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*BELTING PEDAGOGY IN CONTEMPORARY
COMMERCIAL MUSIC: A CRITICAL REVIEW OF
PRACTICAL BELTING STRATEGIES WITH A FOCUS
ON BREATH MANAGEMENT FOR NOVICE ADULT
CCM SINGERS*

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1. COMPONENT 1

1.1. INTRODUCTION AND RATIONALE

As a researcher and active vocal coach, my professional practice and academic inquiry are closely connected. This connection reflects the professional-practice focus of this Master's degree, which integrates theory with pedagogy to ensure findings are both rigorous and applicable. It is noteworthy that my role as a worship singer affords direct access to a distinct cohort of learners—specifically worship vocalists, many of whom are novice singers seeking to develop sustainable and technically sound belting techniques. Belting, a key element of Contemporary Commercial Music (CCM), features a speech-like or yell-like tone and is common across various CCM genres, including Gospel and Worship (LoVetri, 2002; Edwin, 2007; Sundberg, Thalén & Popeil, 2012; LoVetri et al., 2024). In worship or gospel settings, belting plays a critical expressive and stylistic role, enhancing the emotional impact of congregational singing (Estill, 1988; Turner, 2008). As a result, creating effective and sustainable teaching methods for these singers constitutes a significant part of my professional practice and research focus.

Historically, belting was often considered unreliable or harmful to vocal health (Edwin, 2007; McGlashan, Thuesen & Sadolin, 2017; LoVetri et al., 2024). However, contemporary research recognises it as a credible and healthy technique when supported by evidence-based practice (Edwin, 2007; McGlashan, Thuesen & Sadolin, 2017; LoVetri et al., 2024). Despite growing acceptance, its terminology and conceptualisation remain contested, with scholars proposing varied definitions and frameworks that reflect ongoing ambiguity (Popeil, 2007; Bourne & Kenny, 2016; McGlashan, Thuesen & Sadolin, 2017). In module 3, I undertook a review titled 'A Qualitative Exploration of the Experience of Belting in Novice Adult

Female Singers of Contemporary Music Using Reflexive Thematic Analysis' that revealed that current peer-reviewed studies predominantly address the physiological and acoustic aspects of belting while offering limited guidance on sustainable pedagogy or practical strategies, especially for beginners (LeBorgne et al., 2010; Sundberg, Thalén & Popeil, 2012; Bourne & Kenny, 2016). Although some research validates belting from physiological and practical perspectives, a notable gap remains in developing structured, evidence-based strategies for novice and intermediate CCM singers (Roll, 2016; Roll, 2019). Furthermore, many studies privilege expert evaluations and professional performers, often overlooking the experiences and learning processes of beginners (LeBorgne et al., 2010; Bourne & Kenny, 2016; Maxfield & Manternach, 2018). Many studies focus on expert performers and advanced singers, reflecting the positionality of authors such as LeBorgne (2010), Bourne and Kenny (2016), and Maxfield and Manternach (2018), who work within conservatoire, clinical, or research-intensive contexts. Their emphasis on formally trained, conservatoire-style voice production contrasts with my work with novice adult female singers in contemporary worship settings, whose learning is informal and stylistically distinct from classical or structured pedagogies. On the other hand, grey literature and practitioner materials frequently provide concrete exercises, metaphors, and practical strategies that teachers report as effective in studio and worship contexts; however, these resources often lack systematic critical appraisal within academic forums (Sandelowski and Barroso, 2007; Lawrence et al., 2014; Winter, 2021). Bridging the gap between research and practice is essential for advancing pedagogical understanding in CCM teaching (LoVetri & Weekly, 2003; Weekly & Lovetri, 2009). This is because studio practitioners engage directly with students in applied, real-world contexts. While the previous module three's aforementioned review examined peer-reviewed studies on belting, this project extends that inquiry by focusing on grey literature, particularly Tier One materials, such as books (Adams, Smart, & Huff, 2017). This shift reflects my professional interest in

exploring practical, experience-based strategies for teaching belting, which seem underrepresented in academic scholarship (Bourne & Kenny, 2016). The amount of grey literature is necessarily limited, as many relevant publications were not readily retrievable in Switzerland or would have required extended delivery times beyond the module's timeframe. Nevertheless, this analysis seeks to critically compare the available practitioner materials with existing peer-reviewed research to identify sustainable, practice-informed strategies for developing belting among novice adult CCM and especially worship singers.

Across both peer-reviewed research and practitioner-oriented materials, breath management consistently emerges as a foundational component of sustainable belting technique, particularly for novice singers. As such, while this study engages broadly with belting pedagogy, it adopts a focused examination of breath management as a key practical strategy through which belting is taught, learned, and sustained in contemporary worship and studio contexts.

1.2 PLANNED PROGRAM OF STUDY

Aim of the Study:

This study aims to analyse how belting is represented and operationalised within practitioner-oriented grey literature and to compare these representations with peer-reviewed scholarship, with particular focus on breath-management strategies that support sustainable and student-centred belting pedagogy for novice adult singers in Contemporary Commercial Music (CCM), particularly within worship and contemporary studio contexts.

Objectives of the Study:

- To review and synthesise peer-reviewed literature concerning belting, with attention to breath-management considerations.
- To explore and synthesise practitioner-oriented grey literature on belting pedagogy, with particular emphasis on breath management.
- To compare and integrate academic and practitioner perspectives on breath management in belting, identifying areas of convergence and divergence.
- To explore how these insights can inform practical, sustainable breath-management strategies for belting in contemporary studio and worship contexts.

Personal Learning Outcomes:

Through completion of this study, the researcher aims to achieve the following personal learning outcomes:

- To develop a clear, evidence-informed understanding of belting as both a physiological phenomenon and a pedagogical practice within Contemporary Commercial Music (CCM), with particular emphasis on identifying and evaluating practical strategies of this technique, especially those related to breath management.

- To critically examine the relationship between peer-research on belting and practitioner-based teaching approaches, with a focused analysis of grey literature as a source of applied knowledge.
- To develop and strengthen competence in conducting narrative literature reviews, including the analysis, synthesis, and interpretation of peer-reviewed research and practitioner-oriented grey literature.
- To deepen reflexive awareness of how personal experience as a singer and teacher shapes research interpretation, source selection, and pedagogical decision-making.
- To apply insights from the literature to the development of sustainable, student-centred teaching approaches for novice adult belters within practical studio and worship-based CCM contexts.

1.3 METHODOLOGY

This Narrative Literature Review explores strategies for teaching belting, with a focused examination of breath management as a foundational practical strategy for novice adult singers. The review incorporated peer-reviewed research and practitioner-oriented grey literature to provide a more comprehensive understanding of pedagogical approaches for the belting technique.

The present study is informed by a constructionist paradigm (Scott, 2022), which acknowledges that knowledge is co-constructed through interaction between researcher and context. My personal experiences as a worship singer and active belter, combined with my practical experience in teaching belting and my awareness of the challenges faced by novice adult singers, naturally influence my interpretation of literature, selection of sources, and evaluation of both peer-reviewed and grey literature, particularly regarding their application in real studio contexts (Holmes, 2020). This insider perspective facilitates a deeper understanding of the subtle nuances inherent to belting pedagogy. Nonetheless, it is essential to exercise reflexivity to recognise the potential for bias (Mercer, 2007; Tracy, 2010). A reflective and reflexive journal was maintained to monitor biases and to document both the decision-making process and my personal reflections throughout the study (Scott, 2022). My experience as a worship singer and teacher informs my view of vocal expression and learning within worship contexts. This perspective highlights the influence of spiritual, emotional, and stylistic factors on the approaches of beginner singers to belting.

The research question was informed by the FINER framework (Feasible, Interesting, Novel, Ethical, Relevant) to ensure clarity and practical relevance (Covvey, McClendon & Gionfriddo, 2024). The study was deemed feasible because the necessary literature and resources were accessible; interesting because it addresses underexplored strategies in belting pedagogy; novel because it emphasises practical, experiential approaches for novice adult singers; ethical as it involves solely literature

review and reflective practice without direct participant risk; and relevant because the findings have direct implications for studio teaching and student-centred pedagogy.

The search maintained a broad focus on belting in general, as many peer-reviewed studies address the phenomenon without specifically discussing pedagogical implications. A search of peer-reviewed literature was conducted using UWTSD online library resources and Google Scholar. The initial aim was to ascertain whether all relevant peer-reviewed material on belting had already been collected from the previous review from module 3, and also to check for any new publications since this last review. Search terms were combined using Boolean filters: "belting" OR "belting CCM" OR "practical belting strategies" OR "belting singing CCM" OR "belting worship singing". To ensure comprehensiveness, a berry-picking approach was primarily employed; when particularly useful sources, or "pearls," were identified, their reference lists were selectively examined to uncover additional relevant studies. However, the above search for Module 4 revealed that there is still a lack of peer-reviewed literature offering practical belting strategies, particularly for novice and CCM singers (LeBorgne et al., 2010; Sundberg, Thalén & Popeil, 2012; Bourne & Kenny, 2016; Roll, 2016; Roll, 2019).

Subsequently, a search for grey literature was undertaken. This process was challenging, as it was my first formal research in grey literature search, and I lacked prior experience in source identification and retrieval. The focus was primarily on Google and Google Books. Tier-one grey literature was considered, following the framework proposed by Adams, Smart, and Huff (2017). Only books that were retrievable within Switzerland, classified as first-tier sources, and that provided practical guidance were selected. The search terms used Boolean filters and included "belting" OR "belting CCM" OR "practical belting strategies" OR "belting singing" OR "belting worship singing".

To ensure a comprehensive overview, sources were included if they

focused on belting technique and practical strategies relevant to novice or adult beginner singers within the context of Contemporary Commercial Music (CCM). The selection was limited to materials published in English and accessible within Switzerland. In the context of grey literature, priority was given to first-tier instructional books that offer practical, practitioner-based guidance. Sources were excluded if they focused exclusively on the physiological aspects of belting or vocal production without evaluating, describing, or providing guidance on the resulting sound or practical application, or if they were inaccessible. Additionally, grey literature sources that did not meet the first-tier reliability criteria were also excluded. As the literature on practical strategies for belting is relatively limited, the timeframe for inclusion was not strictly defined.

The present study adopts a narrative literature review design; therefore, it does not employ a formal data extraction framework. A narrative literature review was adopted because the literature on belting is limited, heterogeneous, and spans multiple disciplines and study types, making a systematic approach impractical; this design allows for a flexible and critical discussion of key findings, gaps, and practical implications.

After selecting sources according to the inclusion and exclusion criteria outlined above, I will familiarise myself with material drawn from both peer-reviewed and grey literature. Several themes emerged; however, due to time constraints and to allow for a more detailed and focused analysis, the present review examines one theme in depth: breath management in connection to belting.

Sources selected through the inclusion and exclusion criteria will include both peer-reviewed and grey literature, supporting the objectives of reviewing, comparing, and integrating academic and practitioner perspectives. This process enables an interpretive analysis of similarities, differences, and themes that inform sustainable teaching strategies for belting. The analysis is shaped by my positionality as a worship singer and teacher, which provides insight into novice CCM singers' experiences but

also frames the interpretation through my perspective and should not be taken as representing all beginner singers, Western classical singers, or other vocal contexts.

2. COMPONENT 2

2.1. INTRODUCTION

Belting is widely recognised as a central yet contested vocal production strategy within Contemporary Commercial Music (CCM), functioning as a distinctive feature of stylistic identity across genres including pop, musical theatre, gospel, and worship (Edwin, 2007; McGlashan, Thuesen & Sadolin, 2017; LoVetri et al., 2024; LeBorgne & Rosenberg, 2024). Despite its prevalence, its definition, mechanics, and practical and pedagogical applications of the technique remain inconsistent, with historical attempts to describe it reflecting significant terminological ambiguity and opposing conceptualisations (Popeil, 2007; Bourne & Kenny, 2016; McGlashan, Thuesen, & Sadolin, 2017; LeBorgne & Rosenberg, 2024).

This conceptual instability is further complicated within worship or gospel contexts, where singers commonly rely on high-intensity, speech-based production to fulfil expressive, emotional, and congregational functions (Estill, 1988; Turner, 2008; Neto, 2010; LeBorgne & Rosenberg, 2024), often without access to sustained formal training (Neto, 2010). The broader landscape of CCM pedagogy is similarly characterised by diversity and inconsistency. In contrast, scientific research has increasingly documented the acoustic and physiological attributes of belting (LeBorgne et al., 2010; Sundberg, Thalén & Popeil, 2012; Bourne & Kenny, 2016; LeBorgne & Rosenberg, 2024) —such as formant tuning strategies (LeBorgne & Rosenberg, 2024), increased subglottal pressure (LeBorgne et al., 2010; Sundberg, Thalén & Popeil, 2012; LeBorgne & Rosenberg, 2024), speech-like vowel modification (Sundberg, Thalén & Popeil, 2012; LeBorgne & Rosenberg, 2024), and high-intensity phonation (LeBorgne et al., 2010; LeBorgne & Rosenberg, 2024)—the practical application of these findings into accessible pedagogical methods remains variable (LeBorgne et al., 2010; Sundberg, Thalén &

Popeil, 2012; Bourne & Kenny, 2016). This gap is particularly evident among novice adult singers who engage in CCM through informal or experiential pathways, such as church worship teams. Research suggests that singers performing contemporary commercial music styles without systematic vocal training may be more likely to develop inefficient vocal behaviours, which can increase vocal load and elevate the risk of vocal injury over time (Neto, 2010; LeBorgne & Rosenberg, 2024). Research comparing novice and professional musical theatre singers has found that professional singers' intended vocal styles (belt, mix, legit) were more reliably identified by expert listeners than those of novice singers, indicating greater consistency and recognisability in professional productions of these qualities (Maxfield & Manternach, 2018). This pattern is consistent with broader pedagogical perspectives that trained singers tend to demonstrate more stable and differentiated vocal production in CCM styles (LeBorgne & Rosenberg, 2024). Although peer-reviewed literature offers valuable insights into the physiological and acoustic foundations of belting, it seldom provides pragmatic guidance suitable for novices or singers learning within worship-based settings (LeBorgne et al., 2010; Sundberg, Thalén & Popeil, 2012; Bourne & Kenny, 2016). Practitioner-oriented texts emphasise experiential learning, practical exercises, and student-centred strategies, and are extensively utilised; however, their claims and methodologies frequently lack thorough examination (Sandelowski and Barroso, 2007; Lawrence et al., 2014; Sauerland, 2018; Winter, 2021). Consequently, the pedagogical landscape is shaped by an uneven interplay among empirical research, studio-derived practices, and practitioner experience, with limited integration across these domains. In this context, the present component concentrates on the practical implications derived from grey literature, recognising the necessity for practice-oriented strategies to support beginner CCM singers. The review encompasses only tier-one grey literature, specifically four practice-focused publications (Adams, Smart and Huff, 2017). Nevertheless, the epistemological status and

pedagogical coherence of these materials merit closer scrutiny to elucidate their relationship with extant research evidence.

This review prioritises practical strategies and exercises identified in practitioner texts, intending to demonstrate how breath management can be developed progressively in novice CCM singers. Exercises as described by Gagné (2015) will be highlighted as actionable teaching tools.

Technical terms used throughout this review are defined in Appendix 1 for reference.

2.2. LITERATURE REVIEW

Following an analysis of data found during the search for this module, from both peer-reviewed and grey literature on belting, several key themes emerged. These themes reflect deeply interconnected physiological, acoustic, and practical strategies for belting in contemporary commercial music (Peckham, 2005; Peckham, 2010; Gagné, 2015; LeBorgne and Rosenberg, 2024; Roll, 2016; Roll, 2019). The identified themes encompass: breath management and belting (Gagné, 2015); resonance and belting (Gagné, 2015); registration and belting (Gagné, 2015); voice production and belting (Peckham, 2005; Peckham, 2010; Gagné, 2015); practical and pedagogical strategies (Peckham, 2005; Peckham, 2010; Gagné, 2015; Roll, 2016; Roll, 2019); tension (Gagné, 2015); physiology and acoustics of belting (LeBorgne et al., 2010; Sundberg, Thalén & Popeil, 2012; Bourne & Kenny, 2016; LeBorgne and Rosenberg, 2024); perception of belting (LeBorgne et al., 2010; Sundberg, Thalén & Popeil, 2012; Bourne & Kenny, 2016; LeBorgne and Rosenberg, 2024); belting and emotions (Peckham, 2005; Popeil, 2007; Peckham, 2010; Gagné, 2015); and different belting styles (Popeil, 2007; Sundberg, Thalén & Popeil, 2012; Bourne & Kenny, 2016). In this literature review, the analysis focuses on the theme of breath management and belting, comparing findings from practitioner-oriented grey literature and peer-reviewed research, with particular attention to how each source conceptualises the theme and the practical strategies associated with it.

2.2.1.BREATHING AND BELTING INTRODUCTION

It is widely accepted that how singers organise and control their breathing constitutes one of the most extensively examined areas within singing pedagogy and voice science (Miller, 1997; McCoy, 2005; Van Doorn, 2021). Singers draw on a range of respiratory strategies to regulate airflow and pressure in response to the varying musical and technical demands they encounter (Douglas & Patenaude-Yarnell, 2005; Kiesgen, 2005). Leading figures in vocal pedagogy and voice research recognise that approaches to breathing play a significant role in shaping tone, stability, and overall vocal wellbeing (Miller, 2000; Collyer, Kenny & Archer, 2011; Sonnenburg, 2021). At the same time, there remains ongoing discussion regarding how breathing should best be approached in practice, with different pedagogues placing emphasis on differing strategies and traditions (Thorpe et al., 2001; Lyle, 2011; MacDonald et al., 2012).

Proper breathing ensures efficient airflow and optimal vocal fold function, forming the foundation of good vocal technique (Douglas and Patenaude-Yarnell, 2005; Collyer, Kenny and Archer, 2011; Gordon and Reed, 2020). Within CCM, breath use is commonly described as style-responsive and task-specific rather than standardised across repertoire (Bartlett & Naismith, 2020). Their findings indicate that CCM pedagogues adapt breath strategies according to the aesthetic, rhythmic, and communicative demands of the music, emphasising that breath should function in service of the vocal task and remain efficient rather than uniformly prescribed (Bartlett & Naismith, 2020). This pedagogical approach aligns with the speech-based and text-centred characteristics of many CCM styles, in which teachers often encourage breathing patterns that feel natural and conversational, particularly when contrasted with the more sustained and formally managed breath approaches typically

associated with classical singing pedagogy (Bartlett & Naismith, 2020).

In singing pedagogy, the terms “breath support”, “breath management”, and “breath control” are commonly used, often interchangeably, yet none have a universally accepted definition (Peckham, 2005; Peckham, 2010; Gagné, 2015; Bonamico, 2021; LeBorgne and Rosenberg, 2024). Empirical research on singing, however, describes breathing in more precise physiological terms, focusing on subglottal pressure, airflow, and coordinated rib-cage and abdominal movements (Salomoni, van den Hoorn, & Hodges, 2016). Although pedagogical terminology remains inconsistent, the functional goal is clear: singers must coordinate respiratory mechanics to sustain phonation effectively and safely, particularly in high-intensity styles such as belting (McCoy, 2005; Sundberg, 1993; Gagné, 2015).

Richard Miller (2004) conceptualises breath management as an integrated physiological system for singing, involving the coordinated action of respiratory muscles, posture, and the laryngeal mechanism. He critiques the pedagogical term *support* as often being too vague to provide effective guidance, since it does not specify which muscles to engage or how airflow should be regulated. In this study, the term breath management is adopted to emphasise physiological coordination and the systematic control of breath. Following Miller, breath management refers to a comprehensive system of coordinated respiratory and laryngeal activity, in which inspiratory and expiratory muscles work in balance to maintain stable and efficient phonation.

2.2.2.BREATHING AND BELTING INITIAL ANALYSIS

The present analysis examines the relationship between belting and breath management, with particular attention to how respiratory coordination may support both vocal intensity and long-term vocal sustainability. Existing literature suggests that effective breath management is fundamental not only to the production of powerful and expressive sound but also to the mitigation of vocal strain associated with high-intensity singing styles (LeBorgne et al., 2010; Gagné, 2015; Bourne and Kenny, 2016; LoVetri et al., 2024).

A review of both peer-reviewed and grey literature demonstrates a clear and consistent association between belting and breath management, with breath coordination repeatedly identified as a foundational component of efficient and sustainable belting production (Peckham, 2010; Gagné, 2015; LeBorgne and Rosenberg, 2024). Across sources, inadequate or poorly coordinated breath management is frequently linked to compensatory behaviours that may increase vocal effort and undermine technical efficiency; strain and tension are discussed later in the review (LeBorgne et al., 2010; Peckham, 2010; Gagné, 2015; Bourne and Kenny, 2016; LoVetri et al., 2024).

Across pedagogical, clinical, and performance-based perspectives, breath management is rarely framed as an isolated technical skill. Rather, it is more commonly understood as an integrated mechanism that interacts with phonatory and resonant processes to support high-intensity vocal production (LeBorgne et al., 2010; Gagné, 2015; Bourne and Kenny, 2016; LoVetri et al., 2024). This integrated view positions breath management not simply as a preparatory or supportive function, but as a central component of coordinated vocal behaviour in belting contexts.

2.2.3.PRACTITIONER AND PEER-REVIEWED

PERSPECTIVES ON BREATH MANAGEMENT

One of the most influential practitioner-oriented contributions within this discussion is Gagné's (2015) work, which occupies a significant position within the grey literature due to its exclusive focus on contemporary belting. Unlike broader vocal pedagogy texts, Gagné's approach is grounded in the practical demands of belting as a stylistic and physiological phenomenon (Gagné, 2015). Central to her argument is the emphasis on airflow management as a primary component of effective belting, with vocal power understood to emerge from coordinated breath use rather than excessive muscular force (Gagné, 2015). This framing foregrounds breath efficiency and coordination as a key contributor to vocal power, while discouraging reliance on excessive physical effort or laryngeal tension (Gagné, 2015).

Gagné (2015) provides an extensive range of practical strategies and exercises that translate these principles into applied vocal pedagogy. Among these, several exercises focus on developing coordinated breath management and efficient vocal function. These include sustained hissing to develop airflow control, aspirated HA onsets to reduce glottal attack and breathiness, and sustained AH and EE phonation to promote balanced breath use (adapted from Gagné, 2015).

Peckham's pedagogical texts further reinforce this perspective through a practical focus on sustainability. In *Vocal Workouts for the Contemporary Singer* (2005), she emphasises the importance of careful breath use, resonant tone, and the avoidance of unnecessary pressure to maintain clarity and reduce the risk of strain in belting contexts. In *The Contemporary Singer* (2010), Peckham extends this discussion by drawing attention to posture, relaxation of the jaw, neck, and throat, and balanced resonance,

particularly in relation to the heightened physical and emotional demands of contemporary singing styles. Peckham's emphasis on speech-like production aligns closely with Gagné's perspective, collectively presenting belting as a coordinated system in which respiratory, phonatory, and resonant elements must function cohesively (Peckham, 2010).

These practitioner insights are strongly supported by peer-reviewed research, which offers a more detailed physiological explanation of the mechanisms involved. LeBorgne et al. (2010) describe belt production as involving diaphragmatic support, low abdominal inhalation, and the relative freedom of the upper chest, shoulders, and neck, which together accommodate the rapid glottal closure associated with high-intensity phonation. Bourne and Kenny (2016) similarly note that the speech-based qualities of belting depend on coordinated respiratory and laryngeal adjustments. LoVetri et al. (2024) further emphasise that effective belt production requires a precise alignment of subglottal pressure, resonance, and airflow. Taken together, these perspectives reflect foundational breath-management principles that are consistent with those articulated by Gagné and Peckham, delineating breath management not merely as an element of technique but as an organising principle that might enable the integration of multiple physiological processes, aligning with broader discussions in vocal pedagogy that emphasise efficiency over effort (LeBorgne et al., 2010; Peckham, 2010; Gagné, 2015; Bourne and Kenny, 2016; LoVetri et al., 2024). The importance of sustainable technique and breath management, and the relevance of these findings, is particularly significant when considering the needs of beginner worship singers, who are often required to balance high vocal intensity with long-term vocal sustainability in emotionally charged performance contexts (Turner, 2008; Neto, 2010; LeBorgne & Rosenberg, 2024). Neto (2010) further observes that worship singing communities typically

comprise singers of widely varying experience and technical ability, many of whom receive limited formal vocal training. Within this environment, breath management and sustainable technique become especially critical, providing a shared technical foundation that supports vocal intensity and expressive engagement while reducing the risk of fatigue and strain across diverse skill levels (Neto, 2010). This practical concern may be understood in light of broader pedagogical research that underscores the necessity of tailored teaching strategies and graduated skill development in facilitating coordination and reducing maladaptive compensatory behaviours in novice singers (e.g., professional vs novice respiratory differences in singing populations).

It is evident that certain conceptual themes begin to surface within this discussion, notably those relating to vocal health and muscular tension. Although the relationship between strain and tension in the context of belting and breath management will be examined in the following section, the notion of vocal health is already implicitly connected to belting here, albeit remaining largely outside the defined scope of the present review. Moreover, recognising these emerging conceptual threads early in the analysis may clarify broader lines of inquiry, delineate the specific focus of the subsequent section, and simultaneously highlight areas that could benefit from further empirical investigation, particularly in relation to ongoing debates regarding technique, vocal load, and long-term vocal outcomes.

2.2.4. BREATH MANAGEMENT, STRAIN, AND TENSION

As the literature has already indicated, tension and vocal strain may emerge in the context of belting (Gagné, 2015). It may therefore be useful to consider how these phenomena interact with breath management, as understanding this relationship could have implications for voice pedagogy.

Within the scientific voice literature, physical tension is commonly described as excessive or inefficient bodily engagement that may interfere with respiratory coordination, whereas vocal strain is often defined more specifically as increased phonatory effort or hyperfunctional activity at the laryngeal level (Titze, 2006; Vilkman, 2004). In the context of belting, where vocal intensity and subglottal pressure are typically elevated (LeBorgne et al., 2010; Bourne & Kenny, 2016), the interaction between breath management and compensatory behaviours may therefore be particularly relevant, as inefficient coordination could contribute to both tension and strain (Gagné, 2015).

Practitioner literature frequently positions effective breath coordination as a strategy that might mitigate these issues (Peckham, 2010; Gagné, 2015).

Gagné (2015) proposes that efficient airflow management supports vocal power while simultaneously reducing unnecessary physical tension and overexertion. Similarly, Peckham (2010) notes that the emotional intensity often associated with belting may encourage singers to add pressure to the throat and surrounding musculature, particularly when breath support is poorly managed. Singers may erroneously equate increased effort or vocal weight with expressive intensity, despite such pushing frequently resulting in tightness, reduced clarity, and perceptible fatigue. Peckham (2010) further emphasises that skilful belting should feel unforced in the throat and appear relaxed in the jaw, mouth, and neck, with strain and discomfort understood as potential indicators of inefficient

coordination rather than expressive commitment.

Peer-reviewed research in contemporary commercial music (CCM) and music theatre contexts corroborates practitioner observations regarding the physiological and perceptual demands of belting. Bourne and Kenny (2016) and LoVetri et al. (2024) report that inefficient breath management during belting is associated with increased vocal effort, hyperfunctional phonatory behaviours, and heightened laryngeal activity. Such patterns may lead to reduced phonatory efficiency, compromised tonal clarity, and elevated perceptions of effort during high-intensity singing. LeBorgne et al. (2010) similarly emphasise that belting places substantial demands on respiratory–laryngeal coordination, noting that poorly coordinated breathing strategies may impede effective regulation of subglottal pressure. Rather than advocating a singular optimal breathing pattern, the literature highlights the importance of avoiding excessive respiratory effort and maladaptive breath use, which can provoke compensatory phonatory behaviours under conditions of increased vocal intensity (Peckham, 2005, 2010; LeBorgne et al., 2010; Gagné, 2015; Bourne & Kenny, 2016; LoVetri et al., 2024). Posture and physical tension are also critical factors in vocal efficiency. McCoy (2010) asserts that inappropriate posture or chronic muscular tension in the shoulders, neck, jaw, or torso may transfer to the larynx, adversely affecting phonation, resonance, and breath management. Expert CCM pedagogues similarly emphasise the need for upright posture with gentle elongation of the spine, a comfortably elevated chest, relaxed shoulders, and balanced head alignment to facilitate optimal breath flow and phonatory freedom (Bartlett & Naismith, 2020).

Furthermore, the management of muscular tension is particularly salient in belting. The extended use of chest-dominant, speech-like vocal production places elevated demands on laryngeal musculature and respiratory support (LeBorgne et al., 2010; LoVetri et al., 2024).

Taken together, these findings suggest that effective belting should be understood not as adherence to a prescriptive inhalatory technique but as the singer's capacity to coordinate respiratory, laryngeal, and postural function efficiently in response to acoustic and expressive demands (Peckham, 2005, 2010; LeBorgne et al., 2010; Gagné, 2015; Bourne & Kenny, 2016; Bartlett & Naismith, 2020; LoVetri et al., 2024). This approach prioritises functional efficiency and muscular freedom over rigid technical prescriptions, promoting sustainable technique while mitigating the risk of strain-related behaviours in high-intensity singing contexts (Peckham, 2005, 2010; LeBorgne et al., 2010; Gagné, 2015; Bourne & Kenny, 2016; Bartlett & Naismith, 2020; LoVetri et al., 2024).

These dynamics are readily observable in applied teaching settings. Drawing on my professional practice as a vocal coach with beginner worship singers, I have noted that attempts at high-intensity or emotionally charged passages without established breath-management strategies frequently elicit tension patterns such as elevated shoulders, jaw rigidity, and audible vocal strain. Consistent with the literature, targeted interventions emphasising postural alignment, low abdominal inhalation, gentle lateral rib expansion, and conscious release of upper-body tension before introducing volume or intensity often result in immediate functional improvements. These improvements commonly include increased vocal ease, greater tonal consistency, clearer onset, and a perceptible reduction in perceived effort.

Adapted from Gagne (2015), strategies to mitigate tension and strain while singing emphasise both physical and mental awareness, which is particularly important for beginner worship singers.

Breathing exercises, such as deliberately slowing the inhale and controlling the exhale, help maintain a relaxed state and prevent unnecessary muscle contraction, supporting the breath without forcing it (Gagné, 2015). Mindfulness while belting is equally

essential: singers should observe how their voice responds to different techniques, noticing if they are bracing, inhaling too quickly, or tensing muscles unnecessarily (Gagné, 2015). Relaxation should extend throughout the body—releasing the jaw, unclenching the fists, allowing the toes to spread, and calming the abdominal muscles while still supporting the breath (Gagné, 2015). Grounding through the feet helps maintain balance and posture, which in turn reduces neck and shoulder tension, while attention to movement—both in thought and in physical gestures—encourages freer, more expressive singing without stiffness (Gagné, 2015). By integrating these strategies, singers can better manage strain, maintain healthy vocal technique, and sustain powerful performance with less risk of fatigue or injury (Gagne, 2015). In my experience as a vocal coach, applying these exercises in practice has proven particularly beneficial for beginner worship singers, helping them sing with greater ease and reducing tension across both body and voice. In conclusion, effective belting emerges from the coordinated integration of respiratory, laryngeal, and postural function, rather than adherence to a singular prescriptive technique.

Both peer-reviewed research (LeBorgne et al., 2010; Bourne & Kenny, 2016; LoVetri et al., 2024; McCoy, 2010; Bartlett & Naismith, 2020) and practitioner literature (Peckham, 2010; Gagné, 2015) consistently highlight the risks of hyperfunctional behaviours, excessive muscular tension, and inefficient breath management, while emphasising strategies to mitigate strain through mindful alignment, relaxed musculature, and efficient respiratory–laryngeal coordination. Applied teaching experience reinforces these findings: in my work as a vocal coach, I have observed that beginner worship singers in particular benefit from targeted interventions focusing on low abdominal inhalation, postural alignment, and the conscious release of upper-body tension. Adapted from Gagné (2015), exercises that promote mindful breathing, body awareness,

grounding through the feet, and controlled muscular relaxation have proven highly effective in reducing physical tension, improving tonal clarity, and enhancing overall vocal ease. Collectively, these findings suggest that sustainable belting is best supported through an integrated approach that prioritises efficient physiological coordination while accommodating expressive demands in high-intensity singing.

2.2.5.RESPIRATORY COORDINATION AND BREATH MANAGEMENT

Building on the discussion of strain and tension, it is important to consider how respiratory coordination underpins sustainable belting. Gagné (2015) describes effective singing as the coordinated interaction of the diaphragm, intercostal muscles, abdominal musculature, and the laryngeal mechanism. She emphasises that efficient technique enables singers to sustain air pressure beyond the requirements of speech while avoiding unnecessary muscular tension, such as elevated shoulders or excessive abdominal contraction (Gagné, 2015). Crucially, rather than advocating maximal inhalation, Gagné highlights that successful belting depends on managing the air already available.

Over-breathing, which she notes is common among belters, can increase thoracic and laryngeal tension and contribute to fatigue and strain (Gagné, 2015). She further observes that fear or anxiety—such as concern about insufficient air—can worsen laryngeal constriction and impair effective breathing (Gagné, 2015). Breath management is therefore framed as a system of coordination and control, enabling sustained, expressive sound production without force (Gagné, 2015).

Peckham (2005, 2010) provides complementary guidance, emphasising the importance of maintaining a balance between vocal power and muscular relaxation (Peckham, 2005, 2010). She notes that belting, being loud and emotionally charged, often encourages singers—particularly women—to add unnecessary pressure to the throat and surrounding musculature (Peckham, 2005, 2010).

Effective belting should feel easy in the throat, with minimal air escaping, and should allow smooth movement between pitches (Peckham, 2005, 2010). Peckham stresses that singers should maintain relaxation in the jaw, mouth, and neck, while sustaining

resonant tone, and that tension or discomfort is a signal of inefficient technique rather than expressive intent (Peckham, 2005, 2010). She further highlights that attention to vowel placement and a speech-like quality in the tone can support both clarity and endurance, particularly in female singers who must coordinate TA-dominant production with bright vowels to achieve a healthy belt (Peckham, 2005, 2010). Overall, Peckham's observations reinforce the notion that breath management, vocal tract shaping, and muscular freedom are inseparable elements of sustainable, high-intensity singing (Peckham, 2005, 2010).

LeBorgne and Rosenberg (2024) extend this discussion by situating breath management within a broader framework of exercise physiology and progressive skill development. They emphasise that vocal goals should be both challenging and realistic, noting that excessive demands may overwhelm singers, contributing to inefficient coordination, frustration, and increased risk of strain (LeBorgne & Rosenberg, 2024). Similarly, this perspective complements Gagné's (2015) and Peckham's (2005, 2010) emphasis on sustainable technique, particularly in belting, where respiratory and muscular demands are heightened.

Moreover, LeBorgne and Rosenberg (2024) highlight that technical goals must align with the singer's developmental stage, distinguishing clearly between novice and advanced performers. This is especially relevant for beginner worship singers, for whom high-intensity belting tasks imposed before adequate breath management may increase the likelihood of inefficient airflow and compensatory tension (LeBorgne & Rosenberg, 2024).

In addition, they caution that vocal strength and endurance should be developed gradually, with careful monitoring to ensure the vocal mechanism is challenged appropriately without risking strain (LeBorgne & Rosenberg, 2024). They further argue that volume should not be achieved solely through excessive vocal fold closure,

but rather through coordinated interaction between the respiratory system, the laryngeal mechanism, and vocal tract shaping. In line with this, breath management is reinforced as a central mechanism for achieving vocal intensity, aligning closely with both Gagné's airflow-based model (2015) and Peckham's emphasis on projection without force (2005, 2010).

In the author's experience working predominantly with beginner worship singers, these pedagogical considerations are particularly salient. Singers may feel compelled to prioritise volume and emotional expression, often leading to over-breathing or excessive effort. Structuring breath-management-focused goals that allow for early success while progressively increasing physiological demand has been observed to support vocal endurance, coordination, and expressive control, reflecting the principles outlined by LeBorgne and Rosenberg (2024).

Maintaining basic vocal wellness is foundational for sustainable belting, particularly for beginner worship singers. Adapted from Gagné (2015), progressive exercises supporting this development include mindful breathing, stabilising everyday respiration, and controlled release of muscular tension (Gagné, 2015). Regularly monitoring one's practice and maintaining a log can reinforce awareness of vocal habits and progress, a strategy emphasised by Gagné (2015) to support gradual skill development. Hydration is also critical: consistent water intake preserves the mucosal layer of the vocal folds, reducing the risk of damage during high-intensity singing (Gagné, 2015). Complementing this, somatic approaches—such as gentle stretching, body mapping, and attention to grounding through the feet—support postural alignment, promote muscular freedom, and enhance coordination between respiratory and laryngeal systems, as highlighted by Gagné (2015). Observing and regulating everyday speaking habits further contributes to vocal longevity, since under-supported or tense speech can predispose

singers to strain when singing (Gagné, 2015). Incorporating these strategies into daily practice encourages singers to manage physical tension, optimise breath support, and maintain clarity and ease of tone (Gagné, 2015). In my professional experience as a vocal coach, applying these exercises has proven particularly effective for beginner worship singers, providing them with a solid foundation of strategies to develop their technique and care for their voice.

Taken together, the literature and applied observations suggest that breath management is a crucial factor in coordinating physiological efficiency with expressive capability in belting, as well as interacting with posture, resonance, and laryngeal function (Gagné, 2015; Peckham, 2005, 2010; LeBorgne & Rosenberg, 2024). For beginner worship singers, breath management serves as a level-appropriate technical foundation, supporting expressive belting while mitigating strain and fatigue. The alignment between practitioner literature, peer-reviewed studies, exercise physiology principles, and applied teaching experience suggests a strong foundation for further pedagogical research, particularly in developing breath-management-focused interventions tailored to worship contexts.

While CCM singers are frequently treated as a single, homogeneous group within both the literature and pedagogical discourse, in practice they represent a highly diverse population encompassing a wide range of stylistic approaches, vocal qualities, and levels of experience (McCoy, 2010; LeBorgne & Rosenberg, 2024). This simplification risks obscuring the distinct technical and expressive demands of different substyles, including pop and rock belting, gospel singing, and contemporary worship music (Peckham, 2010; LoVetri et al., 2024). Recognising this diversity is essential for tailoring breath-management strategies and addressing vocal strain effectively, as both physiological coordination and expressive requirements vary considerably across styles and performance contexts (LoVetri et al., 2024).

From the perspective of the present review, practitioner-oriented sources such as those by LeBorgne, Gagné, and Peckham provide particularly valuable insight into belting pedagogy, especially in relation to breath management and sustainable technique (Gagné, 2015; Peckham, 2005, 2010; LeBorgne & Rosenberg, 2024). Notably, the works of Gagné (2015) and Peckham (2005, 2010) place strong emphasis on practical strategies and concrete exercises, offering applied guidance that directly addresses the challenges faced by singers working in high-intensity contemporary styles. This review, therefore, suggests that practitioner literature plays a crucial role in translating physiological principles into accessible pedagogical practice.

At the same time, these observations highlight areas for further exploration. A broader review of practitioner texts, alongside empirical research, may contribute to a more nuanced understanding of how breath-management strategies can be adapted to the stylistic and experiential diversity within CCM singing, moving beyond the tendency to categorise CCM singers as a single, uniform group.

3. CRITICAL REFLECTION

Engaging in this narrative literature review has constituted both a professional and personal learning process, integrating critical engagement with the literature and reflective insights from my experience as a worship singer and vocal teacher. This section reflects on the planning, selection, and synthesis of peer-reviewed and grey literature relating to belting, particularly in relation to novice Contemporary Commercial Music (CCM) singers THE WHOLE NARRATIVE REVIEW. This reflection adopts Driscoll's (2007) *What? So What? Now What?* model as a guiding framework for critically examining experience, deriving meaning, and planning future action.

What?

The initial aim was to review literature addressing practical strategies for teaching belting to novice adult singers, integrating peer-reviewed research and practitioner-oriented grey literature. Peer-reviewed sources were accessed through the UWTSD library and Google Scholar, updating and extending previous research. A first systematic search of tier-one grey literature focused on practitioner texts accessible in Switzerland, identified primarily via Google, as recommended for locating non-academic sources (Adams, Smart & Huff, 2017).

Several challenges emerged. Peer-reviewed literature offered limited practical teaching strategies for belting, constraining the applicability of some findings. Evaluating grey literature was particularly complex: locating material that addressed belting specifically and offered practical guidance was difficult. Many practitioner texts provided general vocal advice with minimal reference to belting, while others addressed belting conceptually but lacked practical strategies. Evaluating relevance, credibility, and selection represented a significant initial challenge.

Analysis revealed several themes relating to practical strategies for teaching belting. However, due to time and word-count constraints, not all

could be explored in depth. The focus was narrowed to one primary theme—breath management in belting. Other themes of professional interest were excluded. A reflexive journal was maintained to document decision-making and monitor potential researcher bias, particularly given my insider position (Mercer, 2007; Scott, 2022).

So What?

Reflecting on this process prompted reassessment of initial assumptions about practical guidance availability. Empirical research prioritised physiological description over pedagogy, while practitioner texts varied widely in depth and relevance, leaving belting and worship contexts underexplored. Recognising this gap highlighted the need to integrate insights across, rather than within, these bodies of literature.

My dual role as practitioner and researcher shaped which themes appeared most salient. Focusing on breath management reflected pedagogical priorities and required reflexivity. The broad scope of the original title limited specificity, aligning with Dewey's (1933) view of reflection as examining assumptions to support precise inquiry.

Engaging with grey literature reshaped the understanding of practitioner-oriented evidence. Although methodologically challenging, it highlighted the value of experiential knowledge not readily captured in peer-reviewed research and reinforced the need for a systematic yet flexible approach when working across academic and practitioner domains.

Now What?

These reflections provide a foundation for ongoing practice and research. Breath management was explored in detail, but other themes—resonance and registration (Gagné, 2015), voice production (Peckham, 2005; Peckham, 2010), belting and emotions (Peckham, 2005; Popeil, 2007;

Peckham, 2010; Gagné, 2015), and different belting styles (Popeil, 2007; Sundberg, Thalén & Popeil, 2012)—remain for future investigation.

The review emphasises situating pedagogical strategies within specific contexts. Future work will focus on worship CCM, recognising its distinctive technical, expressive, and stylistic demands (McCoy, 2010; LeBorgne & Rosenberg, 2024). Evidence-informed practice, particularly in breath management, remains essential, alongside responsiveness to individual student needs. Reflexive journaling will support ongoing critical examination of the dual role as researcher and practitioner (Mercer, 2007; Scott, 2022).

Engagement with grey literature highlights the importance of practitioner knowledge. Future searches will adopt a systematic but flexible approach, ensuring research and practice are informed by empirical evidence and experiential expertise.

Finally, this reflection emphasises flexibility and progressive development in applied research and teaching (LeBorgne & Rosenberg, 2024). Exploring multiple themes in belting and focusing on worship CCM contexts will inform pedagogical strategies that are evidence-informed, contextually sensitive, and responsive to novice singers' unique needs, guiding both professional practice and future research.

4. CONCLUSION

This review has offered an opportunity to reflect on how belting is researched and learned within Contemporary Commercial Music, particularly in worship contexts (LoVetri et al., 2024; LeBorgne & Rosenberg, 2024). Peer-reviewed research and practitioner-oriented guidance approach the topic differently (LeBorgne et al., 2010; Bourne & Kenny, 2016; Gagné, 2015). Research provides detailed physiological and acoustic insights but often limited practical guidance for novice singers (Sundberg, Thalén & Popeil, 2012; Roll, 2016; Roll, 2019). Practitioner texts offer exercises and strategies, yet these are frequently not systematically evaluated (Peckham, 2005, 2010; Gagné, 2015; Adams, Smart & Huff, 2017). Considering both together underscores the value of integrating insights across sources rather than relying solely on either perspective (Sandelowski & Barroso, 2007; Lawrence et al., 2014).

A central theme is breath management in supporting belting (Gagné, 2015; Peckham, 2005, 2010; LeBorgne & Rosenberg, 2024), fundamental for sustaining vocal intensity and reducing strain (LeBorgne et al., 2010; Bourne & Kenny, 2016; LoVetri et al., 2024). Strategies such as controlled inhalation and exhalation, postural alignment, and mindful tension release are particularly beneficial for beginners in high-intensity contexts like worship (Gagné, 2015; Neto, 2010; Bartlett & Naismith, 2020).

The review emphasised diversity within CCM singers and the limitations of treating them as homogeneous (McCoy, 2010; LeBorgne & Rosenberg, 2024). Worship singers vary in experience, technical ability, and stylistic expectations, which is important for adapting pedagogy (Neto, 2010; LoVetri et al., 2024; Bartlett & Naismith, 2020). Practitioner literature offers student-centred exercises for individual singers (Gagné, 2015; Peckham, 2005, 2010), but often generalises CCM singers, limiting context-specific strategies. Similarly, research categorises singers broadly, though it provides detailed physiological and acoustic rationale (LeBorgne et al., 2010; Sundberg, Thalén & Popeil, 2012; Bourne & Kenny, 2016).

Engaging with literature was also reflective, revealing the influence of my positionality as worship singer and teacher (Mercer, 2007; Scott, 2022). Focusing on breath management emerged naturally from literature and experience, with reflexivity guiding source selection and interpretation (Driscoll, 2007; Dewey, 1933). First engagement with grey literature highlighted the value of practitioner evidence while showing methodological challenges in locating and evaluating guidance (Adams, Smart & Huff, 2017; Winter, 2021).

Looking ahead, breath management is one aspect of belting pedagogy. Other areas—resonance, registration, and expressive dimensions—remain underexplored and warrant further research (Gagné, 2015; Peckham, 2005, 2010; Popeil, 2007). Pedagogy must be flexible, responsive, and informed by both research and practitioner insight (LeBorgne & Rosenberg, 2024; Bartlett & Naismith, 2020). For beginner worship singers, gradually developing breath control alongside expressive engagement supports technical and artistic growth while reducing strain (Gagné, 2015; Neto, 2010).

Overall, effective belting emerges from coordinated integration of respiratory, postural, and laryngeal function rather than a singular prescriptive technique (LeBorgne et al., 2010; Peckham, 2010; Gagné, 2015; Bourne & Kenny, 2016). Supporting novice singers requires attentive, adaptable, experience-grounded pedagogy (Peckham, 2010; Gagné, 2015; LeBorgne & Rosenberg, 2024). While tentative, these conclusions provide a foundation for ongoing professional practice and future research, particularly in worship-based CCM (LoVetri et al., 2024; McCoy, 2010).

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6. APPENDIX ONE (GLOSSARY)

- **Abdominal inhalation**
A breathing approach in which inhalation is accompanied by expansion of the lower abdominal region and lateral ribs, facilitating diaphragmatic descent and reducing unnecessary upper-body tension.
- **Breath support**
The coordinated use of the diaphragm, intercostal, and abdominal muscles to regulate airflow and subglottal pressure during phonation enables sustained, controlled vocal tone without excessive strain.
- **Chest-dominant**
A pattern of vocal production in which characteristics typically associated with chest register are maintained at higher pitches, often involving increased thyroarytenoid muscle activity and a speech-like tonal quality.
- **Diaphragmatic support**
A pedagogical concept describing the coordinated function of the diaphragm and associated respiratory musculature to regulate airflow and subglottal pressure during phonation, supporting vocal efficiency without excessive tension.
- **Glottal attack**
The manner in which phonation is initiated, determined by the timing and coordination of vocal fold adduction and airflow; abrupt or forceful glottal attack is often associated with increased vocal effort and strain.
- **Glottal closure**
The degree and pattern of vocal fold contact during the vibratory cycle, influencing vocal intensity, efficiency, and timbre; excessive or insufficient closure may contribute to hyperfunctional or breathy voice qualities, respectively.
- **Heightened laryngeal activity**
An increase in intrinsic or extrinsic laryngeal muscular engagement, commonly observed during high-intensity phonation and associated with increased vocal effort or compensatory behaviours.

- **High-intensity phonation**
Voice production is characterised by elevated sound pressure levels and increased subglottal pressure, requiring efficient coordination of respiratory, laryngeal, and resonatory systems to minimise vocal load.
- **Hyperfunctional phonatory behaviours**
Patterns of voice use involving excessive muscular effort at the laryngeal level often emerge as compensatory responses to inefficient breath management or increased vocal demands.
- **Laryngeal mechanism**
The functional system comprises the intrinsic and extrinsic laryngeal muscles that regulate vocal fold vibration, pitch, and phonatory control.
- **Legit**
A singing style derived from classical vocal traditions, characterised by clear tone, legato phrasing, and consistent vibrato; higher voices typically employ head-dominant registration, while lower voices may utilise fuller, more rounded tonal qualities.
- **Low abdominal inhalation**
A breathing strategy emphasising expansion in the lower abdominal and lateral rib regions during inhalation, facilitating efficient diaphragmatic movement and reduced upper-body tension.
- **Mix**
A coordinated balance of chest (thyroarytenoid) and head (cricothyroid) mechanisms that enables smooth register transitions, tonal consistency, and reduced vocal effort in the mid-to-upper range.
- **Phonation**
The process of sound generation resulting from vocal fold vibration as air passes through the larynx, forming the acoustic source of the singing or speaking voice.
- **Registration**
The dynamic coordination of vocal fold behaviour and laryngeal adjustment across pitch and intensity ranges, enabling smooth transitions between vocal qualities without perceptible breaks.

- **Resonance**
The modification and amplification of vocal sound as it is shaped by the configuration of the vocal tract, including the pharyngeal, oral, and nasal cavities.
- **Speech-based production**
A mode of vocal production that maintains acoustic, articulatory, and resonance characteristics closely aligned with natural speech, commonly associated with CCM and music theatre styles.
- **Speech-like vowel modification**
The adaptive shaping of vowels that preserves speech intelligibility while accommodating changes in pitch and intensity, particularly in high-range or high-intensity singing.
- **Subglottal pressure**
The air pressure generated beneath the vocal folds by the respiratory system serves as a primary determinant of vocal intensity, loudness, and phonatory effort.
- **Thyroarytenoid muscle (TA)**
An intrinsic laryngeal muscle forming the body of the vocal folds, responsible for shortening and thickening the folds, contributing to medial compression and pitch regulation, particularly in chest-dominant phonation.
- **Vocal tract shaping**
The adjustment of the vocal tract configuration, including tongue, jaw, lips, and pharynx, to influence resonance, timbre, and vocal efficiency.