons in the encyclopaedia in the classroom later too
L *types*: "Where you frightand of the baboons?"
The teacher helps them spot and fix the errors.
Mrs W: Now - have you got anything to tell him?
K: We are doing a new project
Mrs W: Are you being lazy...?
K *dictates to* L: We are working very hard on our project called The Top Base Cafe. on a Tuesday we ...
J *(interrupts)* We haven't got a capital for O
K...bake for the cafe. On a Wednesday
L: When does it start? About 10 o'clock
K: *(still dictating)* it starts at 10.00
J: *Picks on mistakes* - O capital O twice.
They correct punctuation with some prompting questions from teacher and start a new paragraph.
K: We are working very hard on another project called Teen Times
L types Teem, corrects with teacher prompt
K: It's a magazine we are writing...
L: Hold on!
K: With Ashcraig.
Mrs W intervenes - they decide to say "with another school"

10.45 Time for break. J saves the letter to finish later. She chooses the name "a letter to Denis".

12.10 *J now finishes the letter to Dennis. On her own. Very confident. Adds a lot to it. Then she jumps up:* I'll go and get Mrs Nicholls to come out and check it for me.
Spell check together: J learns to add words to the dictionary. Then they check it visually and find one or two grammar mistakes (Were should have been we're - J says "We can put in an apostrophe".)
The name Top Base Cafe is wrong - it should be Top Class Cafe - they discuss why that is better - Julie comes up with the double meaning, that top class means "That's the best".
12.30 Now it is dinner time. J saves the finished letter. Immediately after lunch she will send it and print me a copy.

Receiving new mail
The school day has just begun. Daniel, Jemma and Ahmed, all aged 11, and their teacher are seated at a computer connected to the Internet.
T: Right, Daniel, check today's mail.
D logs on, teacher puts in password.
J: I haven't got a letter from Louise!
T: Maybe tomorrow. Oh we've got one from Australia..
A letter from a student teacher in Australia. She wants to know about children aged 8 and under using Internet
T: Do children in this school aged 8 and under use the Internet?
J: No
T: Why not?
J: Because they are too young
T: What do we do if we get information about a competition?
J: We print it, then photocopy it
T: And..?
J: We take it to the class, and they do the competition
T So what do we say in our letter?
D: They are not using it but older children are downloading the information and giving to them.
T: And what if they want some information
D: We find it and bookmark it for the teachers.
The children prepare and send their reply:

> Thank you for your letter. We are primary 7 children age 11 from Richmond Park School in Scotland. Our children age 8 and under take part in competitions which have been downloaded from the Internet.

Writing a letter
Daniel *sets up the screen ready*: Do you want to do it in Claris works?
T: Yes please. Are you typing Jemma?
The letter is to Bob and has already been planned. Bob is an American boy who wrote to them - he wanted to exchange letters every day. Teacher reminds them:
T: We're asking him what's happened to him - he hasn't responded for a week.
J types:
Dear Bob,
Were are you
D controls the mouse and helps J correct Were to Where by placing the cursor in the right place as she types. He performs this function throughout, usually correcting word by word. As team work, It is quite fast and efficient.
T: What goes at the end Edwin?
E: Full stop.
T: When it's a question?
E: Question mark!
T: Say "Have you been trying to contact us?" - in case it has been going to someone else.
J types vigorously - she is very happy doing this.
T: Is that a sentence or a question?
D: Question!

T: What goes at the end Edwin?
E: Question mark!
T: *(suggested words)*"Would you like to try that project again?"
E: "Another time?"
T: "Another time, at a later date?" *(To Ahmed)* Were you here when Bob contacted us?
Ahmed nods
T: The problem was it was America, we had to come out in the afternoon and try again
Ahmed nods: Yes
J types, D dictates "Would you like start the project again at a late date?
All four children move as close as they can to the screen. A lot of laughing over the mistakes.
T: Anything else?
E: "Contact us soon.*" Some discussion.*
T: Everybody's got their own way of writing letters - as long as you're consistent.
J: Shall we put our names? *(Starts typing)*
T: My goodness!
D: Jemma first, she's the typist
Julie types: "Jemma, Daniel, Edwin & Ahmed"
Teacher goes through names to point out how commas are used in a list.
T: OK are we going to send this then?
Daniel starts process: UNTITLED comes up
T: Why's it highlighted Daniel?
D: Don't worry, it's alright, I'll just copy it.
He then starts looking for the correct address in a very long list. They eventually find the address by recalling the date they got the last letter.
T: What is the title to be?
They decide on "When we make contact..."
It is sent.
T: Maybe he's on holiday.

Another letter: helping each other
Edwin and Daniel write a letter introduing themselves. Teacher leaves them to get on with it. Edwin types, Daniel has mouse. Edwin has problems with pressing the keyboard lightly enough - the letters keep repeating. Daniel is very patient, and manages the process. They work together slowly but well.

Edwin types: "Our names are Daniel and Edwin"
D: Don't press the buttons so hard... We can't tell them the weather is wonderful!
E: It is getting worse!
Edwin has difficulty with spelling, but is quick to find letters on the keyboard. Daniel dictates letter by letter. He finds a new way to help Edwin with the double letter problem - he uses the mouse to spell check and correct word by word - RAINNY to RAINY.
Now they've made a start they will save on disk and finish the letter later in class as there's something else to be done now.

A letter to Robbie - getting in each other's way
Lynette and Jemma at a computer off-line. They are starting on a letter to Robbie. Teacher starts them off with a briefing. She reminds them they wanted to know how he did his photographs. Lynette types - really fast. At one moment she loses the page - she gets it back in a moment.

They change places so working together is easier. Jemma can look after the mouse while Lynette types. They get a bit stuck. L. decides to read it all through, gets a bit impatient when J. tries to point out mistakes. Starts typing and says "ssssh" when J makes a suggestion. L grabs the mouse too. J is left out, begins to look unhappy, turns slightly away. Teacher comes along, discusses new ideas for the letter with them, discusses sharing and working together - "What happens when you both try to do the same thing? Too many cooks spoil the broth!" It ends in laughter.

Collecting and posting - problems with addresses
Jemma and Ahmed. J gets ready, then gets teacher to come and type in password (closing your eyes for password is treated as a game)

A letter from John in Canada, called "a helpful hint", saying that their contact address is wrong, given with a space after a full stop where there should be none.
T: Where might he have found our contact?
Children: Home page
T: Lets check our home page to see if it's there
J finds it. It is wrong! Everyone is surprised! Julie corrects it. They decide to write a letter to John to thank him for his helpful hint. Teacher asks what they should say.
J: Dear Mr...
T: That's very formal. Was he very formal? Did he say Mr?
Ch: No
T: What name did he give you?
Ch: His first name
T: He wants to be friendly. Send it back to John.
Ch: “Thank you”
T: What are you going to thank him for?
Ch: Helping us
T: ?
Ch: He helped us solve a problem
T: he brought it to our attention that we had a problem. So what did we do?
J: We went to the home page and fixed it.
Teacher goes. J types. A helps with spelling. He's very quick. He spots errors, and can always say what the correction should be. They compose the following:

> Thank you for letting us know about the problem with our E mail address on our home pages. We have fixed it. Thank you for your message. We are glad you like our home pages

Comment: *J can't hear much, A can’t speak clearly, when he does speak it is in quiet utterances, and he can't point easily - his motor control is poor. Yet the two communicate well, are patient with each other, and like working together - they have fun. When A spots an error, teacher sometimes asks him a question that J can hear which allows him a one syllable answer e.g.*
T: Where is it wrong?
A points
T: What should the letter be?
A: B B B (He usually says it a few times to make sure it is heard)

Ahmed’s story
For A, the computer is the only way he can access most of the curriculum. But what good work he can produce. I found this in his file:

Halloween’s coming

It was a dark and storm night I was coming from a halloween party and I saw a witch. She was on her broomstick She was ugly and then I saw a bat and then I saw a white ghost floating in the sky. I was very scared when I saw the ghost and I rushed into my house.

A

Jemma’s letter
Jemma is bold! On her file I found this letter:

Dear Mr Gates
My name is J M and I am 11 years old. I would love to work for your company, Microsoft. I use computers all the time at school and keep up to date with all the new technology. I am sure I would make a good job at being one of the operators of your computer. I am quite quick at typing, have a good knowledge of computers and with a little help from my teachers I'll be an expert and ready to help you create

Windows 2000.

I hope you will read this letter carefully as I am convinced that I am the person for the job. Please reply soon but in the meantime "I'll just dream on."

Lots of love
from
Jemma
xxx

Filing the mail: Daniel tidies up
Lunch time approaches. Daniel is back at the computer working alone. He puts his floppy disk in the drive. He then starts moving documents into folders. He makes a new folder and puts some letters in it. There is one unlabelled letter - he checks the email index and labels it appropriately and files it. I ask why he's doing this.
D: It takes less space.
He gets down to 12 items, arranges the icons, and reduces the size of box round them. Some items have been placed in the waste bin. He deletes the contents.
D: I'm not supposed to do that but I know I've got it.
A final tidy.
D: That's better!
He takes out his disk.

(Digital photomontage available, prepared for MAILBOX, of children processing the mail)

Projects and curriculum: learning by using technology

More about the Alligator Project: video conferencing
The video conferencing project involving Ashcraig School, Richmond Park School and Yorkhill Hospital School in association with British Telecom. The extract below from the teaching shows how the school systematically designs curriculum delivery.

> *Alligator Project Week 1*
> Knowledge and understanding: develop understanding of main distinguishing features of vertebrates i.e. reptiles - alligators. Also look at pupils' own distinguishing features and characteristics. Interaction of living things with their environment e.g. farming and climate
>
> Planning: Propose simple categories within which information found can be organised e.g. reptiles - alligators/crocodiles. Use pupil profile to decide which information to gather on selves
>
> Collecting evidence: Extract specific information from reference books, TV programmes, from Internet search. Measure each other to find height/weight etc.
>
> Recording and presenting: record collected evidence in a variety of ways - enter information under headings/ make drawings. Contribute to class & wall display. Database of personal information.
>
> Interpreting and evaluating: Distinguish between fact/opinion e.g. about "myths" about alligators. Discuss how interaction between humans and environment is very different in some parts of the world to others.
>
> Developing informed attitudes: Develop positive attitudes towards endangered species.
> Raise awareness of the individuality and identity of each person, and the contribution that each person can make to their immediate world.

The plan goes on to describe cross curricular extensions - links to language development, mathematics, expressive arts, music. The impact of this meticulous design is evident both in the confidence, competence and high standards achieved by the children, and also recorded in their personal records. I read the following in the personal file of one child:

> “Work on email/Internet has certainly developed all language skills as well as social/collaboration. It motivates him. The collaborative work to develop self confidence is a good strategy.
>
> Reading: use of Internet as a valuable source for locating up-to-date information - questions the usefulness of information/ relevance/ how to select etc.

Alligator project/video conferencing: K excelled himself in this topic."

The project song, composed in school:

Send a message
Send a message
Send a very, very, very urgent message.
Use a telegram or wire, use a beacon or a fire.
Send a message, hope it gets there in one piece.
But with "Project Alligator", we'll be sure to see you later
When we phone, snap your picture on PC

Send a message
Send a message
Send a very, very, very urgent message.
Hoist the flags up on a boat
Send a letter, send a note
Use the post box at the corner of the street.
But with BT's communication
We have friends across the nation
Exchanging information every day.

The top class café
Started as a project. Children were going to have to learn to buy food in the canteen when they got to secondary school. The project was to get them used to handling money. Now a permanent feature of school - once a week the top class runs the café for everyone with lots of cakes. It is a source of much other activity - the stock sheet on the computer - children record what they have sold. I watched them enter data and compare using numerical total and a bar chart how much of each item they had sold. (*Hard copy available)* Very good example of how the two top classes work collaboratively.

The bus of the future
The school won a competition to make drawings of the school bus of the future. Lots of the buses were equipped with computers - lots of technology! Peter did a particularly good one so he and his class teacher and his Mum went to Gleneagles for the prize - a computer for the school! All his class went outside to see him off. Chauffeur driven car. Peter sat in the front with the chauffeur.

Using the Internet

A first look at Robbie's Home Page
Top class group and teacher
Robbie is an ex pupil now 16. His page is called "The Ramp ahead". It's had 234 visitors. Daniel is at the keyboard. He inserts Robbie's URL into his scrapbook. They find Robbie has linked Richmond Park school into his home page - this is very exciting. They wonder how he took his photos - the quality is so good.

Peter does a search
(Year 5)
Teacher, Peter and Gordon: Peter is looking for information to use off-line for the new class project. Peter is asked to explain to Gordon what he's doing, Gordon to watch. Peter will bookmark suitable material.

T: What shall we do ... What have we been looking at?

P: Science
T: Good. Why science, Peter? Why not go into environment? We've been looking for topics about ourselves and other people.
P explains (his speech is not very clear so I can't record it all): Selects "The future is yours" - it offers case studies of different professions.
T: What do you want to be?
P: A footballer
T: But we have a chemist, geologist, physicist. Do you know what a chemist is?
P: He sells medicines
P clicks on "chemist". It's a case study with photo of a young woman chemist, a researcher, followed by notes on what your interests should be if you choose this career ("Maths is important") and then some experiments to try. Peter leans forward and reads it intently, and very fast. Gordon looks bored at first, but then leans forward and starts reading.
T: *(on first experiment)*. Could you try that? Is that possible?
P: Yes
T: Let's look at the next experiment
It's making home-made silly clay. G is fascinated by a photo of hands holding the blue clay and tries to work out what it is
G: They're washing their hands
T: (*Commenting on the instructions and chemical terms)* Would everyone in the class understand this?
P: No
T: So what could they do?
P: Look it up in the index
T: What else do we use for information?
G: Encyclopaedia
They come to making jewellery. Teacher comments the girls might like this. But Peter lights up instantly:
P: I want to make some for my mum
T: Oh it's Valentine's day
P: Yes
T: Do you think that would be a good activity?
P: Yes
T: They're mad keen scientists, this group
Peter makes a bookmark.
G: Click it!
Teacher reminds Peter he could also put it on his disk. Peter does this.
T (To Gordon) Are you watching
G: Yes
T: you see tomorrow we may come out and get you to do it.
G: Noooo!
T: Yes!

Children learn new technology applications

Learning to use new software - children and teacher together

The school IT adviser is showing a teacher and three children - Lynette, Edwin, Daniel - how to use new software. The children learn by doing, the teacher learns by watching. The software - called Webwhacker - allows you to download layered web pages onto a hard disk. This means you can explore a chosen set of web pages at leisure. The demonstration has already begun:

A: We want to take Robbie's pages down so we can find them without searching
D has mouse and finds the Home Page
A: What's that?
E. This is Robbie
Robbie is a former pupil of the school who now has his own web page
A This software will take all the pages down and save them on disk so we can look at them later. Now Daniel, get the launcher window, Bring up the Web Whacker - a nice programme, it helps you take down several pages at once.
She gives D step-by-step instructions. The other children watch carefully, L is very quick to spot the icons and point to where D should take the cursor.

A: Now we're going to set up a new group... Every new group has .www in its name. What would be a good name?
L: R S (She types R.S)
A: Get the URL (*D. grabs it with mouse*), click once on the title, choose options, choose all levels - normally it just takes one page, we want it to take all levels down, we are going to do a whack - Oh! It's telling us to do something. Where should we go?
L: Preferences
A: So where do we go?
L: Where you go... *(silence)*
A: If you're not sure what do you do?
D answers by scanning the tool bar with the mouse and checking the lists till they find preferences under OPTIONS. The Preference box asks them to enter their email address.
A: Do you have your email address? Do you know where to find it?
All: Yes
They point to the card pinned to the wall above the computer which has the address on it. L reads it, correctly letter by letter, then types it. Now they are ready to try the Whack. D sets it off.
L: What's it doing?
A: It's sending a message then it's coming back with all the words and pictures
L: What pictures?
A: Pictures of Robbie
L: Has he got a computer?
A: Yes, he's had one for quite a long time.
L: I've got one as well.
A: Can I leave you to finish? Then have a look at the pages and perhaps send Robbie a message

More Webwhacking
Daniel and Edwin are watching the software download. They start playing as nothing happens.
E: Why's it so slow?
D: I think it's another page. It's probably someone else's home page that he's added a link to.
.....
Teacher comes o check and finds it still going.
D: The page before this took 10 minutes! *(It did)*
They discuss something else with the teacher. The download continues.
....
A: Boys, any movement?
D: No, we're just sitting there watching it.
A: Let's decide to go back and do the rest of it later. Cut the phone line, close, quit.

Storing and accessing the downloaded pages
Daniel, Edwin and two teachers with the consultant. Daniel has the mouse - he's often in advance of the instructions he's given - imagine the words accompany fast action.
A: We're not on the phone anymore but we still need Netscape to see the page - we want to open a file - what's the first page of a site usually called?
Ans: Index
A: Index - go for... there we go. *(Robbie's home page comes up*) Are we on the telephone?
Ans. No
The children start to tell A about the contents - they have already explored the pages.
- We can see our own picture - it's in here *(They get the school home page up, which is linked in*) - It's got your name as well (*they show her. Everyone gets really excited)*
A: Have you got his address?
D: Yes its down here *(scrolls down)* and we saved it in scrapbook.
A: Every Mac in school has got Netscape, so we can put in on disk.
Another teacher comes up
D: You'd never guess you've got a mention
T: Oh!
D: And this is our home page!
Daniel starts following links, Edwin is really enjoying this, he starts singing along with the music coming from the music classroom, eyes glued to the screen. The teachers are clustered round.

Future plans
Children moving on to making their own home pages. Daniel, and perhaps also Peter although in a lower class. Peter's teacher is learning to use the software so she can help him.

Interviews with children

A chat with Jemma and Ahmed
Both have computers at home. Jemma has an Applemac. Ahmed likes typing, he writes stories - about football... Jemma a little evasive about what she likes doing - she tells me she loves the computer because she finds it interesting. She is interested in words and meanings, and international differences. On one message we find "Esp. the map". I explain that "Esp" means especially - J is a bit disapproving - she says people should write in full because people in different countries use words in different ways. She tells me about "toilet" and "washroom" being different word for the same thing. Yesterday they came across semester instead of term.

Group discussion
I asked children from the top classes about their use of the Internet. We talk first about email. They started using it when they moved to the top class. “Internet is easy.” They describe the process of logging on and searching - they know it backwards! They like email. Why?

> L: It’s easy;
> A: It’s fun - it’s not so much fun just writing a letter - the letter takes longer to go
> *Do they reply to all their letters? No. Some are letters for teachers - they print them out and pass them on; some don’t need a reply. Some are for other classes - the teacher of those classes usually deals with the reply. Sometimes they initiate mail. Usually they get a reply.*
> L: I like showing other people how to do it.
> J: I like meeting other people and helping them. *She is teaching her brother and sister to use a computer*
> K: It’s exciting sending letters all over the world. But I like working on the website best.
> *J wants her own web site.*
> *The Internet? Frustrating! K says he has no patience with it!*
> *They have a sense of pride, of achievement: “Some people haven’t even got a computer”.*
> *They like working together on the Internet. They can talk to people beside them. Sometimes they can’t do that in class.*

They compare video conferencing and email, and list the differences. They really like video conferences. They would like to have video conferences with more places, perhaps link up with London. They would like to visit the schools they video with - just for a day.

Teachers learning: staff development

The Cybercafe
No children in school today. Staff development for all the teachers. One room is set out with several computers, 2 with on-line connections, the others with web pages downloaded to simulate Internet searching. A the computer adviser is showing 3 teachers how to send letters by email. The talk is accompanied by her action all the time, the teachers are watching intently.
T: I didn’t realise it was that simple
A: …because we’ve set it up. As soon as it’s set up it’s very easy - e.g. you could send a letter to Australia … It stores the letters.
T: Have you set it up to do that?
A: Yes… we use a program that’s free to education. You can time it to send the letter when you want.
T: Is it still on line?
A: Yes - if the little hands are shaking, it’s connected. If you cut the phone line, you do a soft close.
T: I’m worried you can go away and leave it on, but it <u>will</u> cut it…?
A: After a time….You see it’s just done it
…..
A: You can get on the Internet by 3 steps…The speed depends on your modem, the time of day, and the amount of memory in your computer. You need a powerful machine for speed - but any machine will do it…
3 more teachers come in and watch

A: You can do a search, or look at pages you put up earlier. This is easier to start with … It's taken a lot of time… it's going to show me…. The Internet is slow, it's always slow
T: Is this the Internet we're on now?
A: Yes - these are pages of information
T: Can you access anywhere in the world?
A: Yes. Finding what you want is the difficulty. You use search engines. Pictures are hardest - they are slow. Anything that's underlined we can click on. You can change the size of text to see how it looks *Changes it to 18 point…* One click - it goes to "Find". Thing is… it takes a long time to search. It's better to take pages and download them on to the computer.
The teachers discuss the problems of preparation time. One went to an evening course - 10 evenings - and came away with very little information - the machines were often not working or the link down. 3 of the teachers are taken to a computer with some pages ready downloaded on to disk, are quickly briefed on how to explore them, and are left to explore. Back to the others - the search is still in progress. The teachers ask about cost of the Internet and discover it's on subscription (through Campus World) + telephone charges. They are warned off services that are payment on use - no good for schools. Still searching….the line is cut
A: The phone lines are horrendous sometimes
T: Can you copy on to a floppy?
A: Yes, the problem is the size of the file … If you've got Netscape you can open the file you've saved to disk through Netscape… This is unbelievably slow
T: It could be an in-service day in lots of schools.
A talks about exponential growth in the Internet and its use. That's why it's important to identify and take down information. That's what we're doing with the top class. Imagine sitting at home doing it! You get scaly eyes….
One teacher who had been to Australia recalls that teachers there used it in the middle of the night when it was less busy.
A: Yes, we can't choose, we have to use the busiest time!
Search done. She starts showing how to save to disk. Another group of 5 come in! They are asked to come back in 20 minutes - the room is crammed full. It emerges that some of these are teaching auxiliaries - every member of staff has turned up including non-teaching staff. She continues:
A: The URL is the address. It knows what page we're on. *The consultant starts showing how to use the Webwhacker to download pages.* I want it to take all the pages in that section, all the levels *She sets it off.* Now we go away and do something else. Yes, I'm on the phone, it's costly, but I'm doing it once. Once it's down I can look at it, choose what to use at leisure. … There are questions of copyright - you should check with the provider - you remember we did that with the whales. There should be no problem for school use, but if you were to let the material go out of school, there would be a problem.
T: What about a child taking their work home?
A: No problem. It's just if its distributed for sale that there is a problem.
T: Is there a Richmond Park Home Page? I've never seen it
A: There should be a bookmark
They find 3
T: Why are there 3 different ones?
A: Well the kids may have put them in… Let me take you down to the off-line search now to look at it more.
One teacher is left on-line experimenting with searching using Altavista.
Tea break - but no-one stops. Someone brings up video-conferences. "Would you like to try it?" An arrangement quickly made with the "boys at BT" who, after tea, will be on the other end of a video-conference to answer questions from staff. This happens and is a tremendous success (not observed)

Comment: I am surprised at how tentative the teachers are in tackling new applications. With the children they appear totally confident. But they are often working at the edge of their competence.

A staff training video
The school has made a video for training staff, called "Chips with everything"- for newcomers to their school and teachers from other schools. I watched it and made the following notes:

Made November 1995
Computers as tools for a highly motivating structure for learning
What are the benefits? Teachers reply:

T1: Self-confidence and self-esteem of children. "Children get satisfaction from being able to produce very good work at very short notice". Especially if they are not good with pencil and paper they can write stories better. Kidpix enables them to draw in their own individual style.
T2. A newer teacher - was told just to switch on and let the children explore. "With children like D in my class it was easy because D kept me right"
T3: "At first I was overawed. I learned a lot from my colleagues and more importantly from children". Children acquire self esteem. "Children are better motivated [if they use computers] when they are redrafting a story or researching information"
T4: "teachers and pupils work together - problem solving". Digital camera - satisfaction and benefit from taking a photo, on screen and print." You can take away my blackboard but please don't take away my computers"
A and N (children) comment on the Internet "I like finding out up to the minute news and what the weather is like".

Children training teachers
Photos of the children training Glasgow teachers. (*I have* one - "Click here" says L). The Assistant Head tells how she set it up. The teachers saw round the school. Then they were told it was time for hands on work. But, said the AT, I can't train you all at once. But I have some assistants. I should tell you they are children. Does anyone mind? Of course not, but as the children came along to join the teachers seated at the computer the teachers, as one, started to move aside so the children could sit at the keyboard. "No, it's not like that, the children are the ones to sit beside you as guides today, and you sit at the keyboard"

Interviews with teachers

The school head *Several discussions*
teachers low expectations of children
need to have individual contracts
Out of school extensions?

10 February Discussion with Maggie Pollard
Over 8 years to get to this point. Giving 1 member of staff responsibility was the first step. But now now 2 staff can be leaders, 3 more coming up. The emphasis has shifted from one person to the Microtechnology Committee. This has been an important step forward. It takes time to get to this stage.

The head seizes all staff training opportunities, informal or structured. Once she got college staff to come into school to train all staff at once rather than sending one off. But in this schools the cascade approach also works. The children and teachers learn together. Empowerment of children, e.g. running videoconferencing. Teachers learn they can be not-right. Staff development must come first - the first session with a computer is as frightening to teacher as teaching might be to children

First steps: the BBC computer arrived - stayed in cupboard for months, then she took it out and unwrapped it - told to do this - terrified - it was like St paul on the Road to Damascus - saw what it could offer to children who couldn't write. Easy to sell to other teachers because teachers want children to succeed. No benchmarks then. Once started just kept going, kids started doing text, graphics etc., started going to unexpected places....

Using Email in-school good for children who can't speak. Frees them to go at own pace

Idea that with the Internet and CDs less books are needed in schools.

We are living in a wired world. Therefore need to be wired. Once wired, we must use the opportunity. Use must be needs based - starts in schools. If it is not seen to be needs-based, examples of good practice, sent from above, will be ignored/ fall on infertile ground.

Wired world at home for children - more familiar to them - why should school be any different?

Glasgow education department has decided to take up the wiring, is now talking to companies about deals. It is getting different companies to tender for different bits of the infrastructure.

Integrating and expanding IT
Beware trying to do too much too fast and ending up spending too much time managing it. Do you have the resources to support what you are doing? If you try to do to much you begin to lose things. For example, she insists on keeping June - the last month of school year - "free" to give teachers time to calm down and reflect before vacation starts. Otherwise they don't rest, there is no renewal.

IT has a magnetic power - the future is unknown. Beware the magnet, go slowly.

In RP it has changed the way teachers think about the way children learn and changed the way they teach. The change from “sage on stage to guide on side” describes it well. That is a BIG leap for teachers who are told to CONTROL children - the Scottish system still tends to favour control.

Steps teachers take:
1 leading/directing learning rather than telling
2 learning together
3 teacher becomes comfortable with child leading and directing
4 teachers can learn together with peers
Once teachers start talking about "learning to learn" the door is open. Step 4 is the hardest - 2 and 3 are enjoyed in privacy, with the children. It is harder to expose yourself to your peers.

If you teach in the old way, the teacher has to be one step ahead of the children. In the changing world of technology, teachers who try this route work themselves into the ground.

The next stage is when the teacher becomes a researcher. “Teacher as researcher” begins to surface at RP. Teachers are asking themselves questions about practice.

Assistant Head (in charge of IT)
Came as a temporary teacher for 2 days in 1989. Remained as temp for 2.5 years. Had Apple Mac early on in infants, used with Daniel and Jemma. When she became a Senior Teacher she had no class assigned, and was assigned to IT. Has had 2 secondments - 4 months to SEN microtechnology centre (Special education) and to Microtechnology Development Centre Glasgow so has had a lot of exposure. Did SEN staff development materials. Development planning came in and also the idea of school quality teams - she then became acting assistant head teacher - then still spent much of her time on IT work, now IT lesser part of work - difficult to withdraw but have to hand over to others who have class, are committed, interested. Still has expertise in many areas but for advanced/recent stuff it lies with those who use it daily - the class teachers are now the experts. Danger of dependence on one person only.

A school notice about “Using the Internet” gives four functions:
for worldwide communication
as a resource
as a platform for featuring children's work
as a stimulus for projects

I ask which are most important.

Home page - this is very important. It leads to more email. Accessing resources is also very important.

Support for technology development
The school adviser is vital - rely on her to come up with new ideas. Basic skills - they now teach each other. Microtechnology Development Centre in Glasgow also gives help. Believes RP gives indirect help to other schools in Glasgow.

How does technology use get embedded? The school looks for creative teachers who do good projects anyway, and gives them the opportunity to exploit technology.

She describes the 3 stages of putting computers into schools (taken from the work of Anneke Strahern):
- use to support existing curriculum
- content free, to extend for a wide range of children

- curriculum changed
What and how changes dramatically at stage 3. I ask for some examples? She mentions the Top Class café, the Home pages, the uses of email. This work is not sticking strictly to the 5-14 curriculum guidelines

Planning
"Topic planners" - standard sheets for teachers to complete (*I have an example)* used to have a separate box for Microtechnology. Now the word used is resources, to emphasise that technology use must be curriculum driven, not for its own sake. Topics are covered in 4 - 8 weeks on average, class teachers' plans are always checked by Senior management team and then the topic work is evaluated afterwards. The strategy is of positive development - the management team makes suggestions to teachers at planning stage, there is always consultation. The team looks at content, then technology. Team teaching occurs at the top of the school.

I noted on planners that home use of computers is mentioned. Teachers always find out if child has computer at home, if so give the child a disk for homework. They decided that as long as there was virus protection on school computers the benefits exceeded the dangers. The school intends to purchase the new portable emates - initially for a literacy project in process but also to help those children without computers at home.

Originally they were reactive - now its proactive - but planners are the central tool, they are enabling

Staff development: half on skills, half showing how to utilise new applications in the classroom.

Experiences with teaching
The children are generally too interested to mess around with computers. Occasionally a child will use the computer to get attention e.g. bang keys.

First experience of using **Internet** a great disappointment - after using CD ROM's a lot. Was very excited about getting on line, had never seen it until got it. On first try found something she wanted to download - it would take 20 minutes. She started it off - and then the computer crashed at 19 minutes 37 seconds! She contacted the adviser who said, why did you try? You've only got copper wires - it's not possible with that technology! But how was she to know?

Also - children must be able to read and read well. It excludes a lot of children.

Another bad experience (in early days): Class Project done, lots of work. Didn't know about floppies, had it all saved on hard disk. Then the computer was stolen - all the children's work gone!

Video conferencing - very exciting because inclusive - motivating even for reluctant communicators.

Email work needs more focus - not pen pals alone. The school has put up story starters e.g. Nettie. They want world wide links for projects - this hasn't happened - they need to develop contacts a bit more - for example a literacy project (local) with children in St Mary's. This will entail collaborative project work on journeys using Story Book Weaver. It will start with meeting of small groups with members from each school who plan the starting point - then the work is extended using email and other techniques - each group will produce a book.

Television - not much used any more - only if useful in curriculum context. Use occasional programmes, on video. For example science in school is a bit weak, plan to use an existing television course next year.

Good experiences
- getting the first Nettie story. Just after the home pages up. *See the web page*

- Creativity of Daniel in primary 3. They had done a class story about the street. They had the idea of a puppet show on the theme "Never go with a stranger". Kids did invitations for the show, sent them out, they had a song. Afterwards Daniel said: "I'm going to write a book". He did it on the computer - he took the script and illustrated it. That was the first book in the school.

- Another time they had done a book of a journey of a letter. A collaborative book, because the same characters had to appear in different pictures even though different people drew them. Then Daniel took it and converted it to a slide show - an outstanding piece of work

These examples show how the technology opportunities open up learning opportunities

Results of using ICT
- more collaboration amongst teachers
- powerful staff development tool
- teachers focus more
- ethos of achievement

Optimum moment for staff - school at high point - staff pride - lots of visitors - give staff a buzz - IT quality team is THE dynamic team, staff very keen to get on it. Several staff keen to go out and do presentations

The microtechnology committee "Chips with everything"
My note of the meeting I attended
About 8 people, chaired by Head teacher
Starts with update on projects - MAILBOX first! Then:
Video-conferencing: report on use for staff training with an English LEA and plans for further such initiatives
Report on plans for "Teleschool" development - first wiring up whole school, then linking out to the community.
Alligator project: They are finding so many uses of video conference, difficult for secondary schools as they need a tightly set time, but at least it is a way in. At primary level it's easier to integrate communications technology uses. Teachers in Alligator are having planning meetings by video conference. What used to take half a day with travel etc. now takes half an hour.
The hospital school - they haven't got their machines going yet. It would be wonderful if a child in hospital could keep in touch with school…
Literacy through technology project: - planning stage - looking for hard evidence. Mainstream school involved, not as experienced in technology as RP. 3 RP teachers will visit mainstream school, there should be class exchanges, videos, email etc. There will be a lot of staff development for the mainstream school - too much at once? RP must beware making it look very easy and putting pressure on staff in other places. Important to keep focus on literacy, see what happens.
Glasgow is likely to have TV on cable - video on demand. The school will be part of it.
The school is being filmed for a staff development CDI for the Scottish Office.
The Glasgow LEA is sending two lots of 9 teachers for training at RP, half a day at a time. They will use off-line Internet in conference room
Some ergonomic issues - cabling - mobility; antiglare filter screen. Height of chairs, craning necks, size of screen, furniture.
Plans for parent evenings and staff evenings. Will involve auxiliaries and nursery staff. Staff talk about project work, training in new software packages, etc.

Conclusions

Learning by using technology
Using the technology is fun, but it is not there for fun. In school, the use of technology is always explicitly related to aspects of the curriculum. Much curriculum content is delivered through use of educational software on computers in class. Equally, communications technologies are used for curriculum enhancement - the video conference, for example, focused on concept development.

Learning more through technology - extending the curriculum
The curriculum of the twenty first century will need to help children to develop the capabilities and skills they need for life in the information age - such things as knowing yourself, knowing how to work with others, knowing how to cope with change. Watching Daniel, I saw a child working well with his peers - activity like checking and replying to the mail was done collaboratively. Sharing tasks put all the children on an equal basis, but at the same time the use of technology gave each individual a chance to shine. A child in control of a mouse is in control of their learning. Daniel's short spontaneous session tidying up

seemed symbolic of the quiet but solid confidence and self-esteem possessed by every child in the school. Confidence empowered these children to learn to learn.

Learning to use technology
Daniel and his classmates have reached the stage where information technology is a natural part of their learning environment, like books and teachers. How was this point reached? The school head is firm: it takes years. Now, every child spends time at a computer at least once a day, even the youngest starting to learn keyboard skills through games. Each individual's progress in IT competence is monitored alongside all other aspects of learning. The children enjoy their learning tremendously. Public presentation of achievement - web pages, the magazine, email communications - are highly stimulating. The ease with which children transfer competence from one application to another is striking.

The result is not just integration of technology in learning but integration between learning technologies.

Changing relations...
The seamlessness of the learning experience is not by chance. The teachers have made it so. But what is the secret of their success? How have they developed the skills to manage the complex organisation of teaching and learning which comes with the integration of information and communications technology? Watching a teacher learn to use new software gave me some insight. I saw teachers and children learning together - more than that, the teacher learnt from the children. I noticed that even those teachers most experienced with technology found new applications challenging. But they have come to realise that children pick up the skills quicker. This they accept, and they have the confidence to allow themselves to learn from their pupils.

Staff development
This confidence derives from regular teacher development over the long-term. The head teacher tells me staff development is one of the cornerstones of effectiveness in her school. Her indispensable lieutenant is the teacher who co-ordinates IT in the school - a post the Head understands well as it was formerly hers. These two provide formidable leadership, but with a light touch. Of the various committees that moderate teaching and learning in the school, the most influential, the one that everyone wants to be on, is the Microtechnology Committee - commonly known as "Chips with everything".

Team work
The teachers in the school work as a team. The atmosphere is one of shared, and enjoyed, endeavour. On my last day in the school, the pupils were absent - it was a day for staff development. The IT adviser had set up a staff cybercafe, open all day for the teachers to familiarise themselves with new applications. All the school support staff turned up. The school dinner ladies learnt to surf the net and find the school web pages.

Creating a new school environment
Richmond Park School has taken 10 years to get to this point. Today, later starters must move faster. What are the conditions for change? How can schools make decisions about technology and its use? And how can they implement change successfully? A recent independent inquiry into information and communications technology (ICT) in UK schools, the Stevenson report, provides a framework for analysis.[1] Published in March 1997, it is both a status report and prescription for progress. It concludes that if progress is to be made, ICT must figure strongly amongst Government-led strategic initiatives for education. There is no quick fix; progress will result from a "coherently managed set of initiatives". The report sets out three requirements for the successful integration of ICT into schools: single minded vision, commitment, stamina. These are all evident at Richmond Park school, and in other MAILBOX schools.

Towards integration - elements of a strategy
The report proposes three elements of a strategy: teacher training, software, connection. These three elements have indeed been vital elements influencing the achievement at Richmond Park.

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[1] The independent ICT in schools commission Information and Communications Technology in UK Schools: an Independent Inquiry March 1997

Teacher training: At the top of the Head's list of key factors was teacher training - the importance of training to help teachers accommodate to the new approach to teaching and learning.

Software: access to an extensive range of software underpins all learning at Richmond Park. The children now turn first to the Internet or their CD ROM encyclopaedia for information and reference material. The school head has accumulated software by directing her spending budget at software in preference to books - a startling idea, but why not? Is the future of text digital or ink?

The Head is particularly keen on "content free" software, which enables the children to write, draw, create. Perhaps such software needs more attention - the power to create motivates children so strongly.

Connection: connection affects the quality of a child's learning experience in a number of ways. It links children with the world of work and adults, enriches the content of learning, gives value to individual achievement, allows children to display their achievements, brings new capabilities for learning into class.

ICT as an equaliser

In Richmond Park School, connection has had a catalytic effect. The successful integration of technology is a powerful demonstration of ICT as not only a force for learning but also a force for social cohesion. Given the disabilities of the children, the impact is all the more impressive. A great equaliser, a great opportunity. As the Head, and the IT co-ordinator, expressed it recently:

> "Information Technology is the medium by which children in one primary school have achieved more than they or we, as their teachers, believed to be possible."[2]

Learning to learn, learning to change

Richmond Park School offers a vision of the future - a school environment where information and communications technologies open access to the whole world of learning, and where children learn to manage their own learning. Teachers too have had to learn to manage learning differently in this new open environment. The school has changed, it continues to change and - a truly learning organisation - is ready to change further in response to each new opportunity offered by the information age.

The vision, commitment and stamina of the people involved has transformed learning, while information and communications technologies have provided both inspiration and means for that transformation. Information technology first opened the door on a new era; now communications technologies have flung wide the windows.

Annex 1: Notes on "Breaking through the glass ceiling"

Scottish network for able pupils (SNAP), 1997, by Mari Wallace and Maggie Pollard

My jottings from reading this report by the school head and assistant head:

"Information Technology is the medium by which children in one primary school have achieved more than they or we, as their teachers, believed to be possible. We are constantly surprised by the ever increasing achievements of our pupils. the children are handling sophisticated multimedia packages to produce high quality integrated presentations involving audio, text, graphics, photographs, spreadsheets and databases. They use the Superhighway to access information to support their curriculum and in turn, their work is being featured on the Internet for use by other learners across the world"

"Children with computers can"

The E approach - expect, enhance, enrich, extend, empower, excite, enjoy

Opportunity for open-ended independent learning for more able

Children arrive at school with low expectations of themselves

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[2] Breaking through the glass ceiling**,** Scottish network for able pupils (SNAP), 1997, Mari Wallace and Maggie Pollard

IT as the catalyst: "revolution" "the shift towards an ethos of achievement has seen staff teaching children how to be learners and staff recognising their own comparative roles as learners."

Asif - self image transformed because can write with computer, can't on page

Extend:
"Using content free software allows children to fulfil targets ... in all five curriculum areas. A group of children were involved in a project about the area surrounding the school. After visiting, photographing and researching historical sites and places of interest, the children used information handling skills to record their information and then went on to produce a Hyperstudio tour incorporating text, sound and photographs. This involved much planning, discussion and collaboration, higher order reading skills, written language and awareness of genre. Religious and moral issues were addressed ...as churches and a mosque fell within the area. The Expressive Arts...were also covered by the children - in designing their tour, in producing invitations, and in the selection, practice, performance and integration of music into their finished work."

Joined in Campus World newspaper day project - registered as normal school, downloaded news in morning for Campus world HQ, by 3 o clock 6 page paper ready to post

Key issues:
Started with vision - intuition about technology - faith in vision
Named person responsible for technology, supported
Rigorous staff development
All learning together - children and teachers
Complex management - high profile for school makes demands - whole school commitment for staff - unwritten rule that every child must use a computer every day - involves parents in workshops - has changed way teachers teach and pupils learn - changed perception of learning to capacity to think and act effectively

Teachers technical hesitations easy to address; changes in teaching style not so. Threatening for teacher to become a novice.

"If it can work for our children with all their physical, intellectual and emotional difficulties, then for the able bodied population the educational boundaries could be blown into cyberspace and we will at last have a nation of active, confident learners"

Annex 2: Interview with Robbie and Stuart.
Robbie and Stuart are former pupils of RP, now aged 17 and 18. They came to the school to be interviewed. Stuart is now at college full time. He spends 1 day a fortnight at RP helping with technology, he does some consultancy for an Internet service Provider. He is also an agent for sales of computer peripherals. Robbie will now soon go to university. He uses the Internet for school work, to back up class work. He also uses it to earn the money for his web connection - he designs web pages for others.

They make interesting comments on computers in secondary schools - especially interesting are their comments on hoe the Internet might be used better - as well as providing examples of the experience of the first generation of young people to use computers right from the early stages of primary school. We talk first about their experience at Ashcraig secondary school.

The use of computers limited to/by subjects. Quite a lot of use of email in French department. But no opportunity to go further and link up e.g. with pen pals. Email only used if there was a reason related to the subject. In primary the justification was simply making the link. Just one computer in the library linked up, later 2. Used Campus 2000 email, not ordinary email.

Not given same guidance in IT as at primary school. Only pupils like S and R used it much. They were given free access, could help the others.

The email computer was recently moved from the library to a back room where it is kept locked. Security reasons?

S felt Ashcraig was behind - has no web pages - S and R pushed to get things moving. R: "I wonder why we as pupils have to do all this"

R now attends a mainstream secondary school (Lenzie Academy). It has got a lot of equipment, Internet connection in the library. A lot of people have Internet at home so not same need to have it at school. Teachers starting to use Internet e.g. in Maths teachers will ask who uses it.

S spent 1 year in technical high school in Australia (Warratah Technical High School, Newcastle, NSW - network from Nelson Bay). School was just getting 30 laptops with modems - children could take home on payment of about £2 to cover insurance (one off) then 30p an hour usage. In comparing this situation with Britain, they talked of financial constraints. School spending priorities seem to be more on buildings than technology: R:" I think a lot in secondary schools is to do with money - they don't get enough for books and things". Schools have old computers e.g. 386 - Cable companies and BT make offers to install links for free but schools still have running costs.

At secondary schools they are having to teach a set curriculum, at primary they are quite flexible as to how they can teach it (*interesting perception*) - S says a secondary curriculum based on guidelines would be better. Schools need leadership from Scottish Education Board to encourage them to innovate.

Internet is good for a back up system for schools, to complement class work, e.g. providing exam papers and model answers - had this in Australia. Also had school intranet, could check grades, dial in doing homework , etc.

Teachers need help to integrate, e.g. help to find material on Internet

S had first computer at age 3, R at 4. S Internet in 1994, R in1996. Both got interested in and competent in Internet from spells abroad (Australia and US), both work to finance their subscriptions - they see it as important enough to do that. Families - S got his mother interested and his little brother (11) uses his computer.
R: "With the Internet, there's not much you can break"

Providers: S has tried 4; R has tried 3 in 8 months. They go for web space. Very street-wise on bargains. Always on the look out for new applications.

They use for: FUN. Web pages. Associated email. 3/4 exchanges of letters per correspondent per week - demanding
Their schools use for: competitions, projects
They talk about disability. Email communication allows "Hidden identity". Communications on a "pure" level. They tell of one correspondent who was blind - they did not know till they met him. It equalises. can't tell accents, speech impediments, time taken.

R: "I can't write. I had to use a computer. When I went on line, I already knew how to use a computer". Recalls at RP they had a business studies tutor in when they were in year 6/7 to teach everyone to type. Why not train primary teachers in all schools in typing skills?

They say you need a grounding in computer use to use the Internet. You need confidence, to learn that not very much can go wrong. You need to learn that in primary schools. Everything is changing, there is more similarity between systems, computers are getting easier to use. Start young, learn from mistakes. Learning to type is hard. Must learn confidence, the way of thinking, technical skills. *(The Scottish curriculum council mentions 4 point: attitude, confidence, computer awareness, technical skills)* Internet reduces danger of isolation, learning alone. A common denominator of interest - such as computing itself - gets people together, communicating with other people: "Wouldn't it be great to pick up a phone and talk to 15 people?" That's what the Internet offers. There are chat lines for teenagers. People don't want the computer to be a solitary thing (*suggestion that if it is so, it's the personality of the user)*

Story (sad) of a boy who got study scholarship and spent all the money straight away on several hours in the Internet cafe...

Do young people misuse the Internet? S has worked testing screening programs and is convinced they work pretty well, e.g. cyberpatrol. Problem of misuse will increase with year 3 upwards. Putting a computer in a locked room in school is a bad idea - it causes a problem by making it "special" - but teachers don't like pupils telling them what they are doing is wrong. Teachers could perhaps accept that if a person demonstrates competence, then they can try to learn from that student. (S)
R: But they should know more than us. Children expect that.

There is a problem with some teachers who take responsibility for IT - they don't necessarily have appropriate expertise. They give an example of a maths teacher moving over to fill the IT post in a school. It is a problem for teachers to keep up to date. In-service for teachers should lay greater emphasis on teaching with computers and learning to use them. Now, certain teachers become "experts" - the others then leave it to them.
"There's no reason why people [teachers] can't get up to our level”

Things are happening so fast. S gets emails on new products from education providers, gets 10-15 per month - email only way to keep up.

"It's our life"
Withdrawal symptoms - get bored without.

School subjects: Geography "The one subject the Internet is there for"
S has a geography teacher who doesn't really trust technology, but still does use it. For a question on weather, the teacher went on the Internet. She got S to help her find something to start - once found, she was away
Maps e.g. Xerox site - all there, can zoom in "down to the size of an ant". Information is there - constantly being updated
Secondary teachers are missing out - there's no subject that can't be helped, it really helps learning - Once you realise that, you're off

S tells of an Australian school book publisher who found the market dropping, did market research and went on line. Courses were free - but assessment had to be purchased. S did it to study Romeo and Juliet, found a revision crib (hadn't read book). He is very knowledgeable about what's there - tells me all of Shakespeare has been put on web by OUP. S states firmly that in next 5 - 10 years all developed world will be connected up, one way or another - need to work out ways to use that potential now. Books will continue - Internet as back up helps you go that little bit further when you go home. Importance of INTERNET is how it is up to date. Problem - how do you open things up, when publishers don't want to give material away free?

R says schools need more money, and better knowledge of how to spend that money, Campus world (the BT system) is now not fast enough, unreliable. Individuals are making their own decisions, companies are taking schools for a ride, teachers time is used up working out what to do and making choices. Schools need advice.
R: Technology is flexible, has to be used flexibly

Further information: R’s Web site “The Ramp Ahead” provides a lot of data on his personal experience with education and computers.