



## National Unit specification: general information

**Unit title:** Computer Games: User Centred Design (SCQF level 6)

**Unit code:** H1KR 12

**Superclass:** CB

**Publication date:** May 2012

**Source:** Scottish Qualifications Authority

**Version:** 01

### Summary

The aim of this Unit is for candidates to gain a fuller understanding of how potential end-users can influence the design of a computer game. Candidates will learn how to identify characteristics and user requirements of a target audience. Candidates will create a prototype interface, carry out testing techniques and apply user feedback to produce a revised prototype if required.

This Unit is suitable for candidates who have an interest in computer game design or who are undertaking a course of study in computing or a computer art related field.

### Outcomes

- 1 Identify the potential users of a computer game from a given brief.
- 2 Identify the user requirements for a computer game from a given brief.
- 3 Create a prototype for a computer game that meets the user requirements.
- 4 Evaluate the final prototype.

### Recommended entry

While entry is at the discretion of the centre it would be beneficial if candidates had knowledge of a suitable software package to produce user interfaces.

### Credit points and level

1 National Unit credit at SCQF level 6: (6 SCQF credit points at SCQF level 6\*)

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

## **General information (cont)**

**Unit title:** Computer Games: User Centred Design

### **Core Skills**

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes of this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

## **National Unit specification: statement of standards**

### **Unit title:** Computer Games: User Centred Design

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

#### **Outcome 1**

Identify the potential users of a computer game from a given brief.

##### **Performance Criteria**

- (a) Research the characteristics of the users for an existing computer game.
- (b) Describe the characteristics of the users of a computer game.

#### **Outcome 2**

Identify the user requirements for a computer game from a given brief.

##### **Performance Criteria**

- (a) Describe the objective of the game.
- (b) Describe the main user interactions.
- (c) Identify the delivery platform/s for the proposed game.

#### **Outcome 3**

Create a prototype for a computer game that meets the user requirements.

##### **Performance Criteria**

- (a) Create a prototype which matches the user requirements.
- (b) Test the prototype to ensure user requirements are met.
- (c) Amend the prototype to take account of user feedback if necessary.

#### **Outcome 4**

Evaluate the final prototype.

##### **Performance Criteria**

- (a) Describe how the finished prototype matches the user requirements.
- (b) Describe improvements that could be made to the final prototype.

## **National Unit specification: statement of standards (cont)**

**Unit title:** Computer Games: User Centred Design

### **Evidence Requirements for this Unit**

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

#### **Outcome 1 — Written and/or oral evidence**

Candidates must provide evidence that they can clearly describe the:

- ◆ characteristics of the target audience for a computer game

A written report of 300–400 words or an oral presentation of five minutes is recommended.

#### **Outcome 2 — Written and/or oral evidence**

Candidates must provide evidence that they can identify and describe:

- ◆ the objective of the game
- ◆ the main user interactions
- ◆ the delivery platform for the game

A written report of 500–700 words or an oral presentation of 5–10 minutes is recommended.

#### **Outcome 3 — Written and/or oral evidence and product evidence**

Software based prototype before testing and a final amended prototype, if necessary, after testing is produced. Hard copy documentation of the user centred testing technique employed.

#### **Outcome 4 — Written and/or oral evidence**

A final written report of 350–500 words or a five minute presentation which justifies the finished prototype against the user requirements and highlights improvements that could be made.

## **National Unit specification: support notes**

### **Unit title:** Computer Games: User Centred Design

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

The National Occupational Standards (NOS) this Unit is mapped to is IM5 Design User Interfaces for Interactive Media Products.

### **Guidance on the content and context for this Unit**

This Unit will introduce candidates to the basics of user centred design techniques. It is recommended that a project brief be given to the candidate and for the tutor to simulate the role of a 'typical' user for the given brief.

#### **Outcome 1**

Candidates should learn how to identify the characteristics of users for the proposed game before undertaking the design process. It should be highlighted that by understanding the users it is likely to result in a game which users will want to play.

Identifying user characteristics will make it possible for the candidate to design a game where the language, media elements, interactions and delivery environment meet user expectations. Characteristics could include:

- ◆ age
- ◆ cultural background
- ◆ gender
- ◆ educational level
- ◆ computer experience
- ◆ income

Consideration should also be given to the accessibility of games for the target audience and could include:

- ◆ input devices used for playing games
- ◆ screen size and resolution
- ◆ audio — sound effects, voice-over

## National Unit specification: support notes (cont)

**Unit title:** Computer Games: User Centred Design

### Outcome 2

For this Outcome it should be emphasised that the findings from Outcome 1 must be taken into consideration when constructing user requirements. For example, the age group of the target audience could affect the interactive elements of the proposed game.

Candidates should first, identify the overall purpose of the game, for example, is it to educate or entertain? Once the purpose of the game has been identified candidates should then describe the objectives in relation to its purpose. For example if the purpose of the game is to educate users in the techniques required to develop a small business then the objectives might be:

- 1 Understand common business vocabulary
  - ◆ users will be required to 'fill the missing word' for sentences presented to them on screen
- 2 Develop decision making skills required to run a small business.
  - ◆ users will be presented with a business scenario and will decide whether the scenario is 'true' or 'false'

The next step is for candidates to begin the process of listing the requirements for each objective incorporating user interactions. For example:

#### 1 Understand common business vocabulary

- ◆ Sentences with a missing word will appear on the left side of the screen
- ◆ A list of business words will be presented on the right side of the screen
  - the list of words will contain the correct answer and three incorrect answers

#### User Interactions

- ◆ Users will use the mouse to drag a word from the list on the right of the screen to the blank space in the sentence on the left of the screen
- ◆ User will use the mouse to click on the 'submit answer' button
- ◆ Feedback will be presented in the lower middle of the screen
- ◆ If the answer is correct:
  - users will use the mouse to click on the 'next' button
- ◆ If the answer is wrong three options will be presented:
  - users will use the mouse to click on the 'try again' button
  - users will use the mouse to click on the 'give me a clue' button
  - users will use the mouse to click on 'reveal correct answer' button

## National Unit specification: support notes (cont)

**Unit title:** Computer Games: User Centred Design

### Outcome 3

Candidates are required to create a prototype which incorporates the requirements identified in Outcome 2. The prototype should be produced using a suitable software application.

The key focus for testing the prototype should be based on user centred testing. For example, how easy is it for the user to interact with the game interface whilst maintaining user interest and motivation? This could relate to something as simple as the size of text. Is the text large enough so that users can read it on a hand-held mobile device? Or does the game offer enough of a challenge to keep the user engaged?

At this point candidates should also be introduced to usability aspects of game design emphasising that addressing usability will help to ensure the best possible user experience and also increase the accessibility of the game. Candidates should be made aware that usability in game design is likely to impact considerably upon both the playability and enjoy ability of the game. From a business perspective, poor usability could seriously impact upon the marketing and sales success or failure of the game.

Candidates should learn about different user centred testing techniques before applying a chosen testing method to their prototype. An explanation of how to carry out user centred testing and how to evaluate the results should be given.

Candidates need to carry out at least one method of testing. Suggested testing methods for the prototype include:

**Usability expert evaluation** — can involve up to three usability experts testing the game individually and then meeting to discuss and prioritise usability issues.

**One-to-one testing** — this method uses testers who fit the profile of the target audience. A facilitator observes the player interacting with the game and notes down any relevant information. The facilitator can ask the player relevant questions in order to better understand issues encountered by the player.

**Focus groups** — tasks are decided for the group to discuss or carry out and then a moderator ensures that the group stays on track. The moderator can ask questions in order to facilitate further discussions or clarification of issues identified.

**Survey/questionnaires** — a set of pre-defined questions are given to target users. It is important the questions used are open-ended and not simply 'yes' or 'no' in response.

Candidates should review and revise their prototype designs after reviewing the results of the testing carried out. The revised prototype should be re tested if time permits. The iterative nature of the design process should be emphasised at this point.

Candidates should retain a copy of the original prototype and the revised prototype.

### Outcome 4

For this Outcome candidates should justify their final prototype suggesting possible improvements for future development.

## National Unit specification: support notes (cont)

**Unit title:** Computer Games: User Centred Design

### Guidance on learning and teaching approaches for this Unit

A practical hands-on approach to learning should be adopted where possible to engage learners and demonstrate key concepts. However, all practical activities should be underpinned with appropriate knowledge before candidates commence these activities.

It is recommended that candidates gain hands-on experience of at least one software technique for the production of a digital prototype. It should be emphasised that whilst the prototype developed must meet the user requirements it is necessary to maintain a business perspective too.

The actual distribution of time between Outcomes is at the discretion of the centre. However, the following distribution and order is suggested.

Outcome 1	6 hours
Outcome 2	10 hours
Outcome 3	18 hours
Outcome 4	6 hours

### Guidance on approaches to assessment for this Unit

All Outcomes should be covered by means of a single project brief given to the candidate.

The practical evidence for this Unit should be by means of a working prototype.

Candidate's written work or oral presentation should demonstrate the candidates understanding of user centred design.

### Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.



## **National Unit specification: support notes (cont)**

**Unit title:** Computer Games: User Centred Design

### **Opportunities for developing Core Skills**

Candidates will have the opportunity to develop aspects of the Core Skill *Problem Solving* during Outcomes 1, 2 and 3.

Candidates will have the opportunity to develop aspects of the Core Skills *Information and Communication Technology (ICT) and Communication* during Outcome 4 when preparing the evaluation report.

### **Disabled candidates and/or those with additional support needs**

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements)

## History of changes to Unit

Version	Description of change	Date

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