IcT's About Learning:

School leadership and the effective integration of information and communications technology

Understanding that ICT is not just another passing fad or innovation that might or might not affect our schools, and being able to change the way the institution works accordingly, is perhaps one of the most important requisites for school leaders today

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This study is based upon interviews with school principals or headteachers and others working in schools in England, Australia and Singapore that are reputed to be at the cutting edge of practice in ICT.

The Context

"One of the perennial problems in the area of technological change in schools is the understandable temptation to write about the future before we fully understand the present." (Abbott, 2001)

In England, headteachers are being exhorted by the Government to include ICT as a major element in the curriculum and the day-to-day organisation of schools. There has been a massive investment in training teachers in ICT but headteacher training has not so far featured in the Government's strategy.

Two recent surveys (Besa, 2001 and Becta, ImpaCT2, 2001) point up the very mixed, if not confused, state of development of ICT in UK schools. In September 2001, there were over one million desktop computers in UK schools but of these, a quarter of a million were considered to be ineffective in teaching the curriculum. The number of laptops had increased to 100,000, with 50 per cent being used for administrative purposes.

Eighty per cent of schools had their computers networked, with 44 per cent of those making 'significant' use of internet connectivity, but 14 per cent did not use their networks for email or to share curriculum software. While few had actually taken the step, 35 per cent of schools were considering wireless networking to allow laptop use in multiple locations. Currently most schools were found to rely on ISDN access to the internet, and on average a school had enough bandwidth for just six concurrent users.

Pupils in the Becta survey reported that they spent up to four times as long using computers at home than at school and many expressed frustration with lack of access, speed of access and curriculum limitations. There was seen to be a growth in teacher competence and confidence, but few teachers were found to be integrating ICT into subject teaching.

Accepting the ineluctable impact of ICT on our lives, education and work, it is vitally important that school leaders understand what steps to take in their particular schools to make valuable use of the technology for learning. For this they will need to understand the bigger picture and have a vision of learning transformed by ICT. They will also need to understand what skills are required to make the crucial decisions concerning the changed priorities of school budgeting and staffing that impact the process of integrating ICT into student learning.

The Effective Integration of ICT

The process of integrating ICT into a school involves a paradigm shift, where insights and new information facilitate new forms of understanding, or an integration with earlier understandings, to create new perspectives and interpretations. Integration implies an embedding of ICT in the school's structures and the organisation of learning.

"ICT systems can no longer be perceived as additionality or as enhancement." (Richardson and Anstey, 2001)

All the study schools use ICT as part of the teaching repertoire in all subjects. Headteachers view the level of integration from 10 to 80 per cent depending upon their perspective. For all schools, it meant a significant change in pedagogy, student assessment and the whole administration of the school.

"Effective integration can be tested in a given lesson if at least one of two things are taking place: a) by the end of the lesson students have further developed ICT capabilities; b) ICT makes something happen in learning about the subject that couldn't have happened, or couldn't have happened so effectively, otherwise." (Neil Calvert, George Spencer School, Nottingham)

All the schools, bar one, have developed highly sophisticated uses of ICT for school administration. They have also provided between 50 and 100 per cent of teaching staff with laptops and see this as one of the most significant moves towards full integration.

Leading Learning

The main change in pedagogy associated with the integration of ICT concerns putting the learning agenda firmly into the hands of the student.

All the headteachers interviewed are convinced of the value of integrating ICT into their schools because it has the potential to change the way students learn and to motivate them in their individual quest for lifelong learning.

"Our long-term goal is to place the responsibility for learning, and the choice of content, back on the student …computers are a transforming technology in that they make the student-centred model more accessible." (Loader, 1997)

All the schools see one of the keys to changing pedagogy to be the development of an intranet of curriculum resources for all ages and abilities which is available at all times of day at school and at home.

The Headteachers

In all the schools, the heads and deputies have been willing to change the way they work, both on an everyday basis and more fundamentally in the way that planning and long-term decisions are made. While heads did not need detailed knowledge about the technology, they had to have enough to know what they were talking about in dialogue with experts and to use the technology themselves in their everyday working lives.

It was clear from the interviews with headteachers and others in the schools that without a total commitment over time from the school leadership there was no way that ICT could be integrated into the life of the school.

Leading ICT from the Middle

All of the study schools have changed their management structures and leadership teams, not only to cope with the expansion of ICT, but also to involve a wider range of staff in the process of innovation and change. Typically structures are wider and flatter than the conventional hierarchies. Leaders have been identified outside the line management model and the schools did not have information technology departments.

"The first thing I tell people when I talk around the country about ICT is to get the nerds and their laboratories out of the system and hand the teaching and learning over to the educators." (Ken Rowe, Frankston High School)

With the development of ICT there has developed a new brand of leader, an instructional and transformational leader who through commitment and enthusiasm for learning works with colleagues across the curriculum to embed ICT into the learning process. In one school, ICT project managers from across the curriculum not only meet together with a deputy head in an important decision-making group; they are also available to be booked by staff for advice in lesson time.

At another, a similar model operates where leading practitioners have been appointed as learning mentors for their colleagues and given extra non-teaching time so that other colleagues can book them to help with new teaching approaches using ICT. There is a similar model working in other schools but using support staff.

Leadership from Non-teaching Staff

Adults other than teachers are playing an increasingly important role in schools around the world. This is particularly the case with the advent of ICT. Efficient systems management is crucial to the integration of ICT for both learning and administration, but non-teachers are also significant in developing learning both inside and outside the classroom. In some cases the technical and learning support roles overlap.

All the schools in the study placed staff training at the centre of their successful integration of ICT.

"Teachers need to be helped to see the possibilities and encouraged to explore the potential for themselves…What will not have the required effect is a programme of entirely skill-based rather than reflective teacher education." (Abbott, 2001)

The Changing Relationship Between the School and Community

It is important for school leaders to realise that changing the way students learn using ICT is not a step-by-step process. The technology itself is changing at a rapid pace and offering new opportunities all the time in a world of permanent change.

"The obsolescent assumption underlying schooling, education and learning is that it involves the transfer of skill, expertise or knowledge from an expert to a novice, and this action has been known as teaching…Information technology will inevitably explode this conception of schooling, or some of it, by making available to learners huge resources of information which they can access and make use of, independent of teachers." (Beare, 2001)

Budgeting for ICT

Whatever the background of the school and the feelings of the staff and governors about raising extra funds, ICT integration is costly and demands a change to budget priorities. However, there are very few schools where there is no possibility of re-prioritising.

Conclusions

All the evidence to date in the progress towards ICT integration into schools points to the importance of the role of the headteacher. The schools that are leading the way internationally are leaving behind the equipping phase and are using new and flexible management structures to create learning environments where the agenda passes from the teacher to put the student in control of his or her own learning.

The process of integrating ICT in these schools is a process, not concerned with the technology per se, but concerned with making a provision for learning which recognises a range of learning styles.

All the schools at this stage have also recognised that the future is one of collaboration in the development of learning resources between like-minded schools wherever they may be. The leadership skills for the future can and should be acquired by a sharing and an inter-dependence that reflects the essential openness of the Internet itself. Headteachers should be reassured that at least the help, if not the truth, is out there.

Schools from which data is drawn

- *Cornwallis School, Maidstone*

- *George Spencer School, Nottingham*

- *King Edward VII School, Melton Mowbray*

- *Monks Dykes School, Louth*

- *Frankston High School, Melbourne, Australia*

- *Trinity Grammar School, Melbourne, Australia*

- *Wesley College, Melbourne, Australia*

- *Sembawang Secondary School, Singapore*

- *Bukit View Secondary School, Singapore*

References

Chris Abbott (2001) **ICT: Changing Education**, Routledge

Becta (Nov 2001) **ImpaCT2, Interim Report**, www.becta.org.uk

Besa Research (Nov 2001) **Information and Communication Technology in UK State Schools**, www.besanet.org.uk

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NCSL is involving school leaders, via research associate opportunities, in establishing a knowledge base about leadership in schools. The following Practitioner Enquiry Reports can be requested by returning the form opposite:

Leading Learning: Instructional leadership in infant schools, Susan Benson, Headteacher, Nettleham Infant School, Lincoln

Winning Hearts and Minds: Leadership and performance management, Michael Crane, Headteacher, John Port School, Derby

Leading to Success: Judging success in primary schools in challenging contexts, Stephen Englefield, Headteacher, Brownhill Primary School, Leeds

No Regrets? Beginning secondary school headship, Alan Sieber, Headteacher, Tarporley Community High School, Cheshire

Enchanted Headteachers: Sustainability in primary school headship, Ronnie Woods, Headteacher, Cleadon Village Junior School, South Tyneside

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The research summarised here is part of the NCSL Research Associate Programme, which offers an opportunity for school leaders to contribute towards the College's research and development agenda. NCSL provides support for school leaders to undertake study, to engage in enquiry and to impact on practice. The programme includes:

- Study visits

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We welcome enquiries about the Research Associates Programme. For details, please contact Martin Coles by emailing martin.coles@ncsl.org.uk

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