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ICT, amenability and the BBC digital curriculum service in Northern Ireland:

Becta's report to the DCMS

Report on the subjects and key stages to be
covered by the BBC in its Year 1 commissioning
plans for Northern Ireland

Foreword

I am pleased to present Becta's report to the Secretary of State for Culture, Media and Sport on ICT, amenability¹ and the BBC digital curriculum service in relation to Northern Ireland and with reference to the Northern Ireland Curriculum. This report sits alongside equivalent reports for England, Scotland and Wales, with reference to their own curricula and circumstances.

The report is the outcome of work carried out by Becta as part of the approval conditions for the BBC digital curriculum service presented in the schedule to the Secretary of State's decision letter of 8 January 2003, in particular condition 7. The report sets out in detail the principles and criteria Becta has used to develop a practical process for determining which learning outcomes are amenable to being taught by ICT in the context of the digital curriculum service, and the activities Becta has undertaken in reaching its conclusions.

The report should be seen in the broader context of the totality of the approval conditions. Becta has acted in the knowledge and spirit of the approval conditions, recognising that permission to develop such a service has been given in expectation that it can serve learners and teachers through distinctive and innovative approaches and the exploitation of the BBC's rich media archive.

Becta has worked in close collaboration with its stakeholders in order to develop a process for determining amenability that is appropriate to the needs of learners and teachers. I would like to record our thanks to all those who have contributed to this work, particularly the companies that took part in Becta's consultation with the commercial sector, and CCEA for its support and detailed advice in relation to the Northern Ireland Curriculum.

The annex to the report contains Becta's verdicts on the amenability of learning outcomes to being taught by ICT in the subjects to be resourced by the digital curriculum service in its first year. It is Becta's intention to supplement this report periodically as we consider the amenability to ICT of learning outcomes in the remaining subjects to be resourced through to 2008. The supplements will also provide an opportunity to review amenability as necessary, given the likelihood that it will change as technology and practice develop.

Becta has very much welcomed the opportunity to undertake this work and we view it as a key element in a coherent overarching strategy to improve the availability and use of high-quality digital content. We look forward to continuing to work effectively with our stakeholders on this important issue.

Owen Lynch
Chief Executive, Becta

¹ *Amenable or amenability: for the purposes of this exercise and in this context, amenable or amenability is taken to mean the extent to which something could be learnt or taught through or with the use of ICT.*

1. Introduction

The BBC first put forward the concept of a 'digital curriculum' in 2000. A period of discussion and debate with interested parties followed. The BBC sought approval for its final version from the Department of Culture, Media and Sport (DCMS) on 3 May 2002. The proposals were given detailed consideration, which included assessment of the potential market impact and also took into account various market features, such as the ongoing provision of electronic learning credits (eLCs) to schools via Curriculum Online. Following public consultation, the Rt Hon Tessa Jowell MP, Secretary of State for Culture, Media and Sport, gave consent to the BBC digital curriculum service, subject to limits and constraints, on 9 January 2003. The European Commission gave clearance in September 2003.

The BBC's digital curriculum service will provide a multimedia online resource, consisting of content and a limited learning platform. It will be based on current UK curricula and intended for use by learners at home and school. It will be formally launched in January 2006.

In general, the Secretary of State has required the BBC's digital curriculum service to:

- stimulate, support and reflect the diversity of the UK
- innovate continually and to promote technological and pedagogical experimentation
- be distinctive from, and complementary to, services provided by the commercial sector.

Among other things, the BBC is required to:

- cover up to a maximum of 50% of learning outcomes in each subject amenable¹ to being taught by ICT. The remit for deciding which outcomes are amenable in this context has been placed with Becta
- spend a maximum of 22% on core subjects and a maximum of 30% on non-core subjects in each year
- spend a minimum of 26% on resources for the nations and Welsh translations and a minimum of 22% on minority subjects overall
- spend an average of 50% of its content budget over five years on commissioning work from external suppliers
- publish commissioning plans according to the DCMS schedule
- make 'clear and prominent reference' to other sources of supply when promoting the BBC digital curriculum service.

The Secretary of State will review the service within two years of its launch. This review will include an independent assessment of the BBC digital curriculum service's impact on the market, and a public consultation.

Further information about the digital curriculum can be obtained from the Department of Culture, Media and Sport and the BBC websites:

- details of the BBC's application and the associated consultation process can be found on the Department of Culture, Media and Sport website at:
http://www.culture.gov.uk/CREATIVE/digital_curriculum.html.
- latest information from the BBC and the activities within the digital curriculum can be found at:
http://www.bbc.co.uk/info/policies/digital_curriculum.shtml.
- the letter from Tessa Jowell, Secretary of State, to the BBC approving the proposal can be found on the Department of Culture, Media and Sport website at:
http://www.culture.gov.uk/global/press_notices/archive_2003/dcms04_2003.html.

The schedule attached to the letter sets out the constraints and limits on the BBC and includes Becta's remit for determining amenability (condition 7).

¹ *Amenable or amenability: for the purposes of this exercise and in this context, amenable or amenability is taken to mean the extent to which something could be learnt or taught through or with the use of ICT.*

2. Becta's remit

The DCMS asked Becta to take on responsibilities in relation to the BBC's proposed digital curriculum service. In particular Becta is tasked with adjudicating in the question of amenability as set out in condition 7 of the DCMS conditions for the approval of the digital curriculum service:

The BBC must not produce resources covering more than 50% of those learning outcomes amenable to being taught by ICT. Since the proportion of learning outcomes amenable to being taught by ICT will vary from subject to subject and over time, the BBC must consult Becta as to which learning outcomes are so amenable in each subject. In the event of a dispute as to whether or not a particular learning outcome is amenable to being taught by ICT, Becta will have the final judgement. In reaching such a judgement, Becta will be looking to maximise the use of ICT in delivering the curriculum.

The judgements reached by Becta about which aspects of the national curricula are and are not amenable to ICT have potential relevance beyond the immediate exercise. The requirement that the BBC must not cover more than 50% of the amenable outcomes in any subject will limit the extent of BBC coverage of the national curricula for each subject and at each key stage (or equivalent age range in the UK countries). The findings on amenability and the issues relating to the 50% limit could also potentially influence how we view pedagogic practice with ICT as well as impacting on the education suppliers' market. Becta does not underestimate the relevance of the judgements to the commercial sector and the potential commercial impact. The decision to allow the BBC to make available a large number of potentially high-quality, free resources in a commercial market is significant.

While this report focuses on condition 7 of the DCMS conditions for the approval of the digital curriculum service, it should be noted that there are other interrelated conditions which will place additional constraints on the BBC. For example, condition 4 states:

The service must innovate continually, and exploit the extensive archives of the BBC and its media-rich resources, and promote technological and pedagogical experimentation. The service, taken as a whole, should be distinctive from and complementary to services provided by the commercial sector.

This condition, along with others, illustrates that ICT amenability is one aspect of a multi-faceted approval framework to which the BBC is bound by the DCMS conditions.

3. Becta's response to the remit

In carrying out its DCMS remit, Becta has sought at all times to act in accordance with the spirit of the Secretary of State's intentions as set out in the letter of approval of 9 January, 2003 and in a fair and transparent way. Becta has acted without prejudice or bias in reaching judgements about ICT amenability and when dealing with stakeholders, while seeking to promote the effective use of ICT and e-learning in education.

Becta has a key role in the strategic development of ICT in learning and teaching. As such the research, information and advice it disseminates form part of a coherent vision for the development of ICT. This vision is based on key underpinning beliefs, derived from the available evidence, about the nature of learning and teaching with ICT. From these, Becta has derived principles specific to the work it has taken on in relation to amenability:

- that ICT can, used effectively, support the learner in achieving learning outcomes
- that ICT is in the main best applied to make the abstract concrete, rather than as an abstract alternative to tangible, real-life experience where this is appropriate and readily available
- that ICT alone does not provide the range of learning experiences that amounts to a broad and balanced curriculum, and that a variety of ICT-based and non-ICT based resources should be employed in the effective delivery of a curriculum
- that even though an amenable learning outcome can be learnt or taught via ICT, this does not imply that it *should* be taught by ICT
- that recommendations relating to range and breadth should be taken fully into account when planning digital curriculum resources (in terms of recognising the scope of ICT in the curriculum under consideration)
- that, wherever possible, curriculum resources should provide opportunities for learners to develop and apply their ICT capability
- that the role of ICT in learning and teaching should be sustainable for learners and teachers
- that materials developed using public money should take the interests of the individual UK nations fully into account, while at the same time being shared where possible in order to make the best use of any investment
- that the adoption of international standards and specifications is vital to the development of a sound market for e-learning content and resources. (This ensures that resources and content can be shared and moved between systems, and, in the case of the BBC digital curriculum service, will maximise the value of this public investment in e-learning.)
- that materials developed with public money should be structured to allow inexpensive ongoing translation into the various languages of the UK, even after the originator's own work on them has ceased
- that digital learning resources should be created and designed to be accessible, usable (and re-usable) and inclusive to meet the needs of end-users
- that amenability will change over time as technologies and practices evolve.

Becta's overriding principle is to best reflect the needs of UK learners. This implies on the one hand, maximising the appropriate use of ICT, and on the other, not encouraging the use of ICT for its own sake, or as the only means of teaching or learning. The BBC is encouraged to make use of the guidelines and information available at Becta's ICT Advice site at, <http://www.ictadvice.org.uk>.

4. Becta's approach to the task

Becta has developed its approach to the task through thorough consideration of the four UK national curricula and consultation with a wide variety of stakeholders. These include the curriculum authorities for the nations, teachers and others experienced in the use of ICT for teaching and learning, and the commercial sector. This report shows the principles applied to the curriculum for Northern Ireland. The curriculum for Northern Ireland has recently been the subject of substantial review. The new curriculum, which has received ministerial approval, differs significantly from the other UK curricula (particularly from the National Curriculum for England), and this must be taken into account in any commissioning plans. As the BBC continues the roll out of its digital curriculum service, our dialogue with the appropriate curriculum bodies will continue.

For each nation, much of the information required to establish amenability and develop measures of '50%' is contained in custom and practice and national expectations. This is particularly true of the 50% measures. This work inevitably involves matters of professional judgement, and Becta will look to CCEA in Northern Ireland for detailed advice when reviewing the BBC's commissioning plans.

4.1 Defining 'learning outcomes'

Becta needed to determine what is, for the purposes of this exercise, a 'learning outcome'. In particular, Becta wished to develop an approach that would be coherent across the four nations.

A review of the Northern Ireland Curriculum was completed in 2004 and the revised curriculum will be implemented from 2006. The curriculum changes now agreed are designed to increase the degree of professional discretion available to teachers in matching the curriculum to the needs of learners.

The new curriculum consists of a number of areas subdivided into strands. Learning outcomes are defined within these strands. While these learning outcomes are specific to the area and strand, they are not subject specific, and indeed may relate to more than one 'subject'. Becta has (with the assistance of CCEA), in the annex to this report, shown how particular learning outcomes can be related to subject disciplines. This has been done for the purposes of this exercise only.

Becta recognises the force of a comment made in the commercial sector consultation: *Learning outcomes, couched as they are in simple language, belie the complex nature of their origins and the challenges of their reconstruction into a coherent personalised programme of study.*

The new curriculum is concerned with the professional role of the teacher, with adapting teaching and learning to reflect new understanding of the learning process and with an increased emphasis on the development of skills for life-long learning.

It is also important to stress the holistic nature of the new statutory provision. In all of the different areas the overarching purposes are to:

- reduce the level of prescription in the statutory requirements
- build on new understanding about how children learn and how they develop
- put learning for life and work at the centre of the curriculum rather than at the periphery
- give much greater emphasis to what children can do in terms of their skills and competences
- make connections across different parts of the curriculum more explicit
- use assessment more as a tool for improving learning rather than only a means of reporting on it.

We note that, in order to support this curriculum approach, it will be important that digital assets can be disaggregated for use in different ways.

4.2 Defining 'ICT amenability'

ICT amenability is not a term that has a standard definition in education and so it has been necessary to develop a consensual understanding of what is meant by the term 'ICT amenability'. For this reason in developing its approach Becta has consulted with:

- expert practitioners
- the statutory curriculum bodies in each country [ACCAC in Wales, CCEA in Northern Ireland, Learning and Teaching Scotland in Scotland, QCA in England]
- the commercial sector (as defined by the list of Curriculum Online producers/suppliers held on Becta's database).

Those consulted recognised that:

...establishing whether a learning outcome is, or is not, unambiguously ICT amenable is clearly problematic. Determining ICT amenability will depend on a number of factors, some of which are subjective in nature.

(Response from a major commercial-sector company to Becta's consultation)

4.3 Developing criteria for making judgements

As a first step, Becta consulted subject experts and asked them to consider the concept of ICT amenability 'in principle' – that is to say without taking into account any practical considerations such as suitability, available technology, or appropriateness. Becta then considered criteria that could be used to determine which of the learning outcomes considered amenable in principle were also amenable in practice, within the context of the proposed BBC digital curriculum service. These criteria were the subject of the consultation and were posted on the Becta website on 6 July 2004.

In general, those consulted welcomed, 'the systematic approach that Becta is seeking to apply to the concept of amenability.' (Response from commercial- sector company).

It was also commented that, 'the criteria to be used must be as objective as possible, to the extent that one would expect different panels applying the criteria to a particular outcome to produce the same yes/no answer.' (Response from commercial-sector sector company).

As a result of the consultation, Becta developed the following criteria for judging ICT amenability within the context of this exercise.

4.3.1 Amenable learning outcomes should be generally suitable for the online medium of the proposed BBC digital curriculum.

For the purposes of this exercise the term 'ICT amenable' is used to refer to digital assets, applications and tools that:

- can be accessed online (in real time) or in cached format from a local server (for example in a school network)
- can be used by a teacher or learner with a reasonable level of ICT capability, based on the expected outcomes for the New Opportunities Funded training for teachers² and the appropriate expectations within the relevant ICT curriculum for learners.

² Becta believes that the existing expected outcomes provide a reasonable basis for making decisions on what might be expected of teachers' ICT capability and that anything less demanding would unduly restrict the BBC's ability to innovate.

4.3.2 The technologies required to exploit the resources available in the proposed BBC digital curriculum service should be generally accessible and affordable.

For the purposes of this exercise the term 'accessible and affordable technologies' is used to mean technologies (commercially or freely available) that have potential for general adoption within the school and home environment and within the timeframe of the proposed development.

For example, it would be possible to produce a downloadable software voice recorder music tool which could be made generally available. This would then require the use of a microphone. Such technology is both accessible and affordable.

However, it is possible to produce downloadable assets and applications that require the use of sophisticated equipment such as high-end heart-monitoring equipment or sophisticated industry-standard software such as that used to produce realistic three-dimensional animations. These types of technologies are not generally accessible and affordable for schools and homes.

Becta considered taking a more restrictive view, limiting the BBC's proposed development to those technologies that are currently available in the majority of schools and homes. After due consideration, it was decided that this restriction could unduly hinder the BBC's ability to innovate. Becta believes that a key aspect of the 'distinctiveness' of the BBC's offering could include support for, and promotion of, emerging technologies and practices.

4.3.3 The use of ICT should be fit for purpose and appropriate in terms of pupil age and need, the use of time, and effectiveness.

For the purposes of this exercise the terms 'fit for purpose' and 'appropriate' are used to mean ICT-based activities that offer an authentic, meaningful way of developing children's knowledge, skills and understanding of the subject matter.

Certain aspects of children's learning depend largely on their physical experience of 'real world' phenomena. For example, an understanding of the concept of 'temperature' is built on practical experiences of, for instance, touching cold, tepid and warm water and experiencing subsequent physical reactions. It is not possible to develop a full, meaningful understanding and experience of the concept of temperature through a purely ICT-based activity. This contrasts with the use of ICT, for example, to make patterns visible within abstract data, which is fit for purpose and appropriate. In essence, Becta believes that ICT is generally best applied to make the abstract concrete, rather than as an abstract alternative to concrete, real-life experience.

For the purpose of this exercise, activities not considered fit for purpose include:

- activities on screen whose principal aim is to substitute for activity that could better be addressed through physical, concrete experience and where that physical, concrete experience reflects sounder pedagogy
- activities which introduce an unrealistic, additional burden on learners or teachers in terms of the ICT skills needed or the time taken.

In relation to any resources planned by the BBC for pupils with special educational needs (SEN), Becta recognises that consideration should be given to amenability in terms of the specific needs and requirements of these pupils. Given that SEN covers a spectrum of need, it is difficult to make specific judgements in advance of learning more from the BBC about the approach it will take in any particular case. In these cases Becta will engage in dialogue with the BBC, take further advice as required, and make any appropriate refinements to its view on amenability in a particular subject.

4.3.4 The ICT-amenable learning outcomes, taken together, should provide the basis of a coherent offering for a particular subject and key stage.

Some learning outcomes taken in isolation and considered out of context might appear not to be amenable to being taught using ICT. For example:

Pupils should have opportunities to describe and talk about real and imaginary experiences and about people, places, things and events.

Language and literacy, Key Stage 1, Talking and listening

However, such learning outcomes may address or contribute to key aspects of the subject and describe 'holistic' or 'integrated' skills that are part of effective learning in that subject. Examples include the skills of enquiry and investigation in science, and of listening, performing and composing in music. These holistic or integrated skills are part and parcel of a meaningful learning experience and when combined with the other learning outcomes constitute a coherent offering.

For the purposes of this exercise, it is appropriate, therefore, to judge learning outcomes which address holistic or integrated skills as amenable to ICT. This allows the BBC to address the outcomes that represent the holistic skills of the subject, ensuring that the proposed BBC materials are coherent and pedagogically sound. Becta considers it inappropriate to rule these out, as doing so would require the BBC to produce unsound materials. These holistic skills are also the most likely to be required by the curricula of all four nations, and, where it does not interfere with the development of materials that address the distinctive needs of the individual UK nations, Becta would wish to encourage the development of materials that can be shared by all.

4.4 Other aspects of amenability

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes should be taught by ICT, nor do they imply any view on how much ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen, and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4 – 14.

4.5 Determining the BBC's coverage of a maximum 50%

In the Northern Ireland Curriculum, holistic or integrated skills³ are presented separately from the statements that relate to relevant knowledge and understanding. Although this separation can be helpful for the purposes of planning and assessment, the two types of requirement are wholly integrated in terms of any teaching and learning activity. For this reason, to treat both types of requirement as countable towards the maximum 50% ruling would constitute 'double counting' of the underlying requirements in subjects such as science and mathematics. Therefore, the learning outcomes drawn from the curricula do not include these holistic or integrated skills for the purposes of determining the extent of the BBC's 50% coverage and the BBC is free to treat these skills in their resources.

4.6 The primary intentions of BBC digital curriculum service resources

Becta recognises that it is both impossible and undesirable to prevent creative teachers from utilising a resource aimed at one learning outcome to support another. For example, a creative teacher may choose to use a music resource to help teach sound within the science curriculum or a resource targeted at one key stage could be used to support learners with specific needs at a different key stage.

For this reason Becta proposes that the BBC's primary intended purposes for any resource form the basis of calculating 50% of the learning outcomes for any subject at any key stage.

4.7 The BBC's right to appeal

The learning outcomes for each subject at each key stage that meet Becta's amenability criteria (see **4.3.1** to **4.3.4**) will make up the amenable outcomes from which the BBC may select to produce resources that cover up to 50%. We note, however, that the DCMS remit allows the BBC to challenge Becta's decision where it feels it has evidence to show that a learning outcome is already, or might be made, amenable. Becta will deal swiftly with any individual appeal and in reaching judgement, will look to maximise the use of ICT in learning and teaching.

³ Becta's judgement on how these types of outcome should be treated for the purpose of defining ICT amenability is dealt with in 4.3.4.

5. Distinctiveness, complementarity and the choices before the BBC

In indicating how 50% of amenable learning outcomes is to be measured in each subject, no comment is implied as to which outcomes the BBC should cover. However, Becta would wish to draw the BBC's attention to particular features of the current digital content market and sources of information.

The commercial sector has already produced well-received material for much of the curriculum, which the BBC is no doubt considering very carefully. Becta would wish to endorse a key message of its recent consultation with the commercial sector that this investment of public money is best placed in breaking new ground and extending the use of ICT – that is, in creating resources for currently under-resourced areas of the curriculum, and for developing innovative and experimental approaches to extending and deepening learning through ICT.

The BBC will also want to consider the current use of ICT in schools and homes and how this can be developed and extended. Information from the Department of Education reports on the use of ICT in schools will be of great value, and Becta would wish to encourage the BBC to seek out and use such sources. Furthermore, as discussed in the remit from DCMS, the BBC will wish to give close attention to the recommendations for England of the Curriculum Online Content Advisory Board and to any relevant equivalents in Northern Ireland as these are released.

Northern Ireland curriculum: amenability findings for the subjects and key in the BBC's Year 1 commissioning plans.

1a) Language and literacy at Key Stage 1

The learning outcomes for language and literacy at Key Stage 1 are organised around the four modes of language: talking and listening, reading, and writing. The outcomes have been examined for amenability.

A majority of the learning outcomes in talking and listening might be considered non-amenable if taken in isolation and out of context. While it would be difficult to argue that the outcomes could all be learnt or taught via ICT, it is clear that ICT might be used in many cases to support and extend learning. For example the outcome:

Listening to, responding to and exploring stories

could be supported by e-books and other electronic media, although one would also wish for non-ICT media to be used in the development of the outcome.

Furthermore, these outcomes address key aspects of the subject and describe 'holistic' or 'integrated' skills that are part of effective learning in the subject. As the introduction to the Curriculum states:

"Language and literacy should be considered in a holistic and recursive way."

Measuring 50%

There are enough outcomes for language and literacy at Key Stage 1 to provide a reasonable basis for measuring the 50% in terms of amenable learning outcomes.

Amenability statement

The following outcomes for language and literacy at Key Stage 1 are judged to be **not** amenable:

- taking turns at talking and listening in group and paired activities

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes *should* be taught by ICT, nor do they imply any view on *how much* ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4–14.

1b) The World Around Us (geography sections) at Key Stage 2

The learning requirements for geography at Key Stage 2 are presented within the curriculum for The World Around Us. This curriculum connects learning across the subject disciplines of geography, history, science and technology, and is organised into three broad strands:

- The way we live
- Movement
- Our world.

Each strand has a number of statutory learning requirements. Some of these are specific to one subject, while others may be addressed by all the subjects. This is to promote a more flexible and integrated approach to learning and teaching in the area of The World Around Us.

The statutory learning requirements or intentions that draw mostly on geography are as follows.

The way we live

- Explore how we live now and how people lived in the past
- Compare and contrast different places, environments and weather conditions now and in the past
- Consider ways of caring for the environment

Movement

- Investigate factors which cause people to move both now and in the past
- Research how places fit within the wider world and are interdependent through the supply of goods and services

Our world

- Explore how to best care for a changing environment
- Investigate the effect of natural disasters and extreme events on people and places
- Investigate local habitats

In addition, there are geography-specific statements from which teachers can select to address these statutory requirements. There is also a list of holistic, or integrated skills relating to The World Around Us. Good pedagogy demands that they should be taught and learned in an integrated fashion and, for the reasons already given (see **4.3.4**), these skills are not included in the list of learning outcomes against which the 50% would be measured.

Measuring 50%

In determining whether the BBC's commissioning plans for The World Around Us (geography) at Key Stage 2 are within the 50% limit, Becta will look to CCEA for advice in making its assessment.

Amenability statement

There are no outcomes judged to be not amenable.

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes *should* be taught by ICT, nor do they imply any view on *how much* ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4–14.

1c) The World Around Us (history sections) at Key Stage 2

The learning requirements for history at Key Stage 2 are presented within the curriculum for The World Around Us. This curriculum learning across the subject disciplines of geography, history, science and technology, and is organised into three broad strands:

- The way we live
- Movement
- Our world.

Each strand has a number of statutory learning requirements. Some of these are specific to one subject, while others may be addressed by all the subjects. This is to promote a more flexible and integrated approach to learning and teaching in the area of The World Around Us.

The statutory learning requirements or intentions that draw mostly on history are as follows.

The way we live

- Find out about themselves
- Explore how we live now and how people lived in the past
- Investigate how the way we live has changed over time

Movement

- Investigate factors which cause people to move both now and in the past
- Investigate how inventions and discoveries have made an impact on 'the world around us'

Our world

- Investigate how change takes place over time
- Research how an aspect of 'their world' compares to that of a particular time in the past

In addition, there are history-specific statements from which teachers can select to address these statutory requirements. There is also a list of holistic or integrated skills relating to The World Around Us. Good pedagogy demands that they should be taught and learned in an integrated fashion and, for the reasons already given (see **4.3.4**), these skills are not included in the list of learning outcomes against which the 50% would be measured.

Measuring 50%

Since the requirements of the programme of study for history at Key Stage 2 form a holistic set of skills and knowledge, for reasons given in **4.5** it is not appropriate to measure coverage of the subject in terms of its learning outcomes. Becta will consult with CCEA on the BBC commissioning plans in making judgements on the 50%.

Amenability statement

Based on both the inspection of individual outcomes and an assessment of the role of ICT in the holistic development of skills in Key Stage 2 history, Becta judges that there are no outcomes that are not amenable in the curriculum for The World Around Us (history sections) at Key Stage 2.

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes is restricted to the purposes of this exercise and should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes should be taught by ICT, nor do they imply any view on how much ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4–14.

1d) **Modern languages at Key Stage 3**

The learning requirements for modern languages (in this case, French) at Key Stage 3 are organised into three broad themes:

- Developing language-learning skills
- Developing cultural awareness
- Language skills.

Together, the requirements under these headings list a set of holistic, or integrated, skills that contribute towards a holistic capacity in this subject. Since pupils develop these skills in the same contexts, for example, 'dealing with information' (Developing language learning skills) in the context of '[using] authentic materials' (Developing cultural awareness), to require the BBC to deal with up to 50% of these, but not deal with the others, would be to require it to produce pedagogically unsound resources.

We note, however, that some requirements are not amenable. These are listed below. In particular, 'meet native speakers of the target language' is considered non-amenable in the context of speaking and listening and responding, though amenable in the context of reading and writing. It is possible that developments in technology will alter this position, and this outcome may be reviewed at some point in the future.

Measuring 50%

Since the requirements of the programme of study for modern languages at Key Stage 3 (as with the rest of the curriculum) form a holistic approach, it would be pedagogically unsound to determine 50% on this basis (see 4.5). Becta will look to CCEA for detailed advice when reviewing the BBC's commissioning plans for resources in this area.

Amenability statement

The following outcomes in modern languages (French) at Key Stage 3 are judged to be not amenable:

- [Pupils should be taught to] take part in short exchanges and conversations
- Meet native speakers of the target language (in the context of speaking and listening).

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes is restricted to the purposes of this exercise and should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes *should* be taught by ICT, nor do they imply any view on *how much* ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4–14.

1e) **Mathematics and numeracy at Key Stage 1**

'Processes in mathematics (Developing critical and creative thinking skills)' lists a set of holistic or integrated mathematical skills. These lists are judged to be of the type described in section 4.3.4 above, for which good pedagogy requires that they should be taught and learnt in an integrated way. These then are considered to be amenable for the purposes of this exercise but, as detailed in section 4.5, will not be included when determining the question of 50% coverage.

The remaining requirements have been examined for amenability. For some of these, appropriate learning and teaching requires first-hand physical exploration and experience of the real world as described in section 4.3.3. For example:

*Make constructions, pictures and patterns using 2-D and 3-D shapes
Shape and space; exploration of shape*

It would not be fitting or appropriate to introduce the teaching and learning of this type of aspect of mathematics through an ICT medium. However, it is feasible that an ICT-based resource might be used to consolidate and apply understanding of the previously learnt concepts.

The BBC has made it clear to Becta that in developing resources for Key Stage 1 mathematics it intends to focus on developing skills of problem solving, and using and applying knowledge and understanding rather than the teaching of concepts. It is in this sense, then, that the amenability of the learning outcomes has been determined as shown below. Mathematics is not, however, considered entirely amenable: there are some outcomes where using and applying knowledge or problem solving would most appropriately be done through a concrete, real-world experience.

Measuring 50%

The BBC may select up to 50% of those outcomes judged to be amenable by Becta. For the purposes of determining 50%, the 'Processes in mathematics' section is not included in the equation, as this would constitute double counting (see 4.5).

Amenability statement

The following outcomes in mathematics and numeracy at Key Stage 1 are judged to be **not** amenable:

Measures: choose and use simple measuring instruments, reading and interpreting them with reasonable accuracy

Measures: make estimates using arbitrary and standard units.

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes is restricted to the purposes of this exercise and should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes *should* be taught by ICT, nor do they imply any view on *how much* ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4–14.

1f) Music at Key Stage 2

The learning requirements for music at Key Stage 2 are organised into three broad themes:

- Working creatively with sound
- Singing and performing with simple instruments
- Listening and responding to their own and others music making.

Together, the requirements under these headings describe a set of holistic skills of the type described in section 4.3.4 above. Since pupils develop these skills in the context of each other, for example listening skills in the context of working creatively (composing, for example) and playing, to require the BBC to deal with some of them but not others would be to require it to produce pedagogically unsound resources.

Some requirements, taken in isolation, would appear not to be amenable. For example:

Children should have opportunities to [sing] a variety of songs and simple rounds.

However, ICT-based resources might reasonably be developed that will support the teaching and learning of singing, for instance by stimulating interest, modelling possibilities and offering opportunities for reflection and analysis. We understand that the BBC is currently planning resources of this kind.

Measuring 50%

Since the requirements of the programme of study for music at Key Stage 2 form a holistic set of knowledge and skills, for reasons given in section 4.5 it is not appropriate to measure coverage of the subjects in terms of its learning outcomes. Becta will consult with CCEA on the BBC's commissioning plans in making judgements on the 50%.

Amenability statement

Based on both the inspection of individual outcomes and an assessment of the role of ICT in the holistic development of skills in Key Stage 2 music, Becta judges that there are no outcomes that are not amenable to ICT.

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes is restricted to the purposes of this exercise and should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes *should* be taught by ICT, nor do they imply any view on *how much* ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4-14.

1g) Religious education at Key Stage 2

We refer throughout this note to the document *Proposals for a revised core syllabus in RE in grant-aided schools in Northern Ireland* (September 2003). We recognise that this proposed syllabus is subject to consultation and therefore to change. As a consequence, these notes may also be subject to revision. It should also be noted that the proposed syllabus relates to grant-aided schools only. The proposed syllabus has developed via a steering group and working group established by the four main Christian Church leaders in Northern Ireland.

The syllabus sets out the content pupils should be given the opportunity to study and explore, and what pupils should be able to do in relation to this. The 'pupils should be able to' statements are the learning outcomes. We note that the learning outcomes are themselves non statutory and 'illustratory material for the guidance of teachers'; however, as they exemplify 'specimen' outcomes in relation to the subject content studied by pupils, for the purposes of this exercise Becta will regard these outcomes as representative.

At Key Stage 2 the syllabus is organised in three parts: The Revelation of God, The Christian Church and Morality. The learning outcomes for these sections have been assessed for amenability to ICT.

Outcomes are various in their focus and specifications:

Pupils should be able to recognise that the early followers of Jesus met together to break bread (LO2, a)

Pupils should be able to locate on a map places associated with the spread of the church (LO2, a)

Pupils should be able to take part in an inter-school activity (LO3, b).

ICT could be used to support all these outcomes in some degree. Quite a number of activities are practical, involving designing and making, collecting and comparing. Again ICT may be used effectively to support these outcomes. One might argue that some outcomes are not amenable, for example:

Collect newspaper cuttings which show examples of good and evil in the world.

However, 'cuttings' could be collected from electronic editions of newspapers and their archives. In general, the learning outcomes, though varied, are of a range which can be supported by various uses of ICT – for example to research, present, explore (through simulations, for instance) and investigate.

Measuring 50%

The learning outcomes are regarded as being sufficiently numerous to be viable as the means of measuring the 50%. The BBC is required not to exceed 50% coverage in any subject and key stage. For the purpose of this exercise, the learning outcomes are judged to be of broadly similar size: therefore the BBC may select up to half the learning outcomes for its resources at Key Stage 2.

Amenability statement

There are no outcomes judged to be **not** amenable in the Key Stage 2 *Proposals for a revised Core Syllabus in RE in Grant-Aided Schools in Northern Ireland*.

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes is restricted to the purposes of this exercise and should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes *should* be taught by ICT, nor do they imply any view on *how much* ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT.

For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4–14.

1h) The World Around Us (science sections) at Key Stage 2

The learning requirements for science and technology at Key Stage 2 are presented within the curriculum for The World Around Us. This curriculum connects learning across the subject disciplines of geography, history, science and technology and is organised into three broad strands:

- The way we live
- Movement
- Our world.

Each strand has a number of statutory learning requirements. Some of these are specific to one subject, while others may be addressed by all the subjects. This is to promote a more flexible and integrated approach to learning and teaching in the area of The World Around Us.

The statutory learning requirements or intentions that draw mostly on science are as follows.

The way we live

- Develop competence, tools and techniques when designing and making objects or models relating to the strand

Movement

- Investigate how forces can affect movement
- Investigate how inventions and discoveries have made an impact on the world around us
- Develop competence and tools and techniques when designing and making objects or models relating to the strand

Our world

- Investigate materials, including their properties and uses
- Investigate how change takes place over time
- Investigate local habitats
- Explore how best to care for a changing environment
- Develop competence and tools and techniques when designing and making objects or models relating to the strand

In addition, there are statements specific to science and technology from which teachers can select to address these statutory requirements. There is also a list of holistic or integrated skills relating to The World Around Us. Good pedagogy demands that they should be taught and learned in an integrated fashion, and for the reasons already given (see **4.3.4**), these skills are not included in the list of learning outcomes against which the 50% would be measured.

The BBC has made it clear to Becta that in developing resources for Key Stage 2 science it intends to focus on developing skills of problem solving, using and applying knowledge and understanding, and investigation rather than the teaching of concepts. It is in this sense, then, that the amenability of the learning outcomes has been determined as shown below.

Measuring 50%

The BBC may select up to 50% of those outcomes judged to be amenable by Becta.

Amenability statement

There are no outcomes in Key Stage 2 science judged to be not amenable.

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes is restricted to the purposes of this exercise and should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Technology statements not counted as part of the science set of outcomes

The following statements are given as the outcomes relating to technology; this is not to dispute their relevance to outcomes which are defined as part of the list of 'science' outcomes (see above), but for the purposes of this exercise, it is helpful to distinguish between the two.

- Develop competence and tools and techniques when designing and making objects or models relating to the strand Design and make an item for personal protection, such as cycle helmets or shin guards
- Design and making a model that uses a renewable energy source
- Design and make a model which uses a pneumatic or hydraulic system, or one that is battery powered

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes *should* be taught by ICT, nor do they imply any view on *how much* ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4–14.

2a) Business studies at GCSE

The learning requirements for business studies at GCSE are given in the specifications set out by CCEA and approved for teaching by the regulatory authorities in Northern Ireland, England and Wales. The requirements have been examined for amenability.

Some of the requirements describe a holistic or integrated group of skills. Good pedagogy demands that these should be taught and learned in an integrated fashion, and for the reasons already given (see section 4.3.4), these skills are not included in the list of learning outcomes against which the 50% would be measured.

The remaining requirements could, in principle, be taught via ICT (though see note on context below).

Measuring 50%

In this subject, the GCSE specifications (syllabuses) produced by the awarding bodies must be used as the basis for the determination of 50%.

Amenability statement

Based on both the inspection of the learning requirements set out in the specifications and an assessment of the role of ICT in the holistic development of skills, Becta judges that there are no outcomes judged to be not amenable in the specifications for GCSE business studies.

In this case, as elsewhere, Becta's judgement on the amenability of learning outcomes is restricted to the purposes of this exercise and should not be interpreted as a requirement or recommendation that they should be taught or supported by ICT-based resources.

Context

For the purpose of fulfilling the DCMS remit, Becta has considered the question of ICT amenability of learning outcomes on a case-by-case basis, in order to judge which learning outcomes are and are not amenable in this context. Those judged to be not amenable lie outside the scope of the proposed BBC digital curriculum service.

Becta maintains that any judgements reached on the ICT amenability of learning outcomes are made for the purposes of this exercise only and are restricted to use in this context. Any judgements made by Becta do not imply that 'amenable' learning outcomes *should* be taught by ICT, nor do they imply any view on *how much* ICT is appropriate for any key stage in any subject.

Indeed, Becta recognises that a curriculum should not be learned or taught solely via ICT, as ICT resources alone do not provide the range of learning experiences that amount to a broad and balanced curriculum. Even where it may find a subject to be wholly amenable in relation to the learning outcomes considered, Becta does not wish to suggest or imply in any way that a subject could or should be resourced entirely by ICT. For all subjects, an appropriate balance should be struck between the time pupils spend working at the screen and the time spent elsewhere.

In addition, while a learning outcome may be judged amenable, it is still the case that any particular learning or teaching resource developed may or may not be effective and appropriate. Becta strongly recommends that the BBC take account of the advice provided in the published Northern Ireland Curriculum 4–14.

advice

evidence

standards



British Educational Communications
and Technology Agency

Millburn Hill Road, Science Park
Coventry CV4 7JJ
Telephone: 024 7641 6994
Facsimile: 024 7641 1418

Email: becta@becta.org.uk
Website: <http://www.ictadvice.org.uk>