

Thumbs Up for the Digital Kids?

Computers, equality and opportunity.

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Digital Kids and Cack-Handed Teachers?

Computers, equality and opportunity?

Sloganising about education rarely needs to be underpinned by statistics. When statistics are trotted out, however, they often serve to obscure whatever argument they are called up to serve. There are times, though, when a set of statistics tells its own story very clearly.

Research during the past four years at The University of Huddersfield into computer use and ownership by secondary school students has highlighted stark contrasts in use and access: between an inner-city school and one in the suburbs of the same city; between teachers and students; amongst teachers themselves. The survey focused on home ownership of PCs to which students had access for school work and their own projects.

Comparative figures (as a percentage of respondents.)

Home ownership of Personal Computers 1997			<i>Suburbs February 1995</i>
Year Group	Suburbs	Inner-city	
Year 7	47%	16%	26%
Year 8	52%	11%	31%
Year 9	55%	16%	35%
Year 10	62%	22%	42%
Year 11	67%	32%	46%
Year 12/13	72%	38%	49%
Wholeschool, as % of respondents	59%	20%	35%

The first significant point is that both schools show an increase in student ownership from Year 10 onwards. The wide disparity between the school in the suburbs and that in the inner-city, however, can be contextualised by comparing results from the first survey carried out in the suburbs during February 1995 with that undertaken at the inner-city school in December 1996.

Two possible interpretations can be placed on these figures.

- students in the inner-city are two years or more behind those in the suburbs in terms of acquiring PCs, and individual access to machines will increase during the coming years;
- the figures reflect the social and economic differences within the population.

Responses cited by students at the inner-city school at the end of 1996 show the mix of machines as varied as that in the suburbs at the beginning of 1995. Replacement of aging games-based computer systems could therefore lead to an increase in ownership of multimedia PCs. Given the differences in the catchment areas of the schools, however, it is unlikely that ownership levels will approach parity. The ownership of home PCs, the use of them for

schoolwork, the acquisition of skills and concepts represented by them and the value placed on these by society represent part of the economic and cultural capital of the Information Society. The divisions highlighted in these results reflect groups that have been termed 'Information Rich' and 'Information Poor'.

During the survey, staff at both schools were asked what they thought were the effects of computers on students' work.

- 80%+ agreed that students' work was improved by computer use. Teachers stressed legibility, presentation and organisation of work as the main areas of improvement.
- 31% of staff in the suburbs and 46% of those in the inner-city stated that work was improved by up to 25%.
- More than 50% of respondents saw access to CD-ROMS as beneficial to students' work.

The rise in student PC ownership over the past three years has been matched by a perception on the part of teachers that the quality of work, and the marks awarded, has been improved. These perceptions are shared by their students (surveys, 1996, 1997).

Teachers and computers

During the academic year 1996/7 a sample of teachers in the Leeds L.E.A. was surveyed to identify perception of the impact of computers on students' work. The survey was carried out at Boston Spa Comprehensive School, City of Leeds School and Elmete, a Leeds L.E.A. professional development centre.

The scope of, and background to, the sample.

Number of respondents: Boston Spa=61; City of Leeds=24; Elmete=31

These numbers represent less than 50% of the combined staff total for the two schools respondents from Elmete Teachers' Centre are those participants who agreed to complete a survey form. The responses, therefore, are from teachers who felt positively enough about ICT to complete the survey. One question asked teachers whether they had a home computer: if so, what type it was, and the purpose for which it was used.

Survey of Leeds teachers: Summer Term, 1997.

Percentage of sample having access to a computer at home.

Base:

PC	Acorn	BBC	Mac	Amiga	Atari	Psion
58%	20%	1.7%	3.4%	0.9%	0.9%	0.9%

The majority of teachers who used a computer at home did so for word-processing ('Typing') of work for school - the production of worksheets. This perception of computers as smart typewriters transfers to curricular computer use by staff.

Superstructure:

Leeds sample: Staff curricular computer use

W/P	D/B	Charts	S/S	CAL	DTP	Internet	CD-ROM	CALL
62%	27%	22%	21%	13%	8.6%	7%	6%	3%

Teacher perspectives:

- 62% of the sample stated that they used computers in the curriculum for word-processing, although no frequency of use was cited.. In this context it is interesting to note that a 1996 survey of more than 3,400 teachers by Keele University cited 70% as using the computers 'very infrequently'.
- The teachers' main use of a computer was for word-processing (71%). This activity was, however, often cited as 'typing'.
- When teachers own a PC the site of production for work-related documents moves from school to home - as happens with many students.

Teachers must recognise the implications: that, unless students have access to a PC at home, the work that they are likely to be encouraged to undertake at school will be comparatively low-level word-processing or tasks that require dedicated curricular applications, such as mathematics CAL, CALL or Integrated Learning Systems.

There are a number of reasons for teachers' lack of expertise, and the growing disjunction between their ICT capability and the competence of a significant percentage of their students.

- The purchase of a PC represents a significant level of expenditure for a teacher - some two months' net salary for those at the beginning of the salary scale.
- There is an understandable resistance to the idea that one should spend one's salary in order to be able to undertake more work at home.
- The amount of time available for staff to use computers at school is limited. Many teachers are unhappy if they seem less than fully competent handling equipment.
- Class control and teaching skills in an ICT classroom are very different from those of a traditional base.
- Current rhetoric promoting traditional methods and stressing teacher accountability inhibit risk-taking on the part of these staff.
- The limited investment in ICT has been seen as providing a resource for students, rather than staff.

One solution would be to ensure that those students without access to a home PC are taught by staff who are highly IT literate, enthusiastic about the integration of IT within the curriculum and classroom, and who manage the school's IT resources so that these students have maximum access.

These very real material issues need to be addressed if the majority of teachers are to feel that ICT is not yet another burden placed on them, but a way in which their administrative load can be lightened, their teaching made more effective and student outcomes transformed. If the material base *can* be changed, changes in the pedagogic superstructure *should* follow.

It is the transformative power of ICT that fires up those teachers who are its advocates. The question is whether those who neither own a computer nor use them can be brought to share

this reality. If affirmative action and a child-centred education system based on need is the only way in which all students can play a part in the Information Society, then the same principle may need to be applied to their teachers. The alternative is the flexible labour market in which the 'information rich' trade on their cultural capital, the lumpen-proletariat of the 'information poor' have fallen beneath the level of subsistence that defines them as consumers, whilst the 'back to basics' movement barricades itself in the staffroom.

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