SQA Advanced Unit Specification

General information

Unit title: Research and Methodology

Unit code: J6PW 47

Superclass: KB

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Source: Scottish Qualifications Authority

Version: 01

Unit purpose

This unit is designed to introduce candidates to the importance of the research process within their area of study.

Outcomes

On successful completion of the unit, the learner will be able to:

1 describe the basic research process model applied in a specific area of study
2 explain the importance of research in a specific area of study
3 apply data handling techniques and interpret key information

Credit points and level

1 SQA unit credit at SCQF level 7: (8 SCQF credit points at SCQF level 7).

Recommended entry to the unit

Access to this unit is at the discretion of the centre. It would be beneficial if the candidate had competence in communication, numeracy and information technology, as well as an extensive overview of the subject area being studied.

- EE3T 12 *Communication (NC)*
- Higher English or its component units
- Core Skill Communication National 4
- Core Skill Numeracy National 4
- Core Skill Information Technology National 4

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes section for this unit specification.

There are opportunities to develop the Core Skills of Numeracy, Information Technology and Communication at SCQF level 6 in this unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery

If this unit is delivered as part of a group award, it is recommended that it should be taught and assessed within the subject area of the group award to which it contributes.

The Assessment Support Pack (ASP) for this unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (https://www.sqa.org.uk/sqa/90557.10883.html)

Equality and inclusion

This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods, or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

Statement of standards

Unit title: Research and Methodology

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.

Where evidence for outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Learners should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Describe the basic research process model used in a specific area.

Knowledge and/or skills

- literature review and planning of research topic
- formulation of hypothesis
- operationalism: choice of research method, definition of concepts, measurement setting, sampling
- conducting the research
- processing of results and analysis
- presentation of results

Outcome 2

Explain the importance of research in a specific area.

Knowledge and/or skills

- primary and secondary sources of data
- qualitative and quantitative data
- primary and secondary sources of reading
- data collection methods

Outcome 3

Apply data handling techniques and interpret key information.

Knowledge and/or skills

- data handling techniques
- interpreting key information

Evidence requirements for this unit

To achieve this unit, each candidate will need evidence to demonstrate their knowledge and/or skills for outcomes 1, 2 and 3.

The unit will be assessed holistically by a single instrument of assessment covering all unit outcomes. This will take the form of one assessment with structured questions and stimuli, requiring a response of approximately 1,500 words. Candidates will not know the questions in advance. However, the broad topic area should be handed out at an appropriate point in the delivery of the unit. The use of notes, textbooks, handouts and other materials will not be permitted with the exception of mathematical formulae, which will be issued by the tutor/lecturer before the assessment begins. It is recommended that the assessment should be undertaken in one sitting of approximately 2–3 hours' duration. The assessment will be conducted under supervision.

Learners will need to provide evidence to demonstrate their knowledge and/or skills across all outcomes by showing that they can:

- describe the importance of following a research process in a specific subject area
- describe what is involved in each stage of the research process
- distinguish between primary and secondary sources of data
- distinguish between qualitative and quantitative data
- justify primary and secondary sources of reading
- explain data collection methods
- apply a minimum of two data handling techniques, relevant to two disciplines in a specific area of study, from information presented to candidates
- correctly interpret information from a minimum of two data handling techniques, relevant to two disciplines in a specific area

The data handling techniques are:

- graphs and charts, for example pie charts, bar charts, histograms, scattergrams
- table of results
- measures of central tendency
- measures of dispersion

Skills in numeracy, which underpin the production and interpretation of data handling techniques in a specific subject area of study, are an essential part of this unit. As part of outcome 3, candidates must:

- solve problems involving one numerical or statistical concept, such as negative numbers, quantitative and qualitative data, discrete and continuous data, numbers represented by symbols, a statistical concept such as range
- decide which operations are to be carried out and the order in which to carry them out — At this level, candidates must show that they can carry out calculations involving four operations.
- carry out a number of sustained calculations or at least one complex calculation, for example, a complex statistical calculation such as calculating standard deviation or correlation co-efficient

Support notes

Unit title: Research and Methodology

Unit support notes are offered as guidance and 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.

Guidance on the content and context for this unit

The unit is likely to form part of a group award and is primarily designed to provide candidates with knowledge of the role and importance of research within their particular subject area. The unit also introduces the candidate to the importance of the research process and develops their skills in analysing and interpreting data. Wherever possible, examples used should have relevance to the subject units studied previously or simultaneously.

Guidance on approaches to the delivery and assessment of this unit

It is envisaged that an integrated approach to teaching the unit will be adopted. Tutors/Lecturers may choose to deliver the content of outcome 1, that is, on the basic research process model, toward the end of the unit in order to contextualise the delivered content of outcomes 2 and 3. Alternatively, they may wish to deliver outcome 1 towards the beginning of the unit in order to inform the subsequent disciplines being studied.

In completing outcome 3, candidates are expected to be able to:

- solve problems involving one numerical or statistical concept
- decide upon the operations to be undertaken and sequence that should be followed when carrying them out at this level; show that they can carry out calculations involving four operations
- carry out a number of sustained calculations or at least one complex calculation

One possible way of achieving the outcome is to carry out a standard deviation calculation on a given set of data provided by the tutor/lecturer. The candidate will be provided with a standard deviation formula. Data may also be provided to permit the candidate to produce a graphical representation, histogram, bar chart or similar.

The unit will be assessed holistically by a single instrument of assessment covering all unit outcomes. This will take the form of one assessment with structured questions and stimuli, requiring a response of approximately 1,500 words. Candidates will not know the questions in advance, though the stimulus material may be issued in advance.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment

methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Opportunities for 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, such as e-testing or the use of e-portfolios or social software. Centres wishing to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment — as specified in the evidence requirements — are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at: www.sqa.org.uk/e-assessment

Opportunities for developing Core and other essential skills

Candidates will develop Numeracy skills as they interpret and apply key information from a minimum of two data handling techniques as part of research activities. Accuracy in the interpretation of figures and statistical data and the ability to calculate and present complex resource information graphically and in writing underpin the competences developed in the unit, and the Core Skill is overtaken at SCQF level 5. Skills in completing sustained complex calculations and effective presentation of data could be further enhanced by access to appropriate technology, and by online support packages.

Instruction in the most effective use of learning resource centre systems will support candidates in using Information Technology as a research tool. Formative work accessing and evaluating electronic sources which provide a range of complex information, current facts and ideas on professional concerns and issues should be encouraged, so that candidates are able to read in depth and in detail reference materials from a range of Internet sites, electronic databases and journal archives. Checklists which might be provided to support analytical evaluation could include criteria to ensure a check on the currency, authority, accuracy, and balance of all information accessed. The need to develop efficient systems of recording, coding and storing outline research information for ease of reference, such as logs, diaries, and notes folders will be emphasised. Where practical, candidates should have opportunities for computerised record keeping and be aware of the importance of saving and performing backups. Although skills in written communication are not formally assessed, candidates should be expected to produce and present written materials to a professional standard. They should express essential ideas, information and conclusions accurately and coherently; they should use a formal structure, recognised format, and accurate, spelling, punctuation and syntax.

History of changes to unit

Version	Description of change	Date

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of SQA Advanced Qualifications.

Further information

Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our Centre Feedback Form.

General information for learners

Unit title: Research and Methodology

This section will help you to decide whether this is the unit for you by explaining: what the unit is about; what you should know or be able to do before you start; what you will need to do during the unit; and opportunities for further learning and employment.

This unit introduces you to the role and importance of research within the subject area you are studying.

A range of research methods will be studied relevant to the subject area you are studying. It is essential for you to understand the differences between primary/secondary and qualitative/quantitative research methods. The use of visual and statistical representations may be needed when presenting evidence; therefore, you are required to demonstrate competence in a range of graphical representations and statistical techniques.

On completion of this unit, you will be able to describe the basic research process model applied in your specific area of study, explain the importance of research in your specific area of study, and apply data handling techniques and interpret key information.

The unit will be assessed holistically by a single instrument of assessment covering all unit outcomes. This will take the form of one assessment with structured questions and stimuli, requiring a response of approximately 1,500 words. You will not know the questions in advance. However, the broad topic area should be handed out at an appropriate point in the delivery of the unit. The use of notes, textbooks, handouts and other materials will not be permitted with the exception of mathematical formulae, which will be issued by the tutor/lecturer before the assessment begins. It is recommended that the assessment should be undertaken in one sitting of approximately 2–3 hours' duration. The assessment will be conducted under supervision.