

Harnessing Technology: Discontinuities with current practice which affect the use of technology for learning

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Table of contents

Table of contents	2
Introduction	3
Approach	3
Discontinuities	3
Technology cluster	4
Social cluster	4
Policy cluster	5
Economic cluster	5
Next steps	6

Introduction

Harnessing Technology: discontinuities with current practice which effect the use of technology for learning is the second in a series of reports focusing on curriculum and pedagogy themes in the context of the Harnessing Technology strategy. The reports inform the delivery and further development of Becta's revised Harnessing Technology strategy, *Harnessing Technology: Next generation learning 2008–14*, which was published in July 2008.

The first report, *Harnessing Technology: Preliminary identification of trends affecting the use of technology for learning*, identified current trends that are likely to drive or inhibit the desired outcomes for the use of technology in education across all sectors.

This, the second report, addresses factors which, while less continuous than trends, are discontinuities with current practice. Such disturbances may disrupt established trends or create new trends. The report considers the broad implications of both forms of discontinuity for the desired system outcomes.

Approach

We used three methods to identify discontinuities:

- Following submission of our first report, we undertook a desk-based activity to identify possible discontinuities.
- We held a research group brainstorming session. Researchers considered how some of the trends identified in the first report could disrupt the Harnessing Technology system outcomes; they also identified possible new developments that may disrupt current trends.
- We convened our Expert Reference Group with invited colleagues from four sectors: primary; secondary; further education, skills and regeneration (FESR); and higher education. Invitees were asked 'Over the next three to five years, what novel resources or circumstances might arise that realistically could be expected to have an impact on the manner in which technology is deployed to support learning?' Following a cross-sector discussion, experts were invited to rank their suggestions for relevance, likelihood and significance.

Discontinuities

We group the significant discontinuities under four headings: technology, social, policy and economic factors. Under each heading, the discontinuities are further grouped into clusters.

For each cluster, we show the number of discontinuities cited and the most frequently identified example (with the number of occurrences in square brackets). As far as possible, we use the language used by our informants.

Most factors proposed under these headings can be seen as discontinuities to existing trends and thus 'disrupt' something. For example, a popular backlash emanating from concerns about safety would disrupt the trend towards the increasing use of ICT in education.

However, the trend that a proposed discontinuity 'disrupts' may not be obvious; in this situation, the term 'eruption' may be better. Factors characterised as eruptions arise either from technology innovations (e.g. improved automated language-translation technologies) or social, economic or political events (e.g. a change in government).

Technology cluster

Most technology discontinuities are 'New technologies that offer new opportunities/problems', closely followed by 'Existing technologies that get used in unanticipated ways'. A large minority relate to 'Internet business models'.

Cluster	Number of discontinuities	Most frequently cited example and number of occurrences
New technologies offer new opportunities/problems	22	Broadband availability in the UK comes to match that in some other countries [5]
Existing technologies are used in unanticipated ways	17	Very small digital devices become the norm among students, and their preferred means of accessing learning resources [4]
Internet regulation	2	All content becomes available globally and is free, so institutions rely on 'cloud services' for more of their critical functions [2]
Internet business models	10	A technology company such as Google starts an online university [3]

Social cluster

Social discontinuities are expected to arise mainly from public perceptions of technology-enhanced learning, and restructuring of the teaching profession. Demographic change and critical incidents are less prevalent considerations.

Cluster	Number of discontinuities	Most frequently cited example and number of occurrences
A critical educational/research incident	5	An e-security incident disrupts personal and social learning or results in an urgent need for added security around young people using technology/social software [4]
Restructuring of, or cultural shifts within, the teaching profession	22	Learners and teachers become the prime, collaborative, creators of digital content [2]
Changes in popular public perceptions of ICT	16	There is significant learner resistance to more school or college encroachment on home and personal technologies [3]
Demographic changes	11	Professional-class parents learn to turn home–school links to their advantage, exacerbating the digital divide [3]

Policy cluster

Most policy discontinuities are anticipated to arise from educational policy. Far fewer are anticipated from other policy areas.

Cluster	Number of discontinuities	Most frequently cited example and number of occurrences
Educational policy	33	SATs are swept away, freeing teachers to use ICT in more innovative ways, including formative assessment [2] (Note: this was before Key Stage 3 SATs were abolished)
Social policy	7	Environment studies are prioritised as eco-education becomes more important [2]

Economic cluster

A number of discontinuities are anticipated to arise from national economic forces and those of a wider or global nature. (Note: these discontinuities were gathered during 2008, when the credit crunch dominated the news.)

Cluster	Number of discontinuities	Most frequently cited example and number of occurrences
National perspectives	20	Industry invents ways of using e-portfolios for the evaluation of potential employees, possibly rendering academic accreditation unnecessary [4]
National and global perspectives	9	Global competition from emerging economies kills the high-skilled, high-paid knowledge economy in the UK [5]

Next steps

This is an interim report on work in progress.

We will be undertake further work to prioritise the discontinuities more fully, in terms of likelihood and impact, and to propose significant scenarios that may arise from the trends and discontinuities. The third report (due in January 2009) will aim to evaluate the likelihood of these scenarios and consider their possible impacts on Harnessing Technology system outcomes. We will then, in our final report, suggest new modes of teaching, learning and assessment that may shape future educational policy and practice in relation to technology-enhanced learning.