2022 VCE VET Music: Sound Production external assessment report

General comments

Student results in 2022 were of a high standard even though there may have been challenges in performing practical tasks. The concepts taught at Units 1 and 2 should continue to be revised at regular intervals so that students retain thorough knowledge of the study’s concepts and terminology.

A more extensive understanding of the physics of sound and the workings of electricity, as they apply at this level, may help students to understand how specific audio components and processors affect sound. In Part A, most students demonstrated a good understanding of what they were listening to, although some had difficulty understanding the difference between an effect and a process. The study of sound production is technical, so students’ answers should be of a technical nature. Students are encouraged to use correct terminology and technical language accurately. General language of particular concern includes students using certain words interchangeably, such as:

* feedback and foldback
* frequencies and waveform
* frequencies and sound pressure level (SPL)
* frequencies and volume/gain
* dynamic mic and dynamic range (students didn’t seem to understand the difference in the meaning of the term ‘dynamic’ in mic operation).

Students need to be encouraged to supplement their preparation with participation in real-life practical situations, for example setting up school assemblies; music, drama or theatre studies assessments; and concerts, plays and musicals. Participation in practical tasks will help reinforce the correct terminology and practice of running cables, being aware of electricity and other safety issues. Students should create a personal glossary of audio equipment/terms they come across to support their understanding of key audio components.

Students need to read the questions very carefully and ensure they are answering what they are being asked. In questions that require multiple examples, students should remember to provide different points.

Specific information

Note: This report provides sample answers or an indication of what answers may have included. Unless otherwise stated, these are not intended to be exemplary or complete responses.

The statistics in this report may be subject to rounding resulting in a total more or less than 100 per cent.

Section A

Question 1a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 2 | 98 | 1.0 |

Piano

Question 1b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 4 | 3 | 93 | 1.9 |

Bass guitar and piano

Question 1c.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 25 | 75 | 0.7 |

Delay/echo

Good responses from most students, although there was the occasional mention of reverb. Students should participate in more critical listening opportunities.

Question 1d.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 2 | 98 | 1.0 |

Saxophone(s)

Question 2a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 36 | 64 | 0.6 |

Plosives/popping

Good responses from most students. Some descriptive words/response were unclear, but the knowledge was apparent.

Question 2b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 11 | 89 | 1.0 |

Windshield / pop shield / stocking / dead cat / wind jammer / pop guard / mic sock / wind guard / pop filter

Question 3a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 1 | 99 | 1.0 |

Synthesiser

Question 3b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 11 | 90 | 1.0 |

Verb/reverb

Question 3c.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 71 | 29 | 0.3 |

Pre-delay

Question 3d.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 22 | 78 | 0.8 |

Distortion

Question 3e.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 29 | 71 | 0.7 |

High frequency cut / LPF

Good responses from most students; there were some other FX noted.

Question 3f.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 33 | 67 | 0.7 |

HPF / High frequency boost / Low frequency cut

Good responses from most students; there were some other FX noted.

Question 4a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 65 | 35 | 0.3 |

Volume/loudness/dynamics

Question 4b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 66 | 34 | 0.3 |

Compressor / volume automation / side chain compression

Question 4c.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 29 | 71 | 0.7 |

Kick drum / bass drum

Question 5

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | Average |
| % | 11 | 45 | 34 | 11 | 1.5 |

* Question 5a – delay
* Question 5b – compression/compressor
* Question 5c – eq/filter/EQ HCF (LPF)

Question 6a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 62 | 38 | 0.4 |

Clicks/clicking (not clipping)

Question 6b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 37 | 63 | 0.6 |

Cross fade / trim / delete the clicks / re-cut / volume automation / re-draw / fade

Most responses were somewhat cryptic, alluding to the process or using the right trigger word, but with not enough detail.

Students overall had poor vocabulary when it comes to editing processes.

Question 7a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 72 | 28 | 0.3 |

Cable/lead

Most students talked about RF interference or spill.

Question 7b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 77 | 23 | 0.2 |

Replace cable / repair cable

Question 8a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 27 | 73 | 0.7 |

Room mic / distant mic / further away / mic placement

Question 8b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 41 | 59 | 0.6 |

Make the sound bigger / roomier / more spacious / more complex.

Section B

Question 1

|  |  |  |  |
| --- | --- | --- | --- |
| Marks | 0 | 1 | Average |
| % | 44 | 56 | 0.6 |

Octave

Question 2

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 34 | 66 | 0.7 |

Slows down.

Good responses from most students, although a few provided the opposite answer.

Question 3

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 18 | 82 | 0.8 |

Audience absorbs sound.

Many students added in some irrelevant ideas, which didn’t answer the question.

Question 4

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 22 | 78 | 0.8 |

Poor LF response, fragile, could be damaged.

If reference to HF is made, can be OK, but not boost.

A lot of students did not reference SPL or Freq Resp (which is what the question was looking for).

Question 5

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 38 | 62 | 0.6 |

Digital clipping harsher / square wave / crackling, popping, distortion (not glitch, musical, analogue etc.)

Many students made a reasonable effort to describe the sound. Most used ‘distortion’ in their answer.

Question 6

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 81 | 12 | 7 | 0.3 |

Maximum dynamic range: 96dB

Highest frequency: 22.05kHz/22kHz – 22,050 Hz/ 22,000Hz

Question 7

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Average |
| % | 6 | 29 | 28 | 16 | 10 | 5 | 4 | 1 | 2.3 |

|  |  |
| --- | --- |
| DAW term | Explanation |
| rough mix | A ‘draft’ mix / a mix done quickly and not perfectly / a quick mix for further listening and refinement |
| comping | Selecting between multiple takes/playlists or parts of takes / ‘compiling’ one take from multiple takes |
| normalise | Adjust volume to a set maximum |
| punch in | Enter record mode ‘on the fly’ / enter record during play back |
| time compression | Shorten the playing time or tempo of an audio part (without raising the frequency or pitch) (not lengthening) |
| stereo interleaved | Combining the left and right audio channels into a single file |
| MIDI note velocity | The volume/intensity/loudness of a MIDI note / how hard the key on a keyboard is pressed initially |

Question 8

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 3 | 23 | 74 | 1.7 |

Any two of:

* quick
* requires no additional equipment
* simple/easy
* authentic feel / captures live energy
* band not intimidated by situation
* instant result
* no mixing required.

Question 9a.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Average |
| % | 1 | 4 | 9 | 11 | 16 | 24 | 25 | 11 | 4.6 |

|  |  |
| --- | --- |
| Mic 1-2 Gain | Adjust input level for mic |
| Line 1 Gain | Adjust input level for line |
| Peak LEDs | Show when input level is too high / possible distortion |
| Monitor Mix Control (Direct/Playback)  Balance between these | Control audio level mix between input or zero latency and output or playback – balance |
| Output level | Volume in headphones/monitors should not reference the DAW |
| Input bar graph | Displays the signal level coming into the unit/AD  Converters (signal the same as dB) |
| USB LED | Shows connection to computer exists / interface has operating power |

Question 9b.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | 4 | 5 | Average |
| % | 8 | 14 | 24 | 27 | 17 | 9 | 2.6 |

|  |  |
| --- | --- |
| Insert 1 and 2 (comp/dynamics) | Send and return signal to external equipment, such as compressor etc. Not the place to plug in instruments. |
| MIDI in | For connecting to MIDI keyboard or controller / to record MIDI information |
| MIDI out | For connecting MIDI device / synth / sound module, playback MIDI information (not to DAW or computer) |
| +48v Phantom Power Switch | To power a condenser mic or active DI |
| Line in 1-2 | To connect a line level device such as a synth, smartphone, CD player etc. |

Question 10a.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 5 | 22 | 72 | 1.7 |

Any two of:

* tour manager:
* transport
* logistics
* itinerary
* accommodation
* catering
* rider
* admin
* stage manager:
* stage call
* playing times
* liaison with crew.

The roles must be quite differentiated.

There were three main issues in responses due to poor wording. Some students simply listed one role of a tour manager and one role of a stage manager; some students listed differences that were irrelevant to the study; and some students only listed responses with one difference.

Question 10b.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 17 | 37 | 47 | 1.3 |

Any two of:

* fewer tasks for the FoH engineer
* each can concentrate on separate tasks
* monitor has easy access / communications with band members on stage
* monitor engineer can react faster to issues such as feedback.

There were some good answers, but the majority of students didn’t demonstrate an understanding of the different roles.

Question 11

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Average |
| % | 1 | 8 | 12 | 27 | 23 | 18 | 10 | 2 | 3.7 |

|  |  |  |
| --- | --- | --- |
| Cable | Cable use | Connector name |
| A picture containing wall, indoor, scissors, pair  Description automatically generated | Instrument lead / guitar lead / unbalanced connections | TS / Tip and sleeve / 1/4” jack / jack / unbalanced jack / phono / phone (reference to any relevant instrument) |
| A picture containing cable, connector  Description automatically generated | Multiple channels of audio in the one cable / stage to desk / desk to stage | Must identify a connector such as XLR.  XLR/Cannon (male/female does not matter) |
| A picture containing wall, indoor  Description automatically generated | Speaker cable | Speakon/NL4/NL8 |
| A picture containing wall, indoor, cable, connector  Description automatically generated | Insert lead / send and return to external equipment  OR  Aux cable for stereo input  OR  Stereo to 2 mono speaker signal | No answer required here |

Question 12

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | Average |
| % | 1 | 21 | 57 | 22 | 2.0 |

Any three of:

* hearing damage
* high temperature
* trip hazards
* manual handling of gear
* clutter.

This was not well answered overall. Students should note that faulty electrics is not a safety issue specific to a small rehearsal room, and that feedback is not a safety issue. Drawing too much power was also not a safety issue as a GPO circuit in a rehearsal room is quite adequate for what the students are familiar with.

Question 13

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 17 | 34 | 49 | 1.3 |

Any two of:

* tuning instruments/guitars
* restringing
* spare plectrums
* spare sticks
* fuse replacement
* replacing a faulty lead
* can assist with setup and test mics
* adjusting mic stand
* reset stage.

Most students worked this out, but there were a lot of references to the work a monitor or FoH engineer would be doing.

Question 14

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | 4 | Average |
| % | 3 | 9 | 20 | 36 | 32 | 2.9 |

Advantages

* free movement
* not constricted by cable
* no tripping hazard from cable
* looks neater
* controlled volume
* consistent monitoring sound between different venues
* low manual handling risk
* click track use
* noise isolation
* less feedback.

Disadvantages

* flat batteries
* cost
* RF interference / signal loss
* additional equipment (receivers)
* more power outlets
* distance constraints
* locate the antennae out of sight
* communication difficulties
* may need ambient mics
* ear damage
* more fine tuning required
* falling out (not latency).

Question 15

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 72 | 28 | 0.3 |

Lower output volume / impedance issues / fry the cable / equipment damage / distortion

Question 16a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 58 | 42 | 0.4 |

Any one of:

* overload the amplifier
* draw too much current
* damage the amplifier
* distorted sound
* blow a fuse
* speaker damage
* wire speakers in series to stop the problem.

Question 16b

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 23 | 49 | 29 | 1.1 |

Any two of:

* use additional amplifiers
* use active speakers (not passive)
* connect fewer speakers per channel (not reduce equipment).

Question 17

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | 4 | Average |
| % | 6 | 12 | 26 | 36 | 21 | 2.5 |

Any four of:

* lighter/portable
* cheaper
* can save settings
* outboard gear built-in
* upgradable
* can use Wi-Fi controller
* have touchscreens
* can use with a digital multicore
* can snapshot show scenes
* offline editing (channel names, routing etc.)
* easier or more advanced automation
* can record digital multitrack audio while doing a live mix
* less space required (not use of word ‘plugins’).

Question 18a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 70 | 30 | 0.3 |

* Replace cable.
* Ground lift switch on DI.
* Plug bass amp power to same circuit as PA.
* Mic up the bass amp instead.

Most students made a good effort. Many talked about some sort of noise and then suggested a noise gate or EQ, which was not quite what the question was asking.

Question 18b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 47 | 53 | 0.5 |

Hum / hum loop / ground loop / earth loop

Question 19a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 44 | 56 | 0.6 |

Low frequency / bass

Most students made a good effort, although there were a lot of HF responses because this is what humans hear best.

Question 19b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 44 | 56 | 0.6 |

Any one of:

* longer wavelength not easily absorbed
* radiates in all directions
* can go around objects better than HF
* less directional
* more energy involved in LF production
* HF is easily absorbed
* poor sound proofing of building.

Question 20

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 31 | 69 | 0.7 |

Less chance of popping sounds when turning on / plugging / unplugging, avoid equipment damage, ability to assign phantom power to individual channels

Question 21

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 83 | 17 | 0.2 |

10 amps / 10A

Question 22

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 86 | 14 | 0.1 |

Amplifiers, powered/active speakers

Most students simply said ‘speakers’; the word ‘powered’ or ‘active’ was necessary.

Question 23

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 60 | 22 | 17 | 0.6 |

Any two of:

* any backline equipment
* any equipment on a stage plan
* instrument amplifiers
* specific type/quantity of microphones/DI or other PA equipment
* specific lighting equipment requirements (not number of leads).

Most students did not demonstrate knowledge of what a technical rider is, instead listing anything related to PA.

Question 24a.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 41 | 59 | 0.6 |

Mp3, m4a or other compressed audio file type

Question 24b.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 32 | 68 | 0.7 |

Better quality / uncompressed / highest quality until final stage / better frequency response or dynamic range (cannot refer to compression)

Question 24c.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | 3 | Average |
| % | 14 | 24 | 37 | 25 | 1.7 |

Problems

* issues with tempo / group timing
* drummer has to play in time with previously recorded tracks
* not starting to play together (no reference to overdubs could be accepted).

Solution

* Use a click track in session 1.

Solution MUST reference both problems.

Most students talked about group dynamics or indicated the recording session was the first time the musicians got together to play the song.

Question 24d.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 33 | 67 | 0.7 |

To accompany the other performers / cue other instruments/parts/people, assist with producer/engineer cue session.

Many students went back to the group dynamic reason, or that the singer could make changes in the second session, which is incorrect.

Question 24e.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mark | 0 | 1 | 2 | Average |
| % | 38 | 37 | 25 | 0.9 |

Show violin in the iso booth. Show that players are positioned in line with the windows. Violin and vox need to be in separate spaces due to spill.

Many students put the drum kit into the session or there were no clear sight-lines between the musicians.

Question 24fi.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 28 | 72 | 0.7 |

Overload the mix bus/distortion/clipping/dBFS.

Question 24fii.

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | 0 | 1 | Average |
| % | 69 | 31 | 0.3 |

Increase the control room monitor level and decrease all channel levels, insert a compressor/limiter on the mix bus, headroom set suitably.