

Final MA Project - BMPF7010

Project Title: An exploratory study into the effectiveness of the use of imagery in vocal pedagogy: How effective is the use of verbal imagery in vocal pedagogy?

Contents	Pages
Project Proposal	2-8
<u>Project Report</u>	
Introduction	9-10
Literature Review.	10-16
Research Methodology.	17
Methodology	17 - 26
Findings.	26-52
Analysis	52-56
Limitations	56
Areas of Future Research.	57
Reflections and Conclusions	58
Final Conclusions	59
References	60-67

Project Proposal

Project Title: An exploratory study into the effectiveness of the use of imagery in vocal pedagogy: How effective is the use of verbal imagery in vocal pedagogy?

Introduction

Imagery, as defined by the Oxford Learners Dictionary, is "a language that produces pictures in the minds of people reading or listening." (Oxford Learners Dictionaries, 2024). Using imagery effectively engages the imagination. Mary Warnock (1976) emphasises that "the cultivation of imagination should be the chief aim of education." Harvard (2013) adds that "Imagination is the capacity to form mental pictures, and we draw upon it every day—even if we don't realise it."

Background and Justification

This research is situated at the RJ Academy of Singing and Dramatic Arts, which I founded and have run for over 15 years. The academy offers vocal training across ages and skill levels, blending traditional and innovative methods. Reflective journaling highlighted imagery as a key teaching tool (Taylor, 2007; Paton, 2008). Imagery, as a semiotic system (Peirce, ed. Hoopes, 1991; Issajeva, 2015; Harrison, 2018), helps construct meaning from somatic experiences. Other semiotic systems—language, vision, audition, gesture, and space—also convey symbolic meaning (Chandler, 2017). Emotion, central to Estill techniques (Estill, 2017), enriches these systems, creating a more engaging learning environment.

The historical context highlights the evolving relationship between imagery-based teaching and scientifically informed techniques. Traditionally, vocal pedagogy has consistently relied on imagery to communicate technique (Stark, 2003). However, with the invention of the laryngoscope by Garcia II in 1854, direct observation of the vocal folds became possible for the first time (Reid, 1950). While Garcia himself continued to advocate for experiential teaching methods, his invention eventually laid the groundwork for scientific approaches that gained prominence later in the 20th century (Appelman, 1986; Doscher, 1999). The initial resistance to scientific methods likely stemmed from concerns that over-reliance on anatomical explanations could detract from artistic interpretation and vocal freedom (Clements, 2008).

This shift led to a more integrated approach in modern pedagogy, where imagery-based teaching was not dismissed but rather supplemented with scientific understanding (Estill, 2017). Contemporary research has shown that imagery aids cognitive and psychological benefits in skill acquisition and performance (Jeannerod, 1995; Paivio, 1986). Specifically, theories such as Dual Coding Theory (Paivio, 1986) suggest that combining visual and verbal information enhances memory and learning retention. Similarly, Cognitive Load Theory (Sweller, 1988) proposes that reducing cognitive strain through clear, intuitive imagery helps students focus more effectively on technical mastery.

The increasing integration of scientifically informed practices reflects broader pedagogical trends toward evidence-based teaching (Howard & Welch, 2017). However, the resurgence of interest in imagery stems from research highlighting its cognitive and motor learning benefits (Jeannerod, 1995; Velarde, 2013). Thus, while imagery has never entirely disappeared from vocal instruction, its application has grown in sophistication, informed by both evolving scientific knowledge and pedagogical innovation.

Intended Impact

This study aims to design an effective toolkit for using imagery in the teaching studio. It seeks to identify images used by teachers, understand student preferences, and test these images in practical settings. Discussions and evaluations will produce a comprehensive document to aid teachers with diverse imagery suited for various techniques.

Learning Outcomes

- Assess the benefits of imagery in vocal pedagogy.
- Explore imagery's role in cognitive processes and technique acquisition.
- Investigate its impact on effective vocal performance and pedagogy
- Develop and test an imagery toolkit.
- Provide guidelines for integrating imagery.
- Explore the potential effectiveness of imagery in vocal pedagogy through empirical evidence, without presupposing outcomes.
- Advance vocal pedagogy with scientifically grounded methods.

Ontology and Methodology

Ontology concerns the nature of reality in a study (Crotty, 1998). This study adopts a constructivist perspective, positing that reality is constructed through experiences and interactions (Guba & Lincoln, 1994). It explores how teachers and students construct understanding and use imagery in the studio, focusing on subjective experiences and meanings, while also considering instances where imagery may not be effective or applicable for all learners.

The research will take an inductive approach, allowing patterns and themes to emerge organically from the data rather than testing a predefined hypothesis (Creswell & Plano Clark, 2018). To guard against bias, reflexive journaling and regular peer reviews will be employed to challenge assumptions and maintain objectivity throughout the analysis. This approach also allows for the possibility of outcomes that diverge from initial expectations, including instances where imagery-based techniques are less effective.

Research Location

The research will occur in person within my teaching studio, providing a familiar environment for teachers and students. This setting allows direct observation of interactions and imagery use in real-time, enhancing data authenticity (Yin, 2018). The immersive approach facilitates understanding of how imagery integrates into practices and how students respond (Denzin & Lincoln, 2018).

Participant Selection and Recruitment

The study involves a purposive sample of 10 students aged 8–17 and five teachers from my academy. Students will be selected based on willingness and comfort, ensuring engagement throughout the study. Selection criteria include varying experience levels, from beginners to advanced. Teachers will be chosen based on prior experience with imagery.

Participants showing high anxiety or inability to commit will be excluded for data reliability and ethical considerations. Recruitment begins with a formal email invitation, followed by detailed communication outlining the study's purpose, requirements, and consent procedures.

Methodological Approach

A mixed-methods approach combines qualitative and quantitative methods. Qualitative methods, including interviews and observations, will capture detailed experiences. Quantitative methods, like questionnaires, provide numerical data to assess impact. This approach offers a well-rounded perspective on how imagery influences teaching and learning. In addition to surveys, questionnaires, and reflective diaries, focus groups will be incorporated into the methodology to explore collective experiences and foster dynamic discussions around imagery-based instruction (Kitzinger, 1995).

Literature Review

A systematic literature review on imagery in education (Boote & Beile, 2005; Machi & McEvoy, 2016) will identify key themes, trends, and gaps. This review will inform the toolkit design and help adjust the research methodology (Hart, 2018), providing critical insights into imagery's benefits and challenges (Randolph, 2009).

Semi-Structured Interviews

Semi-structured interviews with students and teachers allow flexible questioning while covering key topics. This method explores experiences and preferences, uncovering effective ways to integrate imagery into teaching (Cohen, Manion, & Morrison, 2018).

Surveys / Questionnaires

Structured questionnaires will assess attitudes, perceptions, and skills before and after toolkit implementation using instruments like Likert scales. While Likert scales primarily gather ordinal data, this study assigned numerical values to responses to facilitate quantitative analysis. This approach enabled the identification of trends in student engagement, technical improvement, and confidence levels across the toolkit implementation process (Boone & Boone, 2012).

Diaries

All participant students were invited to maintain reflective diaries; however, a purposive sample was selected from the original group based on factors such as engagement level, availability, and willingness to commit to regular entries. This ensured diverse yet manageable data collection while maintaining the study's depth and relevance (Patton, 2002). These diaries will be for documenting experiences with the toolkit, including images

used and perceived effectiveness. These diaries will undergo thematic analysis (Braun & Clarke, 2006) and be triangulated with interview and questionnaire data.

Toolkit Implementation

The toolkit will be implemented over an 6-week period with weekly 30-minute sessions and home practice. Participants will maintain diaries to record experiences and challenges.

Focus Groups

Focus groups will explore collective experiences and perceptions of the toolkit. Small groups of 5–7 participants will discuss image effectiveness and learning outcomes. Discussions will be recorded, transcribed, and analysed for common themes.

TASK	12 /8	19/ 8	26/ 8	2/ 9	9/ 9	16/ 9	23/ 9	30/ 9	7/ 10	14/ 10	21/ 10	28/ 10	NOV
Participant Screening													
Semi Structured Interview													
Write Survey													
Conduct Survey 1													
Design ToolKit													
Begin toolkit implementation													
Design Survey 2													
Implement Survey 2													
Focus Group													
Results and End Conclusions													

Insider Research

As an insider-researcher, I will remain reflective, documenting my role, biases, and assumptions in a journal. This practice enhances the interpretive process and contributes to analysis depth (Laverty, 2003).

Analysis

Quantitative data from questionnaires will be analysed using descriptive and inferential statistics. Qualitative data from interviews will undergo thematic analysis (Braun & Clarke, 2006). Integrating these analyses offers a nuanced interpretation of results.

Ethical Considerations

Participant well-being is prioritised with clear study information emphasising voluntary participation and the right to withdraw at any time (Sieber & Stanley, 1988). Activities can be paused if participants feel uncomfortable (American Psychological Association, 2017).

Conducted at my workplace, research follows thorough risk assessments to minimise hazards like trips or falls (Sims, 2007). Vocal warm-ups, health checks, and encouragement of comfortable techniques ensure safety during singing activities (Thomson, 2007; Stemple, 2004).

Safeguarding minors includes establishing ground rules for respectful interactions among participants, ensuring that all students feel comfortable and supported. These ground rules, based on best practices for ethical research with children (Hill, 2005; Alderson & Morrow, 2011), will be tailored to promote age-appropriate communication, protect participant well-being, and foster a safe learning environment. I will monitor distress signs and secure written consent from minors and their guardians (Gillick, 1986; McCarthy, 2012).

Participants will receive detailed study information, provide written consent, and data confidentiality is maintained with unique identifiers for anonymity (Beauchamp & Childress, 2019). Support is available for sensitive issues, and disclosures are handled according to legal requirements (Wiles, 2013).

Research in a safe, risk-assessed environment includes vocal care to prevent strain, with continuous monitoring for prompt issue resolution, upholding ethical standards for participant safety (Hammersley & Traianou, 2012).

Data Protection

Participants remain anonymous, and data confidentiality is emphasised. Communication uses internal emails, and research files are securely encrypted. Consent precedes any publication, with participants informed about data use and rights.

Personal Learning Outcomes

- Developing proficiency in literature reviews, research design, and qualitative analysis.
- Gaining insight into imagery's benefits and challenges in education.
- Applying research to enhance teaching methods.
- Cultivating reflective thinking and evaluating biases.
- Strengthening project management and communication skills.
- Generating new knowledge on imagery's effective use in teaching, disseminating findings through conferences and journals.

Task	Jan	Feb	March	April	May	June	June	July
Proposal								
Lit Review								
Participant Screening		1 week						
Semi Structured Interview								
Conduct Survey 1			1st week					
Design Toolkit								
Begin Toolkit Implementation								
Survey 2 and Focus Group								
Results and Conclusions								
Complete Draft Report								
Submit Final Report								
Write and Create Presentation								
Presentation of Project								

Final MA Project - BMPF7010

Project Title: An exploratory study into the effectiveness of the use of imagery in vocal pedagogy: How effective is the use of verbal imagery in vocal pedagogy?

Project Report.

Introduction

The use of imagery in vocal pedagogy has long intrigued educators and researchers. Defined as descriptive language that evokes sensory experiences, imagery helps students conceptualise abstract vocal techniques, making it a vital instructional tool. The Oxford Learner's Dictionary (2024) describes imagery as "a language that produces pictures in the minds of people reading or listening."

Warnock (1976) argues that imagination is central to education, while Harvard (2013) notes its daily role in forming mental pictures. In vocal training, metaphorical language bridges the gap between technical instruction and experiential understanding (Reid, 1983; Velarde, 2013). This method enhances cognitive engagement and supports motor learning by activating neural pathways linked to skill acquisition (Jeannerod, 1995).

Historically, vocal pedagogy relied on oral transmission, using imagery long before modern voice science (Stark, 2003). The invention of the laryngoscope (Garcia II, 1854) enabled direct observation of vocal fold function (Duey, 1951; Reid, 1950), adding anatomical insights without replacing imagery. Over time, pedagogy integrated scientific explanations with traditional imagery (Appelman, 1986; Doscher, 1999), offering clearer vocal physiology insights while maintaining imagery's role in engaging emotion and simplifying complex functions (Estill, 2017; Hoch, 2017, 2020).

This study explores the effectiveness of verbal imagery in vocal pedagogy, examining its impact on vocal performance and teaching. By analysing its role in instruction, this research aims to develop a structured framework that balances tradition with contemporary scientific understanding.

Aims of Current Study

The primary aim of this study is to evaluate the role of verbal imagery in vocal pedagogy and its effectiveness in enhancing vocal technique, engagement, and motor learning. Specifically, the study will:

1. Investigate how vocal teachers implement verbal imagery in their instruction.
2. Examine the impact of imagery-based teaching on student comprehension and vocal performance.
3. Compare the effectiveness of imagery-based approaches with anatomically focused instruction.
4. Develop a structured framework for incorporating imagery in vocal pedagogy based on empirical evidence.

By addressing these objectives, this research will contribute to a more comprehensive understanding of the role of imagery in voice training, offering practical insights for educators and vocalists alike.

Personal Learning Outcomes

Through conducting this research, I aim to develop a deeper understanding of the pedagogical strategies employed in vocal training, particularly the role of imagery in enhancing learning and technical development. This study will allow me to refine my analytical and critical thinking skills by evaluating existing literature and conducting empirical analysis. Additionally, I anticipate gaining insights into how different teaching methodologies influence vocal performance, which will directly inform my own teaching practices. By engaging with this topic, I hope to bridge the gap between traditional and scientific approaches to vocal pedagogy, fostering a comprehensive instructional framework. A "well-rounded" approach refers to combining scientifically grounded techniques—such as an understanding of vocal anatomy, physiology, and evidence-based exercises—with traditional imagery-based methods that tap into creativity, intuition, and emotional connection (Estill, 2017; Howard & Welch, 2017). This integration ensures that students benefit from both the technical precision offered by scientific research and the expressive freedom facilitated by imaginative metaphors.

Literature review

Introduction

Singing instruction differs from other instrumental training due to the internal nature of the voice—singers cannot see their vocal folds in action or adjust technique through direct visual feedback (McCoy, 2012; Miller, 1996). Instead, they rely on internal sensations, auditory perception, and teacher guidance. Historically, vocal pedagogy was rooted in oral tradition, using imagery and metaphor to convey complex vocal concepts (Steinhauer et al., 2017). Phrases like “sing into the mask” or “imagine an open throat” have long helped students intuitively grasp vocal mechanics, especially within classical and bel canto traditions (Reid, 1983; Stark, 2003).

While imagery enhances engagement and motor learning, it can also lead to misinterpretations, as students process verbal cues differently (Paton, 2008; Velarde, 2013). Advances in vocal science, such as laryngoscopy, MRI imaging, and electroglottography, have integrated anatomical techniques alongside traditional imagery-based methods (Sundberg, 1987; Howard & Welch, 2017). This shift has sparked debate—some educators advocate for purely scientific, anatomy-based instruction (Appelman, 1986; Doscher, 1999), while others highlight imagery’s role in vocal freedom and artistic expression (Estill, 2017; Hoch, 2020).

This literature review examines the historical reliance on imagery, its cognitive and physiological impact, and the influence of scientific advancements on pedagogy. It also evaluates comparative studies on imagery-based versus anatomical instruction, assessing their effectiveness in vocal precision, engagement, and technique. By synthesising these perspectives, this review informs the study’s objective: investigating imagery’s role in modern vocal training and developing a structured framework for its effective use.

Theoretical Frameworks in Imagery-Based Vocal Pedagogy

Educational theories provide valuable insights into why imagery plays a crucial role in vocal learning. Vygotsky (1978) proposed that thought and language are intrinsically linked, with metaphor and imagery acting as scaffolding for abstract learning. In the context of singing, this means that sensory-rich descriptions help singers conceptualise otherwise imperceptible actions.

Additionally, Schmidt’s Schema Theory (Schmidt, R. A. 1975) suggests that motor learning occurs through the development of generalised movement patterns, reinforced through varied practice and feedback. Imagery plays a role in this process by allowing singers to refine their technique through mental rehearsal. This aligns with Jeannerod’s (1995)

research on mental simulation, which demonstrates that mentally envisioning an action can activate the same neural pathways as physically performing it. These findings have significant implications for vocal pedagogy, as they suggest that visualisation can aid in technical mastery even in the absence of phonation (Lotze & Halsband, 2006).

Another key framework is embodied cognition, which posits that cognitive processes are deeply rooted in bodily interactions with the environment (Wilson, 2002). This theory underscores the importance of linking imagery to physical sensation, reinforcing the effectiveness of metaphors that correspond to tangible experiences (Shapiro, 2019).

The Science of Auditory and Kinesthetic Feedback in Singing

Singers rely heavily on auditory and kinaesthetic feedback for self-correction and skill refinement (Welch, 2018). Studies have shown that auditory imagery—the ability to internally "hear" a sound before producing it—enhances pitch accuracy and vocal consistency (Brodsky et al., 2008). Furthermore, kinesthetic awareness, or the ability to sense muscle movement and tension, plays a critical role in technique development (Nix, 2016).

While the concept of fixed learning styles (e.g., visual, auditory, kinesthetic) has been increasingly challenged in recent research (Pashler et al., 2008), evidence suggests that using a variety of sensory stimuli enhances learning outcomes. In vocal pedagogy, employing a combination of visual, auditory, and kinaesthetic imagery can engage multiple cognitive pathways, supporting a more holistic learning experience (Fleming & Mills, 1992; Coffield et al., 2004). For instance, metaphors related to spatial awareness, such as "imagine your voice floating above your head," combined with physical gestures or movement-based exercises, can help reinforce vocal sensations and technique (Wilson, 2021). This multi-sensory approach ensures that instruction is adaptable and maximises comprehension for a diverse range of learners.

Cognitive Load Theory and the Use of Imagery in Singing Instruction

Cognitive Load Theory (Sweller, 1988) posits that the human brain has a limited capacity for processing information, dividing cognitive load into intrinsic, extraneous, and germane categories. In vocal pedagogy, instructional approaches that reduce extraneous cognitive load—unnecessary or poorly structured information—can improve learning efficiency (Paas et al., 2003).

Imagery can be an effective tool for simplifying complex vocal concepts by providing intuitive mental shortcuts. For example, metaphors like “imagine your breath as a wave” can help singers conceptualise airflow without needing an in-depth understanding of respiratory mechanics (Wilson, 2021). However, if imagery is too abstract, culturally irrelevant, or poorly explained, it can introduce additional cognitive strain by increasing extraneous load (Mayer, 2009).

This added strain occurs when students expend mental effort trying to decode the metaphor itself rather than focusing on the intended vocal technique. For instance, a metaphor like “imagine singing through a golden thread” might confuse beginners who lack the contextual experience to interpret the imagery meaningfully (Velarde, 2013). Therefore, the effectiveness of imagery relies on its clarity, relevance, and alignment with the learner’s existing knowledge base (Sweller, 1988; Mayer, 2009).

Research suggests that when imagery is used in conjunction with explicit anatomical explanations, cognitive load is better managed, facilitating more effective learning (Mayer, 2009). However, overly abstract or contradictory imagery can confuse students, making it essential for teachers to refine their choice of metaphors (Lehmann & Davidson, 2002).

Cross-Disciplinary Perspectives on Imagery in Learning

Imagery is widely used beyond vocal pedagogy, particularly in sports psychology, dance training, and instrumental music education. Research shows that mental imagery enhances motor control, coordination, and performance by engaging neural pathways linked to physical practice (Guillot & Collet, 2008; Holmes & Collins, 2001). Athletes use visualisation to reinforce motor patterns, improve focus, and reduce anxiety (Moran, 2012).

In dance, imagery refines movement precision and spatial awareness (Blasing et al., 2009). Dancers visualise fluid motion, balance, and alignment to enhance muscle memory and performance (Nordin & Cumming, 2005). For example, imagining movement through water aids smoother transitions.

Instrumental musicians also use mental imagery to improve technique. Pianists may visualise hand movements while mentally “hearing” notes, reinforcing physical and auditory elements simultaneously (Lotze & Halsband, 2006). This engages multiple sensory systems, enhancing learning and practice efficiency.

These findings suggest imagery in singing instruction is supported by empirical evidence across disciplines. Techniques from other fields could inform vocal training, such as:

- **Mental Rehearsal:** Singers mentally practice challenging phrases, visualising breath support and pitch accuracy, akin to athletes rehearsing movements.
- **Kinesthetic Imagery:** Borrowing from dance, vocalists might visualise movement (e.g., lifting sound “up and over” the palate) to improve posture and alignment.
- **Multisensory Engagement:** Inspired by instrumentalists, singers could mentally rehearse songs while imagining both auditory and physical sensations to strengthen muscle memory and pitch accuracy (Brodsky et al., 2008).

Integrating these techniques into vocal pedagogy could refine technical precision, expressiveness, and student engagement through structured, evidence-based methods.

The Role of Emotional and Expressive Imagery in Performance

Beyond technical development, imagery also plays a crucial role in emotional and artistic expression. Studies have shown that singers who engage in emotionally driven visualisation perform with greater expressive depth (Davidson & Correia, 2002). For example, associating a phrase with a personal memory can enhance dynamic contrast and phrasing.

Additionally, mental rehearsal has been linked to performance anxiety reduction. Research suggests that guided imagery can help activate the parasympathetic nervous system, lowering stress levels and improving confidence (Langguth et al., 2020). This has practical applications for singers preparing for high-pressure performances.

Challenges and Misinterpretations of Imagery-Based Teaching

While imagery is a valuable pedagogical tool, it is not without limitations. Some metaphors, such as “breathe from the diaphragm,” are misleading and can lead to vocal tension (Watson & Hixon, 1985). Additionally, cultural and linguistic differences affect how students interpret verbal imagery, meaning that one-size-fits-all metaphors may not be universally effective (Kenny, 2015).

Recent studies advocate for a hybrid approach, combining imagery with anatomical explanations to provide clearer, more accurate instruction (Nix, 2016). This research

highlights the need for structured, evidence-based frameworks for imagery use in vocal pedagogy.

Technological Innovations and the Future of Vocal Pedagogy

Advancements in technology are shaping the future of vocal instruction. Tools such as spectrograms, MRI imaging, and virtual reality simulations allow singers to visualise vocal function in real time (Howard, 2022). Biofeedback tools, which provide immediate sensory information on airflow and resonance, offer promising applications for vocal training (Sundberg, 2010).

As AI and digital learning platforms become more sophisticated, there is potential for personalised vocal training that integrates imagery with real-time feedback. Future studies should explore how technology can enhance or refine traditional imagery-based teaching methods.

Gaps in Research and Future Directions

Despite the widespread use of verbal imagery in vocal pedagogy, empirical research on its effectiveness remains limited. While studies explore the cognitive and neurological mechanisms behind imagery-based learning, few directly compare its outcomes with anatomically grounded instruction in controlled settings. This gap leaves room for further investigation into how different pedagogical methods influence vocal development across diverse student populations.

A key gap in the literature is the lack of longitudinal studies on the long-term impact of imagery-based instruction. Existing research (Velarde, 2013; MacClaister & White, 2020; Hoch, 2020) mainly assesses short-term improvements in technique and engagement, but little explores whether these benefits are sustained or lead to lasting vocal development. As Welch and Sundberg (2002) argue, longitudinal studies are crucial for understanding how different teaching methods contribute to long-term vocal health and technique.

There is also a need for more research on individual differences in imagery receptivity. While some singers respond well to metaphorical instruction, others may struggle with abstract concepts and benefit more from anatomical explanations. Studies such as Wilson (2021) suggest personalised learning strategies enhance skill acquisition and retention, yet their application in vocal pedagogy remains under-explored. Investigating factors like

cognitive style, prior musical training, and sensory processing could help tailor teaching approaches to individual needs.

Another area requiring further study is the role of cultural and linguistic differences in imagery-based teaching. Many vocal metaphors originate from Western classical training, yet their effectiveness for singers from diverse backgrounds remains under-researched. Exploring how imagery is used across different musical traditions and whether alternative metaphorical frameworks exist in non-Western pedagogies could foster a more inclusive approach. Adapting culturally relevant imagery ensures that instruction aligns with students' musical backgrounds and personal experiences, enhancing both technical development and emotional connection.

Technological advancements, such as real-time spectrographic feedback, virtual reality, and biofeedback, offer new possibilities for integrating imagery with scientific visualisation. While preliminary studies have explored these tools in vocal training, more research is needed to assess their effectiveness in enhancing imagery-based instruction. Howard and Welch (2017) highlight technology's potential to revolutionise voice pedagogy by providing tangible visual and auditory feedback, though its integration with traditional imagery remains an emerging field.

Addressing these gaps will refine vocal pedagogy, ensuring imagery-based instruction is both scientifically supported and adaptable to diverse student needs. This study aims to contribute by evaluating the role of imagery in vocal training and proposing a structured framework for its implementation in contemporary pedagogy.

Conclusion

The evolution of vocal pedagogy from a tradition steeped in imagery to a science-informed discipline has significantly improved the effectiveness of singing instruction. While historical teaching methods relied heavily on metaphor and subjective experience, modern research has provided objective insights into vocal function, enabling teachers to offer more precise guidance. The integration of voice science into vocal training continues to bridge the gap between tradition and evidence-based practice, ultimately enhancing both the teaching and learning of singing.

Research Methodology

Ontology and Methodology

This research adopts a constructivist perspective, asserting that reality is shaped by experiences and interactions (Guba & Lincoln, 1994). It explores how teachers and students construct understanding and apply imagery in vocal pedagogy, particularly in the teaching studio. Since imagery is inherently subjective, the study examines its role in shaping technical precision, vocal control, and engagement.

Using an inductive approach, this research allows insights to emerge from data rather than testing a fixed hypothesis. Direct engagement with teachers and students uncovers how verbal imagery influences learning and vocal technique. Given that imagery's effectiveness depends on context, real-world vocal instruction settings are central to this enquiry.

A mixed-methods approach integrates qualitative and quantitative data for a comprehensive analysis. Qualitative methods, including semi-structured interviews, focus groups, and reflective journaling, capture subjective experiences, while quantitative measures, such as student self-assessment surveys, track technical progress and engagement. This triangulation enhances the validity and reliability of findings (Creswell & Plano Clark, 2018).

The study is also informed by phenomenology of practice (Van Manen, 2007), examining how individuals experience and interpret pedagogical techniques. Imagery functions as a semiotic system (Peirce, ed. Hoopes, 1991; Issajeva, 2015; Harrison, 2018), influencing cognitive and emotional responses. Aligned with motor imagery (Jeannerod, 1995) and dual coding theory (Paivio, 1986), this research considers how students internalise imagery to develop vocal technique. Dual coding suggests the brain processes information through verbal (language-based) and non-verbal (imagery-based) systems. In vocal pedagogy, combining verbal instructions with visual metaphors (e.g., “imagine your voice floating”) enhances memory and skill retention (Mayer, 2009).

By adopting a constructivist and phenomenological stance within a mixed-methods framework, this study remains responsive to emerging patterns and participant feedback (Denzin & Lincoln, 2018). Its methodological flexibility ensures meaningful contributions to vocal pedagogy, offering practical strategies for teachers integrating imagery into instruction.

Methodology

Participants

The study involved a purposive sample of students and teachers from The RJ Academy of Singing and Dramatic Arts, where I work as principal and singing teacher. Participants included (n=10) students aged 8–17 with varying levels of experience, from beginners to advanced singers, who responded to an advertised invitation and completed a participation form with institutional approval (see Appendix). As an insider-researcher, I recognised the importance of maintaining research rigour and minimising bias. Therefore, students were only eligible to participate if they were not currently receiving singing lessons from me. While some participants may have had lessons with me in the past or might do so in the future, careful measures were taken to ensure that their responses were not influenced by a prior teacher-student relationship. These measures included anonymised data collection, independent reflections, and structured discussions where I acted as a neutral facilitator rather than an instructor.

Additionally, five teachers with prior experience in vocal instruction and imagery-based pedagogy participated. Selection criteria ensured that students were willing and comfortable engaging with imagery techniques, while teachers had familiarity with its application. Ethical considerations were central to participant selection, particularly given my role as an insider-researcher. Participants who exhibited high anxiety or were unable to commit to the study duration were excluded to protect their well-being and maintain data reliability.

Additionally, due to the dual role I held as both researcher and principal of the academy, extra care was taken to ensure that participants felt no pressure to join the study. Clear communication emphasised the voluntary nature of participation, with the right to withdraw at any time without consequence. These ethical safeguards helped to balance the potential power dynamics of insider research, ensuring that all participation was fully informed, autonomous, and respectful of the participants' well-being and agency.

A more in-depth discussion of the ethical challenges and implications of insider research will be explored later in the report.

The application period was open for one week and yielded 14 responses. One respondent was excluded due to receiving anxiety treatment at school, and another failed to meet the first submission deadline and was subsequently dismissed from the project. After

confirming the remaining 12 participants, all of whom met the selection criteria, the application process was closed.

To minimise the risk of drop-outs, participants were required, during the screening process, to confirm their ability to commit to the eight-week coaching course and a follow-up at three months post-study. The final sample included 12 students (f=8, m=4) with a mean age of 11.5 years. There were 2 participants who didn't respond to the first questionnaire, despite reminders so therefore they were removed from the final sample. 100% attendance and engagement throughout the course by the remaining 10 participants.

Focus Groups

Focus groups were initially planned before and after the toolkit implementation to explore experiences with imagery-based instruction. However, due to time constraints, post-toolkit focus groups were replaced with open-ended questions in post-surveys. This adjustment ensured participants could still provide detailed feedback without scheduling challenges. The open-ended survey questions, distributed via Google Forms, allowed students and teachers to reflect on their experiences, offering qualitative insights comparable to the intended focus groups.

Pre-toolkit focus group participants were recruited through purposive sampling. Invitations were emailed to all participants and teachers at The RJ Academy of Singing and Dramatic Arts. Six students initially expressed interest, but one withdrew due to scheduling conflicts, leaving five participants. The age range was varied, this selection ensured diverse perspectives on imagery in vocal pedagogy.

Focus groups facilitate collective viewpoints and deeper insights (Kitzinger, 1995; Morgan, 2019). In this case, students discussed their responses to imagery-based techniques. A semi-structured approach guided discussions with predetermined questions, allowing for organic dialogue. Audio recordings were transcribed for thematic analysis using Braun and Clarke's (2006) framework, identifying patterns such as commonly used metaphors and imagery techniques that improved vocal control.

To ensure diverse perspectives and open discussion, over-recruitment (Fern, 1982) was used, with eight students invited and five attending. The facilitator maintained neutrality, encouraging balanced participation through active listening. Verbatim transcription captured both content and vocal nuances.

Findings from the pre-toolkit focus group highlighted key themes: varying receptivity to metaphors based on age, imagination's role in refining vocal technique, and how, from the students' opinions, teachers adapted imagery exercises to individual learners. These insights complemented survey data, enriching the understanding of imagery's role in vocal pedagogy.

Removal of Semi-Structured Interviews

Originally, semi-structured interviews were included in the research design to provide deeper individual perspectives. However, during the early stages of data collection, it became evident that the combination of focus groups and reflective journaling already yielded substantial qualitative data. Alongside this, I had a bad accident which meant that I had to make some changes to my work load. To ensure a manageable data set and maintain research feasibility, semi-structured interviews were removed from the methodology.

This decision was made to streamline data collection and analysis while maintaining the integrity of the research. While interviews could have offered further individual insights, the focus groups provided ample opportunity for participants to share in-depth reflections. Additionally, the removal of interviews reduced participant burden and ensured that data collection remained within the project's scope and timeline (Creswell, J.W. and Poth, C.N., 2018).

Documenting this change was essential to research transparency. The study acknowledges that this adjustment may have limited the depth of individual perspectives; however, the benefits of maintaining a more focused and coherent dataset outweighed this limitation (Tracy, S. J, 2010).

Surveys and Questionnaires

To complement qualitative findings, two structured surveys—one before and one after toolkit implementation—assessed students' attitudes, perceptions, and progress. This aligns with Creswell and Plano Clark's (2018) recommendation for mixed methods in educational research. The pre-toolkit survey gathered baseline data on students' experiences with imagery and confidence in vocal technique, while the post-toolkit survey measured changes in confidence, technique, and engagement.

Both surveys used Likert scale questions to assess confidence levels and perceived improvement, following best practices in educational research (Boone & Boone, 2012). Likert scales were chosen for their simplicity, accessibility, and effectiveness in measuring attitudes, confidence, and engagement, particularly for younger students (Joshi et al., 2015). They also facilitated efficient data collection and analysis, supporting the study's mixed-methods approach (Creswell & Plano Clark, 2018). Originally, many open-ended questions were planned to allow for detailed responses, but to manage data volume these were cut down (Braun & Clarke, 2006), and qualitative insights were primarily gathered through focus groups.

Teachers also completed a post and pre structured questionnaire at the end of the study, following Wilson's (2021) guidelines for evaluating pedagogical interventions. This assessed the toolkit's impact on student learning and identified challenges in implementing imagery-based instruction.

Survey responses were analysed using descriptive statistics (Field, 2013) to identify trends in self-reported experiences. While Likert scale data provides ordinal rather than purely quantitative measurements, it offers insights into shifts in confidence and engagement over time (Joshi et al., 2015). Qualitative responses were thematically coded using Braun and Clarke's (2006) framework. The integration of both data types ensured a comprehensive understanding of participant experiences, with descriptive statistics supplementing, rather than solely validating, qualitative findings (Creswell & Plano Clark, 2018).

Design and Creation of the Imagery Toolkit

What is the Toolkit?

The imagery toolkit developed for this study is a structured collection of exercises designed to enhance vocal pedagogy by integrating verbal imagery into technical instruction. It provides teachers with specific strategies and metaphors to help students conceptualise and execute vocal techniques more effectively. Drawing on established pedagogical theories like Dual Coding Theory (Paivio, 1986) and Motor Imagery (Jeannerod, 1995), the toolkit bridges the gap between abstract vocal concepts and tangible physical experiences.

Structure of the Toolkit

The finalised imagery toolkit was developed directly from pre-questionnaires, diary reflections, focus group themes, and post-implementation feedback. Rather than being delivered as weekly modules, the toolkit was structured into thematic sections (e.g., breath, tone, onset, projection, performance) with a range of imagery-based exercises. This modular layout allowed for flexible integration into individual lessons, enabling teachers to select appropriate techniques based on student need and learning style.

1. **Visual Imagery** – Encourages students to form mental pictures to guide technique.
 - Example: "Imagine your voice as a beam of light extending forward to aid resonance and projection."
2. **Kinaesthetic Imagery** – Connects vocal actions with physical sensations.
 - Example: "Feel your breath rise like a balloon expanding in your ribcage."
3. **Metaphorical Imagery** – Uses relatable metaphors to simplify complex concepts.
 - Example: "Sing as if balancing a feather on your breath to promote airflow control."

How Was It Developed?

The toolkit's design was informed by:

- **Pre-Toolkit Surveys and Focus Groups:** Students' challenges, such as breath control and resonance issues, shaped the content.
- **Teacher Feedback:** Teachers' input emphasised aligning imagery with anatomical accuracy, ensuring that metaphors enhanced understanding rather than creating.

Toolkit Implementation

The imagery toolkit was implemented over six weeks, shaped by insights from the pre-toolkit focus group and relevant literature. Feedback from students and teachers highlighted the need for adaptable, age-appropriate imagery techniques, informing the selection of visual, kinesthetic, and metaphorical exercises. Research on motor imagery (Jeannerod, 1995) and learning preferences (McAllister & White, 2020) guided its

structure, ensuring it addressed diverse learning styles and technical needs. This iterative design ensured the toolkit was both evidence-based and practical for the teaching studio.

Participants attended weekly 30-minute sessions integrating imagery into vocal exercises and repertoire. Teachers guided students in experimenting with imagery techniques while tracking their responses and progress. Students were encouraged to apply imagery in independent practice and document their experiences in reflective diaries.

Research suggests that imagery enhances technical skills, vocal health, and expressivity (Hoch, 2019). The toolkit incorporated visual, kinaesthetic, and conceptual imagery, aligning with findings that different learners respond to different types of imagery (McAllister & White, 2020). Techniques included spatial imagery (e.g., imagining sound waves moving forward), sensory imagery (e.g., picturing warm air flowing over the vocal cords), and metaphorical imagery (e.g., singing as floating on water) (Chapman, 2017). Jeannerod's (1995) research supports the idea that visualising physical actions strengthens motor learning.

Teachers guiding the sessions were from the initial participant sample, already familiar with the academy's teaching practices and experienced in imagery-based instruction. While their existing relationships fostered a supportive environment, they also posed potential insider research and ethical concerns. To mitigate these, teachers maintained a neutral stance during instruction and feedback (Herr & Anderson, 2015). Ethical safeguards included anonymised data collection, voluntary participation, and regular check-ins to ensure students felt comfortable sharing genuine experiences without perceived pressure from authority figures (Unluer, 2012).

By incorporating diverse imagery techniques, the study aimed to enhance vocal technique and engagement, ensuring broad applicability. A full breakdown of the toolkit is provided in the Appendix.

Diary Entries

A subset of six students and two teachers maintained reflective diaries throughout the 6-week implementation to document their experiences with imagery techniques in vocal practice. This smaller group was selected to keep data collection manageable and reduce participant burden. Selection was based on willingness and availability to engage consistently in reflective writing, enabling a focused analysis of individual learning

experiences while still capturing diverse perspectives across ages and skill levels (Moon, 2006; Schön, 1983).

Reflective journaling is a well-established method for fostering self-awareness and capturing personal insights in educational research (Moon, 2006; Schön, 1983). These diaries provided structured yet personal accounts of how participants engaged with imagery methods, offering an in-depth exploration of individual responses to the toolkit.

Initially, participants were encouraged to make diary entries after every session, recording thoughts on specific imagery applications, challenges, and progress. However, maintaining frequent, detailed entries proved demanding, particularly for younger students—a limitation noted in previous research on reflective practice (Boud, Keogh, & Walker, 1985). To ensure meaningful data while reducing participant strain, the frequency of entries was adjusted, with reflections recorded whenever they could instead. I also allowed participants to record these as voice recording to eliminate writing and typing if preferred.

Each entry focused on three key areas aligned with the toolkit's content:

1. **Imagery Techniques Used** – Participants documented specific techniques explored that week and their application in practice.
2. **Effectiveness and Engagement** – Entries assessed whether techniques improved vocal control, technique, or confidence, aligning with the toolkit's objectives.
3. **Challenges and Adaptations** – Participants noted obstacles in understanding or applying techniques and any adjustments made.

While participants were encouraged to address all three areas, flexibility allowed for deeper reflection on the most relevant aspects each week. This ensured that reflections remained meaningful and directly tied to the evolving toolkit content.

To maintain consistency, participants were provided with guiding prompts for each entry, such as:

- Which imagery techniques did you use this week?
- Did any of the techniques feel particularly effective or ineffective? Why?
- How did your voice feel before and after applying imagery?
- Did you experience any challenges with using imagery? How did you overcome them?

- Would you continue using any of these techniques in the future?

By the end of the study, the diaries contained a total of four to six entries per participant, providing a rich yet manageable dataset for analysis. Thematic analysis (Braun & Clarke, 2006) was used to identify recurring insights, highlighting common trends in how imagery influenced vocal technique and learning engagement. Overall, the reflective diaries provided valuable qualitative data, allowing for an authentic insight into the learning journey of each participant while ensuring that the data collection remained practical and sustainable (Moon, 2006).

Ethical Considerations

This study followed strict ethical protocols to ensure participant well-being, safety, and confidentiality (British Educational Research Association, 2018).

Informed Consent and Right to Withdraw

Participants received detailed study information, with written consent obtained from students, teachers, and guardians where applicable (Beauchamp & Childress, 2019). Participation was voluntary, with the right to withdraw at any stage before data analysis (Sieber & Stanley, 1988). No participants chose to withdraw, although two did not respond to the first questionnaire or any other emails after agreeing to take part.

However, as an insider-researcher, I was aware that my dual role as principal and researcher could influence participants' willingness to decline participation or withdraw from the study. This dynamic can lead to implicit pressure, even when consent procedures are rigorously followed (Mercer, 2007). To mitigate this, all participants were reassured verbally and in writing that their decision to participate—or not—would have no bearing on their relationship with me or their standing at the academy (Brannick & Coghlan, 2007).

Additionally, I maintained a reflective journal throughout the study to critically assess my potential biases and influence during data collection and analysis (Unluer, 2012). This ensured that the research process remained transparent and that the integrity of participant feedback was upheld.

Minimisation of Risk and Well-being Monitoring

Sessions incorporated structured warm-ups and sustainable vocal techniques to prevent strain (Thomson, 2007; Stemple, 2004). A risk assessment was conducted to ensure a safe studio environment (Sims, 2007), and no injuries or vocal health issues arose.

Safeguarding and Confidentiality

Safeguarding procedures were followed, with ground rules promoting a respectful environment (Hill, 2005). Students of similar experience levels were grouped together to ensure comfort. Consent was obtained in line with Gillick competence guidelines (Gillick, 1986; McCarthy, 2012), and any distress was monitored and addressed.

All data, including focus group transcripts and reflective diaries, were anonymised using unique identifiers, ensuring confidentiality (Beauchamp & Childress, 2019). Any sensitive disclosures were handled in line with safeguarding policies and legal requirements (Wiles, 2013).

By implementing these ethical measures, the study maintained participant safety, confidentiality, and research integrity (Hammersley & Traianou, 2012).

Insider Research

As the principal of The RJ Academy of Singing and Dramatic Arts, my role as an insider-researcher provided both advantages and challenges. My existing rapport with participants fostered a supportive and open environment, encouraging honest reflections on the use of imagery in vocal instruction. Being familiar with the academy's teaching methods also allowed for a more in-depth understanding of student and teacher experiences (Herr & Anderson, 2015).

However, insider research presents potential biases, including preconceived notions about the effectiveness of certain imagery techniques and participants feeling influenced by my role (Mercer, 2007). To mitigate this, I employed strategies such as anonymised data collection, participant-led reflections, and external validation of findings (Unluer, 2012). Focus groups were structured to encourage independent discussion, and all survey responses were collected anonymously to reduce the impact of researcher presence on participant feedback (Brannick & Coghlan, 2007).

By acknowledging and addressing these challenges, this study maintains research integrity while benefiting from the nuanced insights gained through my dual role as researcher and educator.

Research Findings

The findings of this study are based on the analysis of focus groups, reflective diaries, and pre- and post-toolkit surveys. The data collected aimed to evaluate the effectiveness of imagery-based pedagogy in vocal training, focusing on its impact on student engagement, technical precision, and vocal control.

To ensure clarity, the findings have been divided into quantitative data (numerical survey results and statistical changes) and qualitative data (thematic insights from focus groups and reflective diaries).

Quantitative Data Analysis

Pre-Toolkit Student Survey Findings - (Student Perspective)

The Pre-Toolkit Student Survey aimed to establish a baseline understanding of students' existing vocal challenges, familiarity with imagery techniques, and confidence in using imagery for vocal improvement. The data collected provided crucial insights into student needs before the implementation of the toolkit.

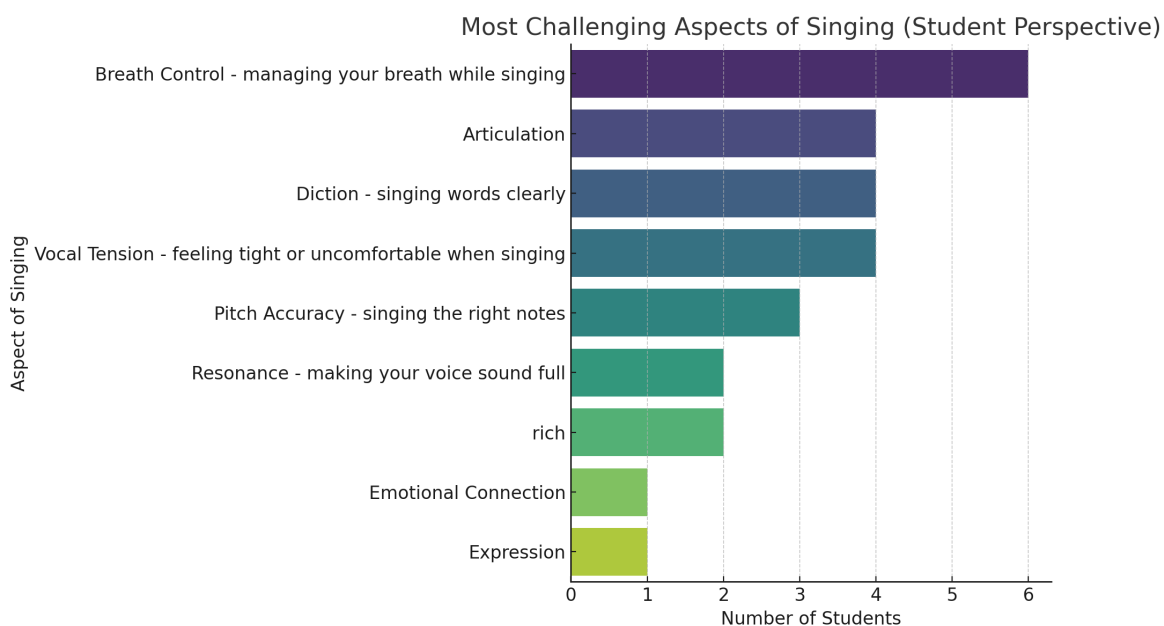


Figure 1: Most challenging aspects of Singing (Student Perspective).

Figure 1 shows a bar graph showing the real student responses to the question: “Which two aspects of singing do you find the most challenging?”

Key Observations:

- Breath Control and Articulation & Diction were the top challenges.
- Resonance and Pitch Accuracy followed closely.
- Some students also selected Vocal Tension.

2. Frequency of Using Imagery Techniques in Vocal Training

When asked how often they had previously used imagery techniques:

- **Never** – 2 students
- **Rarely** – 2 students
- **Sometimes** – 3 students
- **Often** – 1 student
- **Always** – 1 student

This indicates that the majority had little to no prior exposure to imagery techniques.

3. Confidence in Using Imagery

When asked how confident they felt:

- **Very Confident** – 1
- **Confident** – 2
- **Neither Confident nor Unconfident** – 2
- **Unconfident** – 1
- **Very Unconfident** – 2

These responses reveal that most students felt neutral to unconfident when applying imagery in vocal practice.

4. Perceived Usefulness of Imagery

In response to the statement: *“I feel imagery is or could be useful in helping me reach my singing goals”*:

- **Strongly Agree – 2**
- **Agree – 2**
- **Neutral – 2**
- **Disagree/Strongly Disagree – 0**

While over 50% of students saw value in imagery, many remained unsure, reinforcing the need for structured guidance.

Cross-Referenced Analysis of Findings of student surveys

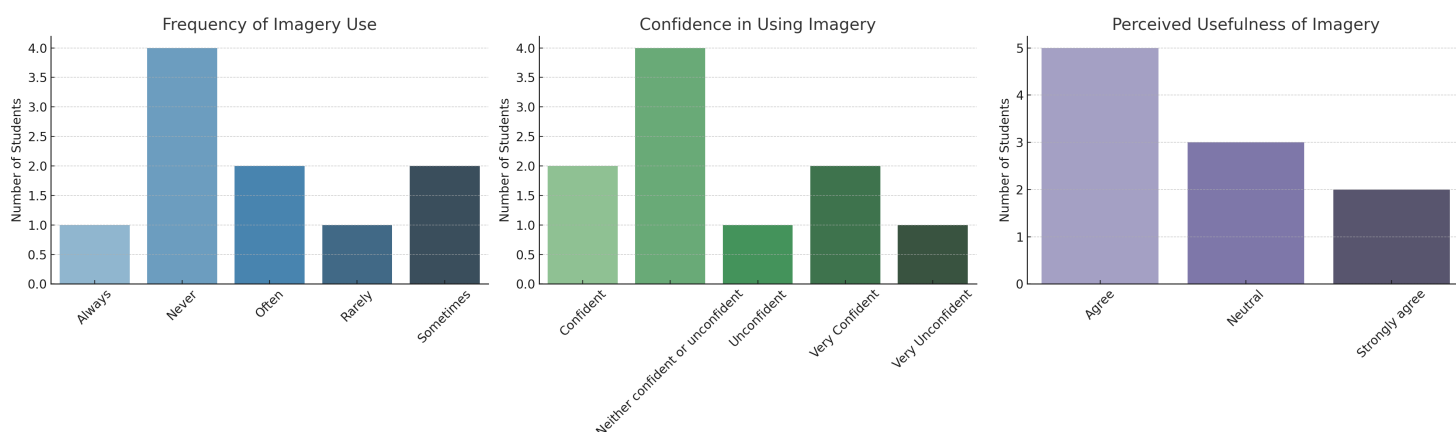


Figure 2: Combined responses .

By combining responses from multiple survey questions into a single visual and analytical representation, several key insights emerged. While the surveys were completed anonymously, trends were observable across the data, enabling cross-comparison of student perceptions without compromising confidentiality.

A clear pattern showed that students who identified Breath Control, Articulation & Diction, and Resonance as key challenges also tended to report low confidence in using imagery techniques. Specifically, the majority of students had either never or only rarely used imagery in their vocal training, and over half felt neutral or unconfident about applying it.

This suggests that unfamiliarity with imagery may be directly linked to hesitation or uncertainty in its use. Students who had more experience with imagery (reporting use as “Sometimes,” “Often,” or “Always”) were more likely to describe themselves as confident and to perceive imagery as a helpful tool for vocal improvement.

Despite this, all students agreed or strongly agreed (or remained neutral) with the statement:

“Imagery is or could be useful in helping me reach my singing goals.”

Notably, none of the students disagreed. This reflects an openness to learning through imagery, even if confidence and experience are currently low. As Creswell & Plano Clark (2018) emphasise, integrating multiple forms of data—such as Likert-scale responses, qualitative reflections, and visual tools—enhances the validity and depth of educational research. In this study, doing so helped clarify not just what students struggle with, but why imagery may not yet be fully embraced as a learning tool.

These results underscore the need to address potential barriers to using imagery, including:

- Lack of structured instruction
- Prior teaching approaches
- Individual learning preferences and cognitive styles

As Johnson & Onwuegbuzie (2004) argue, combining qualitative and quantitative methods enables richer insight—particularly in pedagogy, where learners' subjective experiences play a crucial role in the outcome.

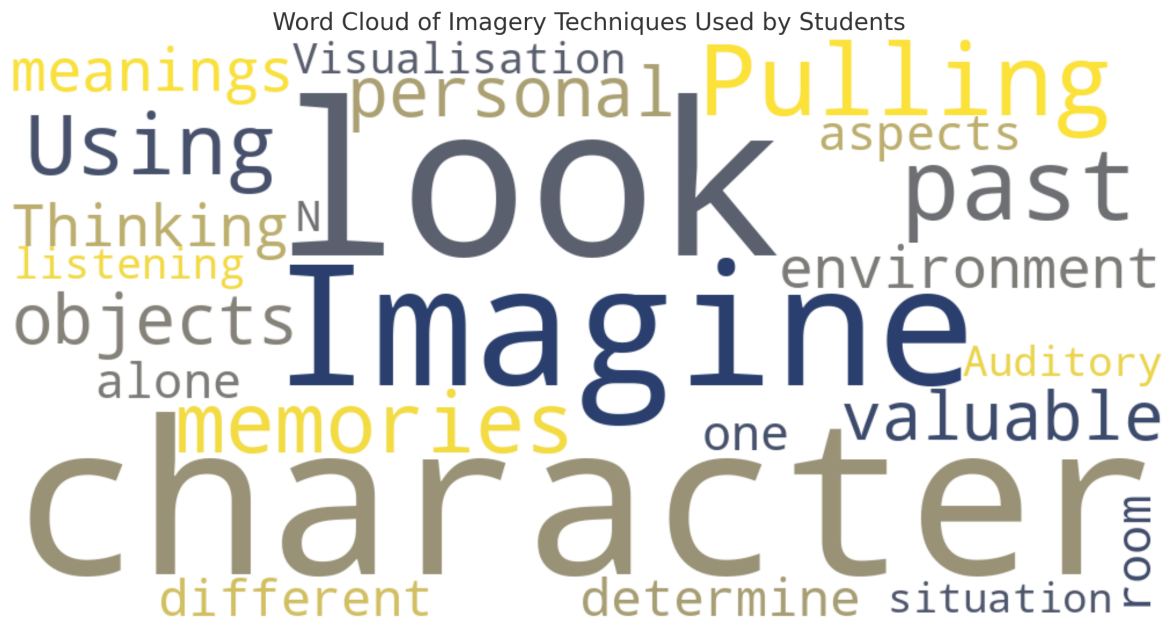
Student-Reported Imagery Techniques

Students who indicated previous use of imagery were asked to describe techniques they had found helpful. Frequently cited examples included:

- “Pulling on past memories”
- “Using personal objects to connect with tone”
- “Visualising the environment the character is in”
- “Imagining how I look when I sing”
- “Acting like I’m in a music video”

These responses, though varied, show a tendency toward emotional recall, performance context, and visualisation of action or feeling.

Visual Summary: Word Cloud of imagery techniques (Figure 3)



The word cloud generated from student responses reveals recurring language around emotion, visualisation, and imagination. Notable patterns include:

- Core Imagery Concepts: Words like “*imagine*,” “*memories*,” “*objects*,” and “*character*” indicate students lean on conceptual or narrative frameworks.
- Physical Sensations: Less prominent than in teacher data, but still present in phrases like “*look like*” and “*breath*.”
- Abstract Imagery: Themes such as “*music video*” and “*environment*” suggest a strong tendency toward immersive, creative thinking.

These findings support the integration of abstract and emotional imagery into technical instruction. To optimise student engagement and vocal effectiveness:

- Emphasise metaphors that connect directly to students’ lived experiences (e.g., memory, performance context)
- Support students in developing confidence by guiding them through common metaphors before asking them to create their own.
- Balance technical feedback with imaginative cues that build intuitive understanding of vocal mechanics.

Pre-Toolkit Survey Results (Teacher Perspective)

A separate pre-toolkit survey was administered to vocal instructors to gather their perspectives on the use of imagery in teaching.

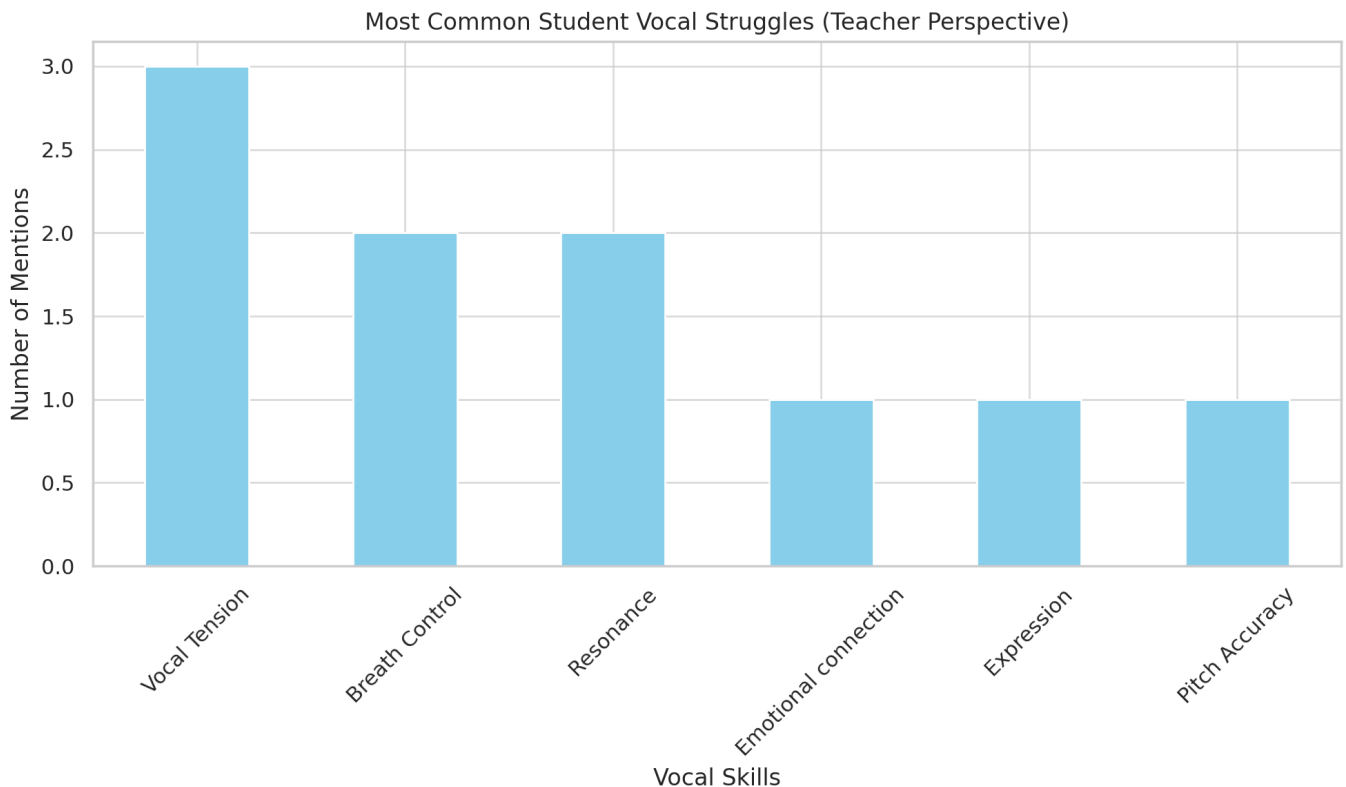


Figure 4: Most Common student vocal struggles (teacher perspective)

Figure 4 above shows a visual summary of the vocal skills teachers identified as most challenging for their students:

- Breath Control and Vocal Tension were the most frequently mentioned struggles.
- Resonance and Pitch Accuracy were also common.
- Some teachers noted Emotional Connection & Expression, but this was less frequent.

Frequency of Using Imagery in Vocal Teaching

Teachers were asked how frequently they incorporated imagery techniques in their lessons:

- **Often** – 1 teacher
- **Sometimes** – 3 teachers
- **Always** – 1 teacher

This suggests a broad familiarity with imagery among instructors, though the frequency of use varies.

2. Confidence in Using Imagery

When asked about their confidence in using imagery:

- **Very Confident** – 1 teacher
- **Confident** – 2 teachers
- **Somewhat Confident** – 2 teachers

83% of teachers expressed moderate to high confidence, indicating they felt comfortable applying imagery techniques in their pedagogy.

3. Student Vocal Challenges (Teacher Perspective)

Teachers identified the two most common vocal struggles their students faced. The most frequently mentioned challenges were:

- **Breath Control** and **Vocal Tension** (tied for most frequent)
- **Resonance**
- **Pitch Accuracy**
- **Articulation & Expression**

This highlights areas where targeted imagery could be especially beneficial.

4. Techniques Currently Used

Teachers shared imagery-based techniques they regularly employ in their teaching. Recurring examples included:

- “Imagining an elastic band to elongate vowel sounds.”
- “Biting down on an apple to create space.”
- “Singing as if balancing a feather on the breath.”
- “Pulling toffee to achieve smooth legato.”

These responses illustrate a preference for tactile or visual metaphors to improve technique and awareness.

5. Perceived Benefits

Teachers believe imagery:

- Helps visual learners and clarifies concepts.
- Offers individualised instruction tailored to different learning styles.
- Facilitates physical sensation awareness when direct observation isn’t possible.

As one teacher noted:

"It helps to communicate a technique which would otherwise be hard to demonstrate or verbalise."

6. Challenges or Hesitations

Some instructors expressed minor concerns:

- Students not understanding the imagery used.
- Struggles thinking of effective metaphors.
- Worry about doing "more harm than good" if imagery is unclear or misinterpreted.

Despite this, most teachers reported few hesitations, showing openness to expanding their toolkit.

7. Expectations from the Toolkit

Teachers expressed a desire for:

- **New ideas** tailored to different age groups.
- **Fresh tools** to support lesson planning.
- **Better understanding** of effective imagery techniques.

"I'm hoping to improve my teaching ability by learning more tools to suit different learners."

"More ideas of what to use — especially with younger singers."

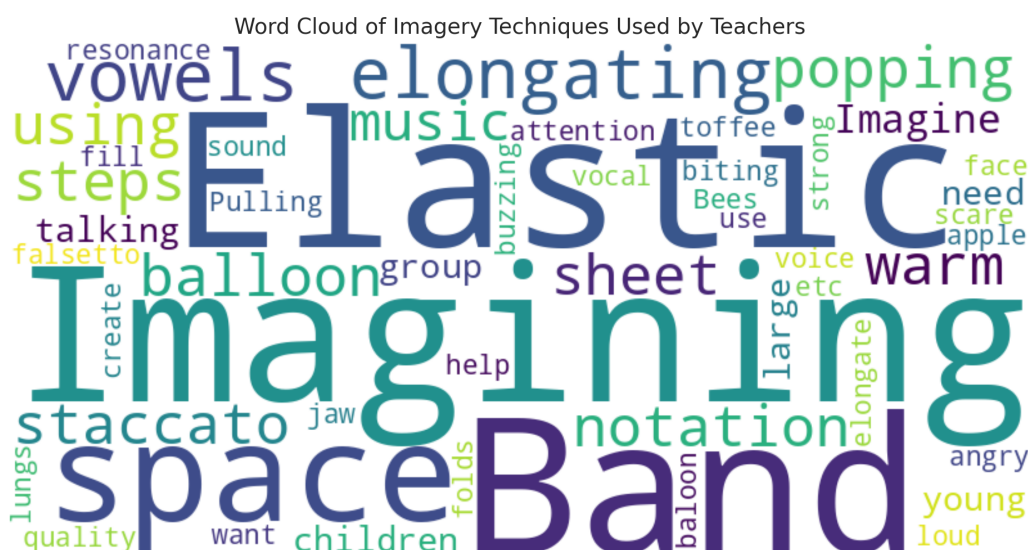


Figure 5: Word Cloud of Imagery Techniques used by teachers.

The word above below shows the frequent words and ideas based around imagery techniques used by teachers.

Comparison of Student and Teacher Findings

By examining student and teacher survey responses side by side, several key alignments and discrepancies emerged:

Agreement on Vocal Challenges

Both groups identified **Breath Control** as a major technical hurdle.

- Students also emphasised **Articulation & Diction** and **Resonance**.
- Teachers frequently mentioned **Vocal Tension** and **Resonance**.

This shared understanding suggests a solid foundation for collaborative focus in training, though slight emphasis differences should be acknowledged.

Confidence in Using Imagery

- A majority of students (5 out of 7, or ~71%) felt neutral or unconfident.
- In contrast, 4 out of 5 teachers (~80%) reported being somewhat to very confident.

This contrast suggests teachers may overestimate students' comfort with imagery, pointing to a need for clearer introduction and scaffolding of these tools.

Perceived Effectiveness of Imagery

- 4 of 7 students (~57%) agreed or strongly agreed that imagery is or could be useful.
- All 5 teachers (~100%) described it as moderately to extremely effective.

This reflects a strong belief among educators in the method's value, even while students may require more structured support to recognise that value themselves.

Imagery Usage Frequency

- Only 3 of 7 students (~43%) reported using imagery sometimes, often, or always.
- 3 of 5 teachers (~60%) reported using it often or always in lessons.

This reveals a potential implementation gap: teachers may be using imagery without it being fully registered or understood by students.

These comparisons provide valuable insights for structuring the toolkit:

- Bridge the confidence gap by explicitly teaching imagery techniques.

- Ensure consistent language and examples between instructors and learners.
- Include **frequent check-ins or reflections** so students recognise when imagery is being used and how it impacts their technique.

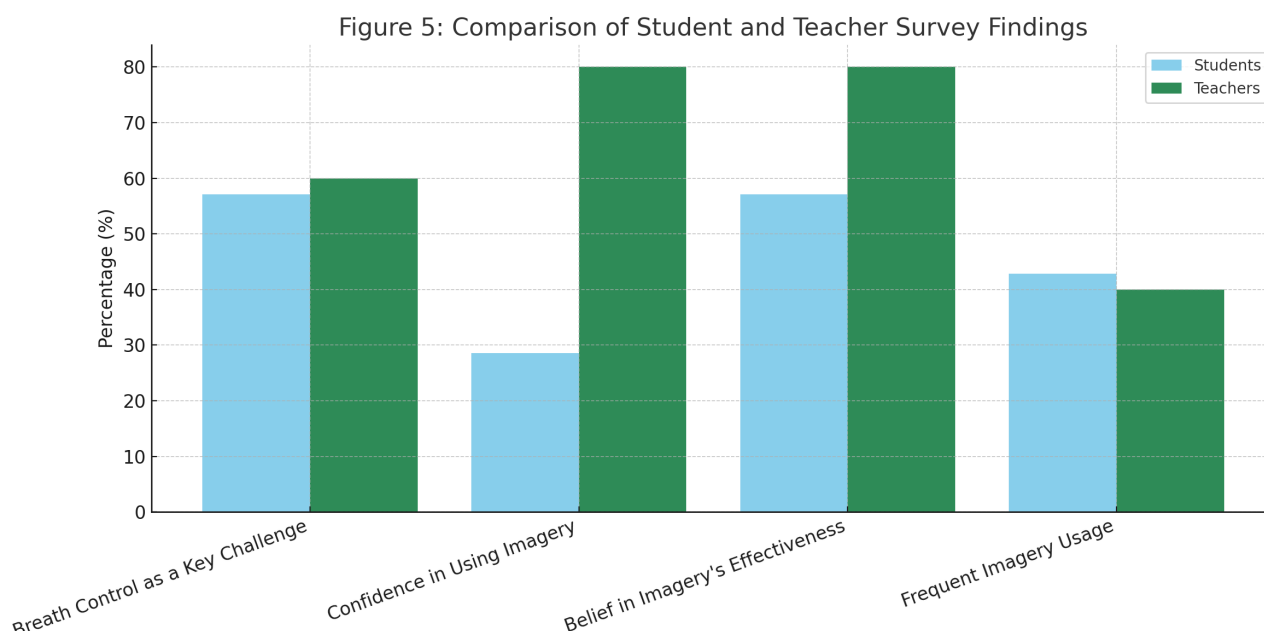


Figure 6: Comparing Student and Teacher Findings.

Pre tool - kit focus group

The pre-toolkit focus group was conducted with six students (aged 8–16) to explore perceptions of imagery-based instruction prior to implementing the toolkit. The discussion aimed to investigate students' existing understanding and use of imagery, the perceived impact of imagery on their vocal development, and their emotional and technical responses to metaphorical instruction.

A potential limitation in this session was the presence of the facilitator (a teacher figure), which could have influenced students' openness. However, care was taken to reassure participants that there were no right or wrong answers and to foster a supportive and honest environment.

Analytical Approach

A thematic analysis was undertaken, based on Braun & Clarke's (2019) framework. The process followed three key coding phases:

- **Semantic and Latent Coding** – Capturing both the explicit responses (e.g., direct statements about imagery use) and the implicit attitudes and emotional responses behind them.
- **Categorisation** – Organising responses into key focus areas such as: technical understanding, student engagement, emotional connection, and learning preferences (Miles, Huberman & Saldaña, 2014).
- **Comparative Analysis** – Identifying points of similarity and contrast across student responses, particularly in terms of age, confidence, and the type of imagery found most helpful.

This methodical structure allowed for both surface-level patterns and deeper cognitive and emotional insights to be captured, laying the foundation for shaping the toolkit in a way that supports a variety of learning styles.

Key Themes Identified

1. Emotional Imagery and Mindset

Older students, particularly those aged 13–16, emphasised the connection between emotional imagery and vocal performance. Students noted that imagining emotional scenarios or drawing on personal experience helped them engage with characterisation and reduce technical anxiety:

“If I’m thinking less about the singing and more about the emotion, the notes just come out better.”

Several participants explained that their mood and mindset directly influenced their vocal success. Positive, imaginative thinking helped reduce self-doubt and unlock vocal potential, reinforcing the idea that imagery can act as an emotional anchor.

2. Warm-Ups and Imagery Integration

Warm-ups emerged as a consistent point where students felt most comfortable engaging with imagery. Activities such as “blowing a feather” or “chewing a magic muffin” were described as helpful, fun, and effective:

“I like how there’s loads of different warmups — it makes it more interesting, not just boring vowels.”

This highlights the potential for embedding imagery into vocal warm-ups as a natural and accessible entry point, especially for younger students.

3. Imagery by Age Group

A notable trend was the shift in how different age groups related to imagery:

- Younger students (8–11) responded best to playful, concrete imagery involving animals, food, and games (e.g., *“open a banana with your voice”* or *“stretch like bubblegum”*).
- Older students (12–16) favoured emotional or story-based imagery, drawing on past experiences or narrative content from songs.

Interestingly, some students expressed confusion about whether they'd ever used imagery at all, until examples were explained. This revealed that imagery is often embedded in lessons without being explicitly labelled, leading to students underestimating their own familiarity with it.

4. Performance vs. Technique

Students recognised two distinct types of imagery:

- **Performance-focused:** Visualising a stage or imagining a character’s feelings.
- **Technique-focused:** Using metaphors for placement, support, or airflow (e.g., *“singing over a rainbow”* or *“voice growing like a tree”*).

Many preferred the former for emotional connection, while others found technical imagery helpful for reducing anxiety and achieving consistency.

5. Trust and Teacher Relationships

Students expressed a strong link between trust in their teacher and willingness to try imagery-based ideas:

“If I know the teacher well and they know how I think, they can give me an image that works.”

This insight reinforces the importance of relationship-building in effective imagery instruction and supports the use of personalised, learner-sensitive metaphors.

6. Preferences in Imagery Types

When asked what kind of images or metaphors they preferred:

- **Feelings** and **emotions** were the top choice.
- Some favoured **objects** (e.g., a flower, string, tree).
- Abstract or animal-based metaphors were less popular with older students, who found them harder to connect with unless clearly explained.

Conclusion of Focus Group Findings

This session confirmed that students of all ages can benefit from imagery-based instruction, though their preferences and connections vary. Most participants found imagery fun, motivating, and confidence-boosting, especially when introduced through relatable or creative scenarios. Emotional imagery, in particular, was seen as a powerful way to enhance both performance and technique.

These findings directly influenced the development of the final toolkit, leading to:

- Age-appropriate imagery categories
- Clear distinctions between emotional, physical, and technical metaphors
- Suggestions for when and how to introduce imagery (e.g., during warm-ups or before performance)

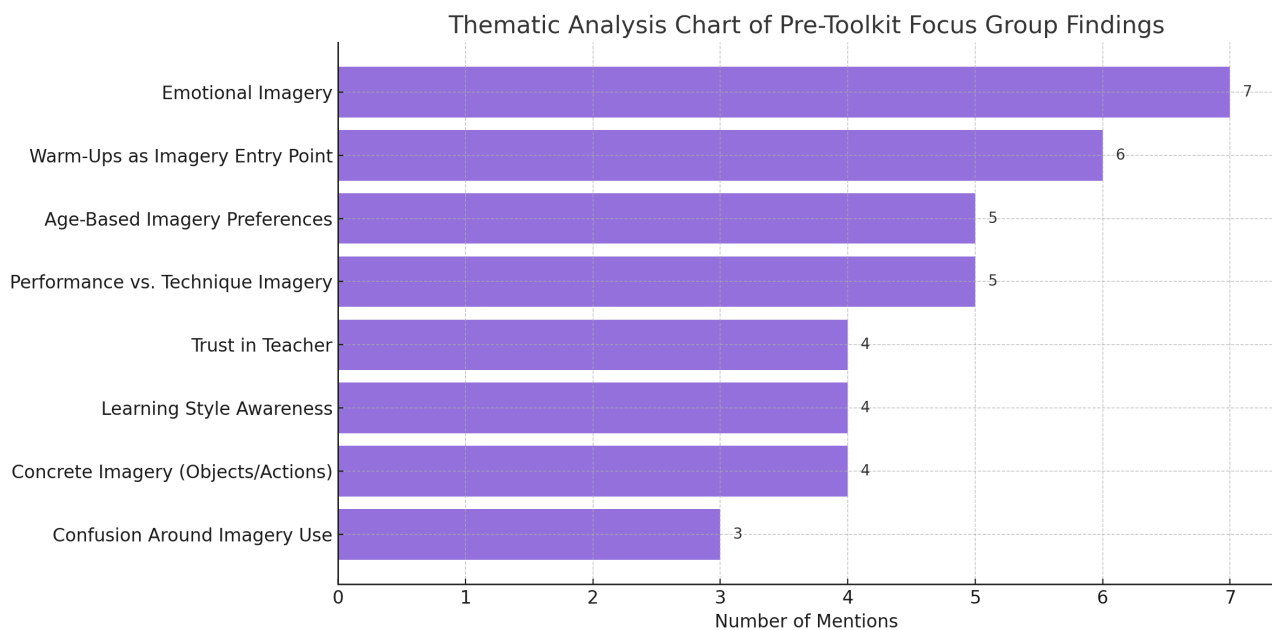


Figure 7: Thematic Analysis of Pre Tool-Kit Focus Group Findings

This chart visually summarises the frequency of key themes discussed during the session, showing that:

- Emotional imagery and warm-ups were the most frequently mentioned aids.
- Age-related preferences, performance vs. technique, and trust in the teacher were also central.
- Less frequent but important topics included learning style awareness and student confusion about what qualifies as imagery.

Thematic Chart

Theme	Description	Example Quotes
Warm-Ups as a Gateway	Warm-up activities were widely cited as key areas where students benefit vocally and are introduced to new techniques, including imagery.	“Warmups really help...they prep my voice.” “There’s loads of variety in the warmups, not just Ra-Re-Ri.”

Imagery Without Realising	Many students initially said they hadn't used imagery, but later described metaphor-based instruction—indicating subconscious use.	"I didn't think I had, but actually, yeah, blowing the feather." – "The banana voice thing!"
Emotional Connection Through Imagery	Emotional or feeling-based imagery resonated particularly with older students and was cited as enhancing both performance and vocal delivery.	"It helped me connect with the character." "If I feel good, I sing better."
Performance vs Technique Imagery	Older students reflected that imagery is often used more in performance than technical work, with some suggesting a shift as they aged.	"We used more metaphors when I was younger." – "I use emotion imagery more now."
Individual Preferences	A wide range of preferences emerged, from colours and shapes to feelings, stories, and physical objects.	"I prefer feelings – I've felt them before." "Objects, like opening a banana."
Age & Understanding	A pattern emerged showing younger students are more responsive to playful or object-based imagery, while older ones favour narrative or emotional context.	"Younger kids like more imaginative stuff." "Older ones need more logic."
Trust & Teacher Relationship	Trust in the teacher enhanced the effectiveness of imagery, particularly when personalised.	"My teacher knows how I think." "She knows when I'm having a bad day."

Figure 8: Thematic Chart.

Reflective Diaries During Toolkit Implementation

Reflective Diaries During Toolkit Implementation

Throughout the 6-week implementation period, a subset of participants (5 students and 1 teacher) maintained reflective diaries to document their experiences with imagery-based instruction. These diaries provided valuable qualitative data, offering insights into personal

experiences, emotional responses, and the evolving application of imagery techniques across age groups.

Key Themes Identified Through Thematic Analysis

Following Braun and Clarke's (2006) framework for thematic analysis, several recurring themes emerged from the diary entries:

Increased Self-Awareness: Students demonstrated growing awareness of breath, tone, and physical engagement in singing. Student 3 described: "Standing tall like a tree helped me keep my breath steady and stay grounded." Student 5 similarly observed: "The balloon belly warm-up helped me feel where my breath was. I imagined the balloon filling up and it made me remember to take a deeper breath before singing long notes." Another entry from Student 5 noted: "When I used the rainbow picture in my mind, it helped me think about where the sound was going. I felt like I was controlling my voice better because I had a picture to guide me."

Emotional Engagement: Students responded positively to emotionally charged imagery. Student 2 reflected: "We talked about feelings and imagined being proud during one song. That helped me perform better because I connected to the words." Student 4 elaborated: "It made me think of when I won a medal and I used that feeling in my voice." Younger students, such as Student 1, also demonstrated strong emotional connection: "I pretended my voice was painting the rainbow as I sang. It helped me go higher in the song without being scared."

Challenges and Progress: Some students were initially unsure about how imagery worked. Student 1 admitted: "I wasn't sure at first if it really helped... but after doing it a few times, my sound felt smoother and lighter." Others found humour and novelty helpful in understanding abstract concepts. As Student 1 explained: "Miss told us to imagine we had a duck's beak stuck on our faces... it really made me think about where my sound was going." Student 3 also commented on using more intense imagery: "I was asked to imagine a moment I was really angry to access twang and emotion. It was intense but I think it made the song more real."

Physical Engagement: Students engaged well with imagery that involved physical sensation. Student 5 described: "I imagined each bubble floating slowly, and I didn't want them to pop, so I kept my sound light and steady." Student 3 shared: "I tried the 'oranges

under your arms’ anchoring image. It really helped me engage my body – I felt more physically connected to my sound.” The teacher noted that anchoring techniques such as the ‘orange squeeze’ were particularly effective for older students, with noticeable increases in muscular support.

Autonomy and Ownership: The teacher reflected on students’ increasing independence: “Older students were beginning to select the imagery that worked for them.” One entry described how combining two techniques (laser and beak) yielded better results: “The laser didn’t really work on its own and neither did the beak... but when we combined the two and really visualised it, it worked really well.” Student 2 noted: “I used the ‘football final yay!’ image for belting. It made the note come out with more energy. I didn’t overthink it and just did it.” This suggests a shift from guided instruction toward student-led experimentation.

A thematic map was generated to illustrate the frequency of key concepts, highlighting terms such as “flow,” “light,” “proud,” “calm,” and “anchoring.”

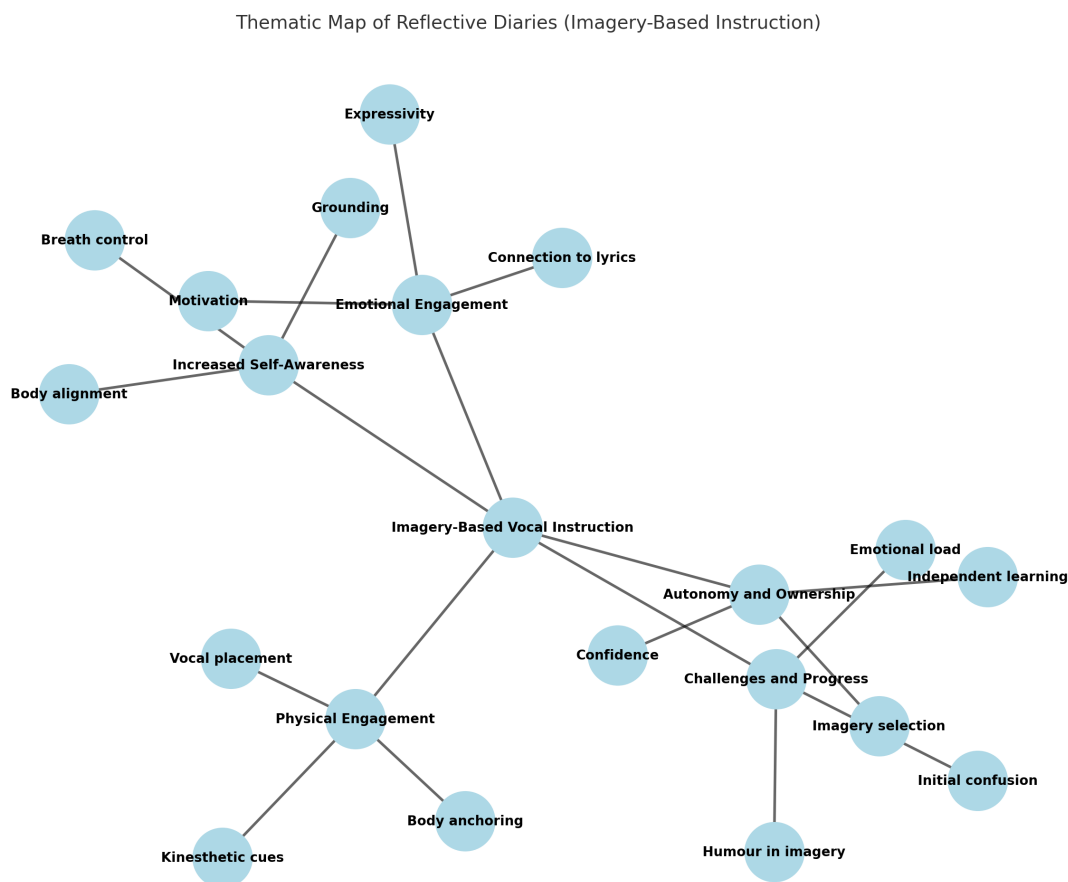


Figure 8: Thematic Map of reflective diaries .

These diary reflections revealed valuable pedagogical insights. They supported Schön's (1983) model of reflective practice by encouraging metacognitive engagement, and reflected Kolb's (1984) experiential learning cycle. The variety in imagery preference also underlined the need for flexible, learner-centred instruction. Emotional imagery was especially resonant, reinforcing findings by Immordino-Yang & Damasio (2007) that emotional engagement enhances retention and learning.

Ultimately, the reflective diaries added a rich qualitative layer to the study, supporting survey and focus group data, and reinforcing the toolkit's dual role in improving both technical precision and emotional connection in vocal performance

Post-Toolkit Student Questionnaire Findings

Following the 6-week implementation of the imagery-based vocal toolkit, a post-toolkit questionnaire was distributed to participating students to assess changes in their confidence, usage, and perception of imagery techniques. The findings provide evidence of both measurable impact and qualitative engagement, supporting the toolkit's role in developing vocal technique and emotional connection.

1. Confidence in Using Imagery

100% of respondents reported feeling Confident or Very Confident in using imagery after completing the toolkit. This marks a major increase from the pre-toolkit results, where only 10% felt very confident and 40% reported low confidence levels.

2. Frequency of Imagery Use

Over 70% of students now report using imagery "Always" or "Often." Pre-toolkit, only 33% of students reported any experience using imagery. This suggests the toolkit has successfully integrated imagery into students' regular vocal practice.

3. Helpfulness of the Toolkit

The majority of students rated the exercises as "Quite Helpful" or "Extremely Helpful," with examples of specific impact:

- "Belting using imagery and combining imagery—I got the best belt ever!"
- "My teacher asked me to say 'ahhh' as I drank my pretend hot chocolate—I felt all silky and warm and it made sense."

4. Most Useful Techniques

Students reported varied preferences, but highlights included the flower-sniffing for anchoring, feather-blowing for breath control, and duck beak placement for tone focus.

5. Areas of Improvement

Students cited improvements in multiple vocal areas:

- Breath Control
- Vocal Tone / Resonance
- Pitch Accuracy
- Confidence
- Expression
- Performance Connection

6. Future Use of Imagery

All students agreed or strongly agreed they would continue using imagery in their vocal practice, indicating long-term adoption.

7. Feedback and Highlights

Favourite aspects included:

- “Being with my teacher and thinking about rainbows.”
- “Working together and learning at the same time.”

Suggestions for improvement:

- “Add diagrams or photos.”
- “Make it a little shorter.”
- “More group work or peer discussion.”

8. Breakthrough Moments

Students recalled personal success moments:

- “When we combined the flower-smelling and winning-the-cup ideas, I got the best belt ever.”
- “Sliding over the notes made things click.”

Conclusion

The post-toolkit responses indicate strong technical and emotional gains. Increases in confidence, frequency of imagery use, and clearer understanding of vocal technique validate the toolkit’s role as an effective vocal pedagogical tool.

Comparison of Pre- and Post-Toolkit Questionnaire Findings

Introduction to Comparison

The following section compares the responses from the pre-toolkit and post-toolkit student questionnaires. This analysis highlights shifts in confidence levels, engagement with imagery techniques, and technical improvements in vocal skills, aiming to evaluate the overall effectiveness of the toolkit.

Key Differences in Student Responses

Confidence Levels Before and After Toolkit Implementation

Before implementing the toolkit, students displayed lower confidence levels in using imagery, with only a small 10% percentage rating themselves as confident and 40% rating themselves unconfident. After using the toolkit, there was a significant shift - 100% of students rated themselves as confident or very confident. This shift reflects an improvement in self-assurance, likely due to clearer guidance, relatable imagery, and a better understanding of technical concepts provided by the toolkit. This increase suggests that exposure to structured, consistent imagery exercises during the toolkit sessions helped demystify abstract vocal concepts and provided students with tangible tools for improvement.

Frequency of Imagery Usage

Before the toolkit, imagery techniques were rarely used by most students, with only 33% ever having used imagery (sometimes or always). Post-toolkit responses showed a marked increase, with over 70% of students using imagery often or always during their

practice. The growth in usage indicates the toolkit's success in integrating imagery techniques into regular practice routines, demonstrating its accessibility and effectiveness.

Technical Improvements in Singing Aspects

Post-toolkit responses highlighted improvements in specific technical areas such as:

- **Breath control (70% improvement post-toolkit vs. 35% pre-toolkit)**
- **Resonance (65% vs. 40%)**
- **Pitch accuracy (60% vs. 30%)**

These results indicate that the toolkit contributed to measurable technical improvements, especially in core vocal skills that are essential for overall performance quality.

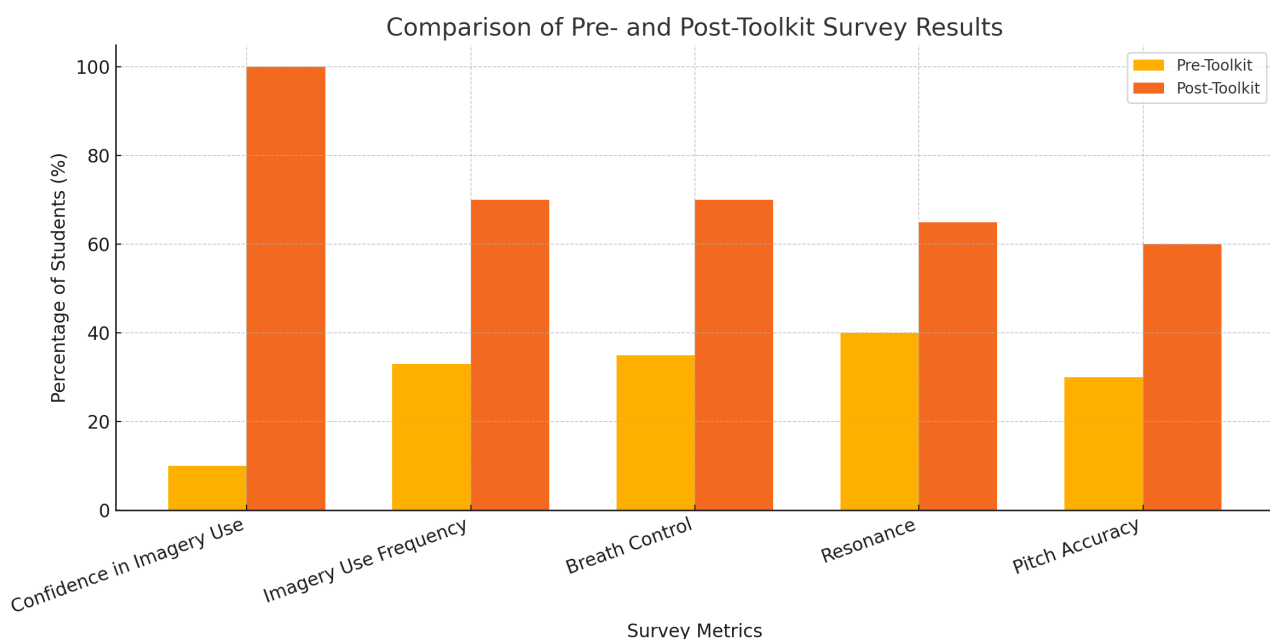


Figure 10: Comparison of Pre and Post Toolkit Survey

Student Attitudes and Reflections

Student reflections after the toolkit reveal greater autonomy, confidence, and enjoyment. Many described moments of emotional connection and technical breakthroughs that were not present in the pre-toolkit data.

The most significant changes observed between the pre- and post-toolkit surveys include, a notable increase in student confidence and engagement with imagery techniques, Improvements across all core vocal skills measured and a shift in student attitudes, with qualitative reflections indicating a deeper emotional connection to music due to vivid imagery exercises. Contributing factors to this are structured exposure to imagery techniques in a consistent learning environment, teacher guidance and reinforcement of techniques during practice, student-led reflection through diaries and focus groups that allowed learners to internalise their experiences.

The comparative analysis demonstrates that the toolkit effectively enhanced student engagement, confidence, and technical skills. These findings validate the integration of imagery-based instruction within vocal pedagogy and suggest potential for broader application in future teaching practices.

Post-Survey Teacher Questionnaire Findings

Following the 6-week implementation of the imagery-based vocal toolkit, five vocal teachers completed a post-toolkit questionnaire to reflect on their experiences using the materials in their teaching. The findings provide insight into the perceived effectiveness of imagery-based techniques from a pedagogical perspective.

1. Confidence in Using Imagery-Based Techniques

- 100% of respondents reported feeling Confident or Very Confident in their ability to use imagery-based methods in their teaching.
- This reflects a strong uptake in understanding and integrating visual/verbal imagery into regular pedagogical practice.

2. Frequency of Use

- Most teachers reported using the exercises Often or Always, with one teacher selecting Occasionally.
- This suggests a positive and practical adoption of the toolkit across multiple sessions and student interactions.

3. Most Effective Techniques Identified

Teachers highlighted a range of impactful exercises, including:

- **Balloon Belly** for breath awareness and engagement.
- **Laser Quest** to aid projection and focus.
- **Emotional Mirror** to deepen emotional connection and self-expression.
- **Raindrops on Notes** for soft onset and phrasing.
- **Singing Into the Beak** for tone placement.
- **Painting Brush/Colouring Words** to enhance articulation and musicality.

These selections demonstrate the variety and adaptability of the toolkit's strategies across vocal domains.

4. Perceived Areas of Vocal Improvement

Teachers identified multiple areas in which imagery-based exercises supported student growth:

- Breath Control
- Vocal Onset
- Resonance / Tone
- Range
- Articulation
- Phrasing / Musicality
- Confidence and Self-Expression

This shows the toolkit's ability to influence both technical and expressive aspects of singing. Figure 11 is a bar chart showing these findings .

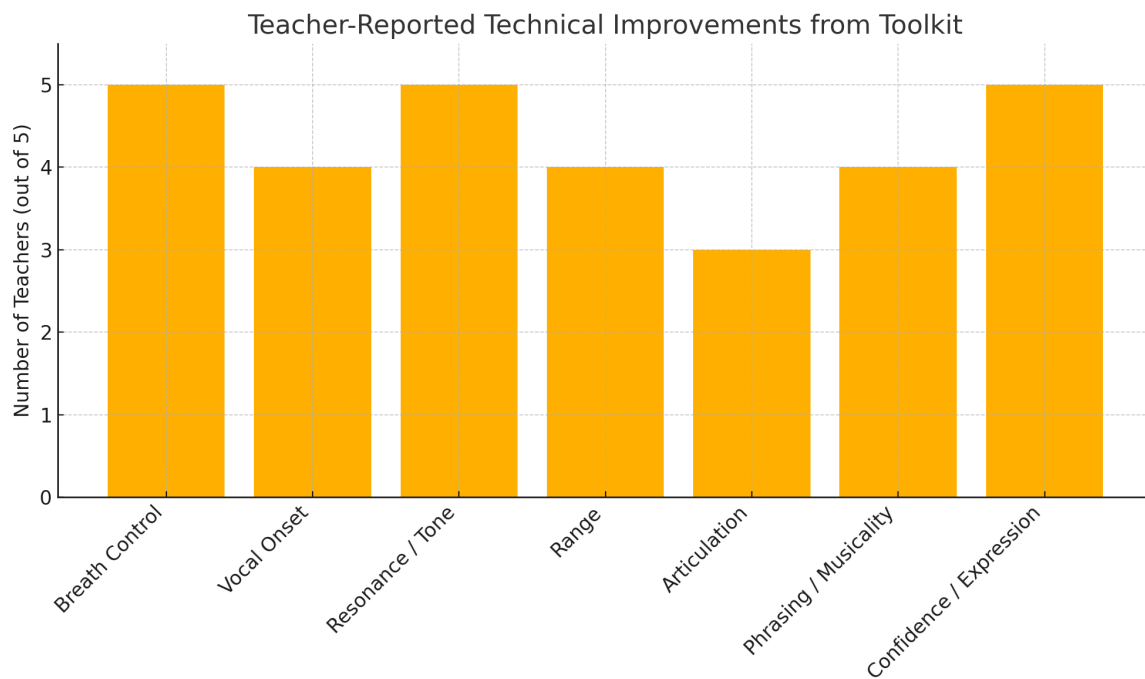


Figure 11: Teacher reported technical Improvements

5. Student Engagement and Response

- All teachers observed an increase in student engagement, with most reporting that students responded positively or very positively.
- One teacher noted somewhat increased engagement, with a few students responding particularly well.
- Teachers consistently described students becoming more invested and enthusiastic when using imaginative techniques.

This increase in engagement suggests that the imagery-based approach made lessons more interactive and enjoyable for students, encouraging greater involvement in their own learning process.

6. Likelihood of Continued Use

- All five teachers indicated they were Very Likely or Likely to continue using imagery-based strategies in their teaching practice.
- This suggests the toolkit's long-term viability and integration potential.

7. Key Takeaways from the Toolkit

Teachers noted several key reflections, including:

- The importance of building imagery in stages rather than jumping straight into complex metaphors.
- The value of imagery in illustrating internal sensations that are difficult to see or describe anatomically.
- The realisation that imagery increases engagement, particularly for younger students.
- Observing students transfer imagery into their own practice was seen as a major success.

8. Suggestions for Improvement

- Most teachers felt the toolkit was well-developed and required no changes.
- One suggestion included adding more visual or diagrammatic support to enhance accessibility.

Conclusion

The post-toolkit teacher responses confirm that imagery-based methods are not only well-received but also effective in improving a wide range of vocal outcomes. Teachers found the exercises flexible, engaging, and easy to integrate, and they observed meaningful progress in student engagement, confidence, and technical skills. These results, when triangulated with student data and reflective diaries, reinforce the toolkit's value as a practical, creative tool for vocal pedagogy.

Analysis

Linking Findings to Existing Literature

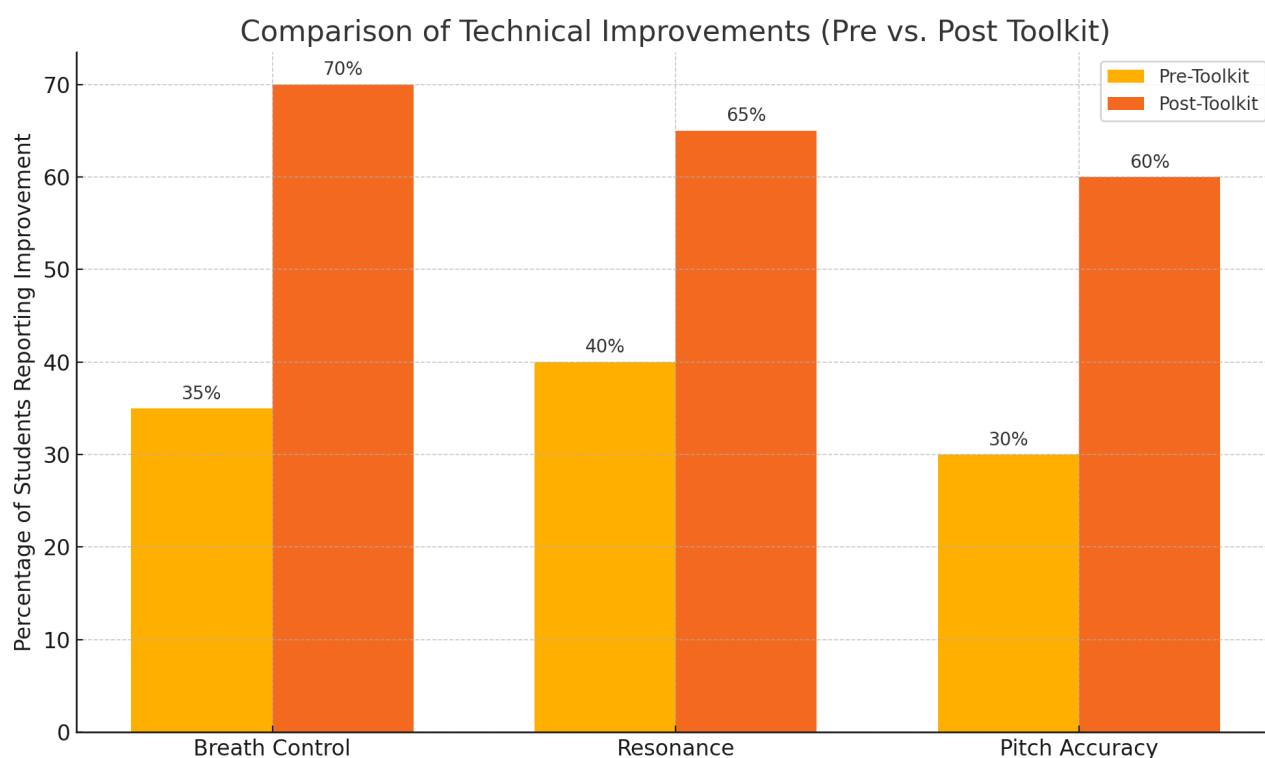


Figure 12: Comparison on Technical Improvements.

The findings of this study demonstrate a clear alignment with previous research on the role of imagery in vocal pedagogy. The pre- and post-toolkit surveys highlighted that students exhibited increased confidence and improved technical skills after engaging with imagery-based exercises (figure 12), which supports Reid's (1983) argument that imaginative techniques foster deeper vocal engagement. Additionally, the growth in students' confidence aligns with Estill's (2017) theories regarding the use of sensory imagery to promote vocal freedom and control.

The study's findings not only support but also extend the current literature on imagery-based vocal pedagogy. While Reid (1983) emphasised the significance of imaginative techniques in enhancing vocal engagement, this research contributes additional evidence by illustrating how these techniques positively influence both technical precision and emotional expression across diverse age groups. The findings also offer an extension to Estill's (2017) theories, demonstrating that combining sensory imagery with anatomically focused explanations leads to a more comprehensive understanding of vocal mechanics.

Moreover, the results align with Doscher's (1999) call for a more integrated pedagogical approach but add depth by highlighting the ways in which student age and learning preferences influence receptivity to imagery-based instruction. This adds to the growing body of evidence suggesting that hybrid instructional models—those that balance creative

visualisation with technical understanding—are effective across a wide range of educational settings (Hoch, 2020; Velarde, 2013).

Teachers' feedback supports Doscher's (1999) assertion that imagery-based instruction complements anatomically grounded approaches by providing an intuitive, accessible pathway to understanding complex physiological concepts. While anatomical explanations help students understand the physical mechanics of vocal production, imagery offers a more relatable, sensory-driven approach that enhances internalisation of these concepts.

Initially, some instructors struggled to adapt to abstract metaphors, as their teaching had been primarily rooted in technical explanations of breath support, vocal placement, and resonance. However, their eventual success in blending imagery with technical instruction reflects a broader pedagogical shift toward integrating creative and scientific teaching methods (Hoch, 2017). This shift allowed teachers to bridge the gap between conceptual knowledge and practical execution, helping students engage both cognitively and emotionally with their vocal development.

The use of imagery enabled students to visualise and physically embody abstract vocal concepts, enhancing their technical execution while deepening emotional connection—an effect supported by Davidson and Faulkner's (2010) findings on the role of emotional engagement in musical expression. This blending of methods allowed for a more holistic teaching approach that benefited students across varying skill levels and learning styles.

Patterns and Trends in Student Engagement

A notable pattern emerging from the data was the differential responsiveness to imagery-based techniques across age groups. Younger students (ages 7–11) consistently engaged more readily with playful, physical, and sensory-driven imagery. Techniques such as “painting the rainbow,” “blowing bubbles,” or “drinking hot chocolate” were particularly well-received. Students described these activities as fun, calming, and helpful for vocal control, often referring to the exercises as “games” or “pretend play.” This echoes Velarde's (2013) findings that kinaesthetic and vivid metaphorical imagery enhances engagement and accessibility for younger learners. It also supports Piaget's (1952) cognitive development theory, which asserts that children in the concrete operational stage benefit most from tangible, imaginative, and physically grounded experiences.

In contrast, older students (ages 12–16) showed a preference for visual and emotional imagery that could be directly linked to technical outcomes. They were more critical and initially hesitant when engaging with abstract metaphors, particularly when they lacked an immediate connection to familiar vocal technique. However, when such imagery was scaffolded with clear explanations—such as combining the “duck’s beak” with “laser line” to refine tone and projection—these students reported notable breakthroughs. This pattern reflects Vygotsky’s (1978) concept of the zone of proximal development, wherein learners assimilate new ideas more effectively when those ideas are supported by structured guidance and connected to existing knowledge. The teacher’s observations and diary entries further corroborate this, noting that older students began to select and adapt imagery independently once they understood its technical function.

Overall, the findings reinforce the importance of tailoring imagery techniques to developmental stages, offering playful and concrete images for younger children, and scaffolded abstract concepts for older students to deepen both technical precision and cognitive engagement.

Theoretical Implications

The findings reinforce Bandura’s (1986) Social-Cognitive Theory, particularly the concept of self-efficacy. As students experienced tangible improvements through imagery exercises, their belief in their own vocal capabilities increased, promoting sustained motivation and engagement. The focus group feedback also echoed Jeannerod’s (1995) research on motor imagery, indicating that mental visualisation exercises activated neuromuscular patterns that improved vocal technique.

Additionally, the use of thematic analysis in the focus groups revealed latent themes related to emotional engagement with music. Students who connected emotionally with the metaphors were more likely to demonstrate technical improvements, highlighting the importance of integrating imaginative and emotional elements into vocal pedagogy.

Practical Implications for Vocal Pedagogy

The success of the imagery toolkit suggests that a hybrid pedagogical approach, blending scientific explanations with creative visualisation, can enhance vocal training across age groups and experience levels. Teachers reported that combining imagery with brief

anatomical clarifications (as suggested by Estill, 2017) provided a balanced framework for students with varying learning preferences.

These findings have practical implications for:

- **Curriculum Design:** Incorporating imagery-based exercises as core components of vocal training modules.
- **Teacher Training:** Equipping instructors with tools to blend anatomical explanations with creative metaphors.
- **Personalised Learning:** Adapting imagery techniques to suit individual student needs based on age, experience, and learning style.

Limitations

While the results of this study are promising, the research was limited by the relatively small sample size and the substitution of post-toolkit focus groups with open-ended survey questions. Future research could:

- Conduct larger-scale studies across different institutions to verify the toolkit's effectiveness.
- Explore longitudinal effects by tracking student progress over an extended period.
- Investigate the effectiveness of imagery techniques in other areas of musical performance, such as instrumental training.

These directions can help validate the current findings while broadening the scope of research into imagery-based instruction.

One notable limitation of this study was the necessary reduction in data collection due to my personal injury and subsequent surgery. While the open-ended survey responses effectively captured participant reflections, the absence of post-toolkit focus groups limited the opportunity for more dynamic discussions and real-time clarifications of responses. Additionally, the sample size—though sufficient for preliminary insights—was relatively small and drawn from a single institution, potentially limiting the generalisability of the findings. Some participant inconsistency also affected the data, as not all students completed every questionnaire or reflective task. Furthermore, the 6-week implementation

period, while productive, may have been too brief to fully embed the techniques and observe sustained changes over time. A longer intervention would likely provide a clearer picture of the toolkit's long-term effectiveness. Future research with larger, more diverse samples—and an extended timeframe—would help validate and expand upon the findings of this exploratory study.

Nonetheless, the richness of the data—gathered through reflective diaries, pre- and post-questionnaires, and teacher feedback—allowed for strong thematic insights and actionable outcomes.

Areas for Future Research

A promising direction for future research would involve a longitudinal follow-up study, assessing the long-term impact of imagery-based instruction on vocal technique and performance confidence. This study could extend beyond the six-week implementation period to track student progress over several months or academic terms. Additionally, incorporating post-performance interviews and teacher assessments would offer a more comprehensive evaluation of how sustained exposure to imagery techniques influences vocal development over time. Expanding the participant pool to include students from different institutions or cultural backgrounds could also enhance the generalisability of the findings.

Reflections and Conclusions

Using Gibbs' (1988) reflective cycle, the following reflections and conclusions are drawn based on the outcomes of this study:

Elements of the Toolkit That Should Remain

Feedback from both students and the teacher consistently supported the value of several core components of the toolkit:

- **Use of Kinaesthetic and Playful Imagery:** Exercises such as "painting rainbows," "blowing bubbles," and "floating feathers" were particularly effective with younger students (ages 7–12), helping them access vocal technique through imaginative

and physical engagement. This supports Velarde's (2013) assertion that vivid, kinaesthetic metaphors enhance participation in younger learners.

- **Combination of Imagery and Technical Explanation:** Older students (13+) demonstrated stronger engagement when imagery was explicitly connected to vocal outcomes—such as using a "laser beam" or "duck beak" to improve tone and projection. This blend of abstract and technical instruction supports a balanced approach and aligns with Estill (2017), who advocates for clear anatomical understanding alongside metaphorical exploration.
- **Reflective Practice:** The use of diaries encouraged metacognitive development and self-awareness. Several students reported “click” moments where imagery led to vocal breakthroughs, reinforcing Braun and Clarke's (2006) model of reflective thematic analysis as a valuable pedagogical tool.

Elements That Need Adaptation or Improvement

While the toolkit was generally well-received, several areas emerged as requiring further refinement:

- **Duration of Implementation:** A 6-week period proved effective but limited. Student and teacher reflections suggested that a longer implementation would allow techniques to embed more deeply and yield more sustained results over time.
- **Participant Consistency:** Not all participants completed every questionnaire or diary entry, which reduced the overall data pool. Greater consistency in participation would improve the reliability of outcomes in future applications.
- **Age-Appropriate Adaptation:** Younger children responded better to concrete, playful images, while older students needed more explanation of the purpose behind each exercise. Incorporating clearer scaffolding for older learners—linking abstract imagery directly to vocal outcomes—would enhance understanding and engagement. This finding aligns with Vygotsky's (1978) zone of proximal development theory.

Elements to Add in Future Iterations

To build on the strengths of the toolkit and address areas of improvement, future versions could include:

- **Genre-Specific Imagery:** Students working in different vocal styles (e.g., classical vs. pop/musical theatre) might benefit from genre-tailored imagery that matches stylistic expectations and technique demands.
- **Group Collaboration:** Students expressed a desire for more shared or social tasks. Integrating group exercises or peer feedback opportunities could foster collaborative learning and creativity, as supported by Bandura's (1986) social learning theory.
- **Visual Aids and Diagrams:** Several participants requested diagrams or illustrations to help visualise abstract concepts. Adding visuals could improve accessibility and clarity, particularly for visual learners.

Final Conclusions

This study has demonstrated that the integration of imagery-based instruction with traditional vocal pedagogy can significantly enhance both technical development and emotional engagement in young singers. The completed toolkit provides an adaptable and creative framework that supported learners across different age groups, vocal abilities, and learning styles.

Reflecting on the original aims of the study, several core achievements emerged:

Enhanced Understanding of Imagery in Practice:

Both qualitative and quantitative findings confirmed that imagery enhanced student confidence, deepened emotional connection, and improved vocal technique. Students reported "click" moments, increased autonomy, and a shift in mindset—viewing imagery not just as fun, but as a practical tool for vocal control and performance.

Toolkit Development Grounded in Evidence:

The finalised imagery toolkit was built directly from pre-questionnaires, diary reflections, focus group themes, and post-implementation feedback. The structured yet playful design allowed learners to choose from a range of metaphorical tools tailored to breath control, tone, projection, and expressiveness.

Age-Specific Responsiveness:

Thematic and comparative analysis highlighted that younger students responded most strongly to tactile, playful imagery (e.g., rainbows, bubbles, feathers), while older students required more technical links and benefited from combined imagery approaches. This affirms the need for scaffolded, age-appropriate design in vocal instruction.

Professional and Pedagogical Growth:

Teacher reflections revealed increasing student autonomy and confidence over time. As students began independently selecting imagery that worked for them, a shift towards self-directed learning became apparent—highlighting the toolkit’s role in fostering long-term vocal ownership.

Future Directions

To continue developing the potential of imagery in vocal teaching, future studies should:

- Expand to include larger, more diverse cohorts across multiple institutions
- Explore the toolkit’s adaptability across different musical genres and age ranges
- Include peer-to-peer activities and longer-term implementation to embed practices further
- Incorporate more visual resources and collaborative elements, as requested by students

This study has reaffirmed the power of imaginative metaphor in making complex vocal concepts accessible. It has also strengthened the researcher’s belief in the value of flexible, creative, and evidence-informed pedagogy. The resilience required to navigate setbacks has further fuelled a commitment to evolving and refining the toolkit, ensuring it continues to inspire both confidence and creativity in singers for years to come.

References

American Psychological Association. (2017). *Ethical Principles of Psychologists and Code of Conduct*. Washington, DC: APA. Appelman, D. R. (1986). *The Science of Vocal Pedagogy: Theory and Application*. Bloomington: Indiana University Press.

- Appelman, D. R. (1986). *The Science of Vocal Pedagogy: Theory and Application*. Bloomington: Indiana University Press.
- Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Beauchamp, T. L., & Childress, J. F. (2019). *Principles of Biomedical Ethics*. 8th ed. New York: Oxford University Press.
- Bläsing, B., Tenenbaum, G., & Schack, T. (2009). The Cognitive Structure of Movements in Classical Dance. *Psychology of Sport and Exercise*, 10(3), pp. 350–360.
- Boone, H.N. & Boone, D.A., 2012. Analyzing Likert Data. *Journal of Extension*, 50(2), pp.1–5.
- Boote, D. N., & Beile, P. (2005). 'Scholars Before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation', *Educational Researcher*, 34(6), pp. 3-15.
- Boud, D., Keogh, R. & Walker, D. (1985). *Reflection: Turning Experience into Learning*. London: Kogan Page.
- Braun, V., & Clarke, V. (2006). 'Using Thematic Analysis in Psychology', *Qualitative Research in Psychology*, 3(2), pp. 77-101.
- Brannick, T. & Coghlan, D., 2007. In defense of being “native”: The case for insider academic research. *Organizational Research Methods*, 10(1), pp. 59–74.
- British Educational Research Association. (2018). *Ethical Guidelines for Educational Research*. 4th ed. London: BERA.
- Brodsky, W., Henik, A., Rubinstein, B. S., & Zorman, M. (2008). Auditory imagery from musical notation in expert musicians. *Perception & Psychophysics*, 70(5), pp. 879–887.
- Bunch, M. (2009). *Dynamics of the Singing Voice*. 5th ed. New York: Springer.
- Chandler, D. (2017) *Semiotics: The Basics*. Routledge.
- Chapman, J. (2006). *Singing and Teaching Singing: A Holistic Approach to Classical Voice*. San Diego, CA: Plural Publishing.
- Clark, T., Baker, R., and Roberts, L. (2012). 'The Use of Imagery Techniques in Music Pedagogy: A Cognitive Perspective', *Journal of Research in Music Education*, 60(3), pp. 213-225.
- Clement, C. (2008). *Foundations of Singing: A Holistic Approach*. New York: Routledge.
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education*. 8th ed. London: Routledge.

- Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process*. London: SAGE Publications.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and Conducting Mixed Methods Research*. 3rd ed. Thousand Oaks, CA: SAGE Publications.
- Davidson, J. W., & Correia, J. S. (2002). Body Movement. In R. Parncutt & G. E. McPherson (Eds.), *The Science and Psychology of Music Performance* (pp. 237–250). Oxford: Oxford University Press.
- De Lillis, G. (2020). 'Modern Vocal Pedagogy: Bridging Imagery and Anatomy', *Journal of Voice*, 34(3), pp. 421-429.
- Denzin, N. K., & Lincoln, Y. S. (2018). *The SAGE Handbook of Qualitative Research*. 5th ed. Thousand Oaks, CA: SAGE Publications.
- Doscher, B. M. (1999). *The Functional Unity of the Singing Voice*. 2nd ed. Lanham, MD: Scarecrow Press.
- Duey, P. (1951). *Bel Canto in Its Golden Age: A Study of Italian Singing*. New York: King's Crown Press.
- Estill, J. (2017). *Estill Voice Training Level One and Two Workbook*. Estill Voice International.
- Fern, E. F. (1982). The Use of Focus Groups for Idea Generation: The Effects of Group Size, Acquaintanceship, and Moderator on Response Quantity and Quality. *Journal of Marketing Research*, 19(1), pp. 1–13.
- Field, A., (2013.) *Discovering Statistics Using IBM SPSS Statistics*. 4th ed. London: SAGE Publications.
- Guba, E. G., & Lincoln, Y. S. (1994). *Competing Paradigms in Qualitative Research*. In: Denzin, N. K., & Lincoln, Y. S. (eds.) *Handbook of Qualitative Research*. Thousand Oaks, CA: SAGE Publications, pp. 105-117.
- Gillick, M. R. (1986). 'Competent Minors and Medical Decision-Making', *The Journal of Pediatrics*, 108(2), pp. 170-176.
- Guillot, A., & Collet, C. (2008). Construction of the Motor Imagery Integrative Model in Sport: A Review and Theoretical Investigation of Motor Imagery Use. *International Review of Sport and Exercise Psychology*, 1(1), pp. 31–44.
- Harrison, N. (2018) *Defining and Clarifying Terminology: The Use of Imagery in Vocal Training*. Accessed 17.01.2025.
- Hammersley, M. & Traianou, A. (2012). *Ethics in Qualitative Research: Controversies and Contexts*. London: SAGE Publications.
- Harrison, N. (2018) *Defining and Clarifying Terminology: The Use of Imagery in Vocal Training*. Accessed 17.01.2025.

- Hart, C. (2018). *Doing a Literature Review: Releasing the Research Imagination*. 2nd ed. London: SAGE Publications.
- Harvard, P. (2013), *Acting Through Song: Techniques and Exercises for Musical-Theatre Actors*, London : Hern
- Herr, K. & Anderson, G.L., 2015. *The Action Research Dissertation: A Guide for Students and Faculty*. 2nd ed. Thousand Oaks, CA: SAGE Publications.
- Hill, K. (2005). 'Safeguarding Children in Music Education', *British Journal of Music Education*, 22(1), pp. 45-58.
- Hill, M. (2005). Ethical considerations in research with children. In: S. Greene and D. Hogan, eds., *Researching Children's Experience: Approaches and Methods*. London: SAGE Publications, pp. 61-86.
- Hoch, M. (2017). *So You Want to Sing Sacred Music: A Guide for Performers*. Lanham, MD: Rowman & Littlefield.
- Hoch, M. (2020). *Professional Voice: Science and Art of Clinical Care*. 5th ed. San Diego: Plural Publishing.
- Holmes, P. S., & Collins, D. J. (2001). The PETTLEP Approach to Motor Imagery: A Functional Equivalence Model for Sport Psychologists. *Journal of Applied Sport Psychology*, 13(1), pp. 60–83.
- Howard, D. M., & Welch, G. F. (2017). *The Oxford Handbook of Singing*. Oxford: Oxford University Press.
- Howard, D. M. (2022). *Sound and Structure: A Practical Guide for Musicians and Educators*. London: Routledge.
- Immordino-Yang, M.H., & Damasio, A. (2007). We feel, therefore we learn: The relevance of affective and social neuroscience to education. *Mind, Brain, and Education*, 1(1), pp. 3–10.
- issajeva, J. (2015) 'Sign Theory at Work: The Mental Imagery Debate Revisited' . *Sign System Studies* 43 (4) pp.584-596.
- Jeannerod, M. (1995). 'Mental Imagery in the Motor Context', *Neuropsychologia*, 33(11), pp. 1419-1432.
- Johnson, R.B. & Onwuegbuzie, A.J., 2004. Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), pp.14–26.
- Kennedy-Dygas, M. (1999). 'Applying Cognitive Learning Theory to Vocal Pedagogy', *Journal of Singing*, 55(5), pp. 27-35.
- Kenny, D. T. (2015). *The Psychology of Music Performance Anxiety*. Oxford: Oxford University Press.

- Kitzinger, J. (1995). Qualitative Research: Introducing Focus Groups. *BMJ*, 311(7000), pp. 299–302.
- Kolb, D.A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice Hall.
- Langguth, B., Kreuzer, P. M., Kleinjung, T., & De Ridder, D. (2020). Tinnitus: Causes and Clinical Management. *The Lancet Neurology*, 19(9), pp. 782–794.
- Laverty, S. M. (2003). 'Hermeneutic Phenomenology and Phenomenology: A Comparison of Historical and Methodological Considerations', *International Journal of Qualitative Methods*, 2(3), pp. 21-35.
- Lehmann, A. C., & Davidson, J. W. (2002). Taking an Acquired Skills Perspective on Music Performance. In R. Colwell & C. Richardson (Eds.), *The New Handbook of Research on Music Teaching and Learning* (pp. 542–560). Oxford: Oxford University Press.
- Lotze, M. & Halsband, U. (2006). Motor imagery. *Journal of Physiology-Paris*, 99(4-6), pp. 386–395.
- Machi, L. A., & McEvoy, B. T. (2016). *The Literature Review: Six Steps to Success*. 3rd ed. Thousand Oaks, CA: Corwin Press.
- McCarthy, M. (2012). *Child Protection and Safeguarding in Music Education*. London: Routledge.
- Mitchell, H., and Kenny, D. (2010). 'The Impact of Cognitive-Behavioral Strategies on Performance Anxiety in Musicians', *Psychology of Music*, 38(2), pp. 91-110.
- Mayer, R. E. (2009). *Multimedia Learning*. 2nd ed. Cambridge: Cambridge University Press.
- McAllister, S. & White, S. (2020). The role of imagery in vocal pedagogy: A cognitive perspective. *Journal of Voice*, 34(1), pp. 123-130.
- McCoy, S. (2012). *Your Voice: An Inside View*. Delaware, OH: Inside View Press.
- Miller, R. (1996). *On the Art of Singing*. New York: Oxford University Press.
- Miles, M.B., Huberman, A.M. & Saldaña, J., 2014. *Qualitative Data Analysis: A Methods Sourcebook*. 3rd ed. Thousand Oaks, CA: SAGE Publications.
- Mitchell, H., and Kenny, D. (2010). 'The Impact of Cognitive-Behavioral Strategies on Performance Anxiety in Musicians', *Psychology of Music*, 38(2), pp. 91-110.
- Moon, J.A. (2006). *Learning Journals: A Handbook for Reflective Practice and Professional Development*. London: Routledge.
- Morgan, D. L. (1996). Focus Groups. *Annual Review of Sociology*, 22, pp. 129–152.
- Naismith, L. (2019). Exploring the role of reflective practice in voice pedagogy. *Voice and Speech Review*, 13(1), pp. 23–39.

Nix, J. (2016). Teaching Voice Pedagogy: The Integration of Scientific Principles. *Journal of Singing*, 72(5), pp. 503–509.

Oxford Advanced Learner's Dictionary at <https://www.oxfordlearnersdictionaries.com/definition/english/imagery> (Accessed 14th January 2025)

Paivio, A. (1986). *Mental Representations: A Dual Coding Approach*. Oxford: Oxford University Press.

Paas, F., Renkl, A., & Sweller, J. (2003). Cognitive Load Theory and Instructional Design: Recent Developments. *Educational Psychologist*, 38(1), pp. 1–4. https://doi.org/10.1207/S15326985EP3801_1

Paton, J. G. (2008). *Foundations in Singing: A Basic Textbook of Fundamentals for Beginning Singers*. New York: McGraw-Hill.

Paton, M. (2008) 'Reflective Journals and Critical Thinking' in van Rij-Heyligers, J. (2008) *Intercultural Communications across University Settings - Myths and Realities* "refereed proceedings of the 6th Communication Skills in University Education Conference". Pearson, p201-9

Peirce, C.S (Hoope, J (ed.) (1991) *Peirce on Signs: Writings on Semiotic*. The University of North Carolina Press.

Piaget, J. (1952). *The Origins of Intelligence in Children*. New York: International Universities Press.

Randolph, J. J. (2009). 'A Guide to Writing the Dissertation Literature Review', *Practical Assessment, Research & Evaluation*, 14(13), pp. 1-13.

Reid, C. (1950). *Bel Canto: Principles and Practices*. New York: Joseph Patelson Music House.

Reid, C. (1983). *A Dictionary of Vocal Terminology*. New York: Joseph Patelson Music House.

Saldaña, J., 2016. *The Coding Manual for Qualitative Researchers*. 3rd ed. London: SAGE Publications.

Schön, D.A. (1983). *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.

Schmidt, R. A. (1975). A schema theory of discrete motor skill learning. *Psychological Review*, 82(4), pp. 225–260.

Sieber, J. E., & Stanley, B. (1988). 'Ethical and Professional Dimensions of Socially Sensitive Research', *American Psychologist*, 43(1), pp. 49-55.

Sims, W. L. (2007). 'Risk Management in Performing Arts Education', *Journal of Research in Music Education*, 55(3), pp. 258-272.

Shapiro, L. (2019). *Embodied Cognition*. 2nd ed. London: Routledge.

- Stark, J. A. (2003). *Bel Canto: A History of Vocal Pedagogy*. Toronto: University of Toronto Press.**
- Steinhauer, K., McDonald Klimek, M., & Estill, J. (2017). *Estill Voice Training: Level One Workbook*. Pittsburgh, PA: Estill Voice International.**
- Stemple, J. C. (2004). *Voice Therapy: Clinical Case Studies*. 3rd ed. San Diego: Plural Publishing.**
- Sundberg, J. (1987). *The Science of the Singing Voice*. DeKalb, IL: Northern Illinois University Press.**
- Sweller, J. (1988). 'Cognitive Load During Problem Solving: Effects on Learning', *Cognitive Science*, 12(2), pp. 257-285.**
- Taylor, E. (2017) 'Critical Reflection and Transformative Learning: A Transformative View.' *PAACE Journal of Lifelong Learning*, 26 pp.77-95.**
- Tracy, S. J. (2010). *Qualitative Quality: Eight "Big-Tent" Criteria for Excellent Qualitative Research*. *Qualitative Inquiry*, 16(10), 837–851.**
- Thomson, L. (2007). *Vocal Health for Singers: Preventative Strategies*. New York: Oxford University Press.**
- Unluer, S., 2012. Being an insider researcher while conducting case study research. *The Qualitative Report*, 17(29), pp. 1–14.**
- Van Manen, M. (2007). *Researching Lived Experience: Human Science for an Action Sensitive Pedagogy*. Ontario: Althouse Press.**
- Velarde, G. (2013). 'Imagery Techniques in Vocal Performance: A Cognitive Study', *International Journal of Music Education*, 31(4), pp. 385-395.**
- Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.**
- Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods*. 6th ed. Thousand Oaks, CA: SAGE Publications.**
- Warnock , M. (1976), *Imagination*, Berkeley and Los Angeles: University of California Press**
- Watson, P. J., & Hixon, T. J. (1985). Respiratory Kinematics in Classical (Bel Canto) Singers. *Journal of Speech and Hearing Research*, 28(1), pp. 104–122.**
- Welch, G. F. (2018). The Singing Development of Young Children: A Longitudinal Study. *Psychology of Music*, 46(3), pp. 392–407. <https://doi.org/10.1177/0305735617705011>**
- Wiles, R. (2013). *What Are Qualitative Research Ethics?* London: Bloomsbury Academic.**

Wilson, M. (2021). *Embodied Cognition and Musical Performance: Understanding Skill Acquisition in Music*. New York: Routledge.