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ICT, amenability and the BBC digital curriculum service in Scotland:

Supplement 1, January 2005



British Educational Communications
and Technology Agency

This document, published in January 2005, supplements Becta's report to the DCMS, *ICT, amenability and the BBC digital curriculum service in Scotland*, published in the autumn of 2004.

It should be read in conjunction with that report.

Annex

5–14 National Guidelines for Scotland: amenability for subjects and age ranges for the BBC's Year 1 commissioning plans

3a) Citizenship, 9–11

Local and global citizenship is one of the five national priorities for education.

Education for Citizenship in Scotland sets out areas of knowledge and understanding relevant to citizenship along with 'core' and 'generic' skills of importance to being an effective citizen. These apply to pupils throughout the school years. Delivery is cross-curricular.

Measuring 50%

The core and generic skills are intended to be repeatedly visited at an appropriate level at each stage of school. For this reason, the BBC may choose up to half the outcomes in these sections. The BBC may also choose up to half the areas of knowledge and understanding of those relevant to this age group.

Amenability statement

Based on both the inspection of the outcomes and an assessment of the role of ICT in the development of skills, knowledge and understanding in citizenship, 9–11, Becta judges that there are no outcomes that are **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.

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 which 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 age range 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 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, as it moves forward with its planning, take account of the advice provided in the sections of the 5–14 national guidelines on teaching and learning using IT.

3b) Technology, 11–14

Technology forms part of environmental studies and is described in *Environmental studies 5–14: society, science and technology*. It is divided into three aspects:

- Knowledge and understanding
- Skills in designing and making
- Developing informed attitudes.

The requirements have been examined for amenability. Together, the requirements set out under the second aspect describe a set of inter-related 'holistic' skills of the type referred to in section 4.3.4 in *ICT, amenability and the BBC digital curriculum service in Scotland*. Since pupils develop these skills in the context of each other – for example, identifying a problem may be part of the 'Preparing for tasks' strand or of the 'Reviewing and reporting on tasks' strand – to require the BBC digital curriculum service to deal with some of them, but not others, would be to require it to produce pedagogically unsound resources.

Measuring 50%

The BBC may select up to 50% of the outcomes set out under the two remaining aspects, 'Knowledge and understanding' and 'Developing informed attitudes'.

Amenability statement

Based on both the inspection of individual outcomes and an assessment of the role of ICT in learning in technology 11–14, Becta judges that there are no outcomes that are **not** amenable to ICT in the requirements for technology.

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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, as it moves forward with its planning, take account of the advice provided in the sections of the 5–14 national guidelines on teaching and learning using IT.

3c) English language, age range 7–11, levels C–D

The attainment targets (outcomes) for the English language 5–14 guidelines are organised into four sections: listening, talking, reading and writing. The attainment targets have been examined for amenability.

In the listening and talking sections, one might consider the majority of these targets non-amenable if taken in isolation and out of context. While it would be difficult to argue that the requirements under these headings could be taught via ICT, it is clear that ICT might be used to support and extend learning. Furthermore, these requirements address key aspects of the subject, and describe ‘holistic’ or ‘integrated’ skills that are part of effective learning in the subject. Given these considerations, it is appropriate to judge these learning outcomes as amenable to ICT.

Measuring 50%

Much of the information required to establish the 50% measures is contained in custom and practice and national expectation, and Becta will look to Learning and Teaching Scotland for detailed advice when reviewing the BBC’s commissioning plans.

Amenability statement

The following outcomes in English language 7–11 are judged to be **not** amenable.

- Talk to others in a group or one-to-one activity, and contribute appropriately to the purpose of the activity by asking and answering question (C)
- Talk to others in a group or one-to-one activity, and contribute appropriately to the purpose of the activity by asking and answering questions relevantly and by making statements which show some awareness of the ideas of others (D)
- Listen to others in group or one-to-one activities, and respond by making relevant comments and offering an opinion (C)
- Listen to others in group or one-to-one activities and respond relevantly by questioning, supporting an opinion or offering an alternative point of view (D)
- In the writing tasks . . . , employ a fluent, legible style of handwriting (C)
- In the writing tasks . . . , employ a fluent, legible style of handwriting, and set out completed work giving attention to presentation and layout (D).

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

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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, as it moves forward with its planning, take account of the advice provided in the sections of the 5–14 national guidelines on teaching and learning using IT.

3d) Environmental studies – People and Place, age range 11–14, levels D–F

In Scotland the study of geography appears as the People and Place component of the 5–14 environmental studies document. People and Place analyses the spatial relationships and processes of the planet, looking at case studies from a local, European and global perspective. Teachers are encouraged to include the study of key issues such as global and environmental citizenship, and sustainability.

The subject also includes key enquiry skills increasing in complexity from level A through to level F. These are:

- Preparing for tasks (planning)
- Carrying out tasks (implementation)
- Reviewing and reporting on tasks (reviewing).

Within all the social subjects, the enquiry skills are also developed in an integrated way with knowledge and understanding, and are generally contextually embedded in topics planned across two or more strands (see opposite). Pupils are encouraged when looking at a particular topic both to develop their knowledge and understanding and also to improve their enquiry skills. This integration means that it is inappropriate to separate them out for the purposes of this amenability work, and therefore these enquiry skills are not included in the list of learning outcomes against which the 50% will be measured.

The four key strands through which the learning outcomes are organised are:

- Using maps
- The physical environment
- The human environment
- Human and physical interactions.

In addition, 'Developing informed attitudes' underpins the entire social subjects programme and is a prerequisite for the development of citizenship.

Measuring 50%

Since the requirements of the programme of study for geography at S1 and S2 are either part of a holistic knowledge/skill set or are interdependent and cannot be taught entirely separately, the BBC may develop resources for the equivalent of up to half the learning outcomes delineated in the 5–14 environmental studies guidelines. There is no prescribed time set aside for any of the learning outcomes within levels D–F and they are generally interpreted as being of equal time and importance. This means there are a total of 25 separate learning outcomes across the four key strands.

Amenability statement

There are no outcomes judged to be **not** amenable within levels D–F covered in the 5–14 environmental studies guidelines.

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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, as it moves forward with its planning, take account of the advice provided in the sections of the 5–14 national guidelines on teaching and learning using IT.

3e) Environmental studies (historical studies – people in the past), age range 5–11, levels A–D

The amenability statement for this subject at this age range can be found at Annex 1c) of *ICT, amenability and the BBC digital curriculum service in Scotland*: Becta's report to the DCMS, of which the current document constitutes Annex 3.

3f) Physical education, age range 5–11, levels A–D

The 5–14 guidelines for physical education list three main outcomes: Using materials, techniques, skills and media; Expressing feelings, ideas, thoughts and solutions; Evaluating and appreciating. A number of strands are linked to each of these outcomes including 'Investigating and developing fitness', 'Applying skills', and 'Creating and designing'.

The guidelines do not set out a specific set of activities through which the outcomes and strands are developed; however, the guidelines make very clear that a balanced and diverse programme of activities should be developed in relation to the guidelines, including gymnastics, dance, sports and games, and, local circumstances permitting, swimming.

The attainment targets (learning outcomes) are broadly holistic in nature, for which good pedagogy demands that they be taught and learned in an integrated fashion; for example, 'applying skills' involves 'using the body'.

Used appropriately, ICT can support the achievement of the attainment targets (learning outcomes). However, it is important to note that it is vital that ICT help learners to make the most of their entitlement, rather than require them to spend a long time away from doing the various physical activities.

Measuring 50%

The requirements for physical education form a set of holistic or integrated skills as described in section 4.3.4 of *ICT, amenability and the BBC digital curriculum service in Scotland*. As stated in section 4 of the report, much of the information required to establish the 50% measures is contained in custom and practice and national expectation. Becta will look to Learning and Teaching Scotland for detailed advice when reviewing the BBC's commissioning plans for resources in physical education.

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 physical education, Becta judges that there are no outcomes in the guidelines for physical education in Scotland (levels A–D) that are **not** amenable to being taught by 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

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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 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, as it moves forward with its planning, take account of the advice provided in the sections of the 5–14 national guidelines on teaching and learning using IT.

3g) Environmental studies: science, age range 5–7, levels A–B

'Skills in science – investigating' lists a group of related 'holistic' or 'integrated' skills of scientific investigation. These skills are judged to be of the type described in section 4.3.4 of *ICT, amenability and the BBC digital curriculum service in Scotland*, 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 of the report, will not be included when determining the question of 50% coverage.

The outcomes in the 'Knowledge and understanding' sections have been examined for amenability. For many of these, appropriate learning and teaching requires first-hand physical exploration and experience of the real world as described in section 4.3.3 of the report. An example of this is:

Pupils are able to make observations of differences in the properties of common materials

Knowledge and understanding – Materials from Earth (level B)

It would not be fitting or appropriate to introduce the teaching and learning of this type of aspect of science through the medium of ICT, since pupils' understanding in the abstract of patterns of behaviour of natural phenomena is founded on their personal physical experience of the real world. However, it is also the case that ICT-based resources might be used to consolidate, extend and apply understanding of these previously encountered concepts.

The BBC has made it clear to Becta that in developing resources for science in the 5–7 age range, 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 learning outcomes are considered amenable, and only to the extent that resources develop and apply experience that has come from the real world.

Measuring 50%

The BBC may select up to 50% of those outcomes deemed to be amenable by Becta. For the purposes of determining 50%, only the outcomes in 'Knowledge and understanding' in science need be counted; the 'Skills in science – investigating' outcomes are regarded as holistic (see section 4.3.4 of the report) and are not to be counted as part of the 50%.

Amenability statement

There are no outcomes judged to be **not** amenable at levels A–B in the environmental studies 5–14 guidelines for science.

Context

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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, as it moves forward with its planning, take account of the advice provided in the sections of the 5–14 national guidelines on teaching and learning using IT.

4a) **Business management, 14–16**

The specifications for business management at Standard Grade are set out by SQA. These specifications have been examined for amenability.

The course content is set out in four areas of study:

- What is business?
- How do businesses develop and perform?
- What resources do businesses use?
- How are businesses managed?

Alongside the areas of study, there are 'functional areas' which are intended to be integrated across the areas of study; these include marketing and human resources. Notably, IT is also one of the functional areas to be integrated across the content studied. Studying the function of ICT in each area of business specified is very likely to require the use of ICT, for example in examining the forms of electronic communication used in business or important software such as databases. Equally ICT offers opportunities to simulate and model a range of business scenarios.

Measuring 50%

In this subject, the Standard Grade syllabus produced by SQA 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 in business management, Becta finds that there are no outcomes that are judged to be **not** amenable in the specifications.

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

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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.

4b) Field studies for pupils with severe learning difficulties (SLD) or profound and multiple learning difficulties (PMLD), 11–16

Field studies fits particularly into the 'Understanding and relating to the environment' section of the Elaborated Curriculum in Scotland. However, learners with SLD/PMLD working within local and other environments on 'field study' skills will be developing skills relevant to other areas of the Elaborated Curriculum – in particular, 'Personal and social development'.

These pupils generally have complex needs, and may require the development of early skills such as attending to stimuli, or anticipating (predicting) the behaviour of familiar objects and people, through to the skills described in level A of the 5–14 national guidelines.

The integrated programme essential to these learners will use a range of relevant and meaningful contexts to develop life skills. While personal physical experience of the environment is of enormous importance to the learning of these pupils, ICT-based resources can supplement and extend the environment, adding to the range of experiences available. For example, a resource inspired by a trek through the rainforest can provide aspects of the visual and auditory features of moving through heavy vegetation, though clearly it does not itself constitute an experience of the rainforest.

Such resources can extend and support learning in all the aspects covered in this proposal, and for that reason, there are no non-amenable outcomes.

Measuring 50%

Many pupils with SLD or PMLD are likely to be working below level A of the 5–14 national guidelines, so learning outcomes drawn from the curriculum – while relevant for planning – do not form a suitable basis for measuring 50%. In this area, the BBC proposal has described twenty 'contexts', which between them cover the range of environments (for instance, home environment, school environment or seaside) that can be experienced by pupils locally and further afield. This approach forms an acceptable basis for measuring 50%.

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.

Amenability statement

There are no outcomes judged to be **not** amenable in field studies for SLD/PMLD pupils aged 11–16.

Context

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4c) Financial capability, 14–16

There are no specific guidelines at present for the subject of financial capability at 14–16 in Scotland. However, a CD-ROM, ‘Facing up 2 finance’ was published by Learning and Teaching Scotland in 2002. With the agreement of Becta, the BBC has chosen to use the learning outcomes from this publication as the basis for its provision for the subject in Scotland.

‘Facing up 2 finance’ sets out four strands of learning for financial capability:

- Financial understanding
- Financial competence
- Financial responsibility
- Financial enterprise.

Management of personal finance occurs increasingly through ICT (using budgeting software, for instance) and through online channels (such as online banking and tax returns). In addition sources of information on financial matters are frequently based online. ICT is thus both an important tool and also a context for learning across the four strands of learning.

Consideration of a range of learning outcomes from ‘Facing up 2 finance’ demonstrates the relevance of ICT: for example, ICT is important in ‘learning to keep financial records’, ‘to analyse financial information’ and ‘to understand the impact of advertising’. In addition, ICT offers considerable scope to model financial situations and problems.

Measuring 50%

In this subject, the learning outcomes specified in 'Facing up 2 finance' produced by Learning and Teaching Scotland should be used as the basis for determining 50%.

Amenability statement

Based on both the inspection of the learning outcomes set out in 'Facing up 2 finance' and an assessment of the development of knowledge and skills in financial capability, Becta judges that there are no outcomes that are **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

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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.

4d) Mathematics at 14–16, statistics elements

The statistical elements of the SQA specifications build on the Information-handling strand of the 5–14 mathematics guidelines. The specifications which particularly build on this strand are in 'Graphs and tables' and the sections explicitly titled as statistical such as 'Use of simple statistics'.

ICT can contribute significantly to these areas of mathematics. Graphing programs and spreadsheets for example are in wide use. More generally, ICT is very suitable to the collection, presentation and analysis of data.

Measuring 50%

In this subject, the SQA arrangements and specifications must be used as the basis for the determination of the 50%. As the statistical elements considered here are part of the main mathematics specifications, the statistical elements covered by the BBC will be considered part of the total 50% for 14–16 mathematics.

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 in the subject, Becta judges that there are no outcomes that are **not** amenable in the specifications.

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