OECD/CERI ICT PROGRAMME

A Case Study of ICT and School Improvement at

Littlejohn School, England
21-24 November, 2000

Raising pupil achievement and supporting community regeneration:
A role for primary school ICT provision

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CONTENTS

1. EXECUTIVE SUMMARY

1.1 Introduction

As part of the OECD qualitative research Case studies of Organisational Change this study was carried out during 21-24 November 2000 at Littlejohn School[1].

The data collection was carried out by means of:
1. Interviews with teachers (children and adult education), administrators (headteacher, governor), students, parents, and technology specialists.
2. Observations of school functioning.
3. Collection of school documentation.
4. Survey of teacher ICT practices.
5. Interviews with knowledgeable people outside of the school: Regional education staff and parents.

The research focused upon a major whole school reform and the part that ICT has played in that reform. In this case, the major reform was the school s adoption of a strategy using ICT to raise pupil achievement and to support community regeneration. The implementation of the ICT strategy brought about substantial changes

in teacher/pupil/parent/community relationships and expectations.

1.2 The whole school reform: using local primary school ICT provision to

raise pupil achievement and to support community regeneration

The school s initiative, to build a connected learning community in an area of considerable social and economic deprivation, provides a model for bridging what is being called the digital divide . The digital divide is the gap in knowledge about ICT and the gap in access to ICT, between different groups in the community. The model facilitates collaboration between the school and its local community and supports not only the learning of children but life long learning for the whole community.

1.3 Evidence relating to the research hypotheses

Data were collected relating to the whole school reform (raising pupil achievement and supporting community regeneration through ICT) in order to provide evidence in relation to the five hypotheses. A summary of the data is shown below.

1.3.1 Hypothesis 1: Technology as catalyst or as additional resource?

The evidence supported the second hypothesis that ICT was not the catalyst for change but was an additional resource. The headteachers' goals for change in:

- community attitudes to education
- parents relationships with the school
- pupils attitudes to themselves and their work
- the way teachers work and plan together.

were not dependent on the availability of ICT. ICT provided tools ('additional resources') to help achieve these goals.

1.3.2 Hypothesis 2: Traditional diffusion patterns apply or is the diffusion pattern of ICT innovation different?

The evidence supported the first hypothesis that traditional patterns for the diffusion of innovation apply.

1.3.3 Hypothesis 3: Staff ICT competence is critical or are infrastructure and pupil competence more important?

The evidence supported the first hypothesis that staff ICT competence was critical in successful implementation of the ICT initiative. Difficulties with the technical infrastructure were a cause of concern for all and the pool of expertise in the pupil or parent community was very small so there was little evidence to support the second hypothesis.

The school was fulfilling an ICT support network role which in other communities is provided by family or friends who have IT expertise[2]. In this respect in particular, staff ICT competence was critical to the success of the improvement.

1.3.4 Hypothesis 4: Is the gap between more and less advantaged students stable when ICT access is increased?

The school did not have pupils from advantaged backgrounds so it was not possible to comment on the hypothesis. But the data suggested that poverty was not the main factor inhibiting pupil ICT use once access was provided. The data showed that the family attitude to risk, change and challenge inhibited take-up of opportunities. Data from parents, pupils and teachers suggested that students who were less likely to take advantage of access to ICT (in a high poverty area) and so who may be doubly disadvantaged, were those from families who were dysfunctional (e.g. drug addicts) or from families who were afraid of the technology or who find new challenges and change too risky.

1.3.5 Hypothesis 5: With improved ICT academic standards will stay the same or increase, or decrease?

The evidence supported the hypothesis that successful implementation of ICT leads to the same or higher academic standards. There was no evidence that standards were adversely affected by the ICT strategy, on the contrary. The evidence was that standards, expectations and self esteem were raised and that parental support for children and pupils motivation to learn, regardless of gender and ability was enhanced.

2. OVERVIEW

Littlejohn school was committed to providing the foundations for lifelong learning for the children, in partnership with the community. The school prospectus stated that to
make this a *reality for all the children, full cooperation is needed between all the adults that play a part in their lives at school and home* .

2.1 Background to the school and its community
The school was located in an area of high social and economic deprivation. The headteacher came to the school six years ago and found an approach to teaching and learning and a school ethos which had led to alienation between the school and community. Many members of the community themselves experienced failure at school. He developed a strategy to use ICT to:

- raise pupil achievement
- involve parents and children in learning together
- support community regeneration .

Littlejohn Junior School was a community school founded in 1950 and funded by the local education authority (LEA). The school was housed in converted World War II army camp buildings. This was originally meant as a temporary measure due to a population explosion in the vicinity after the war. The layouts of the buildings were not conducive for modern educational usage and the maintenance is a drain on the already tight budget.

The school was situated in an area of socio-economic disadvantage on the edge of a large city and the school s catchment area is one of significant social deprivation. Many of the parents suffered from some degree of social exclusion, with accompanying symptoms of low self-esteem. One parent commented*: There aren t many places*

for them to play, and we can t afford to take them out . This was exacerbated by a poor social infrastructure, typical of many post-war housing estates. The school had 234 pupils on roll, aged seven to eleven, who were taught by eight full time teachers. Approximately 44 per cent of pupils were entitled to free school meals, which was well above the national average, as is the proportion of children from single parent households and crowded households.

On entry to the school, the attainment of most pupils was well below the national average and some had learning and behaviour difficulties. Seventy-one pupils were on the school s register of Special Educational Needs (SEN). However, pupils make good progress: the OFSTED report states that *As a result of the good progress pupils make, at the end of Key Stage 2, attainment is in line with national expectations in most subjects, except in information technology, music and art, where it is above national expectations,...* (OFSTED Report). In relation to ICT in particular, the OFSTED report judged that it

is generally above national expectations, ...with pupils making good progress in this area throughout the school. Computers are used as appropriate support for subjects such as English, maths, science, art and history, however, ICT is also taught as a separate subject in a well-resourced computer/community room (OFSTED Report).

This room was fitted out with 18 networked computers, each connected to the Internet, and each class in the school was timetabled to use it. There were also Acorns and PCs in each classroom and the older machines were being used to support the learning of pupils with special educational needs. Pupils' access to the internet at school was under staff supervision and a home-school agreement described acceptable use of the laptop when taken home. On weekdays, the laptops had to be returned to school every morning for class use. Family use of the laptops was encouraged but users were asked not to install additional software.

2.2 The innovation
The school s initiative, to build a connected learning community in an area of considerable social and economic deprivation, provided a model for bridging the digital divide through facilitating collaboration between the school and its local community to support not only the learning of children but lifelong learning for the whole community.

The main elements of the model developed by the school were:
1. Creating an open access school where dialogue about learning between parents and teachers and children was encouraged;
2. Providing access to laptops at school and home: for pedagogical and personal purposes; to develop pupils ICT skill and competence; to support the adoption of new teaching approaches which motivate pupils and parents and which give pupils a sense of success;
3. E-Mentors in industry for pupils without fathers and with little family history of formal employment;
4. An E-Learning Foundation which provided laptops through a low-cost scheme including insurance and maintenance;
5. Access to skill development in ICT for parents through adult education courses on site;
6. A network of support for pupils and parents learning about ICT together;
7. Provision of a creche to support parental access to learning;
h) Celebration of the learning of adults and children through assemblies.

3. THE PAST

Prior to the current headteacher taking the position at Littlejohn Junior, the community surrounding the school was *kept at arms length* and the staff were *struggling with students misbehaving* (headteacher). Much of the curriculum was based on maintaining control in the classroom using worksheets, for example. However, the headteacher *tried to open up the curriculum so that the pupils became more trusting and tried an open door policy to embrace parents* (headteacher). Much of the ICT strategy which the headteacher implemented involved collaboration with people outside the school, such as the local Further Education (FE) college and LEA staff, but the laptop initiative affected all teachers directly. When first introducing the laptop scheme at Littlejohn he met with some initial resistance from parents and teachers, *largely due to lack of confidence* (ICT coordinator).

We had to modify our approach, write letters and relied on word of mouth. We invited parents in as groups and individuals if they couldn t make either of the group sessions after school and in the evening (headteacher).

The sessions were intended to show parents what the laptop scheme was all about and to explain to them the concept of the E-Foundation being set up by the school to enable them, as parents, to have access to machines at low cost (as well as to support ICT across the school generally). For parents with children in Year 4, the payments would be spread over three years; for those with children in Years 5 and 6, payments were spread over less time.

The laptop scheme, which was to target low-income families, used the Microsoft AAL[3] framework, but the financing basis of that scheme (parents purchasing computers or companies sponsoring computers) was not appropriate for Littlejohn because of the lack of industry and low incomes of families.

The school, therefore, had to find alternative ways to finance the laptops, to suit the needs of low-income families. This involved consideration of the implications for taxation and consumer legislation for which they consulted with experts in these fields. The issue of finance was complicated as the majority of parents did not have bank accounts and the school wanted them to pay by direct debit. Another problem that had to be confronted was that of equal access for all pupils to the laptops. The school sought legal clarification from Queen s Counsels (QCs) in London and developed a new model ensuring equitable access to resources for pupils.

4. THE PRESENT

The scheme at Littlejohn which incorporated the use of laptops into the learning programme, both at school and at home, tried actively to encourage a community approach to the education of children. It involved the participation of pupils, teachers and parents. The headteacher said that the school has developed a *feel good factor* and that *the parents are enthusiastic about it, and the teachers see the benefit of it*.

The success of the laptop initiative had been largely due to two aspects: the first, that children had seen the benefit of being able to use the laptops at home and in the classroom; and secondly, that the school had set up the facility to provide access for families to technology which otherwise they could not afford.

Teachers were using the laptops during various lessons, using a variety of software such as MS Word, PowerPoint, and specialist software. The ICT coordinator said that *staff are now using laptops to plan and deliver lessons and they have moved away from pen and paper. They are even creating their own resources*. The staff were well aware of being part of something different and, as one teacher said,

Teachers have been forced to re-evaluate how they re doing things and pupils have had to adjust to using a new tool and the expectations of taking a laptop home.

The impact on the children at Littlejohn had been substantial. According to the headteacher, *the motivation and concentration of children has increased* . He and other members of staff also commented on the way it had positively affected all the children s learning regardless of ability and gender. National statistics confirm that the children's standards of achievement are above average at the time of leaving the school.

Figure 1: Pupils using the laptops during an English lesson.

Approximately two thirds of pupils were taking the laptops home.

Those who do will do their own thing and learn from it. The family will use it which automatically raises the skill level in the household. There s one family who are starting a business and are using the laptop to produce the publicity materials (teacher).

Parents had also been motivated by the scheme and by the school s inclusion of parents in their child s education. Some of them had taken up adult education IT classes offered at the school by the local Further Education (FE) college. This gave them the opportunity to increase their knowledge in this area and, if they wish, to participate in courses leading to an IT qualification. The headteacher explained that he has seen an increase in the self-esteem of the parents who had taken advantage of these courses and said *they can now help their children with homework etc* .

Figure 2: Adults using laptops in the adult education courses at the school.

Many of the staff interviewed agreed that there were a few disadvantages with this technology, especially regarding the lack of technical support. When using the laptops during a lesson, the teaching staff were completely reliant on the equipment working. If something went wrong, the teachers were often left without the use of those resources and sometimes had to abandon a lesson because of such problems.

5.0 MAIN HYPOTHESES

5.1 Hypothesis 1: Technology as catalyst or as additional resource?
Technology is a strong catalyst for educational innovation and improvement, especially when the World Wide Web is involved. The rival hypothesis is that where true school-wide improvement is found, technology served only as an additional resource and not as a catalyst, that the forces that drove the improvements also drove the application of technology to specific educational problems.

5.1.1 Evidence in support of hypothesis 1:
1. The headteacher had over a number of years deliberately employed ICT in various ways to break down the traditional pattern of schooling operating which was creating alienation in the community. He adopted this strategy to help the school achieve its mission in a community which had many members who themselves had not been successful at school.

2. Evidence from parents, teachers, governors, the local education authority and children supported the claim that ICT had been a catalyst for positive change in parent and pupil attitudes to school, schoolwork and to homework. The headteacher said that the parents *feel complimented by the fact that someone s asked if they would like access to top quality technology*. A teacher commented that *if* [a child] *goes home with maths in a book or a worksheet, a parent may not help as it reminds them of difficult experiences at school, but with laptops, they want to learn about it*. Parents and grandparents were undertaking courses provided through adult education courses

run at the school.

3. The laptop initiative seemed to have facilitated the opening up of a dialogue with parents about learning and the ICT adult education courses for parents have built parents' ICT skills and confidence.

4. Teachers access to the technology had revolutionised ways of working both for planning and for administration. Asynchronous collaborative working i.e. the opportunity for teachers to work on documents at times to suit them and then to pass them electronically to colleagues was a positive benefit.

5.1.2 Evidence in support of the rival hypothesis:
1. The headteacher s collaborative attitude to the community and parents was critical in developing mutually supportive home-school relationships. *I tried an open door policy to embrace parents. Some* [parents and teachers] *weren t ready for it...I won most parents around by listening to them and letting them know that we were working in the interest of the child* . The positive attitude of the headteacher e.g. as one teacher said *a willingness to explain things and reason things through with parents* was commented on by many respondents.

2. The school s philosophy of involving the community extended beyond the ICT initiatives.

3. Other initiatives for building home-school links included newsletters and an open door policy.

5.1.3 Summary
The evidence supported the second hypothesis that ICT was not the catalyst for change but was an additional resource. The headteachers' goals for change in:
- community attitudes to education
- parents relationships with the school
- pupils attitudes to themselves and their work
- the way teachers work and plan together.

were not dependent on the availability of ICT. ICT provided tools ('additional resources') to help achieve these goals.

5.2 Hypothesis 2: Traditional diffusion patterns apply or is the diffusion pattern of ICT innovation different?
The diffusion of the innovation/improvement (and therefore of ICT) followed the traditional diffusion pattern for innovations, as outlined by Rogers (1995). The rival hypothesis is that technology functions differently from traditional innovations and that therefore different diffusion patterns occur.

5.2.1 Evidence in support of hypothesis 2:
1. The headteacher was clearly an innovator and he had the support of a core group of teachers who could be categorised early adopters. The strategy he adopted to implement the ICT plans was introduced gradually so that in time, all teachers would be brought on board, through training and collaboration with more experienced colleagues. *I tried to get the* [idea of] *reports done using the PCs, embedded into the psyche* (headteacher). The laptop strategy focused on early adopters first and was then rolled out over three years. Staffing was organised so in each year group team there was laptop expertise. At the time the data were collected no staff could be categorised as resisters although there was evidence that some may have been so when the strategy was first proposed.

2. All the families in the study could be considered low-income families. Families appeared to fall into one of two distinct categories related to their response to the ICT initiatives:
- resisters: because of home circumstances (e.g. drug addiction) some families did not seem able to cope with external demands. The headteacher said *the parents, if they are dysfunctional won t come into this at all. There has to be some stability at home for it to work. 60-70 per cent of parents are up to it.* Other families were afraid of the technology. As one child said *my mum is afraid we will break it* and teachers suggested that sometimes parents passed this tentativeness and lack of problem solving approach to their children.

● adopters: these were families keen to take the challenge on and attended courses so that they could keep up with the children.

5.2.2 Evidence in support of the rival hypothesis:

1. Those teachers who were resisters at first, seemed to move rapidly to embracing the innovation when they realised the personal and professional benefits. It seemed that the personal benefits of ICT to teachers meant that ICT innovation was different to other forms of innovation e.g. innovations such as introducing new ways of teaching literacy or introducing new elements of a curriculum may not have the same personal and professional outcomes for teachers that using ICT has. The headteacher said *Resistance at first was because of being a new idea and it being the first time they used email and internet but now they think it is worth while* .

5.2.3 Summary:

The evidence supported the first hypothesis that traditional patterns for the diffusion of innovation apply.

5.3 Hypothesis 3: Staff ICT competence is critical or are infrastructure and pupil competence more important?

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

5.3.1 Evidence in support of hypothesis 3:

1. The supportive learning community which staff were providing for each other seemed to be essential to the success of the ICT strategy as there was no regular technical help available. Husbands of two teachers helped out; the FE college provided some help. The headteacher had adopted a strategy of pairing teachers (there were two classes in each year group) so that there was ICT expertise in the year teams. The staff ICT capacity had been steadily and strategically built up over a number of years. All staff had bought their own computers and had home internet connection.

2. The use of ICT appeared embedded in the practice of most staff. A teacher said *I d be struggling without it* . Another teacher said *Increasingly we have now reached a stage where we couldn t do without it* [ICT] *especially administration. It* [taking away the ICT] *would* [also] *be such a shock to the students* .

3. As the laptops played a role in the raising achievement strategy and teachers needed to communicate the purpose of the laptops to parents, teachers ICT knowledge and understanding was critical to the success of the initiative.

4. The teachers had worked with parents, often on a one to one basis to develop their knowledge and to encourage them to take part in the scheme.

5. Teacher competence was critical to use of ICT in teaching. The rise in pupil standards was partly attributed to the ICT initiative the use of specialist software for writing and spelling was mentioned as supportive particularly with SEN children. The high quality of produced work was motivating for children.

6. Pupils at the school were under 11 years old and only about ten per cent had home computers: therefore the pool of expertise in the pupil or parent community was very small. Parents said they did not have many friends or family members who could help if they had problems with computers at home.

5.3.2 Evidence in support of the rival hypothesis:

1. The school had achieved high levels of ICT use despite serious problems with the technological infrastructure e.g. lack of technical support, problems with running CD-ROMS over the network, problems with sending email via the network, lack of access points for pupils to use when contacting their E-mentors.

2. The vision for the use of ICT in the school and community was beyond what can be supported by the current technological infrastructure. The problems with infrastructure were frustrating to the staff e.g. the headteacher wanted wireless technology so that parents at home could search sites advertising job vacancies, and staff wanted to be able to use the network without being responsible for dealing with problems if they arose during a lesson.

1. *Summary*

The evidence supported the first hypothesis that staff ICT competence was critical in successful implementation of the ICT initiative. Difficulties with the technical infrastructure were a cause of concern for all and the pool of expertise in the pupil or parent community was very small so there was little evidence to support the second hypothesis.

The school was fulfilling an ICT support network role which in other communities is provided by family or friends who have IT expertise. In this respect in particular, staff ICT competence was critical to the success of the improvement.

5.4 Hypothesis 4: Is the gap between more and less advantaged students stable when ICT access is increased?
Gaps in academic performance between high and low poverty students will not increase when all students have equal access to ICT. The rival hypothesis is that equal access to ICT will lead to more advantaged students increasing the performance gap with disadvantaged (high poverty) students.
The students were from similar backgrounds i.e. high poverty. The evidence presented explore student differences in this context.

5.4.1 Evidence in support of hypothesis 4:
1. Government and inspection data showed that the school was adding higher educational value to the pupils (who were from a high poverty environment) than other similar schools. The introduction of the ICT strategy was a key part of the plan to raise pupil achievement.

2. The ICT strategy may help lessen poverty. The laptop initiative as the headteacher said *may have the effect of increasing the employability of the children and thus increase the prosperity of their families* . The E-mentoring scheme clearly provided a strategy for introducing children from families who may not work, to the world of work. The planned upskilling of the community through course provision may, in the long run, enable families to earn more highly.

5.4.2 Evidence in support of the rival hypothesis:
1. Doubly disadvantaged students in a high poverty community seemed to be those whose families were dysfunctional and those from families who were afraid technology. So attitude to change was perhaps more critical in inhibiting access to technology in this community than poverty.

2. Some parents were afraid of having to pay for damage although this was covered by the scheme and they therefore were not involved so their children have less access out of school times.

1. *Summary*

The school did not have pupils from advantaged backgrounds so it was not possible to comment on the hypothesis. But the data suggested that poverty was not the main factor inhibiting pupil ICT use once access was provided. The data showed that the family attitude to risk, change and challenge inhibited take-up of opportunities. Data from parents, pupils and teachers suggested that students who were less likely to take advantage of access to ICT (in a high poverty area) and so who may be doubly disadvantaged, were those from families who were dysfunctional (e.g. drug addicts) or from families who were afraid of the technology or who find new challenges and change too risky.

5.5 Hypothesis 5: With improved ICT academic standards will stay the same or increase, or decrease?

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

5.5.1 Evidence in support of hypothesis 5:

1. Evidence from the study was that pupil self esteem and motivation to learn was enhanced with ICT. Teachers only used ICT materials which they considered enhanced pupil learning.

2. Pupils were more likely to get help with homework at home, collaboration between pupils was increased, teachers could plan more effectively together.

3. Teachers suggested that ICT allows children to work at their own level e.g. to stretch themselves. One teacher commented *.....high ability (pupils) push boundaries further and low ability (pupils) work at a lower level and achieve less. All make progress at their own level. Some of the very low ability might feel daunted by it* .

4. National inspection evidence and government statistics showed that Littlejohn Junior school was much more successful academically across subject areas than similar schools.
5. Both boys and girls seemed to benefit in different ways. In this community, educational expectations for girls were low: *It will be good for girls in the long term because it will open horizons to work. The community attitude here is that girls will marry but this will give them skills to work and a drive to learn. ICT access to individual laptops evens up the balance between boys and girls, otherwise, boys can hog the equipment. It is more equitable because girls can get as much chance as the boys*...[use of the technology] *boosted girls confidence, there is a macho culture in the community* (teacher).

6. More information was available and children's horizons were widened. Children on the estate have no easy access to a library apart from the school library. One teacher commented that ICT provides *a greater resource than the school library, you can get information for projects, it has changed the attitudes to knowledge* . In addition, the children have restricted lives. The headteacher commented *their* [pupil's] *lives revolve around the estate and going uptown, everything else is strange* .

7. Teachers said that children with special educational needs could produce high quality outcomes using ICT which meant they were motivated to work more. Parents were proud of the quality of the work the children produced. *Children with behavioural problems and those that are disruptive may find it easier to concentrate* . Differentiation is easier to achieve with ICT as teachers you can differentiate by task and outcome more easily. Another teacher commented *higher ability children may explore more, they are happier to discover learning for themselves and to learn independently with less help* .

5.5.2 Evidence in support of the rival hypothesis:

1. Concern that basic education might be adversely affected by the initiative was expressed by two respondents with different perspectives.

1. *Summary*

The evidence supported the hypothesis that successful implementation of ICT leads to the same or higher academic standards. There was no evidence that standards were adversely affected by the ICT strategy, on the contrary. The evidence was that standards, expectations and self esteem were raised and that parental support for children and pupils motivation to learn, regardless of gender and ability was enhanced.

6. PROJECTION TO THE FUTURE
The headteacher remarked that the development of ICT within the school would never be completed; that it was a constant task to improve resources. He did, however, have plans for how he would like to see the use of and resources for ICT built upon. Nearly all the teachers who were interviewed agreed that they would like to see every child with their own laptop:

...they will learn more, be more confident with IT, more able to learn for themselves, not be scared of technology and would have encountered some problems which they would have solved so they will be better with IT in the future.

The headteacher would like to see the laptops used as a family resource rather than just for the children, which he said *would improve the motivation of everyone in the household*. The aim was to achieve this through expanding the training for adults provided by the school, enabling them to gain qualifications in ICT.

There were two further comments made by many of the staff interviewed at Littlejohn Junior School. The first was that they needed a technician on site to deal with inevitable difficulties with the technology. The ICT coordinator remarked:

One of the teachers is married to someone who will come in to have a look at the equipment, but we need someone here all the time. There are always little things going wrong.

The headteacher also commented that they need a technician and that there might be the opportunity to discuss the issue over the coming terms.

The second issue that was repeatedly raised was that of the school buildings and the fact that they were inappropriate for the technological resources they had, not only in terms of room size, but also in terms of layout. It was observed that pupils had to sit in specific places in the classroom when using their laptops so that the wires would not lie dangerously across the room.

As an attempt to address this problem, the headteacher and the ICT coordinator would like to adopt a wireless network. This would also allow easier access for pupils, parents and teachers to the technology at home and may result in the parents not having to pay phone charges when accessing the Internet at home via one of the laptops.

7. APPENDICES

APPENDIX A: METHODOLOGY

1. **Contact period**

First contact was made with the school, in the form of a site visit, on 28th September 2000, followed by a draft itinerary being sent to the school. The actual data collection took place between 21st and 24th November 2000, totalling four school days with two researchers.

1. **Data collection**

The following itinerary documents the data collection for the OECD study for the four days in school.

		Data collection
Tues	am	Interview with the headteacher (1)
	pm	Interview with the headteacher (2)
Wed	am	Interview with two Year 6 teachers Observation of adult education session Focus group interview with members of the adult education group
	pm	Observation of lesson using laptops Focus group interview with Year 5 pupils

Thurs	am	Focus group interview with Year 6 pupils Interviews with a Year 5 teacher
	pm	Interview with LEA Adviser
Fri	am	Interview with the headteacher (3)

Key

ICT ICT coordinator

( ) Numbers in brackets relate to interviews that took more than one session

Notes

1. All interviews were of approx. 1-2 hours unless otherwise stated.
2. All classroom observations were of a typical lesson (approx. 60-75 mins)
3. The interview with the ICT coordinator was done by members of the SITES team during the following week.

3. Organisation of the data collection
Two researchers were present for almost all interviews and observations. The only exceptions were that only one researcher was present for the interview with the LEA adviser. During interviews, one researcher conducted the interview and the other took notes. All interviews were also recorded using audio tape.

APPENDIX B: ICT PRACTICE SURVEY FOR TEACHERS

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

	Very Comfortable	Comfortable	Somewhat Comfortable	Not at all Comfortable
Write a paper	4	2		
Search for information on the WWW	4	1	1	
Create and maintain web page		2		4
Use a database		2	4	

Develop a data base	1	2	3	
Send and receive e-mail	1	2	2	
Write a program	1	2		2
Draw a picture or diagram	1	2		
Present information	1	2	3	

n = 6

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

	Very important	Important	So-so	Not important at all
Write a paper with a word processor	4	2		
Search for information on the WWW	2	4		
Create Web pages		1	2	3
Use a data base	1	1	4	
Develop a data base	1	2	3	
Send and receive e-mail	1	1	4	
Write a program		1		2
Draw a picture or diagram with graphing/ drawing application		5	1	
Present information		5	1	

n = 6

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

	Several times each week	Several times each month	A few times	Never
Use the world wide web		1	3	2
Create web pages				5
Send or receive e-mail			3	3
Use a word processing program	4	1	1	
Use a computer to play games		5		1
Use a spreadsheet		2	2	2
Use a graphics program		2	2	2

Join in an on-line forum or chat room			1	4
Use a presentation program		1	3	2
Use an instructional program			3	3
Other computer uses			1	1

n = 6

How would you rate your ability to use a computer?

Good	*Fair*	Poor
2	*4*	

n = 6

Was student computer use ever evaluated for grading?

Yes	No
3	2

n = 6

If you assigned World Wide Web searching, how much freedom did you allow students in locating sites to visit?

No restrictions	Some restrictions	Designated sites only
	2	2

n = 6

Did you create or modify a Web site with any of the classes that you taught?

Yes	No
	5

n = 6

What portion of the computer use in your classes was directly related to the course content?

All	Most	Some	Very little
	6		

n = 6

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

All	Most	Some	Very little
	3	3	

n = 6

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

Several times a week	Several times a month	A few times	Never	No computer
5	1			

n = 6

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

Yes	No
	6

n = 6

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

Yes	No
	6

n = 6

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

Yes	No
1	5

n = 6

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

More than 12	6-11	1-5	none
	1	5	

n = 6

How many of the following have you ever done?

Made changes to a computer s hardware	
Updated an application program	2
Recovered a damaged file	1
Created a web site	1
Developed a data base	2

n = 6

APPENDIX C: OTHER EVIDENCE

1. Documents
Documents collected from the school, and used in the preparation of this report included:

- Headteacher's Survey of local area funded by TEC
- University of Exeter study on self-esteem
- Don Passey report for Microsoft Anytime, Anywhere Learning
- Analysis of value added by school
- OFSTED report
- The [name of county] Approach to School Improvement   making use of performance data. A guide to analysing progress and setting targets 1999.
- OFSTED 1999 data
- Report for Primary Schools
- Most recent OFSTED main findings
- Print off from DfEE site on school performance
- Notes from telephone conversation with the headteacher (29/06/00)
- Maps
- Additional handwritten notes from visit (28/09/00)
- Littlejohn Junior School (2000). A temporary measure 1950-2000.
- 50th anniversary edition of the school magazine
- School brochure
- Additional typed noted from visit (28/09/00)
- Materials relating to Microsoft Anytime Anywhere Learning
- School development plan

2. School OFSTED report   main findings
The following is an extract from a document reporting the main findings produced by the Office for Standards in Education (OFSTED) following an inspection of Littlejohn Junior School in June 1997. This extract relates to the school s commitment to change, as well as it s ICT work. Inspection reports are available from the OFSTED website (www.ofsted.gov.uk).
 Littlejohn Junior School is a good school in which staff, governors, pupils and parents are highly valued and

work well together to provide a generally good education for pupils. A great deal of work has gone into raising the expectations of everyone involved in the school. This is reflected in the positive attitudes of the pupils.

 The attainment of pupils on entry to the school is well below national expectations. As a result of the good progress pupils make, at the end of Key Stage 2, attainment is in line with national expectations in most subjects, except in information technology, music and art, where it is above national expectations,...

 The quality of information given to parents is generally good. The developing partnership with parents and community has been given high priority and is a strength of the school. Strong links with the local community, college and businesses enrich the education provided. In return, the pupils contribute to the life of the community in a number of ways, such as hosting meals for senior citizens.

 Information and Communications Technology (ICT) is generally above national expectations, ...with pupils making good progress in this area throughout the school. Computers are used as appropriate support for subjects such as English, maths, science, art and history, however, ICT is also taught as a separate subject in a well-resourced computer/community room.

APPENDIX D: Extract from the Nomination Form for Littlejohn Junior School

A. Name and address

These details are confidential.

B. Basic site description

   1. *Type of site (age levels/grades, public/private, special populations or services):*
7 - 11 yrs (KS2) state school

   1. *Location of site (urban, inner-urban, suburban, small town, rural):*
Surburban/small town

   1. *Socio-economic status of parents (describe indicator used):*
High unemployment, (also traveller community)

   1. *Number of students plus notes on any imbalances in representation by gender or citizenship:*
244

   1. *Percentage of students moving to another school before the end of the academic term:*
Negligible

1. *Total site budget:*
£413, 282

1. *Percentage of budget (approximately) spent on ICT:*
.8 per cent or .86 per cent including training

1. *Sources of income:*
Single Regeneration Budget, Local Education Authority/Government funds, laptop scheme.

1. *Other significant resources received in the past two years (volunteers, corporate donations, etc.):*
$50,000 US donation from anonymous individual after the headteacher made a conference presentation in Blackpool

C. Staff

1. *Name, title, phone, and e-mail address of lead administrator:*
confidential

1. *Administrative structure (departments, special educational needs arrangements, roles of staff):*
2 administrative staff, headteacher, deputy headteacher.

1. *Number of staff:*
8 full time and 5 support assistants (2 of them part time).

1. *Percentage of staff who do not complete the full academic year:*
No turnover last year.

1. *Average number of hours spent teaching for teachers whose primary assignment is classroom teaching:*
The children receive 24hrs and 10 mins teaching time during a normal school week, excluding registration, breaks, assembly and lunch time.

D. Academic schedule and performance

1. *Academic schedule (start/end dates, weekly days/hours):*
Morning: 8.55 am - 12 noon. Afternoon: 1.00 pm - 3.20 pm.

1. *Organisation of instruction (timetable type, special educational needs provisions, etc.):*
Two forms in each year group. Learning Support Assistants withdraw groups of up to 8 from each year group. Special Needs Support Assistant's also work in each class. Children are put into ability groups within each year group for maths and English.

1. *Formal assessment procedures (types of tests, dates given, purposes):*
Yr3, 4 & 5 - NFER tests (maths and English) Yr6 tests for National Curriculum assessment (English, maths & science).

1. *Student performance levels for mathematics and reading or equivalent) at two representative student year groups:*

Average or above for the age group on leaving the school but below average on entry.

E. Improvement/Innovation

1. *Description of improvements or innovations (400-500 words--please attach, along with relevant documentation).*

See full report.

1. *Main indicators of success of the improvements:*

Parental feedback, LEA staff feedback, pupil and teacher feedback

1. *Role of information and communication technologies (ICT) in improvements (400-500 words please attach).*

See full report.

F. ICT

1. *Brief description of the main technologies (ICT) used at the site:*

Some PCs in classrooms, 45 laptops, student tracking system, Acorns for SEN,
e-mail for e-mentoring, www for research

1. *Total number of WWW-usable computers*

25 approx + 45 laptops

1. *Total number of other computers*

Approx 6

1. *Locations of computers (labs, classrooms, library, etc.)*

Classrooms and 1 laboratory

1. *Type of Internet connection*

ISDN

1. *Are computers and the Internet accessible to students and teachers beyond class time?*

Yes through the laptop scheme - pupils may borrow computers to take home.

1. *Main uses of ICT in the curriculum:*

Cross-curricular - WP, Excel (graphs), project work, research (internet). Network problems prevent use of CD-Roms on the network.

1. *Brief description of the ICT technical and pedagogical support provided to students, teachers, and administrators:*

Very little technical support except through friends and family. Some provided by an external source through the local further education college.

Pedagogical support: many teachers report being self taught through collaboration with interested family, friends and colleagues. Training has been through some school sessions and the Microsoft AAL initiative. They were about to start their government funded ICT training.

1. *Main indicators of successful use of ICT:*

Raised achievement and morale of pupils; plus change in attitude of parents,
especially those involved in the laptop scheme and adult education ICT courses at the school.

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The research described in this report was funded by the Department for Education and Employment.
Enquiries relating to this report should be addressed to the following:

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[1] In order to preserve the anonymity of the school and staff, this is a pseudonym.

[2] UK Research has shown that being part of a supportive network containing ICT expertise available on a just in time basis is critical to individual s successful use of ICT.

[3] The Microsoft Anytime Anywhere Learning (AAL) programme gives students and teachers continuous access to software on portable laptop computers, enabling learning to take place outside of the school and the school day. The programme involves parents more closely, actively encouraging lifelong learning. During the academic year 1998/9 a pilot study of this programme was started in 28 schools in the United Kingdom   primary and secondary, rural and urban schools. There are 120 children and 4 teachers involved in the laptop programme, along with 45 laptops which are rotated amongst the children for home and school use.