Pedagogical considerations: Facilitating agency in the vocal recording of early career singer-songwriters

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Abstract

Audio recording is a much anticipated and integral component in the career trajectories of contemporary singers. This article discusses research undertaken through three in-depth case studies, each of which focused on the recording of original songs by early career singer-songwriters. The research examined the ways that recording techniques, digital technologies and studio interactions affect vocal performance during the recording processes. Participants were purposively sampled for their early career interest in songwriting and recording. The findings identified specific educational considerations relevant to those involved in vocal pedagogy, and in artist training and development. The outcomes detail pedagogical parameters and features designed to facilitate agency in the recording of contemporary vocalists.

Keywords
singer-songwriter, audio recording, vocal performance, early career, pedagogy

Introduction

Audio recording is a much anticipated and integral component in the career trajectories of contemporary singers. For those singers who write their own songs, the audio recording of their songs often enables their original works to be realised and heard. Additionally, the recording of a singer-songwriter's original works lessens the potential for mimicry or for modelling the vocals of existing performances. This, in turn, has the potential to enhance agency by facilitating original vocal performances. At times, however, the recording process can be complicated by stakeholder, technical and artistic differences (Hughes and Evans 2018: 20). Issues may arise during production or vocal processing that have the capacity to profoundly affect the ways in which the voice and songs are conceptualised and represented. Various stakeholders are usually involved in any recording project and, in addition to the artist, may include musicians, musical arrangers, sound engineers, and producers. Industry stakeholders, such as artist managers and label representatives, can also influence recording outcomes.

Research in the recording studio involves understanding the ways that recording techniques, digital technologies and studio interactions affect vocal performance during the recording process. In this context, the primary question that needs addressing is: 'What are the ways in which audio recording impacts contemporary singer-songwriters, their expressive techniques and their vocal sound?' An interdisciplinary approach, primarily involving singer-songwriters and a producer/vocal coach, aims to reveal strategies for vocal education involving the recording of singers, particularly those early in their career. Participants were purposively sampled for their early career interest in songwriting and recording. The findings identify specific educational considerations relevant to those involved in vocal pedagogy, and artist training and development. These are detailed as pedagogical parameters and features that are designed to facilitate agency in the recording of contemporary vocalists.

Artistic intent and identity in recording

Effective collaboration with stakeholders in all stages of the recording processes is paramount to the realisation of artistic vision (Hughes and Evans 2018; Titelman cited in Massey 2009: 64). Typically, though, early career singer-songwriters are unfamiliar with

or have limited experience in the recording studio/environment and the processes involved. Nor are they used to the various stakeholders and recording terminology. There is then a potential lack of understanding of vocal 'sound' or how to communicate that sound or an associated ideal to others. This can occur in both recorded and amplified contexts. Donohue (2021) stresses the importance of preparing singers for changes to their perceived sound when audio technology is used (Donohue 2021:138). Certainly, learning to 'hear' vocal sound more broadly is vital when that sound is mediated. This concern was previously highlighted in a reflection of a pre-performance sound check of a 'young, local group' (Frith 1996: 24). In this example, Frith details the difficulties experienced by young musicians that arose after an audience member commented on the low vocal level in the group's amplified sound. The challenging situation brought into question the singer's ability alongside the subjective influences of those involved in the resultant 'mixed' vocal. While Frith's example pertains to a live performance setting, it identifies the significance of the level and treatment of the singing voice in a contemporary sound mix. This also has broader educational implications that highlight the relevance of resultant 'sound' including its evaluation, perception and control. Frith noted this when he surmised 'as public performers [the musicians felt] powerless (particularly when starting out), that sounds were imposed on them by engineers' (Frith 1996: 25). Warren (2018) reinforces this perspective when stating that 'too often vocalists are excluded from technical decisions around microphone use [that] reinforces the vocal listening prohibition and deprives vocalists of input into their own cyborg status' (Warren 2018: 31).

In any sound mix, but particularly in recording, vocal performance and its staging are significant considerations (Woloshyn 2020; Dibben 2009; Lacasse 2010). For early career artists, the issue of being 'powerless' in staging vocals indicates a lack of agency on a number levels. When discussing the perception of agency, Zagorski-Thomas (2020) refers to the techniques in record production that specifically enable the manipulation of vocal sound (Zagorski-Thomas 2020: 12). A loss of agency may therefore be evident when a desired vocal aesthetic is manipulated or compromised, or when other stakeholders have exclusive creative control. While such control can be evident at any stage of the creative process, early career artists are plausibly 'vulnerable' when compared to those more experienced. Whether signed to a label or recording independently, early career artists are undoubtedly 'learning' while contemporaneously

endeavouring to establish their artistic identity and resultant sound. Therefore, on the flip side, they have much to learn from those with experienced ears who may provide an 'external' perspective particularly when the singer is unable to predictively hear or lacks the terminology to describe their vision. This presents its own challenges as producer and sound engineer, Glossop (cited in Massey 2000), explains that it is 'more difficult working with an artist who doesn't have a clear idea of how they want the musical identity to emerge' (Glossop cited in Massey 2000: 240). While it may not be a producer *per se* that works with an artist in the early stages of their recording career, it will inevitably be someone acting in that capacity whether it be a sound engineer or another musician, or even the self-producing artist. For many early career singers, recording vocabulary and vocal effects are not included as part of their formal (or informal) vocal learning. Witnessing early-career artist/singer-songwriter navigation through recording processes and environments provided the impetus for this research.

Recording and producing vocals

Singing engenders 'lived experiences, traditions, emotions, ethnicity and human existence' (Hughes 2013: 13). Irrespective of the musical style, the singing voice is an expression of the embodied sound and, for many singers, it represents the individual self. Singers usually learn about their vocal sound through auditory perception and feedback, a process which involves bone conduction (Leigh-Post 2014: 23-28). Listening to amplified or recorded vocals is decidedly different from acoustic vocals as it involves listening to a vocal sound that has been processed via a signal chain (Cafaro and Arneson 2020: 311-313; Donohue, 2021: 138-139; Edwards, 2021: 366-368). It is therefore perhaps not surprising that early career singers sometimes have difficulty in reconciling their processed sound with their self-perceived sound. Yet, the typical way for singers to 'hear' their sound as others hear it is through recording playback. This can be confronting in recording situations where singers are either familiar with listening 'to their own voices on devices that were never meant to capture the complete acoustics of singing' (Frazier-Neely 2013: 594) or are unfamiliar with processed vocals. Either way, the singing voice can seem different from what is expected, and 'representing' the singing voice through captured vocal performances can prove challenging.

Recording (and amplifying) contemporary vocal performance involves a communicative process that mediates a performer and audience connection (Lacasse 2010: 226). As Dibben (2009) further suggests, it is the 'normative staging of pop voices [that] provides aural intimacy' (Dibben 2009: 331). For recording and subsequent staging, microphone placement and capture, ideally in an acoustically treated space, are key. The recording of voice, however, involves multiple stages pre-production, during recording (production) and post-production with many considerations relating to each. While acknowledging that there may be some overlap of during recording and post-production stages (such as preliminary comping), for the purposes of this research the stages of audio recording for vocals are delineated as pre-production, during recording and post-production.

Pre-production for singers usually focuses on song choice and rehearsal. This includes considerations such as song key as Froom (cited in Massey 2000: 203) describes: 'Vocally, you want to make sure that the song is written within a range where [the singer] can be convincing'. Then, during recording, vocal decisions consist of microphone choice (Edwards 2021: 359-366), audio capture (Dibben 2009: 320), and reducing or ensuring a lack of artist tension (Garner 2014: 65). It is in the post-production mixing process that the lead vocal continues to be a primary consideration as evidenced by its placement 'at the front of the mix' (Dibben 2009: 319). Following a typical comping of different recorded takes into a compilation track, mixing processes for vocals usually involve the application of various effects and treatments. The attention on recorded vocals, particularly in a contemporary context, directly relates to a singer's significance in recorded outputs and/or to their artistic identity. This is despite comping and mixing processes that, unless the artist is self-producing, usually involve other stakeholders–engineer, engineer/producer, producer, manager–who may make creative decisions away from the singer.

Research context, aims and design

Research into vocal artistry (Hughes 2014), and the digitised music industries (Hughes, Evans, Morrow and Keith 2016), reveals a host of methods and applications of vocal processing now available (Hughes *et al.* 2016: 123). Digital production techniques capture, alter, treat and/or manipulate vocal sound (Hughes 2012a; Hughes 2012b; Hughes 2014). The democratisation of recording technologies has also resulted in the

singing voice being conceptualised in various soundscapes, contexts and platforms. These sonic conceptualisations, and their associated technologies, facilitate the production of a vocal sound. Exploration of sonic conceptualisation, mediated sound and vocal integrity illustrates the possible interrelatedness of the 'tech-processual contexts' (Bennett 2019: 15) and, more broadly, of vocal artistry.

To date, the ways in which a singer learns to navigate a myriad of recording 'opportunities' and directions is insufficiently researched. This is despite advocacy in relation to teaching singing alongside associated technologies (Frazier-Neely 2013: 596; Edwards 2014: 237; Hughes 2017: 186; Cafaro and Arneson 2020: 315). In comparison with classical singing, Titze (2013) writes, '[contemporary] singing is not 'weak,' 'unrefined,' or 'lacking in timbre' if the electronic processing of the sound is considered part of the instrument' (Titze 2013: 57). Further, Titze (2015), in a description of musical instrument design, suggests that sometimes it is 'a hybrid between acoustic components and electronic components' (Titze 2015: 601). This hybridity extends to the contemporary singing voice as an acoustic output with its audibility and conceptualisation rendered or mediated by technology.

For this research, the parameter of early career focused on those singer-songwriters embarking on the recording of their original songs. Our research involved three case studies, two singer-songwriters with minimal performance experience and one with professional singing experience (mainly in cover bands). None had professional recording experience; two had minimal recording/production experience. The early-career participant experience was important as it reduced possible assumptions about staging vocals. The singer-songwriter and the recording of original songs also lessened the capacity for the vocal modelling of existing works and placed emphasis on an approach often associated with integrity (Hughes and Evans 2018: 18). A studio was the preferred recording location as this not only emulated real-world practices, it enabled the gathering of data in an environment largely untried or unfamiliar to each participant. Such a location lessened the potential for pre-conceptions and was equitable for all participants. It also aligned with industry expectations as, even for live performance, singers often work in a variety of 'untried' locations where the resultant sound is engineered by others.

The recording sessions were designed to be interactive between all stakeholders

(engineer, producer, artist). This interaction also aligns with studio practices, as Zagorski-Thomas (2014) points out: 'the construction of the final composite take is often a complex collaborative process including performer, editor [engineer] and producer in the decision-making process' (Zagorski-Thomas 2014: 43). The producer, Hughes, served a dual function of producer/vocal coach and researcher. While instruction in studio practices and treatments was beyond the scope of the study, participants were encouraged to offer suggestions, to question, and to comment during and after each session. This extended to the applied effects as well as the sounds or treatments deemed to be inappropriate. All participants were 18 years+ and were purposively sampled for their respective experiences. The parameters of each participant were therefore varied. These have been de-identified and are presented as gender neutral, along with associated aggregated data (see Table 1), to ensure the confidentiality of personal details 'gathered in the course of the study' are in accordance with human ethics approval. Informed consent was obtained from each participant at the outset which included the scope and research focus. The number of recording sessions and the length of sessions were participant dependent. These are documented in the findings below. It is important to note that the number of recording sessions offered, exceeded those that would usually be affordable by early career artists in a commercial environment. However, it was also important for the participants not to feel time pressured for the purposes of this research. Additionally, recording sessions were scheduled on non-consecutive days to allow for periods of vocal rest.

The research design facilitated the exploration of sonic conceptualisation as applied to the recording of the contemporary singing voice. As the singing voice and recorded vocal performance are inextricably linked in production and processes (pre-, during and post-production mixing and mastering), data were collected through a combination of participant observations, questionnaires, interviews, and audio/video recordings of each session. Collaboration, through an ethnographic process of mediated production, aimed to facilitate a realisation that aligned with each participant's vocal sound. While the sessions were not necessarily intended to produce commercial outcomes, they were designed to afford the exploration of recorded vocal sound as a primary focus. Post-production interviews determined whether the artistic aims and aesthetic preferences were realised from multiple perspectives, and whether these aims and preferences altered during the recording processes. The subsequent data analyses identified considerations,

concerns and emergent themes that related to the contemporary singing voice in the processes and realisation of recorded original songs. As such, the findings provide theoretical and analytical insight into contemporary vocal recording.

Table 1. Participant parameters

Case Study	Performance experience	Instrument focus	Recording Experience
Participant 1 (P1)	Amateur; mainly covers	Mainly voice, some keyboard	No recording or production experience
Participant 2 (P2)	Some professional; mainly originals	Mainly guitar, some voice	No recording experience; limited production experience
Participant 3 (P3)	Professional; mainly covers	Mainly voice, some keyboard	Limited recording experience; limited production experience

Findings

The participants were encouraged to record up to four original songs. The number of songs selected for recording, along with the type of accompaniment and musical arrangements, ascertained the number of recording sessions offered and were case dependent. Pre-production interviews determined artistic aims and aesthetic preferences, and are consistent with industry practices (e.g., Worley cited in Massey 2009: 238). As such, pre-production meetings were used to outline processes and to identify artistic expectations. In these meetings, participants spoke about their songs, along with their preferred treatment and accompaniment. All participants expressed the aim for their vocal sound to be accurately represented in different ways: 'I want it to sound like myself' (P1), that '[the story that I'm trying to tell is not] just getting lost in translation' (P2), and '[when performing, my voice is] live and it's organic. So, I think as close to that as possible for me–what can be done live–I'd prefer' (P3). This intent aligned with a 'level of similarity between the recording and the live listening experience' (Moylan 2015: 304) and is distinct from recordings in which the vocal sound is heavily treated or even created. Equally, participant intent aligned with notions of authenticity in which 'perceptions of creative agency and authorship' (Richardson 2009: 86) may be intertwined. The participants were subsequently encouraged to raise concerns or issues during and in post-recording sessions, and after their subsequent review of recorded bounces. Overall, Participants 1 and 2 reported positive recording experiences throughout the processes. The outcomes for Participant 3, however, were more complex and resulted in extended sessions. These are documented below.

Participant 1

Participant 1, the most inexperienced of the three participants, presented four original songs for recording; two of the original songs were written by the participant and two were in collaboration with their accompanist. The songs were composed and performed in an acoustic soul-influenced pop style. Single tracked acoustic guitar accompaniment was provided by an accomplished musician who had extensively rehearsed the songs with the participant prior to the sessions. The participant, however, was quick to point out in the post-production interview that the songs were not 'obsessively' rehearsed and, as such, they 'still sounded really natural and raw which I think is a good thing whereas if you [over rehearse] you lose the emotion and the creativity of the song'. The 'raw' ideal further aligned with the aim of using minimal recording effects. Mentioning a slight use of reverb, the participant was adamant that they wanted their voice to sound 'real […] I guess because I think it sounds more honest'.

At the outset of recording, the participant aimed to work in a 'collaborative sense […] so hopefully that will make me a better singer because I'll understand more'. The tracks were recorded and mixed over three sessions; each session was scheduled for up to seven hours. The participant was not expected to sing for the entire session, however, the allocated time allowed for the recording of two songs per day. As the participant and their accompanist were well-rehearsed, the decision was made to record all four songs with guide vocals during the first session. This allowed for subsequent sessions to be devoted to recording the final vocals for each track and to mixing.

Listening in-the-moment and listening back to takes became a reflexive feature. At the end of the first recording day, the participant noted, 'My voice has connected more emotionally with the meaning of the songs. I have heard things in my voice in today's recording that I know I can improve on for my vocal track[s] and live performances'. This level of listening was countered in the second session where the participant arrived 'a bit tired' and subsequently worked throughout the session to overcome an initial tension. In hindsight, the participant commented that they should have been 'a bit more relaxed to begin with'. These sentiments were supported by the producer's notes and a concern in the participant's vocal tiredness and session sustainability. In the last session, however,

the participant noted that they were ‘really happy with how my voice […] sounds’. In relation to general recording processes the participant reflected on the ability to change phrases and sections and how this led to their development:

> I liked being able to record–listen [back to takes] then developing/changing what I did to make it work better [...] It was good being able to split bits up. It made it easier to sing and I got the best result.

From the initial recording session, the participant commented that, ‘It has given me more confidence and understanding with recording. I wasn’t sure what to expect [at] first, now I can be more comfortable if I record again.’ Other challenges were identified by the participant in relation to vocal technique and musicality with their expressing concern in ‘hitting the right note’, in ‘some words – sounding American’ and in their self-identified ‘breathing issues’. Most of the identified issues were resolved through repeated and focused vocal takes.

Describing the mixing of songs as ‘fine tuning’, the participant made notes specifically on the effects and treatments for each song. These included thoughts such as ‘airy more reverb’ and ‘a gutsy sound’. Such comments showed a growing awareness of vocal processing, even in such a short timeframe. Committed to the role of being ‘the voice that sings the song[s]’, the participant found that recording their voice produced constructive outcomes. Having initially expressed concern over accurate pitch and recording each song in one take, in the final interview the participant adopted a practical approach in ‘not having to be perfect in one take [and that it] really takes a lot of pressure off’. The compilation of vocal takes into a single track was viewed as enabling ‘the best product [as] there’s no point in overworking yourself and trying to get one flawless take’.

Participant 2

Participant 2 was the only participant who was used to and proficient at self-accompaniment (acoustic guitar). Preferring guitar to other forms of accompaniment, the participant explained, ‘at the moment it’s just me on guitar. I like doing that because I feel as though I can sort of convey emotion a little bit easier’. The participant was committed to a contemporary folk style and commented that their songs were ‘drawn from […] personal experience’. Three original songs were selected to be recorded over two seven-hour sessions. The participant noted, ‘I’m bringing the song to the session and

then it's my job to perform that, it's my job to sing that. That's my role'. Along with performing, the participant displayed some knowledge of recording effects and how these could be applied to the voice:

> I can say 'look, maybe a little more reverb or cut out the bottom end on that and this' […] I don't tend to like too many effects. I like a natural room reverb and then [using equalisation] so that it sounds crisp and clear. And I am quite a fan of a sort of really transparent subtle compression on the vocals just to give them a bit more sort of stand out from the guitar.

The participant was initially clear on their recording priorities, 'number one is telling the story. Then performing. It's obviously getting the vocal tight [effective vocals]. Guitar playing is sort of the third […] I don't like to overcomplicate my guitar playing when I sing'. During the pre-production interview, the participant and producer discussed alternative ways to record guitar and vocals. The separation of guitar and vocal tracks in recording, was unfamiliar to the participant. As it was impossible to isolate the vocals in a 'live' recording format, and as the aim was to explore vocal conceptualisation, the decision had to be made either to perform the tracks live or to separate tracks by initially recording a guitar bed track. Both formats were explored, although separate tracking proved difficult for the participant as each song 'was driven by the story in the lyrics' not by the chords. When tracking separately, however, the participant noted that this 'improved the quality of the vocals'. In the post-production interview, the participant reflected:

> I aim to record […] live to get the emotion but, in the end, that's not the way it worked out for two [songs] And it was really cool to hear it sort of different […] And I changed my aim. My aim was to get the best sounding recording possible with trying to retain as much emotion as a live take […] You can still tell that there's emotion there but it's a little more controlled.

Another key factor the participant faced in each session related to vocal care and sustainability. Acknowledging that 'resting' the voice during the first session was a challenge, the participant further reflected that through the recording process they realised that the voice reacted to the physical state. For example, in the second session the participant documented that 'I was tired so I was struggling for the [vocal] range I can normally achieve' and, as such, 'it was getting harder to hit notes'. This resulted in minor pitch issues which were corrected when the participant later played guitar while singing. The participant also commented that they were unfamiliar with listening to their voice and that the process of 'listening back' enabled the participant to 'hear' their voice.

Additionally, the participant realised through listening back to and discussing each take, that both the participant and the producer preferred those where 'the emotion was conveyed as intended'.

The process of recording expanded the participant's vocal understanding as initially, in pre-production, the participant had difficulties in describing their singing, '[it's] not technical. It's not so much conversational. Like I don't sound like I'm talking but it's like that I guess […] I can go low but I can't really get any high notes.' This understanding broadened during the project. Striving to maintain the integrity of the vocals during the sessions, the participant was surprised to hear the singing in the mix, saying that it was 'much louder than the guitar and it just pops, it just hits you'. Also, correcting relatively few and minor pitch issues was not utilised either as an option to save tracking time or in the mixing process. The participant's voice was consistently aligned with a folk sound, one that did not require or warrant anything than either minimal processing in its production. Reverb and compression were applied but overall the vocal sound remained 'natural' and unaffected. This supported the participant's artistic aim of being more 'a storyteller than a singer'. Communicating with an audience through creating a listenable experience was paramount. Listening during and post recording formed an essential part of this realisation. Stating that 'to hear myself clearly is like the main thing' for success in the studio, the participant added:

> [Post recording] I listened to [the tracks] a few times. The first time I heard them I listened to them straight onto my iPad and I didn't think they sounded right so I plugged them all through my sound system […] and then they sounded really good […] it sounded big which is exactly how I knew it was going to sound in the end.

Participant 3

Four original electronic/pop tracks were initially scheduled to be undertaken in three seven-hour recording sessions. In this case, the accompaniment was provided by rhythm tracks that became the beds on which to layer the vocals and to add simple keys where required. This was a new musical direction for the participant and so after the initial sessions, the decision was made to offer further recording time to enable consolidation of developing recording artistry. Eight additional recording sessions of between three and five hours, offered over an extended timeframe, allowed several vocal considerations and

concerns to be addressed. These additional sessions are also indicative of recording in a pop style that usually requires more complex production when compared to indie/folk recordings.

From the outset, and despite pre-production preparation, the initial recording sessions brought about significant song changes including structure, key, and the envisaged harmonic layering of vocal lines. Participant 3 commented that in pre-production rehearsal, a process of song adjustments occurred that helped in gaining 'perspective' and artistic direction. Preparation aside, however, the process of constant adjustments meant that the recording sessions tended to follow a similar modification process. This resulted in a focus on varying musical elements such as 'figuring out more suitable [keyboard] basslines', 'playing' with the harmonies and phrasing which were 'affected by the changes in chords and baselines'. The modification process also added time pressures that engendered realisations such as, 'It would have been ideal to start and finish the keyboards earlier so we had more time on the vocals'. By the end of the initial sessions and with a 'way to go' in evolving recording agency, the vocals and studio process were not as envisaged:

> If we had more time, I think the process of recording the harmonies and lead vocals on different days would be better for my voice […] Next time, [there would be] things like a solid outline of the harmonies and a baseline to make the session a bit more seamless […] I feel that it will take a bit of time to find a writing and recording routine, but I am very excited about the journey.

It was at this point in the research that more sessions to focus specifically on recording vocals were offered to the participant.

When the participant returned to the studio, it was evident that three of the tracks had been reworked both in vocal style and musical approach. This resulted in altering the tracks 'as parts that [were previously] done are being reassessed and changed to fit with [the] evolution in style and preference in sound.' One lead vocal track was described as 'too placed and proper', with another two warranting changes in melody as the perception was that they were 'not easy on the ear'. The engineering of reducing breath sounds was also noted:

> Hearing an artist breathe when they sing maintains the organic listening experience. I would prefer that the more pronounced breaths be brought back in the mix as opposed to taking them out completely.

The integrity of recording was also noted in the difference between listening to the voice through headphones during recording versus listening to the voice in an acoustic space. Participant 3 commented that playback over speakers seemed different and was more aligned with artistic expectations. The participant was also initially sceptical about the integrity in comping takes:

> I can honestly say after finishing the mastering process and leaving my ears to rest for a few days, I have not been able to find where the takes were. They are whole takes to me now, even though I know we have several takes in there.

Participant 3 provided insight through a perception of the difference between live performance and recording vocals where the participant's 'performance voice' was different to their 'recording voice'. The primary distinction between the two was the perceived perfection required during recording which added performer tension:

> There is attention and an expectation associated with recording – 'get it perfect the first time' […] I have tried to combat this by holding onto the energy that I feel when I'm performing [live] and with every take I do, I just try to focus on honouring the lyric and connecting to the reasons why I wrote this song.

Here, the self-devised focus strategy evolved over time. Confessing that they are 'very critical' of their voice when recording and that 'it almost never feels exactly how I want it to feel and sound', the participant became increasingly frustrated. Interestingly, as a performer, Participant 3 had never suffered from stage fright. However, the desire to be 'perfect' in recording superseded, at times, the aim of performing with 'soul'.

Lessening the expectations of Participant 3, both in relation to perfectionism and consistent capability, focused on implemented strategies to support and aid relaxation in the studio environment. Strategies such as dimming the studio lights and even creating a small audience in the studio were adopted. In contrast to the negativity expressed, Participant 3 observed the benefits gained from a supportive studio team that assisted the participant in exploring vocal expectations. After discovering that the participant was more relaxed when singing a guide vocal, the participant aimed to embrace an approach 'with the mentality of it being a guide vocal session' as time went on.

In the post-production interview, Participant 3 commented that, 'I don't think we got a really good representation [in the recorded tracks and in] the progression that I had made'. The participant reflected on several issues that contributed to this including their perception that live performance best suited their voice, that the participant would enlist

‘someone who can really play keys’ if they were to start the project again, that the participant was ‘under-rehearsed in my songwriting ability’ and that they had not yet written a song ‘that really showcases my voice in the way that some of the songs that I cover do’. In contrast, the process of recording enabled the participant to learn about recording pragmatics, ‘Not being too cold. Hydrated and warmed up obviously. And just feeling comfortable […] even what you’re wearing – comfortable shoes and dress and everything.’ Overall, Participant 3 commented that the process provided ‘a demystifying experience’ through which the participant ‘had more answers than concerns’.

Discussion

Although each case study was discrete, the commonalities and differences are discussed in relation to the three emergent themes of discovery, listening, and connectivity. Each of these themes has relevance to facilitating agency *in* and *through* recording. These are outlined below.

Discovery through mediated performance was identified as change or consequence due to the recording processes or associated outcomes. As the findings revealed, each case study realised or transformed aspects of voice and/or voice use through recording. For example, the prized notion of vocal strength and loud dynamic achieved in live performances did not readily translate in recording (P2, P3). This resulted in changes to performance energy so that the singing, at times, was adapted to be more nuanced. This finding echoes the concept that live performance and studio recording can serve different functions (Bayley 2010: 5-6; Moore 2010: 255-256).

While each participant expressed, at times, concern over pitch, none opted to use software as a ‘quick fix’. Instead, each persevered with repeated takes (full tracks, sections, or drop-ins). This is despite the ubiquitous nature of vocal tuning that, in reality, decreases ‘the importance of getting something right in the moment’ (Milner 2009: 343) and, in relation to recording singers, requires ethical considerations (Hughes 2015: 591-592). Throughout the recordings, pitch correction was used sparingly and only for a particular note in a difficult phrase or for slight variances in complicated harmonies. Additional performed changes were enabled by listening to playback and experimenting, ‘If I can do it one more time, I can understand what I need to change because I’ve heard it’ (P1). Each

participant experienced singing along with previous takes for drop-in purposes, something that is possible only with 'captured' performance. In some instances, being slightly off-axis in relation to the microphone proved problematic for matching drop-in levels for comping (P1). In all three case studies, however, vocal or physical tiredness proved unconducive to recording vocals.

As the findings identified, *critical listening for artistic development* was evident in several pragmatic ways. Firstly, a click track during recording was usually the preferred method of keeping time for participants when layering tracks. It was not used for songs where timing changes occurred within a song (P1) or where the click was found to be distracting or creating spill (extraneous sound such as a click sound emanating from headphones that is audible in recording) (P2). While two of the participants had some experience using click tracks, P1 adapted a click track as a count in for the beginning of one of their songs. Secondly, the modification or change of melody after hearing the song in playback was, at times, adopted by participants as a method of achieving clearer vocals (P1, P3). Similarly, changing the song key also proved to be an option (P3). Such adaptations show that while there may be pre-production rehearsals, a critical ear in both pre-production and the subsequent recording stages is warranted. Extraneous noises, such as mouth clicks and stomach rumbles, were also detected.

Attaining a level of critical listening in studio monitoring and playback, proved key in the recording and post-production stages. This is particularly complex given that the recording environment is usually a 'dead' acoustic space in which singers may perceive their embodied sound differently to their realised sound (Leigh-Post 2014: 23-28). A comparison of the perception of embodied sound, such as 'it feels dull' (P3), reveals the significance of auditory feedback and its emotive connection. Furthermore, several variables, including 'the *perception* or *induction* [emphasis in text] of emotion' (Juslin 2005: 91; emphasis in text), contribute to the recording complexity. The relevance of a connection with and communication of emotion in vocal recording is supported by Lacasse (2010) who writes:

> Emphasis on the manner of delivery is not that surprising since the aesthetics of recorded popular music is first and foremost anchored in performance; more precisely, in individualised performances of feelings and emotions, as expressed by an artist, a song character, in short, a voice. (Lacasse 2010: 226)

Appropriate or achievable listening was also specifically raised in relation to the monitoring of vocal sound (P1, P2, P3). Headphone monitoring proved distracting, at times, with P2 preferring not to use cans during 'live' takes. All participants noted that listening, however, particularly in the playback of takes, informed their creative choices. Undoubtedly, the quality studio monitoring aided the clarity of sound, the captured performances (vocal sound and emotion) and resultant choices. The isolation of vocal takes also provided opportunities for targeted listening. The staging of vocals and instrumentation was considered and explained throughout the processes. This included discussion of reverb and delay choices, such as a purposefully engineered decision to use dual reverbs – one for vocals and another for guitar (P1). The frequency range of instrumentation that overlapped or challenged the audibility of vocal resonance became evident, at times, when listening to takes (P1, P3). This was largely reconciled through minimal equalisation.

Underpinning agency was the recurring theme of *connectivity and communication*. This involved a complex set of parameters including intrapersonal connectivity to emotion and vocal expression, along with the ability to communicate interpersonally in an interactive environment. As recording outcomes are aimed to connect artists with audiences, it was crucial throughout the recording processes for the participants to be able to communicate their requirements and ideas. For those participants familiar with some recording terminology and processes, the communication of intent and ideas seemed easier to convey (P2, P3). The findings also highlighted how vocalists sing differently in potentially unfamiliar contexts and with varying capabilities. In a recording context, these capabilities are largely reliant on the singer recognising and communicating their ideal vocal sound. Given that pre-production rehearsal is a time to solidify ideas (Howlett 2020), the recording processes do not always facilitate an optimal outcome particularly when intended ideas or vision lack clarity (Glossop cited in Massey 2000: 240).

From a producer perspective, involvement in each of the case studies revealed developing relationships in a recording context or even a perceived hierarchy within those relationships. For example, and at times, production decisions were adapted following the chance overhearing of whispered comments such as when the singer/s wanted to try alternative takes. Here, the purposeful 'team' objective was subverted by a confidence related aversion to being assertive. This was despite the invitation to make suggestions

and ask questions throughout the team processes. The participants also tended to communicate with either the producer or the engineer or, at other times, with both. The either/or communication often resulted in a focus on vocal/artistic outcomes (producer) (P1, P3) or on musical sound (engineer) (P2). Team communication may have been more effective had the participants been systematically introduced to the interactive roles of both the engineer and the producer and themselves at the outset of the project. However, all three participants commented on the supportive environment that the team approach created: 'I think having people there that who are encouraging is important because it makes you feel good about yourself' (P1), 'It was definitely helpful having the support of [the producer/vocal coach] and [the engineer who] was really knowledgeable about what [they were doing] I could say something really vague and [the engineer] would understand what I meant and then translate that' (P2), and 'I think the team […] really helped give me the best opportunity to explore different options' (P3).

At all times during the recording sessions, participants were encouraged and supported, as noted above. Positive feedback was offered at the end of each take, even if this was countered by a suggestion to undertake further recording along with the reasoning for that suggestion. Resolving additional tensions or potential tension centred around opportunities for adequate listening, sustained confidence, realising artistic vision, and the ability to 'own' vocal sound. As detailed in the findings, participant considerations included subdued lighting (P1, P3), positioning a participant to face and interact with their accompanist when recording a guide vocal (P1), and reducing recording time when the participant was either tired at the outset or was tiring during a session (P1, P2, P3).

Pedagogical parameters and features

The research explored the recording of early career singer-songwriters in relation to their respective vocal recording experiences. The emergent themes of *discovery through mediated performance, critical listening for artistic development*, and *connectivity and communication,* highlight an educative role in facilitating agency. The pedagogical parameters and features that help to facilitate this agency, are grounded in these emergent themes and their associated findings. Figure 1 identifies and categorises pedagogical parameters and primary features, and is divided into three phases of pre-production, during recording and post-production. It is envisaged that students would explore these

phases in an educational or guided recording setting. While the research was conducted in a studio environment, the findings detailed in Figure 1 are also relevant to facilitating agency in the recording of early career singers in other contexts (e.g., home studio).

Following initial vocal decisions (pre-production), the findings revealed that the ability to sustain a recording session from a vocalist's perspective (during recording) not only related to the vocal health/conditioning of the singer but also to the vocal load of the repertoire. Tessitura, therefore, becomes a key aspect of vocal repertoire and session structure. Employing the premise that 'sound can inform critical listening' (Warner 2009: 144), initial listening (during pre-production and in recording) and critical listening (during recording and post-production) are distinguished within each recording phase. The findings aligned the latter with *how* the recording and resultant sound *informed* or *represented* artistic intent. All three participants indicated a lack of recording terminology particularly in the decision-making process. Therefore, it is imperative in pre-production (or earlier) for singers to be given instruction in recording terminology to ensure that effective communication occurs during the subsequent phases of recording and post-production. The pedagogical considerations for facilitating agency conclude with a reflective element on processes and resultant sound. Reflective statements that spoke to *learning* were evident throughout the data, such as, '[the process gave] me another understanding of music' (P1), '[the process] opened me up to a whole new way […] of going about recording' (P2), and that '[parts were] reassessed and changed to fit with [an] evolution in style and preference in sound' (P3).

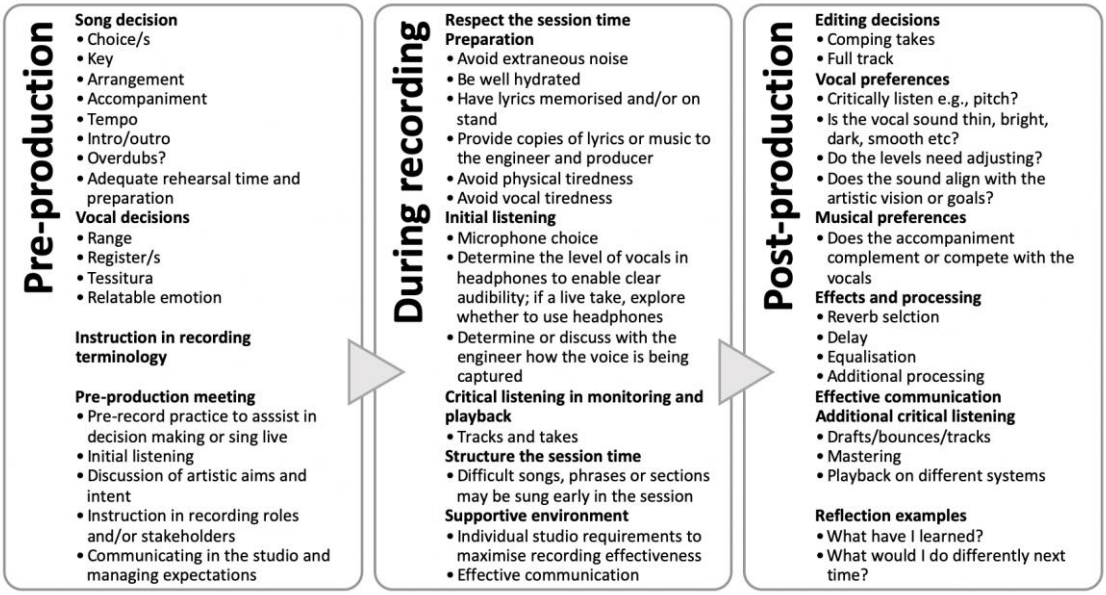

Figure 1. Parameters and features for facilitating agency in recording contemporary vocalists

Conclusion

This discussion has focused on the experiences of singer-songwriters with limited or no experience in the recording of their original songs. From a producer/researcher/educator perspective, the findings reveal that is not always possible or even warranted to generate a 'professional' recorded outcome when a singer is exploring their vocal sound or is using the process to explore emerging creative artistry. This consideration is particularly relevant in an educative context where the focus is on training and pedagogy rather than on producing commercially viable outcomes. In the context of an early career singer, a conversation around managing expectations is crucial prior to recording for educative purposes. For example, when an artist is evolving or changing *through* or *by* the processes, recording can be a positive outcome in itself and facilitate agency, 'it's really helped me progress. I've still got a way to go but I'm really excited about the steps that I took because of this' (P3). As the parameters and features identified in this research reveal, facilitating agency in recording is complex. It is, however, a crucial step for the contemporary vocalist as a primary stakeholder in the way that their public facing voice is conceptualised.

References

Bayley, A. (2010), 'Introduction', in A. Bayley (ed.), *Recorded Music: Performance, Culture and Technology*, Cambridge, UK: Cambridge University Press, pp.1–11.

Bennett, S. (2019), *Modern records, maverick methods: technology and process in popular music record production 1978-2000*, New York, NY: Bloomsbury Academic.

Cafaro, A. & Arneson, C. (2020), 'Audio technology: A tool for teachers and singers', *Journal of Singing*, 73, pp. 311–316.

Dibben, N. (2009), 'Vocal performance and the projection of emotional authenticity', in D. B. Scott (ed.), *The Ashgate Research Companion to Popular Musicology*, London: Routledge, pp. 317–333.

Donohue, L. (2021). 'An essential collaboration: Teaching vocalists to work with audio technology and audio engineers', in S. Holley, K. Reinhart and Z. Moir (eds.), *Action-based Approaches in Popular Music Education*, Denver CO: McLemore Ave Music and Fflat Books, pp. 137–143.

Edwards, M. (2014), 'What every singer needs to know about audio technology', in M. Hoch (ed.), *A dictionary for the modern singer*, Blue Ridge Summit: The Rowman & Littlefield Publishing Group, pp. 231–238.

Edwards, M. (2019), 'The art of perfection: What every singer and voice teacher should know about technology', in W. D. LeBorgne and M. Rosenberg (eds), *The Vocal Athlete: Second Edition*, San Diego, CA: Plural Publishing, pp.353–376.

Frazier-Neely, C. (2013), 'Live vs. recorded: comparing apples to oranges to get fruit salad', *Journal of Singing*, 69: 5, pp. 593–596.

Frith, S. (1996), *Performing Rites: Evaluating Popular Music*, Oxford: Oxford University Press.

Garner, K. K. (2014), *Vocal Recording Techniques for the Modern Digital Studio* [DMA Thesis], University of Miami.

Howlett, M. (2020), 'Pre-Production', in A. Bourbon and S. Zagorski-Thomas (eds.), *The Bloomsbury Handbook of Music Production*, New York: Bloomsbury Academic, pp. 177–186.

Hughes, D. (2012a), '"Mediocrity to artistry: Technology and the singing voice", in Janis Weller (ed.). Educating Professional Musicians in a Global Context, *Proceedings of the 19th International Seminar (CEPROM) International Society*

for Music Education, Philippos Nakas Conservatory, Athens, Greece July 10-13, 2012, pp. 64–68.

Hughes, D. (2012b), 'My sound, our sound: Constructing the aesthetic in contemporary vocal production', in L. Giuffre and P. Spirou (eds.). *Routes, roots and routines: Selected papers from the 2011 IASPM Conference*, pp. 58–71.

Hughes, D. (2013), 'An encultured identity: individuality, expressivity and the singing-self', *Australian Voice*, 15, pp. 13–19.

Hughes, D. (2014), 'Contemporary Vocal Artistry in Popular Culture Musics: Perceptions, Observations and Lived Experiences', in S. Harrison and J. O'Bryan (eds.), *Teaching Singing in the 21st Century*, Dordrecht Heidelberg New York London: Springer, pp. 287–302.

Hughes, D. (2015), 'Technological pitch correction: controversy, contexts, and considerations', *Journal of Singing*, 71: 5, pp. 587–594.

Hughes, D. (2017). '"Art" to artistry: A contemporary approach to vocal pedagogy', in G. D. Smith, Z. Moir, M. Brennan, S. Rambarran and P. Kirkman (eds.), *The Routledge Research Companion to Popular Music Education*, Taylor and Francis Group, pp. 177–189.

Hughes, D. & Evans, M. (2018), 'Communicating artistic integrity: collaborative production in recording processes', *Australian Voice*, 19, pp.15–21.

Hughes, D., Evans, M., Morrow, G., & Keith, S. (2016), *The New Music Industries: Disruption and Discovery*, Cham, Switzerland: Palgrave Macmillan.

Juslin, P. N. (2005), 'From mimesis to catharsis: expression, perception, and induction of emotion in music recording processes', in D. Miell, R. MacDonald and D. J. Hargreaves (eds.), *Musical Communication*, Oxford: Oxford University Press, pp. 85–115.

Lacasse, S. (2010), 'The phonographic voice: paralinguistic features and phonographic staging in popular music singing', in A. Bayley (ed.), *Recorded Music: Performance, Culture and Technology*, Cambridge, UK: Cambridge University Press, pp. 225–251.

Leigh-Post, K. (2014), *Mind-Body Awareness for Singers : Unleashing Optimal Performance*, San Diego, CA: Plural Publishing.

Massey, H. (2000), *Behind the Glass: Top Record Producers Tell How They Craft the Hits*, San Francisco, Calif: Backbeat Books.

Massey, H. (2009), *Behind the Glass Volume II: Top Record Producers Tell How They Craft the Hits*, Milwaukee, WI: Backbeat Books.

Milner, G. (2009), *Perfecting Sound Forever: An Aural History of Recorded Music*, New York: Faber and Faber.

Moore, A. (2010), 'The track', in A. Bayley (ed.) *Recorded Music: Performance, Culture and Technology*, Cambridge, UK: Cambridge University Press, pp. 252–267.

Moylan, W. (2015), *Understanding and Crafting the Mix: the Art of Recording*, Burlington, Mass.: Focal Press.

Richardson, J. (2009), 'Televised Live Performance, Looping Technology and the "Nu Folk": KT Tunstall on *Later … with Jools Holland*', in D. B. Scott (ed.), *The Ashgate Research Companion to Popular Musicology*, London: Routledge, pp. 85–101.

Titze, I. R. (2013), 'Some reflections on speech-like singing and related contemporary approaches', *Journal of Singing*, 70:1, pp. 57–58.

Titze, I. R. (2015), 'Training the electronic (microphone) singer', *Journal of Singing*, 71:5, pp. 601–602.

Warner, T. (2009), 'Approaches to analysing recordings of popular music', in D. B. Scott (ed.), *The Ashgate Research Companion to Popular Musicology*, London: Routledge, pp. 131–145.

Warren, K. (2018), 'Sound Technologies as Agency-Granting Prosthesis to Vocal Body', *Leonardo Music Journal*, 28, pp. 30–33.

Woloshyn, A. (2020), 'Materializing Identity in the Recording Studio', in A. Bourbon, and S. Zagorski-Thomas (eds.), *The Bloomsbury Handbook of Music Production*, New York: Bloomsbury Publishing Inc, pp. 249–264.

Zagorski-Thomas, S. (2014), *The Musicology of Record Production*, Cambridge: Cambridge University Press.

Zagorski-Thomas, S. (2020), 'Recorded Music', in A. Bourbon and S. Zagorski-Thomas (eds.), *The Bloomsbury Handbook of Music Production,* New York: Bloomsbury Academic, pp. 7–18.

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