

BBC Digital Curriculum - Consultation by the Department of Culture, Media and Sport

Response from the Learning and Skills Development Agency

Introduction

1. The Learning and Skills Development Agency (LSDA) is a strategic national resource for the development of policy and practice in post-16 education and training. Our activities include research, with partners, to inform the development of policy and practice for post-16 education and training. We have a clear brief to work across the learning and skills sector, providing support for colleges, work-based training, adult and community learning, and schools post-16, with a particular focus on quality. Our work aims to support coherence within the learning and skills sector and between the learning and skills, school and higher education sectors.
2. A major strand of LSDA's work is in the area of e-learning and ICT. We use the term 'information and learning technology' (ILT) to describe this conjunction of technology and education. LSDA has worked closely with the BBC (for example on the Webwise programme) and with associated bodies, including through membership of the former Educational Broadcasting Services initiative to use BBC video archives in vocational education.
3. We welcome the proposals. There is a shortage of appropriate materials for learning through the medium of information and communication technology (ICT), therefore we welcome this further involvement of the BBC in on-line curriculum development and support the proposal to develop a wider range of 'e-learning' materials.
4. Our comments draw in part upon our responses to the consultations on the Curriculum Online and Culture Online proposals from the then DfEE and the DCMS.¹ In brief these responses suggested or supported:
 - development of a framework for endorsement of granular materials which encourages diversity of choice
 - establishing standards (both pedagogical and technical) for materials
 - schools being only able to use their e-learning credits to purchase materials that meet the approved standards

¹ *LSDA responds – Curriculum Online: A consultation paper* (LSDA, 2001) and *LSDA responds - Culture and Creativity: the next ten years, A Green Paper from the Department of Culture, Media and Sport* (LSDA, 2001). Both available for downloading on the LSDA website at www.LSDA.org.uk

- commissioning materials in specialist areas or areas of demand, (although this would not preclude vendors independently producing their own materials)
- development of a 'shareware' culture whereby suppliers are encouraged to let schools trial materials before purchase, a concept that has been proven to work for the software industry
- encouragement of the free sharing of materials produced by teachers themselves
- the endorsement framework applying to broadcasters when delivery includes distribution of materials over a multiplicity of channels, including digital TV, to ensure that the standards are being met.

Technology and learning

5. There is no doubt that teachers and learners are increasingly using technology in education and training. As the consultation documents point out, interest and investment in e-learning are growing, and public agencies and commercial suppliers are responding accordingly.
6. However, it is important not to overemphasise this growth. We note the latest draft report from the EU L-CHANGE project, which says (conclusions, paragraph 7.1): *“Even though cost effectiveness is pushing towards increasing implementation of eLearning in large enterprises, SMEs, as well as schools and traditional universities are still reluctant to adopt eLearning, and instead prefer to test its effectiveness through pilot projects mostly exploiting eLearning materials produced in-house. L-CHANGE forecasts on eLearning expenditure in Education and Training suggest that while eLearning is expected to reach around 10% of school and university expenditure in 2005 and then to progress up to a limit of 30% in the following twenty years, growth rates of eLearning expenditure are expected to be much higher in the training (institutional, but above all corporate), informal learning and, even more significantly, in the home segment, where 10% of expenditure is estimated to be already for eLearning and the “ceiling” of 50% is expected to be reached around 2010.”*² This analysis of future use of materials can inform the BBC strategy.

Establishing a context in which to use e-learning materials

7. Available research evidence indicates that various elements are necessary for the effective introduction, management and implementation of e-learning. Making large amounts of electronic learning material available will not produce results unless (for example):
 - institutions have a strategic commitment and approach to ILT
 - technology is used appropriately to match curriculum design and individual learning styles

² *European Observatory on IST – Related Change in Learning Systems, IST-2000-26226, Yearly Report 2001/2002 (in draft)*

- when used, technology is easily accessible to teachers and learners, and reliable
- staff are extensively aware and trained in the use of ILT
- staff are skilled in searching for appropriate materials and, in fact, do so before making particular choices
- staff are given opportunities to create and/or adapt learning materials.

12. Our evidence for these conclusions comes from our evaluation of the impact of the National Learning Network on teaching and learning³ and from the key messages from the literature reviews carried out by LSDA on behalf of the LSC's distributed and electronic learning group (DELG). This latter is reproduced as an annexe (Annexe 1) to this response for information.

13. It is important to give consideration to the wider context into which such material is introduced. While not their immediate responsibility, the BBC may wish to consider working with appropriate partners to coordinate a planned strategic approach to any introduction of the 'digital curriculum'. This could, for example, consider how the Digital Curriculum service will complement the resources offered by commercial players.

Support for learners and teachers using e-learning

14. The proposal could build on work to develop the concept of a Cybrarian (using voice recognition) to help learners to find materials on the internet⁴, particularly those with special needs or without advanced information handling skills.

15. Effective implementation of the BBC proposals will be assisted by appropriate support arrangements for learners, especially for pupils and their parents using learning materials at home. Help, advice and encouragement will be needed to maximise the benefits of learning on-line. Teachers most appropriately provide much of the learner support. However, in order to enable teachers to do this effectively there is an urgent need to provide additional training.

16. Training, building on the ICT skills training provided under the New Opportunities Fund (NOF) scheme, is needed to help develop teachers' skills in applying ICT to teaching and learning in classrooms and remotely (ie through distance learning). Responding to a recent British Educational Communications and Technology Agency (BECTA) survey, many teachers reported that they have ICT skills but do not use, or feel confident in using, ICT in their teaching. The emerging FENTO ILT standards may be relevant here and could easily be customised for use in the schools sector. (These are a set of standards relating to those involved in

³ *National Learning Network: Final report to the Evaluation Steering Group and the NLN Programme Board by the Learning and Skills Development Agency (LSDA) and Sheffield Hallam University*, unpublished, 2002

⁴ See DfES press release at http://www.dfes.gov.uk/pns/DisplayPN.cgi?pn_id=2001_0190

teaching and supporting learning and management in FE, and using new and established technologies.⁵⁾

17. Technical support arrangements are another important consideration. A model for technical support exists in the further education sector whereby the Joint Information Systems Committee (JISC) provides technical support for the network connection through the United Kingdom Educational and Research Network Association (UKERNA), but support in the home requires further consideration.

Accessing, adapting and using materials

18. Evidence, including that cited in annex 1, points to the effectiveness of 'blended' solutions to learning (i.e. using a variety of approaches and media which suit individuals and circumstances). The BBC has a rich history and enormous back catalogue of audio, print and video material, which remains useful and relevant. The problem for teachers is often not availability but awareness and skills in use and adaptation.
19. For classroom delivery, experience with practitioners suggests that they prefer to create or collect together their own materials rather than, for example, simply use a book without any further materials of their own. The practice of combining elements of digital learning materials to create personalised materials encourages ownership (of both the materials and the use of technology in general), nurtures teachers' creativity and makes their role more interesting. Benefits accrue to both pupils and schools where teachers are motivated and enthusiastic and feel fully involved in learning systems.
20. A national portal could facilitate the distribution and sharing of many 'modules' or 'chunks' of material, which teachers could combine to create courses. This approach would allow teachers to develop courses tailored to their pupils' preferred learning styles and strategies, as well as to the environment and culture of their school, whilst meeting the demands of qualifications.
21. We would suggest therefore that an effective way for the BBC to support teachers and learners in this area could be to present a menu of materials in this modular form, rather than offering materials covering large parts of courses. If the customisation route is followed, as noted in our response to the Curriculum Online proposals⁶, there are significant training issues for teaching, librarian and support staff in the use of suitable software tools.

⁵ FENTO is one of 71 UK-wide National Training Organisations (NTOs). It is the national lead body responsible for the development, quality assurance and promotion of national standards for the FE sector. Working closely with FENTO, the National Learning Network commissioned the Learning and Skills Development Agency to lead the development of ILT standards in partnership with NILTA, who coordinated feedback and liaison with the sector.

⁶ *LSDA responds – Curriculum Online: A consultation paper* (LSDA, 2001)

The proposal

22. The Digital Curriculum proposal is directed primarily at schools. We comment below on specific issues of particular relevance to our post-16 remit. We would hope that the benefits of any eventual programme, if approved, could be made available more widely. This would also make implementation more cost/benefit-effective.

Supporting all learners

23. Learning materials can sometimes be age- or stage-neutral; that is, they can be used for a variety of purposes irrespective of the age or context of the learner. The proposal (Annexe 1, para 5.3.1) notes some ways in which other providers might link to or use the BBC materials. Access for 'lifelong learners' may be facilitated by discussion with relevant bodies in the learning and skills sector such as the Learning and Skills Council (LSC) and the JISC.

24. It may be that the BBC would wish to explore or pilot the use of materials in contexts other than schools. One locus for this might be the pilot DCMS 'creative partnerships', which have the potential to link schools with other partners – and to extend what is taught beyond the confines of the National Curriculum.

25. We note the proposals to produce materials in the Welsh language. LSDA has experience, which it would be happy to share, of the production and translation of learning materials in the Welsh language.

An e-learning curriculum

26. We welcome the BBC's support in principle for the formation of a UK 'e-learning conformance authority', which is being promoted by the Ufl and many other agencies.

27. In considering the use of their digital curriculum in the post-16 context, the BBC may find it helpful to draw on a draft specification for 'competence' (a universal way to describe, measure and compare learning and achievement) that we are developing, within the framework set by the international IMS project⁷, supporting the 'interoperability' of learning materials. The draft aims to complement other IMS specifications and involves defining a standard way to establish the 'level' and 'volume' of 'learning outcomes' - what a learner knows, can do or understands. The draft accords with practice in much of lifelong learning. Any agreed specification would have international standing and would help to give further credibility to UK education and training.

⁷ www.imsproject.org

Global standards for learning materials

28. We welcome the commitment in the distribution plan (Annex 1, para. 4.3) to support the Curriculum Online core principles of open platform and content interoperability.
29. However paragraph 3.1 says, "*The BBC has no plans to extend the functionality of its own VLE [virtual learning environment] beyond this level, nor to use it to carry content from other providers*". We are concerned that this detracts from the commitment to interoperability.
30. In our response to the Culture Online proposals we emphasised the importance of 'metatagging' related digital resources in line with the e-gif initiative⁸. This would allow learners and tutors to collect and integrate electronic resources for a variety of purposes within customised learning material. Teachers and institutions will need information or reassurance about any copyright implications for use.

A virtual learning environment

31. The proposal makes a case for the development of the BBC VLE. We would rather the BBC concentrate, as a priority, on producing 'digital assets' which could be manipulated within other suppliers' VLEs. We suggest that the BBC consider the outcomes of this consultation before embarking on the development of its own VLE, and that if the decision is taken to proceed, priority be given to ensuring that it is an open system that can support materials produced by other suppliers.

⁸ <http://www.govtalk.gov.uk/interoperability/egif.asp?order=title>

Annexe 1

KEY MESSAGES FROM THE LITERATURE REVIEWS CARRIED OUT BY LSDA ON BEHALF OF THE LSC'S DISTRIBUTED AND ELECTRONIC LEARNING GROUP

Over 500 relevant, or partially relevant, documents were identified by on-line searches carried out in late 2000/early 2001. The main criteria for inclusion were that studies focus on “learners within the LSC remit” and that they were published “within the last ten years”. In some cases studies which did not satisfy both of these criteria (e.g. a few focussing on school age learners) were included as they were considered clearly relevant. A smaller subset of the identified documents were judged to contain “evidence” of interest to the DEL Group and these were reviewed in depth within five reviews which summarised the research findings relating to DEL and workforce development; inclusion and widening participation; systems and content; quality and funding.

The studies identified generally illustrate a strong belief by educators and policy makers, in the UK and overseas, that the use of Information and Communications Technologies (ICTs) in education and training has potential to deliver positive benefits for learners and society. It is suggested that distributed and electronic learning (DEL) can improve access to and support of learning, motivate learners, improve achievement and increase participation in life long learning. There is some research evidence to support these conclusions. However many educators appear to have been convinced mostly by their own experiences in teaching and learning situations. Whilst policy makers may have at least partially based their conclusions on observations of the significant role ICT has played in changing other sectors of our society and on the willingness of commercial companies to invest in DEL.

Many studies have considered the “effectiveness” of DEL however few of these could be said to provide the type of “proof” or “solid evidence” of effectiveness which the LSC on behalf of DELG sought. Most of the research identified by the review is essentially qualitative. Many of these studies provide valid and interesting data about the experiences of, often quite small, particular groups of learners. Taken individually it is difficult to categorise these as reliable evidence as it is not possible to generalise from them to larger populations of learners. However taken as a whole it might be argued that there is a substantial body of work that suggests the use of DEL may provide significant benefits to individuals and society.

Where controlled experiments have been carried out in the education sector some positive and reliable evidence has emerged including:

- groups of on-line learners achieving higher scores in tests compared with the control group taught in a traditional classroom
- overall achievement the same or better for on-line learners compared with a control group
- better retention for those involved in collaborative electronic learning

However qualifying messages also emerge from these studies:

- in some cases retention was worse than for the traditional learning control group
- researchers felt that many of the positive effects noted may have been due to the different pedagogy employed as well as, or rather than, the use of technology. Collaboration between learners was identified as very significant to progress and achievement. Strategies of minimal rote tuition, and a focus on raising learners' motivation to explore topics at their own pace, were also found to be important.

Where commercial companies have introduced DEL to replace traditional training courses direct comparison between the two approaches is possible, providing evidence that DEL

- can train more employees quicker
- can reduce off-the-job time
- allows standardisation of delivery
- supports just-in-time and just-what-I-want approaches
- can result in better knowledge retention by trainees

Also, where very large numbers of staff require the same training, economies of scale can result in cost savings compared to traditional delivery.

Other benefits suggested included:

- application of theory can be reinforced more effectively by the reality of learning in the workplace
- simulations and modelling allow realistic observation of processes too rapid, too slow or too dangerous to observe in real time
- breaking down of the barriers of stigma which are a common problem in Basic Skills and ESOL teaching.

Regarding pedagogy, although few studies focus on pedagogy many writers perceive a trend in educational practice towards learner-centred, or constructivist, approaches. Some argue that this trend is more important than the trend towards greater use of technology. It may be that DEL, which often includes an emphasis on learning in "bite sized chunks" and tailoring education to individual learners needs, is particularly well suited to supporting a constructivist approach. Some researchers argue that the full potential of online learning is not being realised because too much of the pedagogy of online learning has been transferred unreflectively from didactic traditional teaching. Some studies suggest critical success factors for DEL including:

- use of DEL to help confidence building, motivation and learning, not just delivery of subject knowledge
- applying technology to assist achievement of learning objectives and not adapting learning to suit the technology used

- a well structured approach, proceeding incrementally and allowing for progression
- consideration of individual and group learning styles and preferences.

There is a consensus that DEL should provide a full range of educational services and alternative learning resources for learners with disabilities and learning difficulties. Research has found that not all current hardware, software, systems, learning tools and online programmes are designed with the varied requirements of people with special educational needs and disabilities in mind. Adapting this technology can be a costly process and consideration of how these costs could be met is suggested.

There is much in the literature concerning the motivational effects of DEL and there is evidence of improvements in achievement. However some studies suggest this may often be due to the novelty effect of a new and engaging teaching method. There is evidence that in some cases, once the novelty effect has worn off and the learners develop a familiarity with the medium, there seems to be little embedded change. The success of individual e-learners has been found to be influenced by the learner's readiness for self directed learning, their competence with study skills and their motivation as well as the learning context.

Human interaction emerges as a key factor in many studies that try to identify critical successful factors for DEL. Both on-line and face-to-face tutoring and peer-to-peer support are identified as important, as is some social interaction. The importance of human interaction suggests to many writers a need for staff development. There is evidence of effective staff development initiatives in the UK FE sector and an identified need for further work to build on these.

Evidence from evaluation of the QUILT staff development programme, and the National Learning Network Innovative ICT projects, indicates that college based development projects are a particularly effective form of staff development.

Further consideration needs to be given to appropriate strategies to help ensure adequate supplies of electronic learning materials. Studies reviewed suggest that DEL offers the potential to make:

- higher quality content more cheaply available
- content which promotes "analysis, synthesis and evaluation" thus producing improved results
- more visual content better suited to people who are "not at ease with the written word"

but that

- high quality relevant materials are still limited in quantity and scope
- some existing materials can be characterised as providing "Information overload" or content which is "rich in poor information"

- appropriate technologies and pedagogies need to be utilised when developing content

Key questions arising include

- should development for the LSC sector be carried out centrally or by institutions or by consortia and in each case how this should be funded?
- at what level of granularity should materials be produced to increase their flexibility and the likelihood of acceptance and use by teaching staff?
- how might the creation of a sector wide market for sharing developed chunks of materials be facilitated?

There is most consensus about the potential of DEL in the context of it's use to address problems of social exclusion and non-participation in learning and to provide easier access to learning. There is a related widespread concern about the "digital divide" and fear that existing participation patterns can be reinforced through DEL as social groups who make most use of technology are those most likely to participate in learning. The reviews identified many local, national and international plans and strategies seeking to increase inclusion in society, and participation in life long learning, through the application of ICT and to bridge the digital divide. It has also found research that detects some signs of a reduction in the "digital divide" in the USA with, for example, lower income groups making more use of the Internet.

Some studies suggest that DEL is more effective than other forms of learning in promoting social inclusion and wider participation. Alongside this there is some skepticism, either than DEL can promote inclusion, or that there is sound evidence to support this. Some studies conclude that research claiming that "distance learning' is more effective" is seriously flawed and unreliable.

Some studies draw attention to problems, issues and barriers to learning or participation that can arise when DEL is poorly implemented. Other writers insist that "social exclusion must be recognised as a long standing social problem which exists and existed irrespective of the development of ICTs" (Phips 2000).

Many studies suggest critical success factors for the use of DEL to improve inclusion and participation, these include:

- Local availability for communities or individuals that need support
- Use of "bite sized chunks" of learning and provision of "first rung" opportunities to make learning more accessible and manageable
- Development of socio-technical solutions combining social and technical innovation
- integration of learning, social and personal development with community development.
- Use of a range of technologies (e.g. TV, digital video, mobile telephony, games) not just the internet and use of assistive technologies for learners with disabilities

The successful use of localised centres and communities of learners or citizens, particularly ‘telecentres’ and ‘community networks’, emerged from significant studies. The emphasis of these is on DEL being part of a key component in an overall process of inclusion and widening participation. Many studies concluded that providing a greater supply of opportunities will not in itself succeed if the demand amongst under-represented groups is not increased through focused and relevant promotion which is concerted, targeted, and continuous. Partnership based collaborative approaches to advice and guidance through outreach, involving the local community, have shown positive benefits.

The reviews did not identify much substantive literature concerned with “quality” of DEL at either a macro or teaching and learning level. What literature there is tends to be focussed on the organisation rather than practical level advice dealing with the learner/teacher/technology interface. No evidence of how DEL teaching and learning is inspected was found nor were any substantial definitions of what constitutes good or bad DEL provision discovered. Very little literature addresses the question of whether the methods used for ‘traditional’ teaching and learning are relevant to DEL.

Some relevant and authoritative documents were identified on the subject of funding DEL. Some of these are based on research and rather more draw on the expertise and experience of bodies involved in planning, funding and delivering learning services. Much of the research evidence identified focuses more on costing electronic delivery than on developing strategies for funding this provision.

The studies suggest that funding DEL requires development of:

- methodologies to finance provision for individual learners
- hypotheses regarding appropriate approaches to funding creation, development and maintenance of the infrastructure, systems (including socio-technical systems) and materials which enable DEL to be offered.
- plus a need for:
- clear definition of terms when developing strategies and methodologies
- careful consideration of underlying concepts such as “research and development”, “unit cost”, “product”, “delivery”, “distribution”

The current funding methodology for FE colleges requires auditable tracking of learners' achievements as well as educational institutions' ability to recruit and retain learners on to appropriate programs. Electronic life long learning - involving learning that may not be linked to traditional qualifications and accrues in “bite-sized” chunks, possibly over lengthy elapsed timescales – implies a need for more sophisticated assessment and monitoring systems (including managed and virtual learning environments and learner tracking systems) as well as new funding methodologies.

Several reports suggest applying a principle that where fees to learners apply these should be the same, and levels of support available equivalent, regardless of the mode of delivery involved.

The available research indicates that most UK educational institutions are embracing DEL as an enhancement activity, rather than a replacement for traditional delivery. The implication, for researchers focussing on costing, is that this reduces the likelihood of significant cost savings. Some sources suggested that distance education can be more costly than traditional education for both the student and institutions. Researchers have found that recurring costs are often under estimated with analysis of costs focussing on capital investment in development of technological infrastructure. Other areas requiring significant resources to be allocated are the development and maintenance of the content, assessment, induction, tracking and support mechanisms.