Unit 25: Public Service Data Interpretation

Unit code: J/600/6105

QCF Level 3:   BTEC National

Credit value: 10

Guided learning hours: 60

● Aim and purpose

The aim of this unit is to develop learners' knowledge of the nature, source and use of information and to develop their skills in gathering, interpreting and presenting this information to aid decision-making in public services.

● Unit introduction

Public service employees need a clear understanding of how the services collect, analyse and use a range of data, including statistics on employment, finances, housing, asylum seekers etc. The purpose of this unit is to give learners the essential skills required to investigate and interpret a range of data relevant to public services and the context in which those public services operate.

This unit enables learners to apply information and communication technology skills as part of an investigation and interpretation of data within the public service setting in which they currently operate, or may operate within the future.

The unit will give learners an understanding of how public services apply the collection, investigation, interpretation and audit of data to the production of a wide range of internal and external documents. This includes business plans, annual reports, the achievement of key national and local performance indicators and targets, eg response times for ambulances and fire services and the communication of performance to ministers, staff and the wider public.

Learners will look at the limitations of data and possible sources of error in statistics. They will develop skills in searching for, processing, analysing and evaluating appropriate public services data, using relevant statistical methods and information and communication technology.

Learners will be required to present results in appropriate formats which aid decision making and provide information for managers and users.

Learners will gain an understanding of how public services use a range of statistical and performance data. Data includes decisions on funding, making comparisons across the specified service and between different services, both those publicly funded and those provided by the private sector on behalf of the UK Government, for example HM Prison Service and the private sector prisons.

● Learning outcomes

On completion of this unit a learner should:

1   Know the nature and sources of information relevant to public services and how they are used

2   Know how to interpret and present information to aid decision-making in public services

3   Be able to gather, use and present data.

Unit content

1 Know the nature and sources of information relevant to public services and how they are used

Sources of information: published data including books, journals, research, public reports on the internet; electronic data including user databases, internet; local, national and international government information and statistics; primary and secondary data sources

Problems with information: limitations of primary and secondary data; degrees of accuracy; errors and omissions; delays in publication of data; Freedom of Information Act 2000; disclosure of public data; Data Protection Act 1998

Use of data by public services: to inform; in provision of public services; in planning for future services; for research; uses in deciding performance eg education league tables, NHS performance tables; links to funding including formula funding of specific services

2 Know how to interpret and present information to aid decision-making in public services

Interpretation of data: for measurement of performance, efficiency, achieving targets; financial planning and accountability; for management decision making; for inspection and audit purposes; for public accountability

Presentation of information: methods and format of presenting data including histograms, pie charts, linear graphs, table format, time series, moving average, seasonal adjustment; communicating results appropriately to a range of users; structuring data and reports eg style, appropriate language, audience

Decision making: including allocation of public services to individuals and groups, maintaining service provision, increasing service provision, decisions between alternative service provisions eg decisions to fund expensive NHS treatments at the cost of not offering other services

3 Be able to gather, use and present data

Research method: primary data sources, including surveys, questionnaires, interviews, observation, use of internet data collection; sampling methods and their uses eg random, stratified, quota, selective, multi-stage; secondary data sources including published information

Use data: retrieve information; make comparisons eg increase or decrease percentage, statistical averages; organisation of data eg tabulation, frequency tables, by attributes, analysis, percentages, time series, averages; manual processing systems; ICT-based processing

Present data: present data to meet needs of audience using eg written, visual, ICT, formal presentation method

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	**To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:**	**To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:**
P1 outline sources of information used by public services and their limitations	**M1** explain how public services obtain and use information sources to aid decision-making	**D1** assess the ways one public service obtains and uses information to aid its decision-making
P2 illustrate ways public services use the data they collect		
P3 describe how public services interpret and present data to aid decision-making		
P4 carry out research on an area related to a specific public service, demonstrating use of appropriate methods to collect data for a specified audience [IE1, SM2]	**M2** analyse research and results, explaining their limitations and how far the results meet the needs of the intended audience.	**D2** evaluate research and results and explain how the information may be used by the specific public service.
P5 interpret the results of research and present the information in an appropriate format to suit the needs of the identified audience. [RL6, IE4]		

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

Visiting speakers, paper-based exercises, external visits and direct consultation with selected areas of the public services and their personnel can all be used to enhance delivery and opportunities for learner-centred learning within this unit.

Delivery is enhanced where groups of learners take responsibility for researching specific aspects of unit content (as agreed with the tutor) and presenting their findings to other learners in their peer group using presentation slide shows, posters, leaflets, exhibitions, quizzes and other activity-based approaches. This helps learners to develop the personal, learning and thinking skills (PLTS) which are an essential part of their overall programme, in particular team working, independent enquirer and creative thinking skills.

Most recent public services data can be accessed from various public service websites. Local government websites provide information on population figures, unemployment, housing prices and census figures. The government statistics website provides detailed information on a range of subjects, including employment figures, asylum seeker statistics, inflation and earnings.

Individual public services website provide information on their work and activities, their performance against specific objectives and targets, their funding and expenditure.

Case studies can also provide a rich source of information to learners. Data comparisons could be made, for example between local government areas using indicators such as employment rates, population distribution and age. This will give learners the opportunity to discuss the limitations of selected statistical data and additional information that may be required for effective decision making.

This unit has elements which must be delivered using practical activity. Learners are expected to conduct and present their own research and analyse and present their finding in a way appropriate to the intended audience. Ideally this should be a real brief set by one or more public service personnel giving learners the opportunity to undertake research that will be used in a real context to inform decision making.

Throughout the delivery and assessment of this unit learners should use IT packages such as spreadsheets and presentation and word processing software to store, retrieve, analyse and present information and numerical data relevant to specific public services.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Tutor introduces the unit and outlines the assessment.
Sources of information used by public services and their limitations. Tutor input. Internet research on tutor-directed sites with groups of learners focusing on a specific public service and presenting their finding to their peers using a variety of presentation methods. Classroom discussion.
Ways in which public services use the data they collect based on group internet research and case studies designed by the tutor.
How public services interpret and present data to aid decision making using a range of case studies focusing on annual reports, websites and talks from public service personnel.
Assignment 1: How Public Services Use and Interpret Data Focusing on the use of data by public services and the specific use of information by a chosen public service organisation. Time includes learner-initiated private study. (P1, P2, P3, M1, D1)
Tutor input on research methods including primary data sources, including surveys, questionnaires, interviews, observation, use of internet data collection; sampling methods and their uses, eg random, stratified, quota, selective, multi-stage; secondary data sources including published information.
Learners research an area related to a specific public service, demonstrating use of appropriate methods to collect data for a specified audience.
Learners interpret the results of research and present the information in an appropriate format to suit the needs of the identified audience using a range of methods including reports, presentations, exhibitions and interviews.
Learners analyse research and results, explaining their limitations and how far the results meet the needs of the intended audience.
Learners evaluate research and results and explain how the information may be used by the specific public service.
Assignment 2: Research Projects The initiation, undertaking, analysing and presenting original research. Includes learner-initiated private study. (P4, P5, M2, D2)
Review of unit and assessment.

Assessment

Assessment for this unit is split into two distinct areas.

In the first part of this unit, learners have got to show (P1) that they know the nature and sources of information that has relevance to public services organisations and their employees.

For P2, learners will need to use a range of examples to illustrate different ways in which public service organisations use the data they collect (such as informing the planning and provision of public services, comparing performance and deciding funding).

For P3, learners will need to describe how public services interpret and present information to aid decision-making. This will need to cover information provided internally and public information as reported in annual reports and strategic planning.

Decision making should include the allocation of public services to individuals and groups, decisions on the level of services provided and also decisions between alternative uses for public funding.

For M1, learners would be expected to show an understanding of how public services in general obtain and use information sources to aid decision making and to use examples to explain this process and develop this further in D1 by assessing the ways a specific named public service of their choice (ideally one they have visited and/or met personnel from) obtains and uses information to aid its own decision making. Learners will need to give careful consideration to all the factors that apply and highlight those the most important to the decisions making process.

This unit requires learners to undertake original research and present this research to inform the decision-making process within a specific public service. Ideally this research should be a real piece of work commissioned by personnel from a specific public service and backed with a clear project brief.

For P4, learners will need to identify appropriate methods to collect data for a specified audience and carry out research on an area related to a specific public service of their choice.

P5 requires learners to interpret and present their research finding appropriately for their target audience. When presenting their research and findings learners must ensure the presentation methods chosen will aid understanding and decision making by their target audience in their chosen public service. If learners are also studying Unit 23: Extended Research in Public Services, it would make sense to link the research project from this unit to the assessment from Unit 23.

M2 requires that learners analyse their research (methodology, approach, outcomes, limitations of research findings). Learners will then need to analyse the research brief provided and to what extent the outcomes from their research have met the needs of that target audience.

For D2, learners need to evaluate their research and results and form a conclusion as to how their findings may be used by their chosen public service. They will need to back their conclusions with evidence.

The opportunity for learners to present their finding formally to the project sponsor and receive feedback from that sponsor would greatly assist with the analysis (M2) and evaluation (D2) of the completed project.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the assessment and grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, P3, M1, D1	How Public Services Use and Interpret Data	Using real examples to explain the use of public service data to aid decision making.	Report, presentation, exhibition. Interview.
P4, P5, M2, D2	Research Projects	Using a specific public service, undertake original research and present this research to inform the decision-making process.	Report, presentation, exhibition. Interview.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Public Services sector suite. This unit has particular links with:

Level 2	Level 3
Research in Public Services	Enhancing Public Services Through the Use of ICT
ICT and the Public Services	Extended Research in Public Services

Essential resources

Learners will need access to ICT, including the internet.

Employer engagement and vocational contexts

It is vital that this unit is delivered using a range of real case studies and scenarios drawn from real public services.

Delivery of this unit will be enhanced if learners have the opportunity to visit a range of public service organisations.

Talks from relevant public service personnel are vital for learners to be able to relate the content of this unit to real public service scenarios. Public service personnel should be asked to contribute to the design and assessment of assignments including setting real assignment briefs and attending events and presentations where the outcomes of learner work are reviewed.

The use of public service websites and literature is also essential for successful delivery of this unit.

Indicative reading for learners

Textbook

McNabb D E – *Research Methods in Public Administration and Nonprofit Management* (ME Sharpe, 2002) ISBN 0765609576/9780765609571

Websites

Advisory Panel on Public Sector Information	www.appsi.gov.uk
Audit Commission	www.audit-comission.gov.uk
Best Practice in Statistical Presentation	www.neighbourhood.statistics.gov.uk/dissemination/Info.do?page=userguide/detailedguidance/statisticalpresentation/best-practice-key-principles.htm
Central Office of Information	www.coi.gov.uk
Communities and Local Government Publications	www.communities.gov.uk/corporate/publications/
Government Communication Network	http://gcn.civilservice.gov.uk/welcome
Home Office – Official Statistics	www.homeoffice.gov.uk/science-research/about-home-office-science/official-statistics
Information Commissioner's Office	www.ico.gov.uk
International Monetary Fund	www.imf.org
Local Government Association – Publications	www.lga.gov.uk/lga/publications/publication-home.do

UK National Statistics   www.statistics.gov.uk

UK Parliament – Publications and Records   www.parliament.uk/business/publications

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	carrying out research on an area related to a specific public service, demonstrating use of appropriate methods to collect data for a specified audience
	interpreting the results of research and presenting the information in an appropriate format to suit the needs of the identified audience
Reflective learners	interpreting the results of research and presenting the information in an appropriate format to suit the needs of the identified audience
Self-managers	carrying out research on an area related to a specific public service, demonstrating use of appropriate methods to collect data for a specified audience.

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Team workers	working with other learners to research information and public service organisations
Effective participators	taking part in classroom discussions.

Functional Skills – Level 2

Skill	When learners are …
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: • text and tables • images • numbers • records	undertaking original research, analysing and presenting findings
Present information in ways that are fit for purpose and audience	undertaking original research, analysing and presenting findings
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	undertaking original research, analysing and presenting findings
Identify the situation or problem and the mathematical methods needed to tackle it	undertaking original research, analysing and presenting findings
Select and apply a range of skills to find solutions	undertaking original research, analysing and presenting findings
Interpret and communicate solutions to practical problems in familiar and unfamiliar routine contexts and situations	undertaking original research, analysing and presenting findings appropriate to the audience
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	presenting their assignment evidence
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	researching information and public service organisations
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	presenting their assignment evidence.