

Unit 14: Listening Skills for Music Technologists

Unit code:	K/600/6985
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 develop their listening skills, with a focus on the sonic and musical components particularly of interest to music technologists.

● Unit introduction

Anyone working in music needs to have good listening skills. This ability is essential in order to perform, compose, DJ or to work in a recording studio or work with live sound.

Producers and personnel making decisions for a record company must be able to listen effectively when making choices. Sound engineers need to be able to recognise and describe the quality of musical and other sounds so that they can balance and creatively adjust them. They also need to listen for different types of distortion. Music producers need to listen for intonation and timing problems, and DJs need to refine their listening skills in order to match speeds and keys and to recognise points at which to mix.

In this unit, learners will explore the potential of hearing by learning to listen actively instead of passively. Learners will explore what it is that they need to be listening for and how sounds relate to each other musically and in the natural world.

This unit is intended to be as practical as possible. It gives learners the opportunity to explore the world of sound and share their discoveries with each other. In developing listening skills, learners will be able to investigate not only musical sounds but also the sounds and rhythms in nature and urban environments. Learners are required to develop and use a musical vocabulary and combine the theory of music, the nature of sound and production techniques. Learners composing and recording their own music can include examples from their portfolio to demonstrate what they have learned from listening in a wider context.

Throughout this unit, any references to musical instruments are taken to include conventional instruments and any natural or artificially generated sounds.

● Learning outcomes

On completion of this unit a learner should:

- 1 Know the musical components in recordings or performances
- 2 Know the sonic components in recordings or performances
- 3 Know sonic faults or negative components of recordings or performances
- 4 Know the texture of vocal and instrumental resources and their acoustic environment in recordings or performances.

Unit content

1 Know the musical components in recordings or performances

Musical components: eg rhythm, melody, harmony, tonality, timbre, texture, dynamics, tempo, articulation, time signatures, note values, simple and compound time, regular and irregular rhythms, syncopation, metronome markings, beats per minute (BPM), tempo instructions, pulse, styles of music (Western art music, pop music, jazz and music from around the world)

2 Know the sonic components in recordings or performances

Natural sonic components: eg analysis of sound in nature and urban environments, the indoor acoustic environment, listening versus hearing, focus, sound spectrum, frequency range of sounds, contrast between sounds

Sonic field: mix; balance; blend; clarity; position in depth of sound-field; placement in stereo (or surround) field; depth of the field

Sound effects and processors: equalisation; boosts and cuts; masking; dynamics and volume change; different balances for different musical styles

3 Know sonic faults or negative components of recordings or performances

Musical sonic faults: incorrect notes; intonation (sharp, flat); keeping time; variations in tempo and pitch

Balance and timbre sonic faults: audio spectrum; acoustic environments; blend; intelligibility; stereo or surround field; monitor speaker choice and positions; volume and safety considerations; reverb issues; EQ; effect of the listening environment

Negative components: eg pops and clicks, clips, signal to noise ratio, rumble and excessive low frequency content, hums, balance, editing mistakes, crosstalk, microphone and headphone spill, feedback and howl-round, slap-back and echo problems, drop-outs, clicks, crackle, distortion, sibilance, wind noise, extraneous instrumental noise, matching tracks, loudness

4 Know the texture of vocal and instrumental resources and their acoustic environment in recordings or performances

Textures: eg harmonic content, place in sound spectrum, monophonic, homophonic, contrapuntal, dynamic contrast and shading, articulation and intonation, tone colour, orchestration, experimental combinations

Vocal: eg soprano, alto, tenor, bass, falsetto, a cappella, choir, backing vocals

Instrumental: eg commonly heard instruments and instrumental combinations, brass, percussion, strings, woodwind, keyboards, acoustic and electronic, samples

Acoustic environments: effect of the acoustic environment on instruments; sound spectrum; reverberation characteristics; echo; empty and full hall; speaker types and positions; microphone types and positions; dead spots; feedback and electronic control of the sound

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 listen to recordings or performances and describe the musical components [IE]	M1 listen to recordings or performances and explain the musical components	D1 listen to recordings or performances and critically comment on the musical components
P2 listen to recordings or performances and describe the sonic components [RL]	M2 listen to recordings or performances and explain the sonic components	D2 listen to recordings or performances and critically comment on the sonic components
P3 hear and describe sonic and musical faults in recordings or performances [EP]	M3 hear and explain the sonic and musical faults in recordings or performances	D3 hear and comment critically on the sonic and musical faults in recordings or performances
P4 describe the textures of musical instruments and the effect of the acoustic environment on them.	M4 explain the textures of musical instruments and sounds and the effect of the acoustic environment on them.	D4 critically comment on the textures of musical instruments and sounds and the effect of the acoustic environment on them.

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

This unit is intended to be very practical in delivery and gives learners the opportunity to develop their listening skills. It is closely linked to *Unit 1: Acoustics for Musicians* and lets learners put the principles of acoustics into practice. It also introduces learners to a wide range of musical and sonic possibilities, without emphasis on the history or social context of genres.

The unit gives tutors the opportunity to demonstrate what is meant by the various components of music so that learners know what they should be listening for. Learners can work in pairs or groups to identify and record natural sounds. Learners could be given the opportunity to present and discuss these discoveries in a group setting. Learners could complete a 'listening log' of everyday listening experiences.

This unit can be adapted to meet the needs of different learners. Music technology learners might wish to focus on activities such as identifying edit points, balance of sound, and identification of effects such as reverberation, for example using recorded music. Performers might wish to concentrate on live music. Many pop musicians and DJs have developed aural awareness skills through their methods of working and this unit will deepen learners' skills.

Some of this unit is theoretical. Learners should become familiar with music signs and symbols and be able to use them in listening, score reading and playing.

Imaginative and creative methods should be used to deliver this unit. Learners should be encouraged to listen to, analyse and map the natural sounds around them, both indoors and outdoors. Deliverers may wish to create group exercises where sounds can be plotted on paper and the frequency, content and position discussed by the group. Listening examples can also be played and discussed in the classroom as this can introduce learners to a range of music that they may not have experienced previously. CD or MP3 are effective forms of media however DVD could be utilised providing the learner refers only to the audio element.

Learners could be encouraged to listen to each other's spoken voices and note changes in dynamics, texture and tempo. Learners could research listening skills in many different formats on the internet. They could include in their discussions examples of how listening is used to develop communication and study skills, and how listening is used to cure ailments, for example in the Tomatis method.

An active involvement in music should be encouraged. It would be helpful if learners could take part in workshops with visiting musicians. Frequent and varied listening is essential. Learners should be exposed to a wide range of music of different styles.

Learners should be encouraged to attend a variety of live performances. They should demonstrate their knowledge and understanding in a variety of ways – through discussion, presentation, criticism with tutors, visiting musicians, sound engineers, producers and their peer group. Technical terms should be used appropriately and accurately in discussion.

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 and structure of the programme of learning.
Whole-class sessions covering the musical components of a range of varied material.
Assignment 1: Magazine Review 1 – P1, M1, D1 Assignment overview: <ul style="list-style-type: none">• individual and class listening – example and methods• research and preparation of materials/written piece• assessment feedback, review and further opportunities for assessment.
Whole-class sessions covering the sonic components in a range of contrasting material.
Assignment 2: Magazine Review 2 – P2, M2, D2 Assignment overview: <ul style="list-style-type: none">• individual and class listening• preparation of materials/written piece• assessment feedback, review and further opportunities for assessment.
Whole-class sessions covering sonic and musical faults in a range of varied material.
Assignment 3: Listening Test – P3, M3, D3 Assignment overview: <ul style="list-style-type: none">• individual and group discussions• listening/test sessions• assessment feedback, review and further opportunities for assessment.
Whole-class sessions covering roles and commercial practice.
Assignment 4: Textures and Environment – P4, M4, D4 Assignment overview: <ul style="list-style-type: none">• individual and class listening and discussions• collating evidence, report writing• assessment feedback, review and further opportunities for assessment.

Assessment

Assessment strategies can be devised to meet the needs of different groups of learners. For example, music technology learners might be assessed in ways that reflect the demands of a recording studio. Decisions will be made as to the styles of music used (bearing in mind that the course should broaden awareness through the use of a range of styles) and whether the music is live or recorded.

A written test could be designed to assess learners' abilities to identify aurally, musical and sonic elements in recordings where learners respond to questions based on recorded extracts of music on a CD, eg identifying key changes, instruments, recording techniques, sonic problems, etc.

Learners can be given the opportunity to record different acoustic environments, present the recordings to the class and provide written details of the process and their findings.

Written descriptions could be used for assessing the ability to identify musical elements and to make comparisons. These comparisons could use different interpretations of the same work or different recordings of the same songs by various artists. Music technology learners could be asked to make comparisons both in terms of the music (genre, context, musical language, etc) and in terms of the recording (quality, use of effects, instruments and methods).

Pass grading criteria

- P1: learners will give accurate, relevant and substantially full descriptions of the musical components suggested in the unit content. Learners must use appropriate and relevant technical terms in their descriptions.
- P2: learners will give accurate descriptions of the sonic components as suggested in the unit content, apparent in given recordings and/or situations. Learners will use relevant technical terms.
- P3: learners will give accurate and full descriptions – listening tests can be used – of sonic faults/negative components in recordings, using relevant technical terms. DVD can be utilised but learners should not refer to visuals, focusing only on the audio element of the recordings.
- P4: learners' descriptions will address the way that different textures – instruments and voices – are affected and respond differently depending on the acoustic environment in which they are placed. Descriptions will be as before, accurate, relevant and full, using correct technical terms throughout.

Merit grading criteria

In addition to the relevant pass criteria:

- M1: learners' explanations could cover, for example, why certain components for example rhythms or tonality have been used, again using relevant technical terms
- M2: learners could meet merit criteria by explaining, for example, how and why certain sonic components are more easily heard than others and the ways in which these components are boosted and cut in recordings or performance
- M3: learners will, in addition to the descriptions given for the pass criteria, explain in detail the sonic faults and negative components heard in the examples given by the tutor using relevant technical terms and phrases
- M4: learners will, in addition to the descriptions given for the pass criteria, explain why certain textures respond to different acoustic environments the way that they do. As before, learners are expected to use the correct technical terminology throughout.

Distinction grading criteria

In addition to the relevant pass and merit grading criteria:

- D1: learners at this level will comment critically on the musical components, for example rhythms melody and tonality used in the specimen recordings or the audio element of any DVD performances used, with accurate use of relevant technical terms throughout
- D2: learners will comment critically on the sonic components – for example the blend and clarity of these components along with any perceived use of equalisation to control elements in this area. Learners will always use the correct technical terms throughout
- D3: learners will comment critically and may give solutions with regard to negative components such as pops, clicks and distortion in the recordings, howl round or feedback during a performance or musical faults such as incorrect notes/intonation in the performance itself. Comments will contain correct terminology and accurate terms across the piece
- D4: learners will comment critically on the textures used and how they work within the acoustic environment chosen for the specimen recordings or performances. Learners will provide solutions and use the correct terminology accurately throughout.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the 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, M1, D1	Magazine Review 1	Brief from a music magazine to write a review of a live performance, which considers the musical components evident.	Magazine article. Evidence may include: <ul style="list-style-type: none"> ● written piece ● illustrations ● A/V performance information.
P2, M2, D2	Magazine Review 2	Brief from a music technology magazine to write a review of a live performance, which refers to the sonic components of recordings/performance.	Magazine article. Evidence may include: <ul style="list-style-type: none"> ● written piece ● illustrations ● A/V performance information.
P3, M3, D3	Listening Test	Learners will sit a listening test where a recording or recordings are commented on with regard to sonic and musical faults evident.	Evidence to include a completed answer sheet with accompanying commentary.
P4, M4, D4	Textures and Environment	Brief to write a piece for publication which covers the texture of a given range of instruments within specified acoustic environments.	Magazine article. Evidence may include: <ul style="list-style-type: none"> ● written piece ● illustrations ● technical information.

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

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

Level 1	Level 2	Level 3
		Aural Perception Skills
		Live Sound Techniques
		Acoustics for Musicians

This unit also has links with the following National Occupational Standards:

Technical Theatre

- CPD1 – Improving your skills
- CPD2b – Ensure that you and your team keep up to date with the technical and production areas of the live arts
- CPD4a – Contributing to technical production work for Performance
- TP8.4 – Setting up and checking sound equipment (C6)
- HSI – Working safely.

Essential resources

There should be a music studio containing a piano or keyboard, facilities to play CDs, MP3s or DVDs, and a whiteboard with manuscript. There should be access to a wide selection of CDs or tapes. These should include examples of Western art music, contemporary art music, pop music and jazz, world music and music from film and television.

Resources for further research might include the central main library, CD ROMs, CDs or tape collections and a specialist music library including scores. Learners should have access to practice rooms with keyboards or pianos, and listening facilities with good quality monitoring speakers.

Indicative reading for learners

Textbooks

Davis G and Jones R – *The Sound Reinforcement Handbook* (Hal Leonard Corporation, 1990)
ISBN 978-0881889000

Moulton D – *Total Recording* (KIQ Productions, www.KIQproductions.com) ISBN 978-0967430409

Paynter J – *Sound and Structure* (Cambridge University Press, 1992) ISBN 9780521355810

Rumsey F and McCormick T – *Sound and Recording, 5th edition* (Focal, 2005) ISBN 978-0240519968

Talbot-Smith M (editor) – *Sound Engineer's Pocket Book* (Focal Press, 2000) ISBN 978-0240516127

Winterson J, Nickol P and Bricheno T – *Pop Music: The Text Book* (Peters Edition, London, 2003)
ISBN 978-1843670070

Periodicals

Audiomedia (www.audiomedia.com)

Live Sound International (www.livesoundint.com)

Pro Sound News (www.prosoundeurope.com)

Sound on Sound (SOS Publications Group)

CD ROM

Moulton D – *Golden Ears* (KIQ Productions) CD-based ear training – www.KIQproductions.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	selecting recordings for listening
Creative thinkers	simulating an acoustic environment
Reflective learners	comparing simulated acoustics with real acoustics
Team workers	participating in class discussion
Self-managers	taking part in independent listening
Effective participators	participating in class/group listening.

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 ...
Self-managers	ensuring deadlines are met.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	creating magazine articles
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	creating magazine articles
Manage information storage to enable efficient retrieval	saving and opening written pieces
ICT – Develop, present and communicate information	
Present information in ways that are fit for purpose and audience	using ITC to create publicity materials
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	discussing the running of a marketing campaign.
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	exploring marketing materials used by music organisations.
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	producing copy for marketing materials.