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Module 5

Demystifying Vocal Fatigue for Professional Voice Users:

Developing a Research-Informed Educational Guide on the Underlying Mechanisms, Identification and Management Strategies

Project Portfolio: 1640 Words

Project Report: 6589 Words

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1.0 - Component 1 - Project Portfolio

1.1 - Introduction

Fatigue is the inevitable biological response to any sustained or intense muscular exertion (Ament and Verkerke, 2009). For professional voice users across various disciplines and professions, vocal fatigue is a frequent and sometimes unavoidable condition (Van Overmeiren *et al.*, 2018). In my work as a vocal coach, working predominantly with professional musical theatre performers and vocalists, vocal fatigue is the most common issue my clients encounter. Due to the heavy vocal load (Hunter *et al.,* 2020) demanded in these professions, they will undoubtedly experience vocal fatigue at some point in their professional careers (Mehdi, 2024). Welham and Maclagan (2003) describe vocal fatigue as *"a complex multifaceted clinical phenomenon"* (p.21). But is vocal fatigue something that professional voice users should be worried about? This question, posed regularly by my clients, is ultimately the underlying rationale for this study.

Professional voice users commonly lack understanding surrounding the condition (Joseph *et al.,* 2020; Düzenli-Öztürk *et al.,* 2023; Zhou *et al.,* 2025). Although numerous articles and scientific papers address aspects of vocal fatigue, a dedicated educational guide designed to inform professional voice users in an accessible way is still lacking. Much of the scholarly literature requires a level of academic knowledge, time and interpretive skill that professional voice users may not always possess (Latukefu and Verenikina, 2011). Therefore, this project seeks to address this gap by creating an educational guide that explains the multidimensional nature of vocal fatigue, provides effective management strategies, and demystifies the condition.

1.2 - Planned Programme of Study

Theoretical Influences

Vocal fatigue has been widely discussed by researchers for decades; however, ambiguity remains around a universal definition (Nanjundeswaran *et al.,* 2015; de Oliveira Lemos *et al*., 2023). This lack of a consensus often extends to professional voice users, contributing to misunderstanding, uncertainty and increased anxiety. Recent studies explore the biophysiological mechanisms of vocal fatigue with the aim to further categorise and determine the underlying causes of the condition (Shembel and Nanjundeswaran, 2022). My artefact aims to translate this emerging research into an accessible guide, with Cognitive Load Theory (Sweller, 1988) underpinning its pedagogical structure, ensuring complex information is delivered in a clear and relatable manner and avoiding cognitive overload.

Best Practice Influences

Evidence-based voice pedagogy (EBVP) represents current best practice for professionals working with the voice, integrating pedagogical experience, scientific voice research and learner feedback (Ragan, 2018). Contemporary practice increasingly incorporates awareness of heavy vocal loading and high vocal demand, both of which can contribute to vocal fatigue (Hunter *et al.,* 2020), enabling professional voice users to anticipate and manage vocally strenuous material or tasks (Phyland *et al.,* 2013). Some key management strategies include research-informed approaches such as SOVT (semi-occluded vocal tract) exercises (Titze, 2020), vocal steaming (Mahalingam and Boominathan, 2016), nebulising (Vermeulen *et al*., 2020) and voice rest (Sataloff *et al.,* 2019), all of which are already highly used and recommended to mitigate vocal fatigue. While these approaches are robust and beneficial, the precise application of these strategies within individual practice is not always clearly defined, a gap my artefact aims to address through accessible and structured guidance.

Research Questions

- What are the key causes, symptoms and underlying mechanisms associated with vocal fatigue that professional voice users need to understand to effectively recognise, prevent and manage the condition?
- Which research-informed management strategies support the prevention and treatment of vocal fatigue, and can these be categorised into immediate relief and long-term prevention approaches?
- How can a research-informed educational guide support professional voice users in understanding and managing vocal fatigue, to improve awareness and self-management of the condition?

Aims

- To develop an evidence-based educational guide that demystifies vocal fatigue for professional voice users.
- To translate complex research exploring the biophysiological mechanisms of vocal fatigue into a clear, accessible and user-friendly format.
- To provide practical, research-informed strategies for recognising, preventing and managing vocal fatigue.

- To ensure my artefact is relatable, pedagogically sound and directly relevant to professional voice practice.
- To outline how the educational guide could be evaluated in future professional contexts, and how its success could be measured.

Objectives

- To conduct a narrative literature review synthesising current research on vocal fatigue, with a particular emphasis on the biophysiological mechanisms underlying the condition.
- To design and develop an educational guide that conveys research-based knowledge around vocal fatigue in a way that is beneficial, reliable and accessible for professional voice users.
- To translate research findings into user-friendly, pedagogically informed content relevant to professional voice practice.
- To evaluate the artefact’s relevance, accuracy and applicability within the contemporary field of professional voice.
- To specify criteria and indicators that could be used to evaluate the educational guide's effectiveness within professional contexts.

Expected Learning Outcomes

- To develop the ability to synthesise and communicate complex concepts and scientific research in the form of a clear, accessible and pedagogically effective educational guide.
- To further enhance my understanding of vocal fatigue, with a particular focus on the biophysiological mechanisms underlying the condition, its typical causes, symptoms, and research-informed management strategies.
- To gain practical experience in artefact creation, thereby strengthening my research, design and evaluative skills.

Activities and Assessment Criteria

This project will begin with a narrative literature review to collate contemporary research on vocal fatigue, including its causes, symptoms and management strategies. These findings will influence

the design, development and creation of an educational guide grounded in research-informed pedagogy. Key activities will include collating and analysing academic sources, translating complex scientific research into an accessible, user-friendly format, and designing the artefact's overall layout.

The success of this project will be evaluated against clearly defined criteria. The credibility and relevance of the sources will be assessed to ensure a comprehensive balance between contemporary research and foundational knowledge, incorporating grey and white literature where appropriate (Hughes *et al.,* 2021). The project will be critically reviewed against my stated aims, objectives and expected learning outcomes, assessing the educational guide's accessibility, clarity and accuracy.

GANTT Chart

	July	August	September	October	November	December
Decide on topic and overall approach						
Compile and critically analyse relevant literature						
Write project portfolio						
Write project report						
Develop artefact						
Submit draft						
Final refinement and adjustments						
Submit final project and artefact						

1.3 - Methodology

This study adopts a primarily pragmatic stance, valuing knowledge for its practical application (Reybold, 2002), focusing on actionable guidance that professional voice users can apply to prevent or manage vocal fatigue. Pragmatism emphasises 'prospective knowledge', where understanding is applied to influence change and growth (Goldkuhl, 2011), informing my artefacts' aim to translate research into practical guidance. A pragmatic approach allows for a flexible and adaptable research design, ensuring the research question remains central (Elgeddawy and Abouraia, 2024). A secondary constructivist perspective will ensure that complex concepts are presented in a relatable and meaningful way (Ültanır, 2012), addressing a potential limitation of pragmatism, where insights can become overly context-specific (Ray, 2004).

A narrative literature review will be conducted, as this approach best aligns with the trajectory of my project and allows for the integration of a range of concepts, theories and scientific findings to inform the educational guide (Sukhera, 2022). Unlike systematic reviews, which risk excluding nuanced evidence that may not fit predefined criteria (Greenhalgh *et al.,* 2018), a narrative review

enables the integration of diverse sources, making it the most appropriate method for creating an artefact that is both research-informed and practically applicable. Literature will be identified through keyword searches across multiple academic databases, organised into themes with Boolean operators to refine results (Reed and Baxter, 2009; Aliyu, 2017).

Footnote chasing and citation chaining will identify additional key studies, further expanding the review's scope (Cribbin, 2011). Clearly defined inclusion and exclusion criteria will enhance the rigour and focus of the narrative review (Ferrari, 2015). The inclusion criteria will predominantly consist of articles published in the last ten years to ensure that the review reflects the most current research and any recent developments within the field. However, foundational papers will also be considered, as they provide influential insights and are frequently cited in contemporary studies (Maggio *et al.,* 2016). Priority will be given to studies examining professional voice users, while studies involving the amateur population will be assessed for their relevance. Peer-reviewed (white) literature will provide a strong academic grounding, and selected grey literature will be included to capture real-world experience, thereby supporting the guide's practical relevance (Mering, 2018).

Following my literature review, a combination of inductive and deductive coding will be used, beginning with predetermined codes and allowing new codes to emerge during analysis (Fereday and Muir-Cochrane, 2006). Codes will then be synthesised into broader themes and patterns identified in the literature, reflecting the approach of Williams and Moser (2019), as shown in Figure 1 below. This adopts a non-linear approach that aligns with my overarching pragmatic stance.

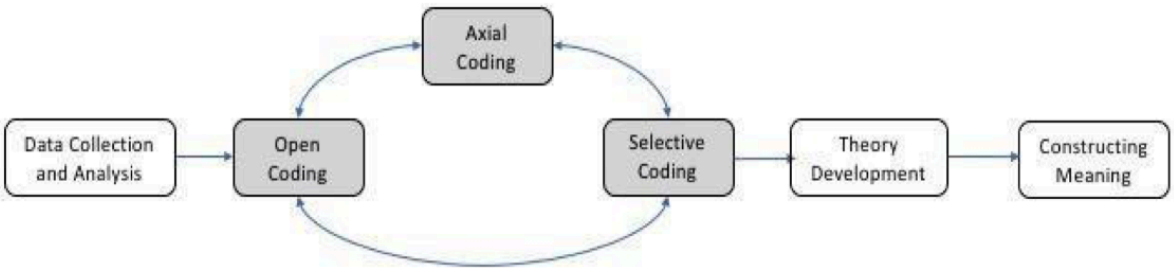

Figure 1 *- Non-Linear qualitative research process by Williams and Moser*

This project is theoretical, involving no direct engagement with participants or students. Any future data collection or use of the artefact will only commence after full ethical approval. Transparency and rigour will be maintained throughout the research and artefact creation process, ensuring ethical integrity (Pietilä *et al.,* 2019).

The findings from my literature review will inform and underpin the artefact, condensing evidence into actionable guidance for professional voice users. Nelson's (2022) 'Know That, Know How and Know What' framework will underpin the study. The 'Know That' component corresponds directly to

my literature review, and the remaining two components will focus on the process, creation and evaluation of my artefact. This will include critical reflection on personal experiences, the study rationale and a critical examination of the artefact, considering its intended purpose and impact.

Canva will be my chosen software for creating the artefact, selected for its effectiveness in visual learning and its ability to enhance cognitive engagement (Jamaludin and Sedek, 2023). Throughout the development process, I will engage in continuous critical reflection using Kolb's experiential learning cycle (Kolb, 2007) and also draw on Gibbs (1988) to enrich my reflective process, encouraging a deeper level of self-analysis.

2.0 - Component 2 - Project Report

2.1 - Introduction

Vocal fatigue is a condition that can significantly impact professional voice users if not effectively managed, posing a serious risk to those whose livelihoods depend on their voice (Zhou *et al.,* 2025). Within my career as a vocal coach supporting professional singers, musical theatre performers and performers in training, vocal fatigue is one of the most frequent concerns raised by clients. The sustained vocal demands in these professions (Brown and Thomson, 2019; Hunter *et al.,* 2020) mean that my clients are inevitably at high risk of experiencing vocal fatigue. These discussions, alongside my previous study exploring undergraduate students' knowledge of vocal fatigue (Howley, 2025), inspired the creation of this artefact.

Research indicates that professional singers often have a partial understanding of vocal function, hygiene and pathology, despite their dedication to the field (Braun-Janzen and Zeine, 2009). This highlights a gap in the availability of specific, scientifically supported and accessible information for professional voice users regarding vocal fatigue. For professional voice users to manage this condition effectively, they need to identify it accurately, apply structured mitigation strategies, and develop an understanding to prevent recurrence, all goals that are central to the design of my artefact. Following Nelson's (2022) Practice-as-Research framework, this report will be structured into three sections: literature review *(Know-That)*, development of the artefact *(Know-How)* and a critical reflection of the artefact's application and impact *(Know-What).* This structure will ensure that the study not only provides practical guidance for professional voice users but also situates my artefact within a research-informed context, reflecting the pragmatic stance that practice can both influence and generate knowledge.

2.2 - Review

Literature Review - Know That

Identification and Symptoms of Vocal Fatigue

Although vocal fatigue remains somewhat ambiguous in nature, a working definition is required to provide clarity. This study adopts the definition given by Hunter *et al* (2020):

> "Vocal fatigue" is the perceived measurable symptom that influences vocal task performance and is individual specific; it is a multifaceted concept integrating self-perceived vocal symptoms and/or physiologic deficit, which may be a result of high "vocal demand response," high "vocal effort," or neuromuscular deficit."

Hunter *et al*., 2020, p.518

Understanding and acknowledging any condition begins with identification, which involves recognising subtle changes or irregularities (Bechel *et al.,* 2022). It is then crucial that the person experiencing the condition attempts to understand exactly what is happening (Nunstedt *et al.,* 2017), integrating both cognitive interpretation and personal perception.

Common symptoms of vocal fatigue include reduced control of the voice, loss of the voice, reduction in range of pitch, flexibility and power, increased vocal effort required to produce sound, discomfort in the laryngeal region or pain in the throat or neck (Solomon, 2008; Nanjundeswaran *et al.,* 2015; Lei *et al.,* 2020). Many of these symptoms rely heavily on self-perception, highlighting the importance of awareness and reflection in the early identification process (Kitch and Oates, 1994; Aquino and Teles, 2013).

Changes in a professional voice user's voice can cause significant anxiety (Franco and Andrus, 2007), and attention must be given to symptom duration and whether the voice is responding adaptively or maladaptively. Adaptive responses allow symptoms to resolve with the correct mitigation strategies, while maladaptive responses can cause persistent vocal fatigue (Shembel and Nanjundeswaran, 2022), and without appropriate intervention, this may progress to more serious voice disorders (Joseph *et al.,* 2020; Lei *et al.,* 2020). It is important to note that symptoms for multiple voice disorders often overlap; therefore, initial symptoms may be indistinguishable from fatigue (Ferreira *et al.,* 2012). If a professional voice user’s symptoms persist for more than two weeks, they should seek help from a specialist laryngologist, particularly when self-implemented mitigation strategies fail to aid the condition or prevent recurrence (Ragan, 2017).

Causes and Biophysiological Mechanisms of Vocal Fatigue

Although the aetiology of vocal fatigue remains uncertain (Hunter and Titze, 2009), contemporary research has made significant progress in identifying the biophysiological mechanisms that underpin the condition (Shembel and Nanjundeswaran, 2022). Vocal fatigue develops through the interaction of external causes and internal physiological responses. Among professional voice users, the most common cause is high vocal demand (Gaskill and Hetzel, 2017), referring to the effort required by a given scenario, incorporating situational context and performance requirements, independent of the individual's physiology (Hunter *et al.,* 2020). Other common contributing factors are substandard vocal hygiene routines, inadequate recovery time, laryngeal irritants, unsatisfactory vocal technique (Gaskill and Hetzel, 2017) and stress or environmental conditions (Kitch and Oates, 1994).

Fatigue can manifest through several biophysiological mechanisms, which together explain how causes translate into symptoms:

- **Neuromuscular Mechanism:** Neuromuscular fatigue refers to the reduction in muscle performance that occurs when the intrinsic laryngeal muscles or respiratory muscles

struggle to maintain the amount of tension required for phonation (Welham and Maclagan, 2003). Sustained or intense vocal activity increases the muscular workload, and if not managed correctly, can lead to neuromuscular fatigue, which may present as an asthenic vocal quality (Shembel and Nanjundeswaran, 2022) or as tightness and discomfort in the extrinsic laryngeal and postural muscles (Welham and Maclagan, 2003).

- **Vocal Fold Cover Mechanism:** The vocal fold cover, composed of the epithelium and the superficial lamina propria, is the primary structure responsible for generating sound (Ishii *et al.,* 1996). This mechanism is highly susceptible to tissue-related fatigue due to the high frequency of vibrations and collisions during phonation (Shembel and Nanjundeswaran, 2022). This can alter the fluid composition of the tissue, increasing viscosity, which can raise the phonation threshold pressure and make voice production require more effort (Titze, 1994). For professional voice users, this may present as a heavier tone or reduced vocal flexibility.

- **Afferent Mechanism:** Afferent mechanisms involve sensory signals that travel between the laryngeal muscles and the brain, informing the self-perception of vocal effort and fatigue. High vocal load can heighten the sensitivity of these signals, causing laryngeal hypersensitivity and amplifying the perception of vocal fatigue (Shembel and Nanjundeswaran, 2022). This can explain why professional voice users may feel fatigued before objective signs appear. The educational guide will highlight the importance of early symptom recognition to encourage proactive strategies.

- **Metabolic Mechanism:** Metabolic mechanisms refer to the cellular processes that supply energy to the muscles involved in voice production. Voice production primarily relies on aerobic metabolism, using oxygen to generate energy efficiently for sustained phonation (Nanjundeswaran *et al.,* 2017). During intense or prolonged vocal activity, reduced blood flow to the vocal folds (Titze, 1994; Welham and Maclagan, 2003) may limit oxygen delivery and slow the removal of metabolic by-products, forcing a temporary shift to anaerobic metabolism. This can result in a buildup of lactic acid, contributing to the onset of vocal fatigue (Nanjundeswaran *et al.,* 2017; Nesbitt, 2023). For professional voice users, understanding these effects can guide strategies such as targeted recovery, which will be addressed in the educational guide.

- **Central Neural Mechanism:** Central neural mechanisms refer to the processes within the central nervous system (CNS) that coordinate and control the muscles involved in voice production. When this system becomes fatigued, neural stimulation to these muscles is reduced (Welham and Maclagan, 2003). For professional voice users, this could manifest as reduced vocal control or instability.

Mitigation and Management Strategies

The natural next step after recognising a condition, identifying symptoms, and examining causes, is identifying mitigation strategies and ways to manage the condition in the present and to prevent its recurrence in the future (Behlau and Oliveira, 2009). These strategies can be broadly categorised into symptom-relief strategies and future mitigation strategies, which will be presented within the educational guide to provide clarity to the reader.

Symptom-Relief Strategies

- **Steaming:** Steam inhalation is thought to provide superficial hydration to the vocal folds, lubricating the vocal fold mucosa (Sataloff *et al.,* 2005; Keltz *et al.,* 2022; Sandage and Morton-Jones, 2024). Studies indicate that steam inhalation can temporarily improve vocal stability, clarity and consistency (Mahalingam and Boominathan, 2016). This may support the vocal fold cover mechanism by reducing tissue viscosity, particularly when fatigue symptoms suggest that the superficial layers of the vocal folds are primarily involved.

- **Nebulising:** A nebuliser converts saline solution into a fine mist capable of depositing on the vocal folds. Research shows that nebulising with a saline solution can enhance vocal fold vibration, reduce vocal discomfort, and improve airflow-to-sound efficiency (Souza *et al.,* 2023). Similarly to steaming, nebulising may also support the temporary recovery of vocal fold cover fatigue.

- **Hydration:** Hydration is essential for maintaining good vocal hygiene (Weston and Schneider, 2023) and should be a consistent part of a daily routine rather than a precautionary measure prior to a performance (Gates *et al.,* 2013). To support satisfactory systemic hydration, it is recommended to consume around 1.8 litres of primarily water-based fluids per day, while also limiting alcohol and caffeinated beverages (Sivasankar and Leydon, 2010). However, individual needs vary depending on medication, body type and environmental conditions (Gates *et al.,* 2013). Dehydration, whether caused by low fluid or dry air, can increase the effort required for phonation, thereby increasing the risk of vocal fatigue (Sivasankar and Leydon, 2010).

- **Voice Rest:** There are two types of voice rest: *absolute* and *relative*. Absolute voice rest requires complete silence and is often recommended after vocal fold surgery or for serious voice disorders; however, it is prescribed with caution, as research shows that prolonged silence when not absolutely required can potentially weaken the laryngeal muscles (Gates *et al.,* 2013; Sataloff *et al.,* 2019). Relative voice rest involves using the voice only when absolutely necessary and ensuring any phonation is technically correct and handled with care (Sataloff *et al.,* 2019). Voice rest is one of the most common recommendations for the immediate treatment of vocal fatigue (Solomon, 2008), as it allows all mechanisms involved in voice production a chance to recover and prevents potential further damage (Behlau and Oliveira, 2009).

- **Laryngeal Manual Therapy:** Laryngeal manual therapy is a contact-based treatment targeting the laryngeal musculature, typically focusing on the sternocleidomastoid, suprahyoid and jaw-associated muscles (Sonam and Kalyani, 2024). Several variations of this therapy exist, developed by different practitioners, including myofascial release, manual circumlaryngeal therapy and laryngeal manipulation (Dugan, 2020)**.** Research indicates that even a single session of laryngeal manual therapy can reduce peri-laryngeal muscle tension, making it an effective immediate recovery approach (Sonam and Kalyani, 2024).

- **SOVT (Semi Occluded Vocal Tract) Exercises:** These exercises involve partially closing the vocal tract, typically at or near the lips, which increases supraglottal (back) pressure and allows sound to be produced with reduced subglottal effort (Hijleh and Pinto, 2021). SOVT exercises primarily address neuromuscular fatigue, as they help to rebalance muscular activity and enhance overall efficiency, reducing the effort required for phonation (Nayebian *et al.,* 2025).

Long-Term Prevention Strategies

- **Prioritising technique**: For professional voice users, maintaining and refining technique must remain a consistent priority throughout all stages of their career, whether that be during live performances, recording sessions, audition processes, rehearsals or during training. A solid vocal technique extends beyond the act of using the voice, it also requires a deep understanding of the instrument itself and its functional mechanisms (Chapman and Morris, 2021).

- **Healthy vocal habits:** A wide range of factors influence vocal hygiene, but there are several key areas. Environmental conditions, such as exposure to dry air or dusty spaces, may negatively affect vocal efficiency and should be considered by professional voice users (Van Every, 2016; Sataloff, 2017). Nutrition and diet also play a significant role, while certain foods may adversely affect vocal function, individual responses vary; therefore, self-awareness and reflection are crucial (Sataloff, 2017). The detrimental impact of tobacco smoke on the voice is well-researched and established and should be avoided for professional voice users (Sataloff, 2017). Similarly, vaping and the use of e-cigarettes can cause inflammation of the epithelium and vocal fold mucosa, reducing voice quality and overall function (Monteiro *et al.,* 2025). Drug and alcohol use can also further impair vocal performance through dehydration, decreased vocal control and cause potential vasoconstriction (Sataloff, 2017). Finally, consistent warm-up and cool-down routines are vital components of healthy vocal habits. Just as athletes prepare their muscles prior to physical exertion, professional voice users should also warm up gradually prior to intensive voice use and follow with a cool-down process to support recovery and help prevent the onset of vocal fatigue (Gates et al., 2013).

Artefact Development - Know How

Pedagogical Approach

Cognitive Load Theory

Cognitive Load Theory explores how learners process information within the limits of our working memory, which is limited in capacity and duration, in contrast to long-term memory, which has the ability to store structured knowledge for efficient retrieval (Sweller, 2011). A key component of the theory is element interactivity, referring to how many pieces of knowledge must be processed simultaneously and how they interact. As interactivity increases, so does cognitive demand (Sweller, 2011). Mental effort is shaped by two main types of load: *intrinsic load,* which reflects the inherent complexity of the knowledge being acquired (Paas *et al.,* 2003; Sweller, 2011) and *extraneous load,* which is the unnecessary effort required to eliminate the irrelevant or unimportant knowledge that interferes with processing the intrinsic load (Sweller, 2011). The goal is for extraneous load to be minimal so the working memory is dedicated to processing essential content. These principles directly inform the creation and design of my artefact. Vocal fatigue, as a topic, involves high intrinsic load, particularly when approaching the biophysiological mechanisms. Therefore, I focus on reducing extraneous load by using clear headings, icons, concise phrasing and visual separations. Figure 2 below illustrates how information is presented using icons and specific phrasing to support cognitive processing.

Figure 2 *- Excerpt from page 3 of my artefact.*

I display the symptoms as short bullet points, each using an icon corresponding to the symptom. There is no distracting detail around the page, making the information visually digestible and reducing extraneous cognitive load (Zhu *et al.,* 2022), whilst requiring careful consideration to ensure no essential information is lost. Icons allow the brain to process meaning rapidly by involving a visual cue to support the knowledge. I use simple icons that do not require additional cognitive effort from the reader, instead, the icon supports the reader in digesting the information more efficiently. However, icons can be interpreted differently, especially when there are no widely recognised visual symbols for specific symptoms (Zhu *et al.,* 2022). For this reason, I pair each icon with a brief textual description to ensure clarity and reduce the risk of misinterpretation. Across the full artefact (Appendix A), I continue to apply these cognitive load theory principles, chunking information into distinct sections and using visual structures to manage extraneous load. Applying these strategies supports cognitive efficiency but also requires continuous judgment to ensure that simplification does not compromise the scientific accuracy of the translation of knowledge.

Leventhal's Common-Sense Model

The stepwise approach of my guide aligns with Leventhal's common-sense model of self-regulation (Leventhal, Brissette and Leventhal, 2003), which provides a valuable framework for understanding how individuals recognise, interpret and respond to illness. Although the model is not directly associated with vocal fatigue, its emphasis on self-awareness and adaptive response is highly relevant within the professional voice field. Figure 3 below illustrates Leventhal's 'five domains of illness representation', outlining the cognitive process that underpins the recognition and management of a condition.

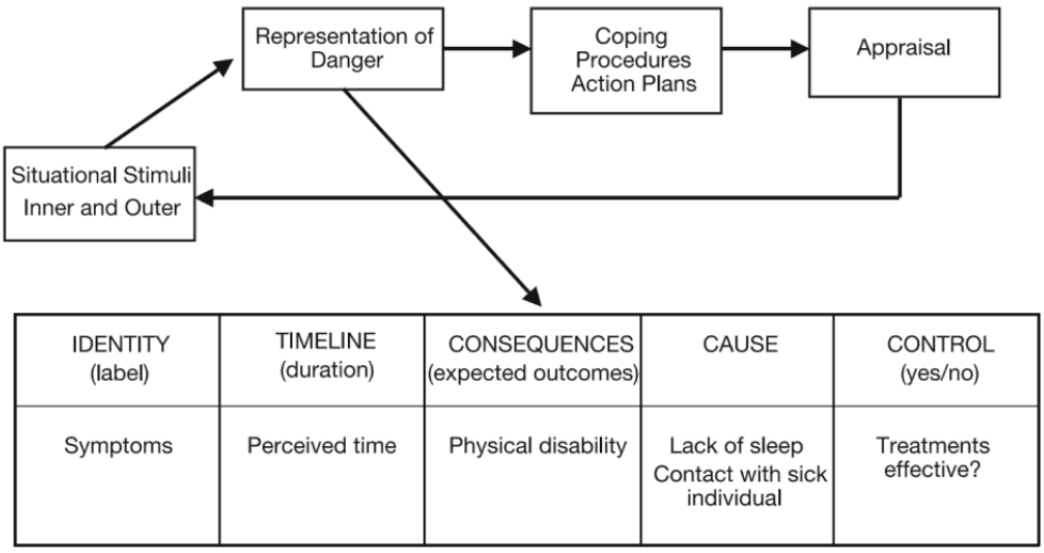

Figure 3 *- The five domains of illness representations by Leventhal, Brissette and Leventhal. (2003, p.50)*

Leventhal's model begins with the 'initial recognition process', in which an individual progresses from perceiving 'situational stimuli' to forming a 'representation of danger'. For professional voice users, this represents the point at which subtle changes in the voice are recognised. Following this, the model identifies the five domains of illness that shape understanding and response:

1. **Identify:** Recognise and identify symptoms.
2. **Timeline:** Determine whether symptoms are acute or chronic.
3. **Consequences:** Assess how symptoms affect vocal performance.
4. **Cause:** Evaluate potential underlying factors.
5. **Control:** Explore research-informed strategies for recovery and prevention.

This structure can be seen below in Figure 4, an excerpt from page 2 of my artefact:

Figure 4 *- Excerpt from page 2 of my artefact.*

By embedding this theoretical structure within my educational guide, this allows readers to logically move through the stages from recognition to management, fostering understanding, awareness

and proactive care. Although Figure 4 only represents one panel of the leaflet, the full artefact (Appendix A) continues to support this sequence throughout. Each stage aligns with the process of managing vocal fatigue: **Identify**, **Timeline** and **Consequences** directly relate to individuals recognising and evaluating their symptoms, prompting them to consider duration, severity and impact; **Cause** is represented through understanding of potential contributing factors and then the breakdown of the biophysiological mechanisms that underpin the condition; and **Control** links to strategies for symptom relief and future prevention (Behlau and Oliveira, 2009). Structuring my artefact in this way ensures it is not only informative but logically structured to reflect an individual's natural response cycle (Diefenbach and Leventhal, 1996).

While Leventhal's model provides a helpful structure, applying it to vocal fatigue requires careful adaptation. Although the model assumes a linear progression, professional voice users may shift between steps depending on personal preference. For this reason, I removed the numbers from my step-by-step guide, as seen in Figure 4. However, the artefact still maintains a sequential order overall, to offer a suggested timeline. This balances accessibility with accuracy, allowing readers flexibility while providing a clear guideline.

Design Rationale

Artefact Format

The Z-fold leaflet format and concise text enhance accessibility, allowing readers to navigate key information quickly (Almanasef, 2024). This addresses challenges reported by clients in my professional experience as a vocal coach, who have found digital research difficult to access or understand due to complex terminology and time constraints. While digital resources are increasingly common, research indicates a continued preference for both hard-copy and digital formats to effectively access, reference, and retain educational material (Almanasef, 2024). Therefore, the artefact is available as a Z-fold leaflet (Appendix A) with a digital version provided to accompany it (Appendix B), maintaining the natural flow of pages in both formats. This hybrid format addresses the practical needs of professional voice users, providing flexibility and demonstrating how professional insight and research inform effective educational design.

Visual Design

The artefact's visual design supports learning, clarity and usability. Canva is used as the design platform due to its contemporary graphics, flexible layout options and ability to create visually engaging materials, enhancing cognitive learning (Jamaludin and Sedek, 2023). Throughout the creation process, the layout, colour schemes, icons, headings and phrasing are refined iteratively to ensure clarity and accessibility, guided by cognitive load theory and Leventhal's model. Colour

choices have been informed by research identifying green as a tone to support clarity during processing (Xia *et al.,* 2022), and muted, cooler tones promoting calmness and reducing cognitive load (Teixeira *et al.,* 2024). Figure 5 below shows page 1 of my artefact illustrating how I implemented these colour choices in practice.

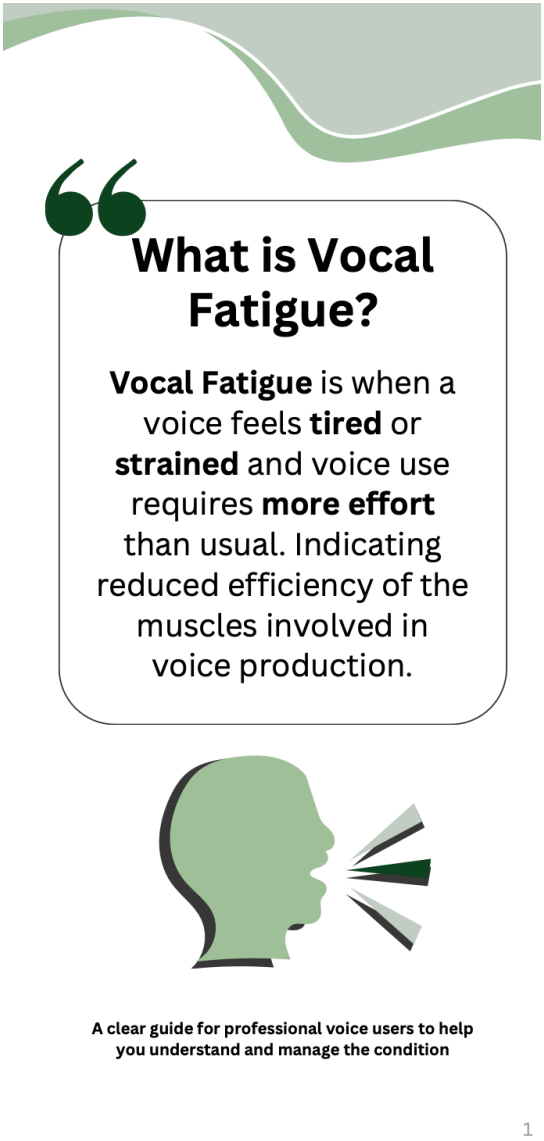

Figure 5 *- Excerpt from page 1 of my artefact.*

Translating Research into Content

In my experience as a vocal coach and during my training, I have observed that terminology is often used inconsistently across voice professionals (Hoch and Sandage, 2017), creating confusion for students. To address this, the language in my artefact remains scientifically accurate while reflecting the terminology I would use in a studio setting when explaining complex concepts to students. This supports clarity, reduces cognitive load and bridges the gap between research literature and practical application for voice users. A key example of implementing this within the

artefact is on page 5 which explains the biophysiological mechanisms underpinning vocal fatigue, as seen below in Figure 6.

A SCIENTIFIC MOMENT!

THE BIOPHYSIOLOGICAL MECHANISMS THAT UNDERPIN THE CONDITION

Neuromuscular Mechanism Fatigue
When the muscles used for voice production lack the ability to sustain the tension required to produce sound efficiently.
➜ *May present as a weak voice quality or tightness surrounding the laryngeal muscles.*

Vocal Fold Cover Mechanism Fatigue
When the high frequency of vibrations alter the composition of the folds making vibration less efficient.
➜ *May present as reduced flexibility in the sound or a more effortful process.*

Afferent Mechanism Fatigue
When the sensory signals between the laryngeal muscles and the brain become less accurate.
➜ *This can alter your perception of vocal fatigue meaning the brain "feels" vocally fatigued before it becomes audible.*

Metabolic Mechanism Fatigue
When the energy supply to the muscles involved in voice production is depleted faster than it can be restored, potentially leading to a build up of metabolic by-products.
➜ *May present as "heaviness" or lack of vocal control.*

Central Neural Mechanism Fatigue
When the central nervous system becomes less efficient at coordinating the muscles involved in voice production.
➜ *If this system is fatigued the signals may weaken which may appear as reduced control or stability of the sound.*

5

Figure 6 *- Excerpt from page 5 of my artefact.*

Another key consideration during the development of the artefact is the tone and emotional impact of the language used. With the aim of the artefact being to educate and empower professional voice users, not to position them as inadequate or at 'fault', it is essential that the wording supports confidence and reduces fear. This is particularly relevant in the 'causes' section of the artefact, shown below in Figure 7, where the concept of 'cause' can unintentionally suggest blame or personal failure (Malle *et al.,* 2014). Research into health communication highlights that framing information in a non-judgemental way can reduce defensive responses and increase engagement with material, particularly when self-reflection is required (Lee *et al.,* 2025).

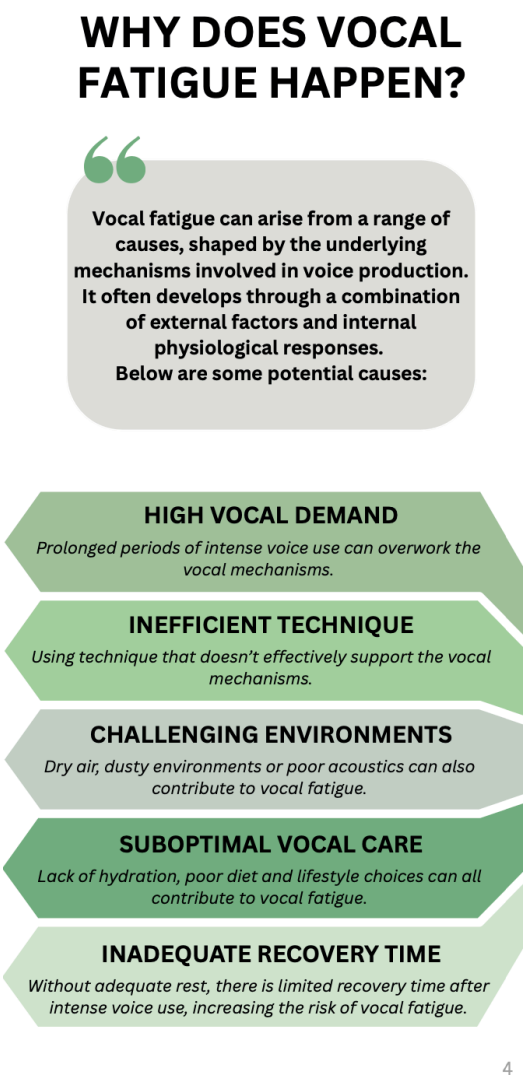

Figure 7 *- Excerpt from page 4 of my artefact.*

With this consideration, I have intentionally selected terminology that maintains scientific accuracy while avoiding negative connotations. For example, words such as *suboptimal, inefficient* and *inadequate* are used in place of words such as *bad, poor* or *unacceptable.* This supports a tone that encourages self-reflection without triggering feelings of guilt, aligning with the need to reduce emotional load but promote positive self-reflection. Achieving this balance is challenging, the artefact must acknowledge habits and practices that may contribute to vocal fatigue, but do so in a way that motivates rather than alienates. The final language choices therefore reflect a deliberate effort to combine clarity of information along with sensitivity to the reader, ensuring the content remains accessible yet also psychologically supportive.

In the strategies section of the educational guide, I structure the content to balance symptom relief approaches with long-term prevention strategies, enabling users to manage and reduce vocal fatigue effectively. Symptom relief strategies, such as voice rest, provide a necessary "physiological reset" after periods of vocal exertion (Fujiki *et al.,* 2021), while prevention-focused habits should be consistently embedded into daily vocal routines to maintain overall vocal health (Weston and Schneider, 2023). Semi-occluded vocal tract (SOVT) exercises reduce phonatory effort and improve vocal efficiency (Nayebian et al., 2025) but must be executed correctly, as

inappropriate technique can lead to compensatory strain (Hijleh and Pinto, 2021), and laryngeal manual therapy decreases peri-muscular tension around the larynx (Rubin et al., 2000). Evidence on humidification practices highlight the need for safe steaming temperatures (Peckham, 2005; Gates et al., 2013), as excessively hot steam may negatively affect vocal fold function (Horovitz, 2013), while there is no defined temperature for “warm” (Tipton and Bradford, 2014), studies typically use a temperature ranging between 40-45°c (Macknin et al., 1990; Forstall et al., 1994). Similarly, guidance on nebulising varies across professionals, indicating the need for caution in practice.

This section aims to balance accuracy and accessibility, with the corresponding page shown in Figure 8 below. I chose to replace the term *immediate relief* with *symptom relief* to avoid implying instant recovery and pair concise descriptions with safety notes to reduce the risk of misinterpretation. This complexity leads me to exclude some of the detailed content previously mentioned, as this could easily be misconstrued. Therefore, I added concise descriptions with safety notes and advise contacting a voice professional when needed, to ensure safe and individualised application of the strategies, which reflects ethical considerations and also my experiential understanding as a vocal coach.

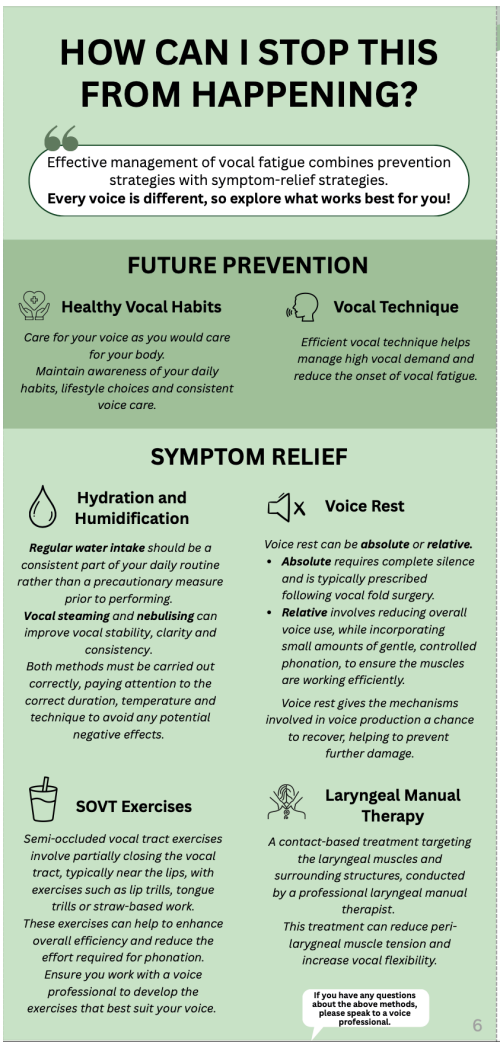

Figure 8 - *Excerpt from page 6 of my artefact.*

Ultimately, these decisions support the artefact's wider aim by presenting research-informed strategies in a clear, practical, and safe format. This process aids professional voice users in developing a deeper awareness to better support and protect them during periods of stress, intense schedules and illness, ultimately reducing the risk and impact of vocal fatigue (Gates et al., 2013; Gaskill and Hetzel, 2017; Chapman and Morris, 2021).

Artefact Reflection - Know What

Introduction

This section critically evaluates the factual and conceptual knowledge embedded within the educational guide. Driscoll's model "What?/ So What?/ Now What?" (Driscoll, 2007), influenced by Borton (1970), underpins the structure of this analysis, offering a clear analytical framework through which to identify the knowledge presented, explore its significance and evaluate its effectiveness within the guide.

Core Factual Knowledge

For reference, my entire artefact is linked in the appendices as a hard copy leaflet (Appendix A) and a digital copy (Appendix B). The artefact begins with a clear and concise definition of vocal fatigue, drawing on research compiled by Hunter et al. (2020), Welham and Maclagan (2003) and Nanjundeswaran et al. (2015). This definition provides a foundation for the readers, ensuring professional voice users have a clear understanding of the condition before engaging with the more detailed guidance. By starting with a concise definition, the artefact reduces potential confusion and frames the condition, which is important for readers who may have encountered conflicting definitions previously.

Following the definition, the artefact introduces an identification timeline, influenced by Leventhal's five domains of illness model (2003). This stepwise guide not only structures the user's engagement with the content but also encourages proactive self-reflection. Analytically, this section bridges theoretical understanding with self-awareness, highlighting the importance of early recognition, which can potentially prevent the onset of more serious vocal injuries (Joseph *et al.,* 2020; Lei *et al.,* 2020).

The symptoms section is presented in short bullet points with intuitive icons, listing reduced control of the voice; discomfort in the laryngeal, neck or clavicular region; reduced overall vocal power; increased vocal effort required to produce sound; temporary loss of voice; reduced vocal flexibility (Solomon, 2008; Nanjundeswaran *et al.,* 2015; Lei *et al.,* 2020). The use of the visual cues alongside concise descriptions minimises the extraneous cognitive effort for the reader (Sweller,

2011). This combination also supports self-reflection by enabling users to relate symptoms to their own experiences, without being overwhelmed by detail and reinforcing the accessibility of complex scientific information.

The guide then addresses potential causes, framed under the question *'Why does vocal fatigue happen?'*, to avoid the potential of blame or negative connotations. The factors included are: high vocal demand, inefficient technique (Gaskill and Hetzel, 2017), challenging environments (Kitch and Oates, 1994), suboptimal vocal care and inadequate recovery time (Gaskill and Hetzel, 2017). Each definition provides a concise explanation that encourages readers to contextualise the condition within their personal and professional routines, to undertake self-assessment, and to attempt to alleviate fear or anxiety.

The section on biophysiological mechanisms aims to translate the scientific knowledge underlying the condition into digestible and accessible content for professional voice users. The mechanisms are organised into five categories: neuromuscular (Welham and Maclagan, 2003), vocal fold cover, afferent (Shembel and Nanjundeswaran, 2022), metabolic (Nanjundeswaran *et al.,* 2017; Nesbitt, 2023) and central neural (Welham and Maclagan, 2003). This translation of technical knowledge is significant as it provides professional voice users with a scientific understanding of exactly how symptoms can arise, supporting awareness and enabling the development of knowledge, a key aim when developing this artefact.

Finally, the artefact presents management strategies, separated into *'symptom relief'* (hydration and humidification [Sataloff et al., 2005; Souza et al., 2023; Weston and Schneider, 2023; Keltz et al., 2022; Sandage and Morton-Jones, 2024], SOVT exercises [Nayebian et al., 2025], voice rest [Gates et al., 2013; Sataloff et al., 2019] and laryngeal manual therapy [Sonam and Kalyani, 2024]) and '*future prevention'* (healthy vocal habits [Gates et al., 2013] and vocal technique [Chapman and Morris, 2021]). Separating strategies in this way encourages users to acknowledge the importance of prevention alongside treatment, encouraging proactive self-management.

Conceptual Knowledge and Framework

Leventhal's five domains of illness model (2003) underpins the conceptual organisation of the guide, shaping the progression from identifying the condition and the symptoms, to understanding the causes that underpin the condition, along with subsequent management strategies. The ordering of the guide is conceptually important as it aligns with the natural cognitive pathway professional voice users follow when interpreting a change in their voice, thereby supporting coherent and informed decision-making. The guide is also heavily informed by cognitive load theory (Sweller, 2011), which emphasises the importance of reducing unnecessary cognitive effort so learners can focus their attention on the most relevant information. The value of simplicity in supporting cognitive processing is also reflected in tools such as the Vocal Fatigue Index

(Nanjundeswaran *et al.,* 2015) and the EASE (Evaluation of the Ability to Sing Easily) scale (Phyland *et al.,* 2013). Although these are both assessment tools rather than educational guides, their concise and clear prompts minimise extraneous cognitive load. This enables users to reflect on their symptoms without cognitive overwhelm, demonstrating how reducing complexity can facilitate effective self-reflection. Similar to my guide, both scales use step-by-step question approaches to manage cognitive load, aligning with research showing that structured, scaffolded approaches can facilitate cognitive processing and effective reflection (van Nooijen *et al.,* 2024), a principle also central to my guide.

A key conceptual distinction in the artefact is the separation between *'symptom relief'* and *'future prevention'* strategies. Although some overlap will always exist, differentiating the two categories reinforces a core conceptual principle: effective vocal health requires both reactive and proactive responses (Epstein *et al.,* 2011). Professional voice users often engage in reactive self-management when symptoms emerge, particularly when anxiety or fear is also present. Yet, without an understanding of long-term prevention strategies and the underlying causes, reactive management will not always suffice. Structuring strategies in this way encourages users not only to consider how to manage their current symptoms but also how to reduce recurrence.

The guide also draws on pedagogical concepts of self-awareness and self-regulation, which are essential for managing a condition such as vocal fatigue. Self-awareness enables individuals to recognise patterns in their voice use and habits, while regulation supports them in selecting appropriate strategies, influenced by their awareness (Gomes *et al.,* 2024). The guide encourages reflection throughout, through symptom lists, highlighting potential causes and explaining the underlying mechanisms, promoting the need and importance for self-reflection as a professional voice user.

Application to Practice

Vocal fatigue is one of the most common conditions affecting professional voice users (Zhou *et al.,* 2025). In practice, responses are often reactive rather than proactive, such as professional musicians cancelling shows due to a 'lost voice' and requiring 'vocal rest'; although not confirmed, this is likely due to vocal fatigue. High-profile examples include Benson Boone (Molloy, 2024), Sam Fender (Dunworth, 2024) and Ashley McBryde (Bowlby, 2025), who have publicly cancelled performances due to voice-related issues or injuries. These real-world cases highlight the impact that vocal fatigue can have on professional voice users and emphasise the importance of early identification and management to prevent more serious conditions (Solomon, 2008).

The educational guide provides research-informed prompts to help professional voice users recognise early signs, understand the underlying mechanisms, identify potential causes and implement targeted preventive strategies into their practice. For example, artists on large-scale tours can benefit from recognising how insufficient recovery time can contribute to vocal fatigue (as

highlighted on page 4, Appendix A), and the guide could encourage them to incorporate proactive planning and informed voice care into their preparation process. This will encourage prevention rather than reactive responses and hopefully reduce the amount of last-minute cancellations for artists, illustrating why an educational guide is necessary and can bridge the gap between the theory and real-world issues.

Evaluation and Future Recommendations

The scientific knowledge within this artefact was translated accurately, ensuring that simplification of advanced content did not lose essential nuance or meaning. Condensing the biophysiological mechanisms was particularly challenging, as this is contemporary scientific research which is still under development, therefore making this information accessible required careful precision. As previously addressed, certain strategies overlap between '*symptom relief'* and *'future prevention*', meaning that some aspects of this section could be seen as ambiguous. However, this distinction was important, to emphasise the importance of preventative management rather than only reactive responses. It may be beneficial to add an additional page to the leaflet to clarify the overlap of certain strategies further. A notable gap within the educational artefact is the discussion of more serious vocal injuries. This was deliberately excluded to avoid instilling fear and to keep the focus solely on vocal fatigue.

Although the artefact cannot be formally tested without ethical approval, its effectiveness can be conceptually evaluated through indicators reflecting its pedagogical aims. Successful engagement with the artefact would be indicated if users are able to identify symptoms that align with the guide, reflect on potential causes within their own context, and select management strategies they can successfully implement for symptom relief and future prevention of the condition. These outcomes would signify that the artefact achieves its goals of demystifying the condition, reducing anxiety or fear and promoting self-awareness. If users confidently begin to identify vocal fatigue by recognising and describing potential causes and making connections to scientific study, this would demonstrate increased knowledge, reflective awareness and critical thinking. Suggested implementation of this evaluation is detailed below in Figure 9.

Indicator of Success	Method of Evaluation
Users can accurately identify and recognise symptoms of vocal fatigue.	Observational feedback and discussions
Users can describe potential causes within their own context.	Self-reflection assessments
Users can implement strategies to provide symptom relief and prevent recurrence.	Monitoring self-reported symptom reduction and frequency of recurrence
Users develop confidence in understanding the condition, alleviating feelings of fear or anxiety.	Surveys to evaluate knowledge, plus discussion surrounding emotional response.

Figure 9 *- Suggested Evaluation Criteria*

Future iterations could include a section that differentiates fatigue from more serious voice disorders or illustrates the potential escalation if the condition isn't managed efficiently. Currently, the guide is a hard-copy leaflet with a PDF digital version. In future, a more interactive digital format could be explored, potentially incorporating interactive elements or adaptive guidance to enhance accessibility and engagement for professional voice users, reflecting the popularity of E-learning within the current professional voice field (Konovalova *et al.,* 2019).

2.3 - Reflective Conclusion

The purpose of this study was to identify the key elements of vocal fatigue that professional voice users require to recognise, prevent and manage the condition effectively. A further aim was to determine research-informed strategies supporting both symptom relief and future prevention. These findings were translated into an educational guide presenting complex scientific information in a clear and accessible way, encouraging self-awareness and self-management. My dual methodological stance, informed by both pragmatism and constructivism, shaped these decisions: pragmatism guided the guide's focus on clarity and practical usefulness (Reybold, 2002; Elgeddawy and Abouraia, 2024), while constructivism ensured reflective practice and engagement for the reader (Ültanır, 2012). The literature review highlighted the multifaceted nature of vocal fatigue, its diverse symptoms, emotional impact and the biophysiological mechanisms that underpin the condition. It also emphasised the importance of early recognition and the need for actionable management strategies.

Developing the guide required careful simplification without compromising accuracy, particularly when condensing information surrounding the biophysiological mechanisms. This reflected the integration of my dual stance, with pragmatism prioritising accessibility (Goldkuhl, 2011), while constructivism guided attention to user interpretation (Ültanır, 2012). Leventhal's model and cognitive load theory supported coherent structuring and minimised reader overwhelm. The guide has the potential to support professional voice users by increasing clarity, reducing uncertainty and encouraging proactive voice care. Limitations included the unavoidable loss of nuance and the deliberate exclusion of more serious vocal injuries. These challenges also reflect the interplay between my methodological stances and the need to carefully prioritise content and design decisions to balance accessibility with scientific depth. Future development could explore how vocal fatigue relates to more significant voice disorders and provide more explicit guidance on when professional assessment is needed. This would strengthen later iterations of the guide and enhance its value for professional voice users.

3.0 - Critical Reflection

This critical reflection uses Kolb's Experiential Learning Cycle (2007), as shown below (Figure 10), to structure the knowledge gained throughout this study and throughout the development of my artefact. Kolb describes learning as *'grasping experience',* through concrete experience and abstract conceptualisation and *'transforming experience'* through reflective observation and active experimentation. Using this framework, I evaluate how my understanding of vocal fatigue as a condition evolved, and how theoretical learning informed my practical decisions and will shape my professional practice in the future. Elements of Gibbs' model (1988) were also incorporated to facilitate deeper analysis, particularly regarding the emotional aspects of the learning process.

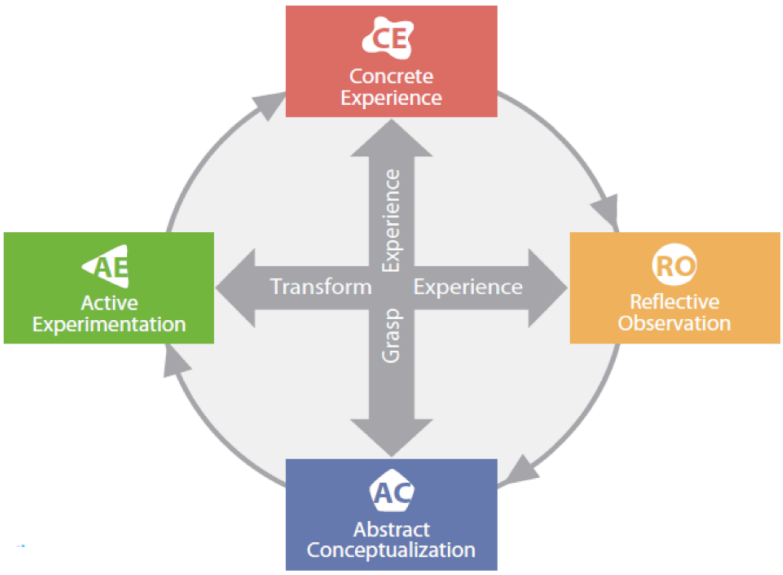

Figure 10 - Kolb's Experiential Learning Cycle (2007).

Concrete Experience

Upon selecting my topic and conceptualising the artefact, I conducted a comprehensive literature review to identify the essential knowledge professional voice users require to recognise, prevent and manage vocal fatigue. I chose to produce a leaflet as an educational guide, as I judged it to be an accessible, user-friendly format that would avoid overwhelming the reader.

Drafting each page of the leaflet highlighted the challenge of condensing extensive information. I initially included extensive content, which then required multiple iterations to determine what was essential. The guide was heavily influenced by cognitive load theory (Sweller, 1988), and the structure aligned with Leventhal's model to reflect the natural process of illness identification (Leventhal *et al.,* 2003). I focused on design elements, including colour scheme and layout,

supported by research to guide my choices, ensuring the artefact was coherent, research-informed and accessible, supporting readers' understanding and engagement.

Reflective Observation

The process of condensing the information revealed a personal tendency of mine, to retain information when not strictly necessary, as if to prove depth of knowledge. This aligns with Honey and Mumford's Reflector and Theorist learning styles (1994). As a reflector, I like to assess information thoroughly before drawing conclusions and value having a broad range of information to inform my decisions. As a theorist, I also prefer structured approaches with a clear purpose, allowing me to prove and question the logic behind a concept, but only when I feel sufficiently informed. While this ensured accuracy within the creation process, it also slowed progress, requiring me to make firm decisions to finalise the content. However, a positive outcome of this awareness was the intentional integration of reflective prompts throughout my artefact. By embedding these small prompts, I encouraged users to engage actively in self-reflection and self-management, enhancing the educational value of the guide. This also allowed me to reflect on my own approach, reinforcing the importance of balancing depth with accessibility.

Abstract Conceptualisation

Engaging with cognitive load theory (Sweller, 1988) was particularly beneficial throughout the creation of my artefact. Reconnecting with this framework informed not only the artefact design but also broader approaches to teaching and structuring knowledge for students. This experience reinforced the importance of research-informed practice and decision-making, which are central to my professional development as a vocal coach.

In addition, navigating conflicting research during the literature review, such as differing opinions on mitigation strategies, required careful evaluation and critical analysis to ensure the guide communicated these strategies in a nuanced yet clear way to reflect the literature. This process strengthened my ability to synthesise complex research findings into actionable guidance, alongside my professional judgement.

Active Experimentation

This project has reinforced the importance of synthesising scientific knowledge in an accessible way, highlighting my role as a facilitator of learning rather than a source of knowledge. I have developed skills in condensing content effectively whilst maintaining scientific accuracy, and I am

pleased with how this has translated into my educational guide. These skills will inform future lesson planning, client guidance and artefact development.

In future projects, I aim to implement a more structured, step-by-step process when condensing information to reduce time on iterative revisions. If revising this artefact, I would consider including an additional page on related vocal injuries, using a clear format, making connections to vocal fatigue in a way that will avoid overwhelming users. I would also like to explore a range of digital and interactive formats for presenting the digital version of the artefact, to enhance engagement.

This process heightened my awareness of my personal strengths and limitations, demonstrating the value of reflective practice for practitioners' professional development.

5.0 - Appendices

APPENDIX A

Complete Artefact - Educational Guide on Vocal Fatigue for Professional Voice Users - *Hard Copy Leaflet*

A SCIENTIFIC MOMENT!

THE BIOPHYSIOLOGICAL MECHANISMS THAT UNDERPIN THE CONDITION

Neuromuscular Mechanism Fatigue

When the muscles used for voice production lack the ability to sustain the tension required to produce sound efficiently.

➔ *May present as a weak voice quality or tightness surrounding the laryngeal muscles.*

Vocal Fold Cover Mechanism Fatigue

When the high frequency of vibrations alter the composition of the folds making vibration less efficient.

➔ *May present as reduced flexibility in the sound or a more effortful process.*

Afferent Mechanism Fatigue

When the sensory signals between the laryngeal muscles and the brain become less accurate.

➔ *This can alter your perception of vocal fatigue meaning the brain "feels" vocally fatigued before it becomes audible.*

Metabolic Mechanism Fatigue

When the energy supply to the muscles involved in voice production is depleted faster than it can be restored, potentially leading to a build up of metabolic by-products.

➔ *May present as "heaviness" or lack of vocal control.*

Central Neural Mechanism Fatigue

When the central nervous system becomes less efficient at coordinating the muscles involved in voice production.

➔ *If this system is fatigued the signals may weaken which may appear as reduced control or stability of the sound.*

5

HOW CAN I STOP THIS FROM HAPPENING?

Effective management of vocal fatigue combines prevention strategies with symptom-relief strategies.
Every voice is different, so explore what works best for you!

FUTURE PREVENTION

Healthy Vocal Habits

Care for your voice as you would care for your body.
Maintain awareness of your daily habits, lifestyle choices and consistent voice care.

Vocal Technique

Efficient vocal technique helps manage high vocal demand and reduce the onset of vocal fatigue.

SYMPTOM RELIEF

Hydration and Humidification

Regular water intake *should be a consistent part of your daily routine rather than a precautionary measure prior to performing.*
Vocal steaming *and* ***nebulising*** *can improve vocal stability, clarity and consistency.*
Both methods must be carried out correctly, paying attention to the correct duration, temperature and technique to avoid any potential negative effects.

Voice Rest

Voice rest can be ***absolute*** *or* ***relative.***

- ***Absolute*** *requires complete silence and is typically prescribed following vocal fold surgery.*
- ***Relative*** *involves reducing overall voice use, while incorporating small amounts of gentle, controlled phonation, to ensure the muscles are working efficiently.*

Voice rest gives the mechanisms involved in voice production a chance to recover, helping to prevent further damage.

SOVT Exercises

Semi-occluded vocal tract exercises involve partially closing the vocal tract, typically near the lips, with exercises such as lip trills, tongue trills or straw-based work.
These exercises can help to enhance overall efficiency and reduce the effort required for phonation.
Ensure you work with a voice professional to develop the exercises that best suit your voice.

Laryngeal Manual Therapy

A contact-based treatment targeting the laryngeal muscles and surrounding structures, conducted by a professional laryngeal manual therapist.
This treatment can reduce peri-larygneal muscle tension and increase vocal flexibility.

If you have any questions about the above methods, please speak to a voice professional.

6

What is Vocal Fatigue?

Vocal Fatigue is when a voice feels **tired** or **strained** and voice use requires **more effort** than usual. Indicating reduced efficiency of the muscles involved in voice production.

A clear guide for professional voice users to help you understand and manage the condition

1

Early recognition of vocal fatigue is paramount, and professional voice users should be self-aware and attentive to any minor changes in their voice.

Below is a simple step-by-step guide to help you identify and manage vocal fatigue.

- **Identify your symptoms**
- **Assess the duration of your symptoms**
- **Evaluate the impact of your symptoms**
- **Consider potential causes**
- **Implement targeted strategies**

COMMON SYMPTOMS

- **Reduced control of the voice**
- **Discomfort in the laryngeal, neck or clavicular region**
- **Reduced overall vocal power**
- **Increased vocal effort required to produce sound**
- **Temporary loss of voice**
- **Reduced vocal flexibility**

Or any change that doesn't feel right for ***your*** voice.
Remember, every voice and experience is unique - trust your own awareness!

WHY DOES VOCAL FATIGUE HAPPEN?

Vocal fatigue can arise from a range of causes, shaped by the underlying mechanisms involved in voice production. It often develops through a combination of external factors and internal physiological responses.
Below are some potential causes:

HIGH VOCAL DEMAND

Prolonged periods of intense voice use can overwork the vocal mechanisms.

INEFFICIENT TECHNIQUE

Using technique that doesn't effectively support the vocal mechanisms.

CHALLENGING ENVIRONMENTS

Dry air, dusty environments or poor acoustics can also contribute to vocal fatigue.

SUBOPTIMAL VOCAL CARE

Lack of hydration, poor diet and lifestyle choices can all contribute to vocal fatigue.

INADEQUATE RECOVERY TIME

Without adequate rest, there is limited recovery time after intense voice use, increasing the risk of vocal fatigue.

APPENDIX B

Complete Artefact - Educational Guide on Vocal Fatigue for Professional Voice Users - *Digital PDF Version*

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