Unit 10: Using Multimedia Software

Internally assessed

Introduction

Everything is created to be communicated! Advances in digital technology have transformed the way we live and learn and, in particular, how we communicate.

One of the major areas of development is digital multimedia which combines two or more media types such as text, graphics and video, and allows us to present information in ways that have a major impact on the audience. Multimedia is widely used throughout the world in business, education, industry and leisure.

You will already have gained experience of some of the ICT tools and techniques needed to develop a multimedia product. In this unit you will increase your understanding of the features and possibilities of these and other tools so that you can combine them to produce well-designed multimedia products that communicate your ideas effectively.

Your work for this unit will culminate in the design, development and testing of an interactive multimedia product for a specified target audience.

You will establish the functional requirements of the product at the outset and carry out formative evaluation and testing throughout its development. You will learn the importance of seeking and making use of feedback from others to help you in your work.

The summative evaluation of your work for this unit will include a self-assessment of your current skill level and an indication of what else you need to know or be able to do in order to further enhance your ability to produce interactive multimedia products

This is a user-focused unit. The knowledge and skills developed in this unit are particularly relevant to those who use advanced ICT skills on a daily basis at work or at school/college for personal, social and work-related purposes.

Recommended prior learning

This unit builds on the knowledge and skills related to producing on-screen publications that you acquired in *Unit 1: The Information Age*.

What you need to learn

10.1 Applications of multimedia

You have already gained some experience of producing a multimedia product — your e-book for Unit 1. This was designed to communicate information about the digital society in which you live. Every multimedia product is designed to carry some communication to an audience. In this unit you will identify and learn to use more advanced multimedia tools and techniques and apply these skills in the creation of useful multimedia products.

You will need to explore the use of multimedia in a variety of contexts, including:

- education and training
- entertainment
- marketing and advertising
- teleconferencing
- publishing
- interactive television
- product demonstration.

In each case, you should evaluate the multimedia features used, the effectiveness of the underlying design and the extent to which the product is fit for purpose.

10.2 Functional specification

You are very unlikely to produce a multimedia product that completely fulfils all its objectives unless you are absolutely clear what these are.

You will learn the value of a functional specification, both in terms of explaining to others what it is you are aiming to achieve and helping to ensure that you never lose sight of your goals. You must be able to produce a functional specification at the outset, specifying:

- the purpose of the multimedia product
- the information it must supply
- how that information must be presented
- how the product will be used
- how you will judge the effectiveness of your solution.

The functional specification is not a static document. It is quite possible that once you begin work your understanding of what is required alters or becomes clearer.

You will learn the value of a functional specification, both in terms of explaining to others what it is you are aiming to achieve and helping to ensure that you never lose sight of your goals.

10.3 Product design

The effectiveness of any multimedia product lies in the quality of the design.

Designing a solution involves making decisions about:

- structure and navigation
- graphical design
- interactivity and user interface
- use of multimedia components
- timelines and storyboards
- layout and presentation
- consistency
- testing.

There is almost certainly more than one way of meeting the requirements. You will need to experiment with alternative designs before finally deciding which one to choose.

The more expert you get at applying multimedia tools and techniques, the better you will be at producing detailed designs up front. However, at this stage you will probably find it easier to use an iterative approach to software development.

You will be familiar with this approach if you have studied *Unit 5: Web Development*. It involves producing a series of prototypes. Each prototype brings you that much closer to a final fully-functional solution and helps clarify in your mind what it is you really want the product to do.

In the context of this unit, a prototype is a working, but incomplete, multimedia product which can be used to:

- refine your initial design and try out alternatives
- test that the product is functional and works as expected
- check for ease of use
- test for robustness
- test users' response/reaction to the product.

Prototyping enables you to interweave design, implementation and testing, rather than each of these being a distinct one-off stage of development.

10.4 Navigation

Another crucial element of any multimedia product is the navigation structure — the way in which the user can move around/through the product.

You will learn about the need for different navigation structures in relation to the product being developed including:

- hierarchical
- linear.

10.5 Graphical design

It is essential that you learn to make your multimedia products as user-friendly as possible by structuring the content appropriately and making effective use of available presentation and formatting features.

By looking critically at a range of products and by experimentation you will learn about:

- user interface
- effective use of colour including
  - contrast
  - pattern
  - background and borders
  - web-safe colours
- the impact of layout on the overall effect
  - composition
  - shape
  - balance
- how fonts can enhance or detract from the readability
  - styles
  - typefaces
  - emphasis
- consideration of presentation method
  - screen size
  - nature of audience
- consistency
- the importance of a corporate image/brand, including logos.

10.6 Interactivity design

Much of the success of digital multimedia is due to its interactive capabilities, which allow users to interact with the product by responding to prompts.

You will learn about suitable uses of interactive user elements, including:

- buttons
- image maps
- hot spots
- text links
- rollovers
- menus.

You will also learn about user response methods including:

- text boxes
- list boxes
- radio buttons
- check boxes.

10.7 Image capture and manipulation

You need to be able to store and manipulate images in order to incorporate them effectively.

You will learn how to:

- capture ready-made images
  - paper-based sources, eg photos and drawings
  - digital sources
- create original images
  - using a digital camera
  - using graphics software
- manipulate images using techniques including
  - filters
  - resize and crop
  - colour.

You will need to understand:

- characteristics and uses of bitmap and vector graphics
- image resolution
- types of compression (lossy and non-lossy) and the effects on image quality and file size.

10.8 Video

You will learn how to incorporate video into your own multimedia products.

You need to be able to:

- capture ready-made video clips
- record original video clips
- edit video clips
- select and use appropriate file formats.

10.9 Sound

Sounds such as music and narration are used to enhance the multimedia experience.

You will learn how to incorporate sound into your own multimedia products.

You need to be able to:

- record live sound
- select and import pre-recorded sound
- manipulate sound using techniques including
  - cut and edit
  - speed up, slow down, and reverse
- assign sound to an action or event
- select and use appropriate file formats including
  - WAV
  - MIDI
  - MP3/MPEG
- understand and use compression and codes.

10.10 Animation

You will learn about different types of animation, including:

- stop frame
- tweened
- animated gif.

You will learn how to create animations and use them in appropriate ways in your own multimedia products.

10.11 User interface

Ease of use is a key requirement for any multimedia product. You will learn how to design an effective user interface, including:

- using a consistent layout
- using graphics to illustrate a message
- adding prompts or messages to help users find their way around
- using interactivity features to allow users to initiate certain procedures.

10.12 Testing

No amount of flashy graphics and interactive features are any use if the product does not work properly. One of the advantages of prototyping is that you can carry out formative testing as you develop your products. You should also undertake summative testing when you think you have finished.

Summative testing involves asking questions, such as:

- Does the product meet all the requirements listed in the functional specification?
- Do all the interactive features work correctly?
- Does every link go where it should with no dead-ends?
- Is the product robust or can it be made to fail?
- Can other people use the product without help?
- What do people think about it in terms of design, layout etc?

It is essential to involve others in this process.

10.13 Distribution

If you create a multimedia product using specialised software, it is quite possible that some of your target users will not have this software available to run the product.

You will learn how to create a run-time version of a multimedia product — this will allow a user to run the program independently of the software used to create it and will mean that you can distribute the product freely on a portable storage medium such as a CD or memory stick.

10.14 Evaluation

The starting point for an evaluation of any software development project is the functional specification which lists what the software has to do. The key question to answer is how well the solution meets the requirements.

Being able to assess your own performance on a project critically is also important. You must learn how to judge your performance in terms of what you did well and what you could have done better in order to determine your current level of competence, identify areas for improvement and future training needs.

10.15 Standard ways of working

Whilst working on this unit, you will be expected to use ICT efficiently, legally and safely. You must adhere to standard ways of working, including:

- file management
  - saving work regularly
  - using sensible filenames
  - setting up directory/folder structures to organise files
  - making backups
  - choosing appropriate file formats
  - limiting access to confidential or sensitive files
  - using effective virus protection
  - using 'readme' files where appropriate to provide technical information, eg system requirements
- personal effectiveness
  - selecting appropriate ICT tools and techniques
  - customising settings
  - creating and using shortcuts
  - using available sources of help
  - using a plan to help you organise your work and meet deadlines
- quality assurance
  - using spell check, grammar check and print preview
  - proofreading
  - seeking views of others
  - authenticating work
- legislation and codes of practice
  - acknowledging sources
  - respecting copyright
  - avoiding plagiarism
  - protecting confidentiality
- safe working
  - ensuring that hardware, cables, seating etc are positioned correctly
  - ensuring that lighting is appropriate
  - taking regular breaks
  - handling and storing media correctly

- Eportfolio
  - creating an appropriate structure for an eportfolio
  - collecting together all the required information, converting files to an appropriate format if necessary
  - authenticating your work
  - providing a table of contents, using hyperlinks to locate information easily
  - testing for size, compatibility and ease of use, making sure that the eportfolio conforms to the technical specification.

Assessment evidence

For this unit you will design, produce, test and evaluate a multimedia product to meet a given set of functional requirements.

Your eportfolio for this unit should include:

(a) A functional specification that describes the purpose, audience and context for the multimedia product and explains what it is required to do.

(b) An initial design that:

- satisfies the functional requirements
- considers all aspects of multimedia design
- plans the timing of events using a timeline
- combines multimedia components — both ready made and original to convey information.

Plus evidence of your use of prototyping to improve and refine the design.

(c) A run-time version of a fully working multimedia product, with supporting 'getting started with …' instructions for users.

(d) Evidence of formative and summative testing.

(e)* An evaluation assessing:

- the multimedia product
- your own performance and current skill level.

*Opportunity for learners to be assessed on Quality of Written Communication (QWC) — (i-iii).

Assessment criteria — Unit 10: Using Multimedia Software

	Mark band 1	Mark band 2	Mark band 3	Mark awarded
(a) **(AO 2, 3)**	A functional specification that: • briefly **describes** the purpose of the product, the context and intended audience • outlines what it must do, but **not in sufficient detail to give a clear picture** of what is required. **(0–2)**	A functional specification that: • describes the purpose of the product, the context and intended audience • explains what it must do. **(3)**	A functional specification that: • fully **describes** the purpose of the product, the context and intended audience • explains **clearly** what it must do, **specifying measurable success criteria.** **(4)**	**4**
(b) **(AO 1, 2, 3, 4)**	A **design** for a multimedia product that: • satisfies **most** of the functional requirements, but demonstrates **limited** awareness of audience and purpose • gives some consideration to **key** aspects of multimedia design • uses **some** ready-made and original multimedia components • has been developed and improved, making **limited** use of prototyping, with some **explanatory** comments at each stage. **(0–8)**	A **detailed design** for a multimedia product that: • satisfies **all** the functional requirements, demonstrating **sound** awareness of audience and purpose • gives **full** consideration to **most** aspects of multimedia design • makes **good** use of **different types** of ready-made and original multimedia components, combining them together to convey information • has been developed and refined, making good use of prototyping, with **some evaluative** comments at each stage. **(9–12)**	A **comprehensive** design for a multimedia product that: • satisfies all the functional requirements, demonstrating **astute** awareness of audience and purpose • gives **full** consideration to **all** aspects of multimedia design • makes **effective** use of **different types** of ready-made and original multimedia components, combining them to together to convey information **effectively** • making **effective** use of prototyping, with **evaluative** comments at each stage showing how **feedback was acted on**. **(13–16)**	**16**

	Mark band 1	Mark band 2	Mark band 3	Mark awarded
(c) **(AO 1, 3)**	A working multimedia product – produced **with some assistance** – that: • meets most of the functional requirements • makes **appropriate** use of **some** of the facilities of the software. Plus **some** 'getting started with …' instructions, giving **an indication** of how to install and use the product. Whilst working on this project, the learner adheres to relevant standard ways of working, but needs **frequent** prompting. **(0–9)**	A **fully-working**, **easy-to-use** multimedia product – produced **with occasional prompting** – that: • meets **the majority of** the functional requirements • makes **good** use of the facilities of the software. Plus **detailed** 'getting started with …' instructions, enabling a **competent user** to install and use the product. Whilst working on this project, the learner adheres to relevant standard ways of working, with only **occasional** prompting. **(10–14)**	An **attractive**, **fully-working**, **easy-to-use**, multimedia product – produced independently – that: • meets **all** the functional requirements, **communicates effectively** and is **easy to use** • makes **full** and **efficient** use of the facilities of the software Plus **comprehensive** 'getting started with …' instructions enabling a **novice user** to install and use the product. Whilst working on this project, the learner adheres to relevant standard ways of working, **independently**. **(15–18)**	**18**
(d) **(AO 4)**	Evidence of **some limited** formative and summative testing, but **not sufficient** to **ensure** that the multimedia product works as intended. **(0–4)**	Evidence of systematic formative and summative testing – making **some** effective use of feedback from test users – **sufficient** to **ensure** that the multimedia product **works** as intended. **(5–6)**	Evidence of **thorough** and systematic formative and summative testing – making **effective** use of feedback from test users – sufficient to ensure that the multimedia product works as intended and is easy to use. **(7–8)**	**8**

	Mark band 1	Mark band 2	Mark band 3	Mark awarded
(e) **(AO 4)** **QWC (i-iii)**	Some **evaluative comments** assessing: • the extent to which the final multimedia product meets the specified requirements, **identifying** any shortcomings • the effectiveness of the solution • their own performance throughout the project. The learner uses everyday language and the response lacks clarity and organisation. Spelling, punctuation and the rules of grammar are used with limited accuracy. **(0–7)**	A **thoughtful evaluation** assessing: • the extent to which the final multimedia product meets the specified requirements, **explaining** any shortcomings • the effectiveness of the solution, with **some sensible suggestions for improvements** • their own performance throughout the project and **current skill level**. The learner uses some specialist terms and the response shows some focus and organisation. Spelling, punctuation and the rules of grammar are used with some accuracy. **(8–11)**	An **well-rounded evaluation** – **incorporating feedback from others** – **critically** assessing: • the extent to which the final multimedia product meets the specified requirements, **fully explaining** any shortcomings • the effectiveness of the solution, with some **well-thought-out** suggestions for **enhancements** • their own performance throughout the project, **current skill level** and **identifying areas for improvement**. The learner uses appropriate specialist terms consistently and the response shows good focus and organisation. Spelling, punctuation and the rules of grammar are used with considerable accuracy. **(12–14)**	**14**
			Total marks	**60**

(For AO performance descriptions see page 291.)

Assessment guidance

The guidance should be used within the context of a 'best fit' approach within the band. (See the section *Applying the mark bands* for further guidance.)

Assessment evidence (a)

Mark band 1 (0–2 marks)

To be eligible for mark band 1, learners must have made an attempt at describing the context, purpose of the product and the intended audience. However, at this level the information is likely to be somewhat vague and incomplete.

For full marks in this band, learners must have given enough information for the product requirements to be surmised — even if they are not explicitly stated.

Mark band 2 (3 marks)

To be eligible for mark band 2, learners must have outlined what the product must do, indicated how it will be distributed and provided sufficient information for the requirements to be clear.

Mark band 3 (4 marks)

To be eligible for mark band 3, learners must have produced a complete functional specification and specified measurable success criteria by which to judge it.

Assessment evidence (b)

Mark band 1 (0–8 marks)

To be eligible for mark band 1, learners must have produced outline design documents for a multimedia product that address most of the functional requirements, although they will have given little thought to audience and purpose. They must have:

- designed the product's structure and navigation
- produced a timeline showing the order of events, effects and transitions used
- given some thought to screen layout and presentation
- chosen some appropriate ready-made and original multimedia components.

Learners must also have produced a prototype solution, but will not have made much use of it to identify and try out possible improvements.

For full marks in this band, the design must demonstrate some awareness of audience and purpose and take account of how the product will be distributed and used.

Learners must also have shown that that have made some improvements to the initial design as a result of prototyping, providing some explanatory comments.

Mark band 2 (9–12 marks)

To be eligible for mark band 2, learners must have produced detailed design documentation for a multimedia product that addresses all of the functional requirements and demonstrates sound awareness of audience and purpose. They must have:

- considered most of the key elements of multimedia product design
- chosen different types of multimedia components (ready-made and original) and combined them together to convey information.

Learners must also have shown that they made refinements to the initial design as a result of prototyping, providing some evaluative comments.

For full marks in this band, learners must have paid attention to how users will interact with the product (*What you need to learn* section 10.6). They must also have provided detailed comments evaluating each prototype in terms of how well it meets the specified requirements.

Mark band 3 (13–16 marks)

To be eligible for mark band 3, learners must have produced comprehensive design documentation for a multimedia product that addresses all of the functional requirements and is tailor-made for audience and purpose. They must have:

- given full consideration to all aspects of multimedia design, including interactivity and the user interface
- selected appropriate types of multimedia components (ready-made and original) and combined them effectively to convey information
- evaluated each prototype produced, in terms of fitness for purpose/audience.

For full marks in this band, learners must have produced a creative, quality product — something that stands out from the crowd! They must have involved others in evaluating prototypes and have shown clearly how feedback from test users was used to shape and refine the design.

Assessment evidence (c)

Mark band 1 (0–9 marks)

To be eligible for mark band 1, learners must have produced a working, multimedia product. They can have had some help/guidance to do so. The product may not meet all of the requirements, but it must demonstrate some appropriate use of facilities of the software.

Whilst working on the multimedia product, learners will have needed frequent reminders to adhere to relevant standard ways of working, eg file management, copyright, acknowledgement of sources.

For full marks in this band, the product must meet most of the requirements. Learners must also have produced some basic 'getting started with …' instructions covering system requirements and installation procedures.

Mark band 2 (10–14 marks)

To be eligible for mark band 2, learners must have produced a fully working, multimedia product that meets the majority of the requirements of the functional specification. They will have needed only occasional prompting to do so. The solution must make good use of the facilities of the software. Learners must also have provided some 'getting started with …' instructions.

Whilst working on the multimedia product, learners will have needed only occasional reminders to adhere to relevant standard ways of working.

For full marks in this band, learners must have produced a product that is easy to use and is accompanied by detailed 'getting started with …' instructions, enabling a competent user to install and use it.

Mark band 3 (15–18 marks)

To be eligible for mark band 3, learners must have independently produced a fully working, easy-to-use multimedia product that meets all of the requirements of the functional specification and makes full use of the facilities of the software. They must also have provided comprehensive 'getting started with …' instructions, that would enable even a novice user to install and use the product.

Whilst working on the multimedia product, learners will have demonstrated that they are fully conversant with standard ways of working and understand their relevance. They will have adhered to them without being reminded.

For full marks in this band, learners must have made efficient use of the facilities of the software to produce an attractive solution that communicates effectively.

Assessment evidence (d)

Mark band 1 (0–4 marks)

To be eligible for mark band 1, learners must have carried out some testing of individual aspects of the solution, such as interactivity features, links, robustness etc.

For full marks in this band, learners must show evidence of a simple test for most of the main elements of the solution.

Mark band 2 (5–6 marks)

To be eligible for mark band 2, learners must show evidence of a simple test for each of the main elements of the solution, demonstrating that it works in the manner intended. They must also have made some attempt to test the solution with other people.

For full marks in this band, learners must demonstrate that they adopted a systematic approach to testing making good use of feedback from test users.

Mark band 3 (7–8 marks)

To be eligible for mark band 3, learners must show that they adopted a thorough and systematic approach to testing and involved other people.

For full marks in this band, learners must have carried out sufficient testing and refinement to be confident that the solution as a whole works as intended in all anticipated circumstances and that other people can use it without assistance.

Assessment evidence (e)

Mark band 1 (0–7 marks)	To be eligible for mark band 1, learners must have made some meaningful evaluative comments about their solution, relating them to the requirements specified in the functional specification. They must also have made a sensible comment about their own performance. The learner uses everyday language and the response lacks clarity and organisation. Spelling, punctuation and the rules of grammar are used with limited accuracy. For full marks in this band, learners must have commented on the effectiveness of the solution.
Mark band 2 (8–11 marks)	To be eligible for mark band 2, learners must have produced a thoughtful evaluation of the final spreadsheet, identifying and offering some explanation for any shortcomings. They must have considered the effectiveness of the solution and made at least one suggestion for how it could be improved. They must also have assessed their own performance realistically. The learner uses some specialist terms and the response shows some focus and organisation. Spelling, punctuation and the rules of grammar are used with some accuracy. For full marks in this band, learners must have produced a considered evaluation, including a realistic assessment of their current skill level.
Mark band 3 (12–14 marks)	To be eligible for mark band 3, learners must have produced a well-rounded and critical evaluation of both the multimedia product and their own performance/skill level, drawing on feedback from others. The learner uses appropriate specialist terms consistently and the response shows good focus and organisation. Spelling, punctuation and the rules of grammar are used with considerable accuracy. For full marks in this band, learners must have identified some sensible ways of improving both the product and their own performance. (See the section *Applying the mark bands* for further guidance.)

Delivering this unit

General information

Assessment requirements

The *Assessment evidence* section is addressed to the learners and gives precise details of what they must do.

The *Assessment criteria grid*, on the other hand, is addressed to the assessor and defines the quality of output required for each mark band. Whilst the requirements remain the same across the mark bands, performance is differentiated by the quality of the learner's response, eg level of detail provided, quality of output, mastery of software tools, depth of analysis/evaluation etc.

The *Assessment guidance* section provides further information to help assessors determine which mark band a piece of work falls into and how to award marks within that band.

Balance of theory and practical work

Most of the marks available for this unit are for practical, hands-on activities, involving the development of a multimedia product.

Learners will need to have access to fully-featured multimedia authoring software.

Vocational context

This unit has a user focus. It is not essential that learners undertake work experience. However, learners will benefit from learning about industry practices in relation to the design and production of multimedia products, such as information points, web promotions, e-learning packages, games etc. A number of software producers such as Macromedia run online design workshops and seminars which learners might find useful.

Standard ways of working

To be eligible for mark band 1, learners must work safely and adhere to relevant legislation and codes of practice. To be eligible for higher mark bands, learners must use standard ways of working to manage files, enhance personal effectiveness and quality assure their work.

Eportfolio

Learners will be expected to present their evidence for this unit in an eportfolio. The eportfolio must be constructed so that its contents can be accessed using 5th generation, or equivalent, web browsers, such as Microsoft internet Explorer version 5 or Netscape Navigator version 5 and be in a format appropriate for viewing at a resolution of 1024 x 768 pixels.

Learners must be clear about the distinction between file formats appropriate for product creation and read-only file formats appropriate for viewing. Acceptable file formats for eportfolio content are likely to be PDF for paper-based publications, jpg or png for images, html for on-screen publications and swf (Flash movie) for presentations, but may be revised to take account of future developments.

A detailed technical specification for eportfolios for this qualification will be published on the Edexcel website.

The following evidence should appear in the eportfolio for this unit:

- a functional specification
- an initial design, plus selected prototypes showing how the multimedia product was developed and refined
- the final version of the multimedia product
- evidence of formative and summative testing
- 'getting started with' instructions for users
- an evaluation of the product and own performance.

Teaching and learning strategies

Learners are required to design and produce a fully working interactive multimedia product. The product must have a clear purpose and be sufficiently complex in nature to challenge learners' expertise and encourage them to develop new skills and techniques in order to produce a fully functional solution. Suitable products could include an e-learning package, a computer game, an interactive information point, a juke box, a web promotion etc.

Examining examples of multimedia products online such as subject tutorials, a revision site with a quiz style assessment, an e-book or an e-learning site will be beneficial in developing learners' understanding of how an interactive multimedia product may be used to enhance communication.

Functional specification

From a given set of requirements learners must produce a detailed functional specification which establishes exactly what the final multimedia product must do and can be used as a yardstick to measure the success of the project.

The project brief that learners are given must provide sufficient scope for them to be able to demonstrate their ability to design and produce interactive multimedia products. A collection of small unrelated tasks would not be appropriate. Learners should put themselves in the role of the end-user who has to produce a multimedia product as part of their job.

It is important that learners realise that it may be necessary to revise the specification as the solution progresses. However, the original purpose must always be kept in mind. It is easy to get carried away on an exciting project and change the specification drastically!

Product development and testing

Evidence of how the product develops must be submitted. This will include the initial design, prototypes at various stages and, of course, the finished product.

Managing prototypes and keeping evidence of feedback from users, and what changes will be made as a result, is a skill that learners will need to learn.

Learners will need to learn elements of multimedia design, for example, the rule of three in choosing colour and font, the need to develop a co-ordinated image throughout and how to add interactive elements to encourage user participation and enjoyment.

Video, sound, animation and graphics should only be included if they have a purpose not just because they are pretty!

The design of the user interface will require careful consideration.

Testing is a vital part of the process in order to provide a fully-working product. Learners must carry out formative testing throughout the development of the product as well as thorough summative testing at the end. Records of testing need to be kept together with evidence of the results of the tests.

The summative, or end testing, should be thorough and include testing links, navigation, interactive features, sound, video, animation etc.

Evaluation

This should assess the extent to which the final product meets the requirements identified in the functional specification. Learners should explain and justify any changes made to the original specification.

Learners also need to evaluate their own performance and assess their current level of competence. As part of this self-appraisal, learners should consider what else they need to know or be able to do and identify further training needs.

Links

Other units

This unit builds on the work learners did in *Unit 1: The Information Age* and *Unit 5: Web Development*.

Production of a multimedia product could be used as the focus for *Unit 8: Managing ICT Projects*.

Resources

Please note that while resources are checked at the time of publication, materials may be withdrawn from circulation and website locations may change.

Equipment

Learners will need access to:

- desktop/laptop computers ideally with the following minimum specification (based on the Becta workstation specification 2/10/03):
  - 256 MB memory
  - 1.7Ghz Intel processor or equivalent
  - 40 GB hard drive
  - video card with 32 MB memory
  - CD/DVD
  - some form of rewritable media
  - UK keyboard and pointing device
  - colour, high resolution monitor, capable of supporting 1024x768
  - sound output (16 bit soundcard, output through speakers/headphones)
  - sound input (microphone)
  - digital video camera
- printing facilities
- digital camera, scanner, tape recorder
- video camera (digital or webcam)
- sufficient individual storage space
- internet access (broadband)
- Windows XP operating system or equivalent
- software
  - office software, eg Microsoft Office
  - web authoring, eg Macromedia Dreamweaver
  - graphics, eg Adobe Photoshop, CorelDraw, Macromedia Fireworks
  - animation, eg Macromedia Flash.
  - video editing software
  - sound editing software
  - image manipulation software.

Textbooks

Aho K (editor) — *Macromedia Studio MX Step-by-step* (Course Technology, 2005) ISBN 0619267097

Aho K (editor) — *Multimedia Projects* (Course Technology, 2002) ISBN 0619055146

Aho K et al — *Digital Design Curriculum Guide: Foundations of Web Design* (Course Technology, 2002) ISBN 0619055162

Chapman N and J — *Digital Multimedia, Third Edition* (John Wiley & Sons, 2009) ISBN 0470512164

Chasemore R — *Basic Paint Shop Pro 8* (Payne-Gallway, 2004)

ISBN 1904467369

Elsom-Cook M — *Principles of Interactive Multimedia* (McGraw-Hill, 2001) ISBN 007709610X

Guy C and O'Byrne S — *Information and Communication Technology for Edexcel Applied A2: Single Award with CDROM* (Hodder Murray, 2006) ISBN 0340926511

Hart J — *The Art of the Storyboard, Second Edition* (Focal Press, 2007) ISBN 0240809602

Heathcote T — *Edexcel GCE In Applied ICT: AS Students' Book and CDROM* (Edexcel, 2006) ISBN 1903133815

Heller S and Drennan D — *The Digital Designer* (Watson-Guptill Publications, 1997) ISBN 0823013464

Mitra S — *Introduction to Multimedia Systems* (Academic Press, 2001) ISBN 0125004524

Popper F — *Art of the Electronic Age* (Thames & Hudson, 1997) ISBN 0500279187

Vaughan T — *Multimedia: Making It Work, Seventh Edition* (McGraw-Hill Osborne, 2007) ISBN 0072264519

Websites

Examples of multimedia products:

www.360degreevirtualtour.co.uk/new/article.php?id=109

www.360dof.com/360-virtual-tour-studio.htm

www.360spin.co.uk/demo/index_google.htm