Unit 26: Music Technology in Performance

Unit code: K/600/6968

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

The aim of this unit is to develop knowledge and skills in the use of music technology in performance contexts. Learners will perform using technology, work with related art forms and investigate the historical development of the technology and techniques used.

Unit introduction

This unit considers the technology currently available and how it can be used in music performance it then looks at historical developments in this area. Much of the focus of this unit is on practical music creation using the technology, and possibly some of the techniques, discussed.

Music technology has been used in performances since the 1960s and has now established itself in the mainstream with DJs, bands and music producers using technology to enhance, or completely produce, their live shows. It is now commonplace to see a band perform with an integral backing track and DJs using computer technology and hardware controllers.

Within the scope of this unit there is a focus on the basics as this may be the first time learners have performed with technology. It is not expected that new ground be broken or innovative techniques used. Part of this unit looks at the history and development of music technology so the use of seemingly 'low tech' items such as microphones, pickups, tape recorders, mixing console, basic effects processors and loudspeakers could be encouraged. This type of equipment when used in a creative way can allow for the highest grades to be achieved just as much as when using modern software and hardware controllers.

Learners will develop the skills to use music technology in live performance and know how music technology can be integral to a live performance as well as playing a supporting role. They will research the history and development of music technology in performance from the experimentalists to current trends. Finally, learners will work with a related art form to create an integrated performance.

Learning outcomes

On completion of this unit a learner should:

1 Know how music technology can be used in performance

2 Know the historical context of electronic music performance

3 Be able to use music technology in performance

4 Be able to perform with related art forms using music technology.

Unit content

1 Know how music technology can be used in performance

Music technology equipment: eg computers, hardware controllers, music software, samplers, synthesisers, effects processors, recording equipment, keyboards, microphones, pickups, sound systems, controllers, electronic musical instruments, sequencers

Performance techniques: eg control of software using hardware, use of electronic musical instruments, live sampling, live looping, triggering, DJ mixing/scratching, effects processing, filtering, sequencing, combining traditional instruments with technology, backing tracks

2 Know the historical context of electronic music performance

Electronic music: eg analogue synthesis, electronics, digital synthesis, computer based, computer generated, electro-acoustic, musique concrète

Historical development: landmark composers; performers; compositions; performances; music technology equipment; recording technology; electronic musical instruments; hardware controllers; computer software and hardware

3 Be able to use music technology in performance

Performance methods and technology: eg solo or as part of a group, hardware control over software, computer sequencing, backing tracks, sample playback, live sampling, live looping, electro-acoustic, integration of music technology with traditional instruments and voice, audio effects, DJ mixing, synthesis, backing tracks

4 Be able to perform with related art forms using music technology

Art forms: eg still image, moving image, film, animation, dance, movement, theatrical shows, sculpture, fashion, installation work, spoken word, poetry

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 describe how music technology can be used in performance [IE]	**M1** explain how music technology can be used in performance	**D1** assess how music technology can be used in performance
P2 describe a chosen focus within electronic music performance, placing it in context with historical developments [IE]	**M2** explain a chosen focus within electronic music performance placing it in context with historical developments	**D2** comment critically on a chosen focus within electronic music performance, placing it in context with historical developments
P3 use music technology in the live performance of music with minor errors that do not detract from the overall effect [CT, EP]	**M3** use music technology competently in the live performance of music	**D3** use music technology in the live performance of music, demonstrating artistic flair
P4 produce a performance using music technology working with a chosen art form, with assistance. [CT, TW, SM, EP]	**M4** produce a performance using music technology working with a chosen art form, with only occasional assistance.	**D4** produce a performance using music technology to a near-professional standard, demonstrating artistic interpretation of a related art form.

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

The bulk of delivery should be practical to allow learners time to experiment with the equipment and resources available. Learners should be encouraged to be creative at all times and think of new and different ways in which to use the resources available to them. Short workshop-style projects that focus on one particular composition or performance technique can serve to link the theory elements to learners' own creative work. Tutors should aim to show learners a wide variety of ideas and techniques from which they may take inspiration. There are many options available to tutors when planning delivery of this unit as the grading criteria can be linked or assessed individually to suit a range of projects and working methods. Delivery could combine the theory and the practice at every stage or attempt to cover the theory side first then move on to practical work.

The unit delivery can start by looking at what equipment is available, how it can be used and some of the issues surrounding music technology in performance. This could focus, for example, on a performer who uses a laptop, music software and hardware controllers to perform live sets. Learners are then required to research the historical and developmental aspects of music technology in performance so input sessions are needed to cover the wide range of equipment, techniques, composers and performers set out in the unit content. Examples should be given of music concrete, electro-acoustic and computer-generated music as well as early developments in dance music that highlight the use of sampling, drum machines, turntables and synthesis. There should also be access to the internet for research. Learners are likely to start by looking at a broad area of study then shift focus to one performance technique, item of equipment, musical genre, composer, performer or electronic musical instrument, placing that into context with historical developments. As this is a large area of study it is important that learners are encouraged to focus on one small aspect in their assignment work.

The learning outcomes can be combined or kept separate, creating more than one performance opportunity for learners that could include individual or groups of learners. For example, developing a live performance of a soundtrack to a silent film or playing a live set to a VJ style mix of moving images. An example of where it would be best to separate the criteria would be where the music created is not played back live such as when music is created for a sculpture or other artwork that is then performed as part of an art installation. In this case learning outcome 4 would be satisfied but further evidence would be needed for learning outcome 3 to show the learner using technology during a live performance.

There is no requirement for learners to work alongside other artists in developing a joint performance piece. Music can be produced in response to artwork and played back, or 'performed' remotely. The art forms used for this part of the unit are down to the discretion of the tutor and the available resources. In larger centres where there is a performing arts department, learners following dance programmes may welcome the opportunity to be involved in a cross-arts project.

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.
Music technology equipment: technical features and creative potential. Case studies: modern performers and the technology they use. Historical context: Techniques, composers, compositions.
Assignment 1: Music Tech Performance Article – P1, M1, D1, P2, M2, D2 • Research in class – collating/editing evidence. • Report/presentation.
Assignment 2: Music Tech Performance – P3, M3, D3 • Planning – performance date, line up, equipment. • Practice sessions – exploring equipment, creating ideas. • Performance of music. • Review: watch the demonstrations back/peer review and assessment feedback.
Assignment 3: Working with Related Art Forms – P4, M4, D4 • Planning – interpretation of art form, performance method. • Practice sessions – creating appropriate musical ideas. • Performance of work. • Review: watch the demonstrations back/peer review and assessment feedback.

Assessment

The suggested assignments show how criteria can be assessed individually but centres could choose to run assignments that combine criteria.

Evidence for learning outcome 1 can be presented in any format and can be linked to the historical context and/or practical performance work where appropriate. It is expected that this evidence be kept as closely as possible to the type of work someone in this area of the industry would produce, for example an article for a music technology magazine based on given case studies of musicians who use technology in performance.

Assessment for learning outcome 2 is best done through a presentation or an internet-based journal or 'blog.' A written report is also acceptable. Learners should be introduced to a wide area of study then be encouraged to focus on one particular area of interest. Their finished presentations or reports should reflect this by having an introductory section and timeline that attempts to capture some of the key developments and figures and then moves on to a specific area.

Assessment for learning outcome 3 should to be done within a live performance context and with an audience. Where possible learners should manipulate technology during the performance. Individual or group performances are suitable as is linking this work to learning outcome 4. Audio-visual recording is likely to be the best approach for collecting evidence.

Assessment for learning outcome 4 should be done within a looser 'performance' context that will depend on the art form being used as stimulus. It may be useful for learners to provide accompanying evidence with their music performance, explaining how they interacted with, or reacted to, the chosen art form. In some instances working alongside learners from other disciplines may not be possible so it may be appropriate to produce pre-made music that is simply played back as a 'performance' to a live audience. Much of what makes good performance is in the preparation, especially when using music technology so learners should be given credit for preparation of sounds, samples, recordings and sequences for learning outcome 3 and learning outcome 4. If playback of the finished work is appropriate then it should be able to gain the full range of grades available. Again, audio-visual recording is likely to be the best approach for collecting evidence.

To achieve P1, learners must describe how music technology can be used in performance. They will provide a list of the equipment needed and give a description of what each key item is used for. This can be based on a given case study. Evidence is likely to be brief but must be accurate.

To achieve M1, learners must explain how music technology can be used in performance. Focus can be on one or more items of equipment within the setup or can focus on a complex setup as a whole. Explanation evidence is likely to answer questions such as how things work and why they are used.

To achieve D1, learners must assess how music technology can be used in performance. Here the learner can focus on one or more item of equipment, assessing the quality and functionality of a range of technical features focusing on how they are used during performance. Evidence should include assessment of control and functionality, with questions answered such as: How well does the equipment function? How useful are the features? Possible issues may be highlighted and solutions presented.

To achieve P2, learners will describe a chosen focus within electronic music performance placing it in context with historical developments. A timeline or text should be included that shows some of the historical developments. The chosen focus should show some link back to early developments. For example, a dance music performer may link back to early synthesis, tape music, early drum machines and samplers.

To achieve M2, learners will explain a chosen focus within electronic music performance, placing it in context with historical developments. Explanation evidence is likely to answer questions such as: How things work and what they are used for? How are developments linked to development in music genre or techniques?

To achieve D2, learners will comment critically on a chosen focus within electronic music performance, placing it in context with historical developments. Questions should be answered such as: What if these technical developments had not happened? How influential is this composer? The continued development of musical techniques and genres could be considered.

To achieve P3, learners will use music technology in the performance of music with minor errors that do not detract from the overall effect. They may also make some mistakes in their performance or there may be technical issues that need input from the tutor to solve. Tutors will need to provide video evidence of the performance.

To achieve M3, learners will use music technology competently in the performance of music. They will demonstrate the ability to setup and use the equipment without significant tutor input. The musical product will make good use of the available technology.

To achieve D3, learners will use music technology in the performance of music, demonstrating artistic flair. The musical product will be impressive and will make excellent use of the available technology. The learner will manipulate the technology during the performance using a range of control techniques. There will be evidence of preparation before the performance.

To achieve P4, learners will produce a performance using music technology, working with a chosen art form with assistance. The learner may require technical assistance or artistic direction. Work should be performed to an audience and recorded for evidence.

To achieve M4, learners will produce a performance using music technology, working with a chosen art form with only occasional assistance. Learners should demonstrate a growing confidence and need help only with some technical issues.

To achieve D4, learners will produce a performance using music technology to a near-professional standard, demonstrating artistic interpretation of a related art form. There should be a clear link between the music and the art form that can both be seen and explained by the learner. The music should work with and complement the art form, creating a well-rounded integrated product.

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 Pearson assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, M1, D1 P2, M2, D2	Music Tech Performance Article	Working for a music technology magazine, write an article about performing using technology.	Evidence comprising: • presentation • written report.
P3, M3, D3	Music Tech Performance	Perform using music technology equipment.	Evidence comprising: • video recordings.
P4, M4, D4	Working with Related Art Forms	You have been commissioned to produce a piece of music for a film sequence.	Evidence comprising: • video recordings.

Links to other BTEC units

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
		DJ Performance Techniques
		Music and Sound for the Moving Image

Essential resources

Learners will need access to a sufficient quantity and range of music technology equipment alongside more traditional instruments and sound reinforcement equipment. This is likely to include computers running music software, keyboards, controllers, effects processors, recording equipment, microphones, samplers, drum machines, hardware sequencers, phrase recording pedals, effects pads, keyboards and synthesizers.

It is how the technology is used and the final musical outcome that is important, not necessarily what equipment is used. However, it is expected that most centres will have the resources to allow learners access to a computer, music software and a hardware controller. This setup offers the learner much scope for creating and controlling music during a performance, using software they may already be familiar with. Learners who choose to employ DJ mixing and sound manipulation techniques will require decks and other specialist equipment.

Access to a good quality projector will be required where visual aspects of performance are employed. Resources to allow learners to integrate their performance with another art form are essential. Research materials will be required and a range of recordings of works by leading practitioners in performance using music technology will need to be available.

Employer engagement and vocational contexts

Musicians may be required to use technology in performance and production, including live sound engineering, performing to a backing track and interdisciplinary works such as installations, theatre and dance. This subject area is a part of many undergraduate and post-graduate courses.

Delivery of personal, learning and thinking skills (PLTS)

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	investigating the historical development of music technology performance
Creative thinkers	creating musical ideas
Team workers	working with learners from related art forms and/or within performance groups
Self-managers	developing musical material for performance
Effective participators	performing music to an 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 ...
Independent enquirers	working individually to master music technology equipment and in developing individual musical ideas
Creative thinkers	working in response to a related art form
Reflective learners	considering learner's own work in context with historical developments
Team workers	planning musical performances.

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	researching music technology equipment, composers and techniques online
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	researching music technology equipment, composers and techniques online
ICT – Develop, present and communicate information	
Bring together information to suit content and purpose	presentation using ICT
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	presentation using ICT
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	reading technical information relating to music technology equipment from a variety of sources including the internet
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	writing about music technology equipment involving presenting factual information and using it to shape ideas and opinions.