

Unit 12: IT Technical Support

Unit code:	J/601/7279
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

The aim of this unit is to enable learners to use their understanding of technical support tools and techniques and organisational policies and procedures to source technical information and communicate advice and guidance to resolve technical problems.

● Unit introduction

Developments in technology have created a demand for technical support personnel who can support individuals and organisations in different ways. This can include on-site help, desk support or remote support (connecting to the client machine and attempting to resolve the problem), field support and call centre support. The continuous development of technology and changing work patterns requires IT professionals to keep up to date with how to deal with technical problems and how to access and provide support where and when needed. In addition, organisations now seek to use new mechanisms, systems and technologies and this changing organisational practice has had a direct impact on the individuals who provide technical support.

On completing this unit, learners will be able to use their technical knowledge to help clients resolve technical problems and improve the performance of IT systems. In order to do this, learners will explore how to select relevant and reliable information from different sources.

This unit focuses on help desk/desktop support but includes an awareness of other kinds of support. It is common for calls to help desks to be made by people under some pressure, perhaps because their workflow is interrupted by a system failure and potentially involving loss of data or communications breakdowns. This means that support technicians need to develop good interpersonal skills to interact positively with customers and provide technical support.

This unit is directly related to providing advice and guidance within a business context, although learners will respond to most individuals. The IT sector is changing rapidly and an important part of this unit is to look at new and emerging technologies that relate to the areas they support and but also how these new technologies might impact on their work.

● Learning outcomes

On completion of this unit a learner should:

- 1 Understand the tools and techniques used for technical support
- 2 Understand how organisational policies and procedures influence technical support
- 3 Be able to gather information to provide advice and guidance
- 4 Be able to communicate advice and guidance.

Unit content

1 Understand the tools and techniques used for technical support

Tools: software diagnostic and monitoring tools eg VNC, remote diagnostic connections; other eg control panel

Techniques: direct questioning of users; recording faults and remedies eg fault log, solutions database

Future trends: possibilities eg increasing reliance on remote support, development of systems that analyse and report on faults for other uses such as planning corporate training programmes, development of central infrastructures, contracted out and offshore services

2 Understand how organisational policies and procedures influence technical support

Working procedures and policies: organisational guidelines eg reporting of faults, internet use, security; service level agreements; confidentiality; sensitivity of information; organisational constraints eg costs of resources required, time, user expertise; outsourcing of support services

3 Be able to gather information to provide advice and guidance

Fault: type eg loss of service, poor performance, virus, error messages

Sources of information: product specifications and manuals; colleagues with specialist expertise; manufacturers knowledge base/resource sites; fault records showing previously found solutions; other internet sources eg FAQs and technical forums

Validity of information: issues eg cross-reference checks with user, problem reproduction, reliability of different types of information

4 Be able to communicate advice and guidance

Communication method: direct to user in response to a query eg via email, face to face, telephone; additional support material eg email, newsletters, FAQs, input to technical forums, help sheets, user guides

Types of advice: recommendations for repair or replacement of components; provision of training or direct instruction; others eg bug fixes, installation of patches, systems reset or rebooting instructions

Communication skills: providing information to relevant people; anger management skills (customer); keeping calm and objective (self); soft skills eg patience, empathy; referring issues that are beyond scope of individual; providing and communicating appropriate response times for resolution

Checking solutions: testing; user review ie ensuring that advice was sufficient and correct or solution was successful; recording actions eg updating fault log

End users: types eg experienced, novice, technical

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 explain the tools and techniques used for technical support	M1 discuss the importance of keeping fault logs	D1 review a recent advance in support systems technology
P2 explain the impact of organisational policies and procedures on the provision of technical support	M2 explain the advantages and disadvantages of outsourcing technical support	
P3 identify the types of fault that can occur		
P4 source technical information to provide advice and guidance for a variety of faults [IE2]	M3 judge the value of different sources of support material [IE4]	
P5 use different communication routes to provide advice and guidance [TW6]	M4 provide additional support material to users.	
P6 respond appropriately to end users [RL6]		D2 demonstrate effective communication skills with different types of end user.
P7 check solutions and record actions.		

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 CT – creative thinkers	RL – reflective learners TW – team workers	SM – self-managers EP – effective participators
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Essential guidance for tutors

Delivery

Delivery of this unit would be most effective if learners can build links between their classroom environment and organisations that need and provide technical support.

Delivery could be based on the given order of the learning outcomes. However, if opportunities for learners to gain work experience are available, this could start early and run through the whole programme. Evidence for the practical assignment work could be collected in the form of logs, notes, observational records or witness statements.

The constant change in technology, and support issues related to hardware and software of IT and the impact on working practices must be continually referenced. Learners must be encouraged to develop transferable skills and familiarise themselves with the need for self-development to keep up with the demands of industry.

Research into the tools and techniques used in IT support could be supported by visiting speakers (possibly the centre's own technicians), and wherever possible diagnostic tools demonstrated. Learners could categorise types of fault and research and discuss future trends.

Understanding how technical support is influenced by organisational policies, procedures and constraints could be supported by a visiting speaker or visit to an organisation with in-house technical support. Outsourcing is a topic that attracts interest in the media and libraries can provide rich sources of real-life case study information, newspaper reports etc. Some aspects may be qualitative such as the issues relating to sending jobs abroad, however such discussions should not be discouraged as they provide an important perspective.

Learners need to appreciate early on in the programme that it will be unlikely that they accumulate and maintain the technical knowledge required to deal with any and all the problems they encounter. Although it is true that many of the questions and problems posed will be routine, learners will need to establish skills in finding and validating sources of information for other situations beyond their immediate knowledge. Different sources of information can be researched and the value of each discussed. Deciding whether something is valid can be difficult, especially internet sites which may seem genuine. Learners need to be able to recognise what to look out for to assess validity.

It is important for learners to develop skills in approaching problems and using documentation methodically, such as logs, as well as checking that the solution they offer is appropriate. Exercises in keeping logs and planning activities (particularly in relation to giving users an estimated time for solving problems) can be used and case studies discussed.

Video/DVD and role play exercises can be particularly valuable for developing soft skills. Learners will need practice in dealing with irate and frustrated users. Written case studies with situations and queries could also be used but these may miss some key aspects about the need for soft skills.

This unit is closely linked to many vendor units, as well as other practically based units.

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
Introduction to the unit
Tools and techniques: <ul style="list-style-type: none">• whole-class exercise – tutor presentation on types of fault – categorise• whole-class exercise – tutor presentation on diagnostic and monitoring tools, followed by research• whole-class exercise – demonstration/visiting speaker (technical support)• individual exercise – other techniques• individual exercise – research into future trends, followed by group discussion• a mixture of tutor-led sessions, directed learning, case studies and demonstrations.
Technical support and the organisation: <ul style="list-style-type: none">• whole-class exercise – tutor presentation on working procedures and policies• whole-class exercise – tutor presentation on organisational constraints• a mixture of tutor-led sessions, practical exploration, learner exercises, case studies and detailed investigation.
Assignment 1 – IT Support Guide
Information gathering: <ul style="list-style-type: none">• whole-class exercise – tutor presentation on information sources• individual exercise – research into information sources, followed by discussion and evaluation of the sources• whole-class exercise – tutor presentation on validation of information• individual exercise –research into validation of information, followed by discussion.
Communicating: <ul style="list-style-type: none">• whole-class exercise – tutor presentation on interpersonal skills, followed by practical exercises, exemplars• whole-class exercise – tutor presentation on methods of communication and their appropriateness, followed by group discussion and individual exercise• individual exercise – record keeping• whole-class exercise – tutor presentation on documentation• individual exercise – producing and evaluating user guides• a mixture of role play exercises, demonstrations (DVD), discussions, exercises.
Assignment 2 – Manage and Maintain IT Support

Assessment

It is suggested that this unit is assessed using two assignments as summarised in the *Programme of suggested assignments* table.

The numbering of the assignments does not mean that they have to be undertaken in that order, rather they are based on the order of delivering the unit.

Suggested Assignment 1 – IT Support Guide

The suggested scenario for this assignment is that learners are working for an IT support department which needs a guide for new technical support staff joining the company. This could be presented as a booklet or a leaflet or prepared as a presentation for staff induction.

For P1, learners are expected to explain the tools (such as software diagnostic tools) and techniques (such as questioning) that enable the IT support technician to identify faults. Reference to sources of advice and guidance could be usefully incorporated here.

For P2, the impact on technical support of organisational policies and procedures and organisational constraints should be explained.

For P3, learners should research the most common faults and categorise them. This may be based on practical work.

M1 expands on P1 and requires the learner to show they understand the reasons for keeping accurate records of faults and their solutions.

M2 can be covered in the context of the scenario by explaining why the organisation has chosen in-house support rather than outsourcing.

For D1, the term 'recent' is relative, however technologies over five years old are unlikely to be appropriate. An understanding of the evolving nature of the workplace that learners may be entering is important.

Suggested Assignment 2 – Manage and Maintain IT Support

Ideally, for this assignment learners will be able to carry out real support activities in a work-placement environment. This may be in-junction with the centre's own technical support department. Failing that, faults will need to be deliberately set up for learners to diagnose and support and the user's role played by the tutor or others. Learners should be able to identify that technical help can be for hardware problems, software problems or lack of understanding on the part of users.

Evidence for P4 (sourcing information) could be shown through fault records that include the sources of information accessed. A variety of sources should be included.

Evidence for M3 should demonstrate that the learner has accessed a number of different sources for a given fault and judged the value and validity of each source. This could be presented as a referenced appendix to the fault records.

It is important for P5 that learners appreciate and evidence different types of advice and guidance and show they are able to use a variety of communication routes as suggested in the unit content.

For P6, learners do not need to provide support for experienced, novice and technical users (note the use of 'eg' in the sub-content line), although this is expected for D2. In all cases it is important that the responses provided are appropriate for the particular user. Again, a fault log including how, when and where advice and guidance was given could be included with supporting statements from end users on the quality of the guidance provided, ie how it was presented how well the learner communicated the information and handled the situation. Witness statements or observation records can be used for assessing learners' communication skills.

P7 is about after care in terms of checking that solutions have been successful and recording the fault and its solution.

For M4, learners could produce a 'User's Guide' to solving common faults. At least two faults should be included with appropriate screenshots or illustrations. As long as the material is different from that provided for P5 any style or format is acceptable.

For D2, it is expected that learners will have dealt efficiently and effectively with the whole process of solving user problems, and their responses will have demonstrated a high standard of interpersonal skills.

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-P3, M1, M2, D1	IT Support Guide	An IT support department requires a booklet for staff induction.	Booklet Notes
P4-P7, M3, M4, D2	Manage and Maintain IT Support	Work as an IT support technician.	Activity log Observation records Witness statements User guide

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

This unit forms part of the BTEC in IT sector suite. This unit has particular links with the following unit titles in the IT suite:

Level 2	Level 3	Level 4
Unit 12: IT Technical Support	Unit 13: IT Systems Troubleshooting and Repair	Unit 28: IT Support for End Users
Unit 13: IT Fault diagnosis and remedy	Unit 25: Maintaining Computer Systems	

This unit maps to some of the underpinning knowledge from the following areas of competence in the Level 3 National Occupational Standards for IT (ProCom):

- 7.2 IT/Technology Service Helpdesk and Incident Management
- 7.3 IT/Technology Problem Management.

Essential resources

Learners will need access to practical resources and the opportunity to work as IT technicians on a help desk providing advice and guidance.

Employer engagement and vocational contexts

Using a local computer retailer and the centre's IT supplier as well as support from the IT centre, IT support and practical, vocational, job-related tasks will provide an appropriate vocational context.

Indicative reading for learners

Textbooks

French C – *Computer Science, 5th Edition* (Thomson Learning, 1996) ISBN-10 0826454607, ISBN-13 978-0826454607

Knott G and Waites N – *BTEC Nationals for IT Practitioners* (Brancepeth Computer Publications, 2002) ISBN-10 0953884821, ISBN-13 978-0953884827

Websites

techrepublic.com

whatis.techtarget.com

www.pctechguide.com

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	sourcing technical information to provide advice and guidance for a variety of faults
Reflective learners	responding appropriately to end users
Team workers	using different communication routes to provide advice and guidance.

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 ...
Independent enquirers	judging the value of different sources of support material reviewing a recent advance in support systems technology
Effective participators	discussing the importance of keeping fault logs.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Using ICT	
Plan solutions to complex tasks by analysing the necessary stages	fault finding and checking solutions
Select, interact with and use ICT systems safely and securely for a complex task in non-routine and unfamiliar contexts	using different communication routes to provide advice and guidance
ICT – Finding and selecting information	
Use appropriate search techniques to locate and select relevant information	sourcing technical information to provide advice and guidance for a variety of faults
Select information from a variety of sources to meet requirements of a complex task	sourcing technical information to provide advice and guidance for a variety of faults
ICT – Developing, presenting and communicating information	
Use communications software to meet requirements of a complex task	using different communication routes to provide advice and guidance
Combine and present information in ways that are fit for purpose and audience	responding appropriately to end users
English – Speaking, listening and communicating	
Take full part in formal and informal discussions and exchanges that include unfamiliar subjects	interacting with clients using role play or real help-desk situations
English – Reading	
Read and understand a range of straightforward texts	reading and evaluating source material.