

Metaphors or Mechanics?

An Exploration of Learning Preferences in AuDHD Adult Singers

Katie Hogan

2333703

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Project Proposal

The Context

The study will take place at my UK-based private voice studio with seven adult singing students who identify as both autistic and ADHD (AuDHD). Inclusivity is growing within music education (Xin *et al.*, 2023; Mommo, Sutela and Mononen, 2025), however research rarely investigates the support methods for AuDHD singers. Voice pedagogy traditionally delivers a varying mix of technical explanations metaphor (Pfordresher, Halpern and Greenspon, 2015; Brown, 2023), yet the field lacks studies about AuDHD responses to these educational methods. The research study will explore how adult AuDHD singers experience these educational methods while creating new teaching strategies through collaborative work.

The Justification

As an AuDHD singer and pedagogue of over twenty years, I frequently notice how personal learning preferences impact students' confidence, progress, and overall enjoyment of the learning process. Current pedagogical approaches stem from neuronormative ideals (Azuka *et al.*, 2024), leaving neurodivergent students to adapt to the teaching rather than the teaching being adapted for them. I am seeking to amplify neurodivergent voices and explore how we might build more flexible and inclusive learning models.

Using principles of Participatory Action Research (PAR) will enable participants to create and evaluate the process with me (Galletta and Torre, 2019; Wood, 2019). Rather than finding one superior method, the aim is to develop a learning approach which students can direct and adapt to their needs.

The Intended Impact

This study aims to develop a nuanced understanding of AuDHD learning preferences and ways the teacher might adapt their practice accordingly. Participants may develop better understanding of their learning style and confidence to self-advocate in lessons. Personally, I wish improve my ability to identify, respond to, and support diverse learning styles more fluently in real-time to enhance both the inclusiveness and efficacy of my teaching. More broadly, this research aims to contribute to the neuroaffirmative education discourse by showing how centring neurodivergent voices in the pedagogy can improve learning outcomes for all.

The Outlined Intention

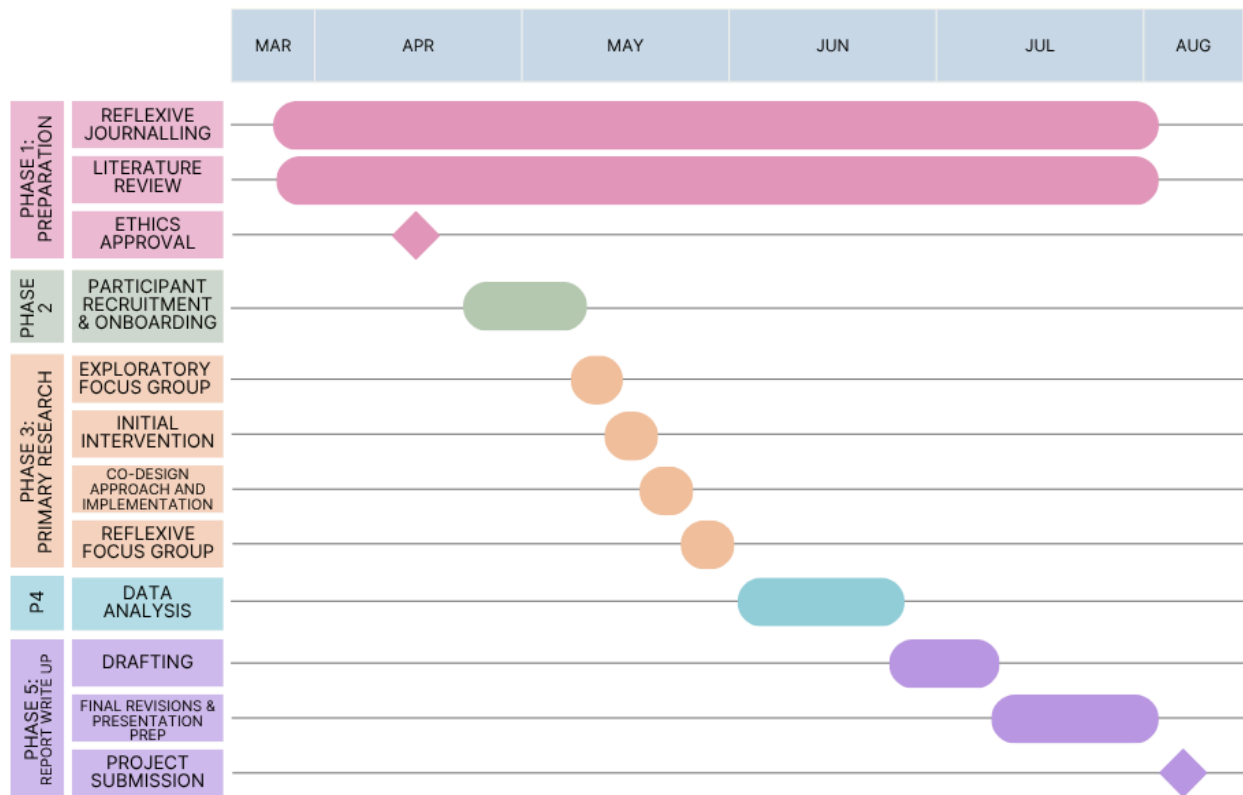


Figure 1. Project Timeline

The study will run in five phases (Figure 1):

1. Focus group - participants will evaluate their previous learning experiences as AuDHD learners.
2. Initial Intervention - I will teach the same vocal concept through both imagery and technical explanation during two different lessons. During lesson one participants determine the order of presentation but lesson two will reverse the order to counterbalance sequencing effects (Brooks, 2012).
3. Collaborative focus group - Participants will reflect on both methods before co-creating a new approach.

4. Intervention 2: The newly developed teaching method will be presented by me during the co-designed session.
5. Final Focus Group: Participants analyse the new teaching approach while discussing future adaptations.

The data will be interpreted through Reflexive Thematic Analysis (Braun and Clarke, 2022), and I will maintain a reflexive journal to track my position as both teacher and researcher (Finlay, 2002; Berger, 2015).

Ethics and Insider Research

As an AuDHD vocal coach researching within my teaching practice, I acknowledge the ethical complexities of insider research. Inherent power dynamics require careful management (Mercer, 2007), especially as some participants will be current students. To mitigate this, participants will receive assurance that their involvement, feedback, and criticism will not impact their lessons or their relationship with me. I will establish a safe and respectful space whilst journaling reflexively will generate awareness about my impact on the process (Finlay, 2002; Berger, 2015).

Expected Learning Outcomes

This project aims to:

1. Deepen my understanding of how adult AuDHD singers respond to different teaching styles, particularly imagery-based and technical approaches.
2. Develop my skills in PAR and Reflexive Thematic Analysis, refining my ability to design and deliver ethically sound, inclusive research.
3. Enhance my capacity for insider reflexivity and critical self-awareness, especially in balancing roles as both teacher and researcher.
4. Co-create more responsive, accessible vocal pedagogy that centres neurodivergent voices.
5. Strengthen my ability to translate research into practical strategies that support neurodivergent learners and inform my teaching practice.

Introduction

This study explores how adult singers with combined traits of autism and ADHD, often referred to in neurodivergent communities as AuDHD (Cannon, Hernández-Saca and Johnson, 2024), prefer to learn in their singing lessons. Whilst AuDHD is not a clinical term, it is widely used by those who experience the combined traits of both conditions (Craddock, 2025), and will be used throughout this study to maintain the neurodivergent voice.

My experience as a private voice coach who is both AuDHD and works with neurodivergent students has shown me that traditional vocal pedagogy seems to depend mainly on two dominant explanation methods which include metaphor (imagery-based) and mechanics (technical explanation) (Jestley, 2011; Jaber, 2020; Brown, 2023). Although these approaches have been studied across several groups, there seems to be a gap in recent literature exploring how effective these strategies are for neurodivergent learners (Bailey and Petty, 2025; Panwar and Lata, 2025).

Existing literature suggests that autistic and ADHD students face specific learning challenges including differences in cognitive processing, working memory, and sensory sensitivities (Tse *et al.*, 2022; Buckley *et al.*, 2024). Despite much being written about these traits in broader educational contexts, voice pedagogy has yet to fully explore how teaching methods should adapt to better support neurodivergent students (Hopkins, 2024).

This study explores whether adult AuDHD singers prefer imagery-based learning, technical explanations, or if they prefer a different approach that closely considers their individual learning styles. Participants will take two singing lessons (imagery-based and technical explanation), followed by a third lesson that they will co-design. By incorporating elements of PAR, this study will also explore how inclusive, participatory methods can lead to greater learner agency and inclusive pedagogy (Wilkinson and Wilkinson, 2018; Kakoulidou *et al.*, 2024).

The broader aim is to inform inclusive practice in the voice studio by contributing to an emergent body of work that centres neurodivergent experiences in singing education. In alignment with the calls for neuroinclusive education frameworks (Coates, 2022; Hetherington, 2024; Horner, 2025), this study seeks to contribute to the conversation around grounded, practice-based insights that voice educators can apply in their teaching.

Through this project, I will develop my skills in Participatory Action Research and Reflexive Thematic Analysis, informing my ability to design and deliver ethically sound, inclusive research. It will also improve my capacity for insider reflexivity and critical self-awareness, especially when managing dual roles as teacher and researcher. By working closely with participants, I will co-create more accessible and inclusive vocal pedagogy that centres the neurodivergent voice, and strengthen my ability to translate research findings into practical strategies that support neurodivergent learners and develop my teaching practice.

Literature Review

Methodology

This review draws on peer-reviewed literature published within the last 15 years, except where earlier works are considered seminal to the field. Sources were identified using keywords related to vocal pedagogy, neurodivergence, and inclusive education. Inclusion criteria focused on studies involving adult learners, with relevant autism-only and ADHD-only research included where AuDHD-specific sources were lacking; reputable grey literature was considered where peer-reviewed material was limited, particularly for emerging terminology and lived-experience perspectives.

Neurodivergence and Pedagogical Inflexibility in the Singing Studio

Vocal pedagogy has traditionally prioritised established teaching conventions, often failing to account for the diversity of cognitive and sensory profiles among learners (Longlong and Luen, 2023). The growing awareness of neurodivergent students in music education poses an important challenge because voice teachers rarely receive sufficient training to support them properly (Steiner, 2024). Voice teaching continues to rely heavily on imagery or technical instruction (Jestley, 2011; Jaber, 2020; Brown, 2023), both of which may be inaccessible or simply unhelpful for some neurodivergent learners (Le Cunff, Giampietro and Dommett, 2024). Exploring how these styles are received by adult AuDHD singers is therefore both timely and necessary.

Metaphor vs Mechanics in Vocal Pedagogy

The use of metaphor is common practice by voice teachers to simplify complex vocal processes making them easier to understand and apply (DeSantis *et al.*, 2022; Morales-Villar *et al.*, 2023). For some learners, this can reduce cognitive load and help develop an embodied understanding (Jaber, 2020). However, autistic learners may find metaphors confusing or unhelpful if they are overly abstract or culturally specific (Kalandadze, Bambini and Næss, 2019). Similarly, ADHD learners may lose focus if the metaphor is too lengthy or not grounded in immediate experience (Matthew and Nasri, 2022).

Conversely, mechanical or technical explanations appeal to learners who prefer precision and structure, offering explicit insight into anatomy, acoustics, or motor function (Vicente, Michel and Petrolini, 2024). Yet, these approaches can overwhelm those with working memory differences or sensory sensitivities, especially if presented without visual or kinaesthetic support (Fugate, Zentall and Gentry, 2013).

There is limited research comparing these pedagogical approaches within neurodivergent populations, and almost none specific to adults with AuDHD. This project aims, in part, to address this gap.

Understanding AuDHD in the Learning Environment

The dual presentation of autism and ADHD is well documented in clinical and lived experience however, formal recognition of this dual diagnosis is relatively recent (Bölte, Poustka and Geurts, 2018). Before the publication of the DSM-5 in 2013, a manual written to assist the diagnosis of mental conditions, individuals could not receive a dual diagnosis of autism and ADHD as one diagnosis would often exclude the other (Murray, 2010; Doernberg and Hollander, 2016). Because of this diagnostic criteria, much of the earlier research looked at these conditions in isolation from each other, limiting our understanding of the interplay between the two (Kentrou *et al.*, 2019; Okyar and Görker, 2020). Since the DSM-5 update, more research has begun to explore AuDHD within education with a growing focus on how this dual condition impacts learning and teaching methods (Hatch, Kadlaskar and Miller, 2023). However, research that specifically applies these findings to voice pedagogy remains limited. This gap highlights the need for further investigation into how the learning preferences and challenges of AuDHD students can be supported in the voice studio.

The term AuDHD is not formally recognised but it is widely used within neurodivergent communities by individuals who experience the combined traits of both conditions (Kapp *et al.*, 2013; Craddock, 2025). This term reflects the suggestion that autism and ADHD interact in ways that produce distinct learning profiles rather than cumulative effects (Huang *et al.*, 2024). For example, whilst ADHD is commonly associated with inattention, impulsivity, and time-blindness (Vadalà *et al.*, 2011; Weissenberger *et al.*, 2021), autism is often linked with sensory processing challenges, cognitive inflexibility, and a preference for routine and predictability (Polderman *et al.*, 2014; Schulze, Lux and Philipsen, 2020). When these traits are combined, learners may seek novelty and stimulation whilst also feeling overwhelmed by unpredictability, creating complex challenges in situations like singing lessons, which require focused attention and sensory regulation (Masters *et al.*, 2023; Skaletski *et al.*, 2025).

These overlapping traits might affect how AuDHD learners respond to vocal instruction (Butcher and Lane, 2025). For example, an AuDHD singer might become hyper-focused on a metaphor whilst struggling to connect this to broader applications of the skill being taught, or they might find technical explanations cognitively overwhelming without accompanying visual or kinaesthetic supports (Kalandadze, Bambini and Næss, 2019; Huang *et al.*, 2024; Steiner, 2024). One adult AuDHD singer, who had reached out for peer advice in an online forum, described how metaphorical language hindered their learning: “I need specific details with phrasing that is literal. Metaphors and abstract explanations just confuse me” (u/yk093, 2025). They went on to explain that when they read a comment stating that “your chest shouldn’t do anything,” they interpreted it so literally that it caused physical tension and confusion during inhalation: “I take that as my chest should literally be completely still” (u/yk093, 2025). Singing teachers often use statements like “don’t let your chest do anything” to simplify complex vocal actions (Reed, 2022) but for some learners these metaphors can result in confusion or tension due to the lack of concrete, step-by-step detail needed to guide the body (Jensen, 2006; Reed, 2022). These experiences highlight how commonly used teaching strategies, whether overly abstract or anatomically detailed, can unintentionally increase stress and hinder vocal performance for AuDHD students.

Despite this, there is little guidance available for educators on how to adapt teaching for this population. Much of the current literature either generalises neurodivergent learners as a whole, or focuses on children and adolescents in school-based settings (McDowall and Kiseleva, 2024) whereas it is estimated between 4.3% to 5.9% of adults in the UK engage in private or group singing lessons (Department for Digital, Culture, Media and Sport (UK), 2018). This study aims

to help address that gap by exploring the lived learning preferences of adult AuDHD singers and how they respond to different instructional styles.

The Value of Participatory and Reflexive Practice

Participatory Action Research (PAR), which places learners as co-creators of knowledge, has been successfully used in developing inclusive education (Wilkinson and Wilkinson, 2018). PAR also aligns well with neurodivergent values of autonomy and agency, encouraging reflexive, adaptable teaching rather than rigid strategies. Research suggests that involving students in shaping their learning journey, especially underrepresented groups like AuDHD students, can lead to greater engagement, satisfaction, and success (Anggraeni, 2021; Tang, 2023).

This study integrates PAR principles by inviting AuDHD learners to provide feedback after lessons and collaborating towards the design of a future lesson. In doing so, it explores not only the efficacy of two common teaching strategies but also the process of co-constructing learning with neurodivergent singers.

Summary of Literature Review

The literature highlights an urgent need for more inclusive and adaptable teaching methods in voice education (Longlong and Luen, 2023; Steiner, 2024). While both metaphorical and mechanical approaches have merit (Jaber, 2020; Vicente, Michel and Petrolini, 2024), their efficacy with AuDHD learners remains largely unexamined (Bölte, Poustka and Geurts, 2018; Huang *et al.*, 2024). In addition, the binary choice between these methods may mask the need for more participatory, co-designed teaching that responds to the varied learning preferences of AuDHD students (Wilkinson and Wilkinson, 2018; Anggraeni, 2021; Tang, 2023). Even though the (*Equality Act 2010, sch. 10*, 2010) mandates reasonable adjustments for disabled learners, there is limited guidance on what that means for vocal pedagogy. By centring the experiences and preferences of adult neurodivergent singers, this study aims to contribute to a more nuanced and inclusive pedagogy that reflects the diversity of the modern singing studio.

Methodology and Methods

Research Paradigm

This research adopted an interpretivist-constructivist paradigm, with elements of Participatory Action Research (PAR), an approach that emphasises researcher-participant collaboration to identify issues and co-develop solutions (Galletta and Torre, 2019; Wood, 2019). As this research sought to understand the learning preferences of adult singers with both autism and ADHD (AuDHD) an interpretivist approach was considered appropriate for valuing participant-generated meanings and constructivism acknowledges knowledge creation through interactions with the world and others (Lincoln and Guba, 1985; Creswell and Poth, 2024).

The PAR-inspired relational model of this study embodied the principles of inclusivity, responsiveness, and knowledge co-creation (Wilkinson and Wilkinson, 2018; Galletta and Torre, 2019). While the final co-created lesson was not delivered, participants made valuable contributions toward developing an accessible teaching method through the co-design form (see Appendices D3 and E3).

The principle of reflexivity was integral throughout the research process (Finlay, 2002; Creswell and Poth, 2024). As an autistic and ADHD individual myself, I took extensive measures to eliminate any assumptions that might stem from our shared background. A reflexive journaling process was used to document choices made, emotional responses, and ethical dilemmas encountered (see appendix F2). The study design underwent continuous adjustments through real-time modifications that addressed participant feedback and accessibility requirements throughout Phase One. The participant information sheet introduced a five-phase mostly synchronous process initially but the revised timeline (see appendix B2) transitioned to an entirely asynchronous format to accommodate scheduling conflicts and participant preferences (see appendix D for adapted materials).

Participants and Recruitment

Participants were recruited from my wider teaching network and included seven self-selecting adults who had singing lesson experience and identified as both autistic and ADHD (self-identified or formally diagnosed). The participants shared their informal descriptions about their vocal experience levels and gender identities and neurodivergence profiles during phase one but specific demographic data was not formally collected (see Table 1). This was an intentional decision to

protect participants' emotional safety and prevent identity-based withdrawals. This approach aligns with neuroinclusive research practice which values participant autonomy alongside emotional safety over more rigid data collection procedures (Bernard *et al.*, 2023; Huston, McMorris and Murias, 2024).

Table 1: Participant Overview

Participant	Age Group	Singing Experience	Prior Vocal Training	Notes
P1	Adult	Beginner	Self-taught	
P2	Adult	Professional	>10 years	Music Teacher
P3	Adult	Intermediate	1-4 years	
P4	Adult	Advanced	>10 years	Professional Singer
P5	Adult	Intermediate	5-9 years	
P6	Adult	Professional	>10 years	Music Teacher
P7	Adult	Beginner	Self-taught	

Design and Procedure

The research implemented a three-phase qualitative design which incorporated participatory and reflexive elements such as inviting participants to co-design a singing lesson (Galletta and Torre, 2019), and ongoing reflexive journaling to document my decision making, identify biases, and encourage awareness around how my emotional responses could colour interpretation of the data (Lincoln and Guba, 1985; Finlay, 2002). This research method allowed exploration of student views while prioritising safety measures for emotions along with student selection and easy access (Wilkinson and Wilkinson, 2018; Wood, 2019). A fourth and final phase was planned but not completed due to personal illness and time constraints.

Phase One: Initial Focus Group via Chat

The study began with an asynchronous focus group which took place through secure group chat channels. This was a shifted from its original plan for a sixty-minute Zoom session. The asynchronous format was chosen due to scheduling constraints amongst participants but for many AuDHD individuals, asynchronous communication reduces cognitive load, minimises

social masking, and allows for self-paced reflection (Faulconer, Bolch and Wood, 2022; Gorbunova *et al.*, 2024). The participants were asked to share their past learning experiences and identify factors that either supported or hindered their vocal development. The gathered feedback shaped the content and delivery approach for Phase Two lessons which were adapted from planned groups lesson (appendix C2) to pre-recorded videos (appendix F1) that could be watched independently, giving participants more control over their learning.

Phase Two: Video Lessons and Feedback Forms

The participants received two brief video lessons for their viewing. The first lesson demonstrated aspirate onset using a metaphor and the second lesson showed glottal onset using anatomical explanations (appendix F1). Each lesson contained a vocal exercise section to practise applying the skill described. The participants were able to determine the order in which they watched the videos although the metaphor-based video was the first in the sequence to evaluate possible order effects and learner bias (Cohen, Manion and Morrison, 2002). Participants completed a short feedback form after each video to share their thoughts on clarity, effectiveness, embodiment, and emotional response.

Phase Three: Co-Design Form

During the third phase participants created their preferred singing lesson design through an online form. Participants used this form to suggest their preferred explanation methods along with delivery formats, emotional support needs, and sensory tools. The design step followed the PAR model by focusing on learner involvement to create pedagogical approaches that centre the neuro-divergent voice (Wilkinson and Wilkinson, 2018; Wood, 2019). Although the co-created lesson did not receive execution the phase generated substantial data regarding learning preferences and emotional accessibility needs of participants.

Phase Four: Undelivered Co-Created Lesson

A fourth phase existed in the plan to record and distribute a co-created video lesson rooted in the participant insights collected in phase three. Unfortunately, I was not able to finish this phase due to personal illness and time constraints.

Asynchronous Design as an Accessibility Strategy

Ultimately, the study's asynchronous delivery functioned as its primary accessibility feature. The participant information sheet (see appendix B1) initially suggested five live sessions across three weeks but the format underwent changes during Phase One because participants faced

scheduling issues and preferred less demanding formats. The revised timescale (see appendix B2) presents a more flexible and condensed participation model which received further real-time adjustments through direct participant feedback.

The asynchronous methods enabled participants to:

- Engage at their own pace
- Avoid performance anxiety or sensory overload
- Choose optimal times of day for concentration
- Reread and reflect before responding

This method supports neuroinclusive practice because it benefits people who experience changing attention levels and executive function difficulties and sensory sensitivity challenges (Faulconer, Bolch and Wood, 2022; Gorbunova *et al.*, 2024).

Data Collection and Analysis

Data was collected in written format: chat transcripts, feedback form responses, and open-ended answers on the co-design form. I then followed Braun and Clarke's (2022) six-phase model for Reflexive Thematic Analysis (Figure 2), which is well suited to identifying patterns in subjective learner experience.

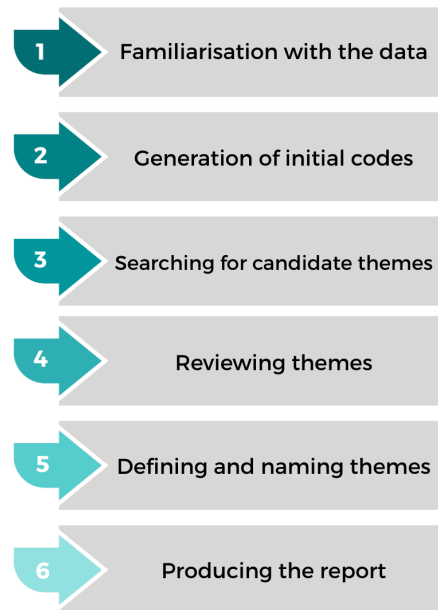


Figure 2: Braun and Clarke's RTA model

Initial line-by-line coding captured detail while preserving participant voice. Codes were then grouped into categories at each phase such as “learning preferences”, “emotional safety”, and “embodiment”. From these, broader themes were developed to represent recurring ideas across participants (see appendix E4).

Notably, some collaborative coding occurred indirectly, when defining and naming the themes participants' own words shaped the code names and thematic boundaries. For example, several subthemes such as “Help Me Feel It” or “Let Me See The Map” were derived from participants' own language.

Ethical Considerations

This study was reviewed and approved by the University of Wales Trinity Saint David (UWTSD) Ethics Committee. Informed consent was obtained in writing and participants were regularly reminded they could withdraw at any time without giving a reason, and that their participation would not affect their relationship or future lessons with me.

As an insider researcher, I was mindful of inherent power dynamics especially where participants were current students of mine. To mitigate this, participation was entirely voluntary, and all lessons and feedback forms were delivered asynchronously, minimising direct influence.

Anonymity and confidentiality were ensured through password-protected data storage and anonymisation of all participant responses. Flexible participation, content warnings, and the freedom to skip any question or activity were offered to generate emotional safety.

Pacing and sensory needs were also considered throughout with the reflexive shift to an asynchronous format allowing participants to manage energy levels, control their learning environment, and avoid overstimulation.

Limitations of the Method

The study is subject to several limitations, though these do not undermine its trustworthiness. The final co-created lesson was not delivered due to illness limiting my ability to complete a full PAR cycle but the rich data gathered in Phase Three still allowed for valuable insight into learner-designed pedagogy.

There was also some participant attrition across phases: while seven participants signed consent forms, six completed Phase One (focus group), five completed Phase Two (video lessons and feedback), and three completed Phase Three (co-design form). This reduction is typical in asynchronous, voluntary research with neurodivergent populations, and may reflect fluctuating energy, personal circumstances, or varying comfort with each activity format (Hoerger, 2010; Parslow and Williams, 2015). Rather than undermining the process, this dropout rate reflects the realities of designing around participant autonomy and accessibility.

Table 2: Summary of Participant Engagement

Phase	Description	Format	Participants	Status
1	Initial focus group on past learning experiences	Asynchronous group chat	6	Complete
2	Two video lessons + feedback form	Pre-recorded videos/google form	5	Complete
3	Co-design questionnaire	Google form	3	Complete
4	Co-created lesson delivery + feedback form	Pre-recorded video/google form	0	Incomplete

The overall sample size was small limiting generalisability but this is consistent with the exploratory and interpretive nature of this qualitative study (Lincoln and Guba, 1985).

Additionally, as a researcher with lived experience of AuDHD, there is a risk of interpretation bias (Finlay, 2002; Xiao *et al.*, 2024). However, this was addressed through reflexive practice, transparent documentation of decisions, and close alignment with participants' original language (Finlay, 2002; Tracy, 2010). The analysis aimed not for neutrality but for rigour, care, and fidelity to participant voices (Braun and Clarke, 2021).

Findings and Discussion

Introduction to Findings

The analysis of participant feedback from different lesson formats and collaborative lesson design produced four interconnected themes (Figure 3):

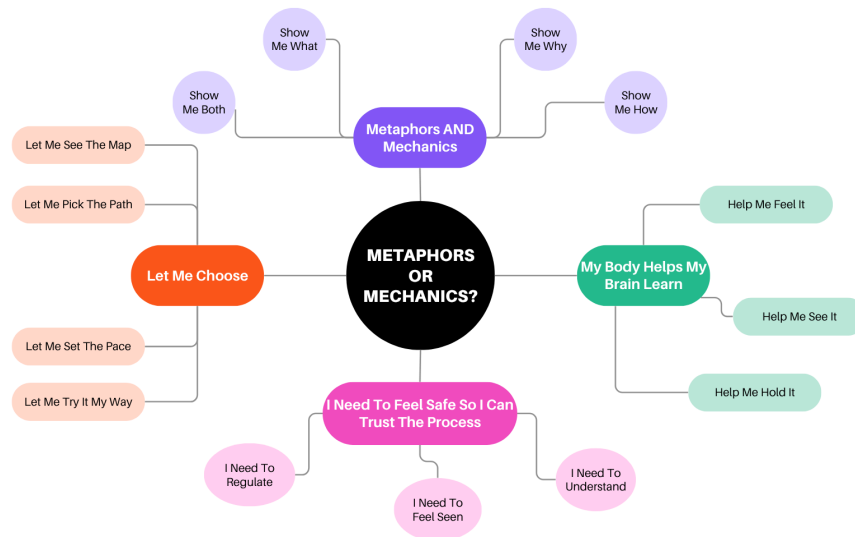


Figure 3. Visual Theme Map

The themes presented are:

1. Metaphors AND Mechanics Help Me Understand
2. My Body Helps My Brain Learn
3. I Need to Feel Safe So I Can Trust the Process
4. Let Me Choose

Each theme exists independently yet maintains strong connections with the others. The participants' narratives demonstrate how access to vocal learning was multi-factorial including cognitive processes, sensory experiences, emotional states, and environmental elements.

Theme 1: Metaphors AND Mechanics Help Me Understand

This theme represents a consistently expressed preference for hybrid approaches to explanation, blending both metaphor and technical description. Rather than perceiving these as opposing methods, participants described them as mutually supportive, appreciating how each brought unique benefits to their understanding.

Participant responses showed engagement and cognitive ease came from having vivid and relatable imagery with Participant 3 sharing, “I enjoyed the imagery of...sighing into the big chair for the aspirate onset,” and Participant 4 noting, “it was a very effective way to get the desired sound.” Imagery-based learning was consistently valued for both its emotional resonance and sensory cues enabling skills to be grasped both swiftly and intuitively.

Imagery alone was insufficient, however, as Participant 4 explained, “I do like to know the reason/science behind the exercise so that I can understand what is expected of me,” and Participant 3 also reflected that the technical explanation helped their application of the skill, “it helped me to find that pop easier, which helped with the overall sound.” Technical explanation thus offered precision and contextual reasoning.

Participants reflected upon how metaphors and technical explanations together “create a fuller picture” (P4). Participant 2 reflected, “Once I am already achieving the desired onset/sound (through the imagery based learning) I like to know the science behind it as it solidifies my understanding and confirms why my voice is working that way.” Participants felt that imagery-based learning and technical explanation engaged different aspects of their thinking creating a more holistic understanding of the vocal concept being presented.

Teacher demonstrations emerged as an integral mode of learning, “having you demonstrate, and then having me sing with you,...really helped make sure that I was applying the vocal techniques correctly” (P5). This would suggest that demonstrations are essential for bridging the gap between conceptual understanding and application of the skill.

The theme as a whole suggests that AuDHD singing students benefit from instruction that unites

imagery with technical explanations and demonstrations in order to fully understand the taught concept before physical skill execution. This is supported by Dual Coding Theory ([Paivio, 1990](#)) in which learning becomes more effective when information passes through verbal and non-verbal channels. Recent research into bridging the gap between abstract and concrete concepts shows how connecting the two enhances accessibility and understanding especially for neurodivergent learners ([Butcher and Lane, 2025](#)). Taken together, this evidence suggests that the combination of imagery with technical explanation and teacher demonstrations function as cognitive preparation priming students for the embodied learning experience that follows.

Theme 2: My Body Helps My Brain Learn

This theme suggests that, for AuDHD learners, bodies are essential instruments for understanding vocal concepts. The majority of participants indicated that they needed to connect new knowledge to physical sensations or visible signals before they could fully grasp it.

The findings show that visible information can transform abstract and invisible processes into tangible concepts. Participant 6 shared, “my music is covered in doodles, helping me to visualise what I’m supposed to be doing,” a sentiment echoed by others. Visual cues appear to function as anchors, helping participants to reproduce the target sound or technique bolstering both confidence and consistent skill application.

Physical sensations and movement were also viewed as valuable tools for in-the-moment learning. Participant 6 stated, “I’m not good at listening as my brain won’t focus for long enough but if my body is involved in the doing of it, it will stay with me,” indicating the need for embodied learning strategies to assist comprehension and retention of learning. Participant 7 also reflected the efficacy of sensory-based learning to consolidate understanding, “the exercises of breathing and describing what sensations we are supposed to feel in certain areas of our body, really helped for me to track if I was doing it correctly.” These physical cues suggest a way to establish more concrete connections between concept and skill application as well as manage concentration and engagement levels.

Participants shared how important it was for them to contextualise new skills within their repertoire immediately suggesting that real-world contexts assist later recall, “if the skill is introduced without demonstration of how it could be used in a song, it is easily forgotten for me.” Embodied metaphors also worked as a recall tool with participants noting that metaphors that

came with intuitive actions, such as “fogging up the mirror”, aided in the repeatable application of the new skill.

These findings suggest that multi-sensory anchors provide embodied cognitive scaffolding for AuDHD singers, enabling them to internalise and recall new vocal skills that can sometimes feel abstract and intangible. This aligns with Gallagher’s (2005) Embodied Cognition Theory, in that thinking and understanding develop through body-world interactions, and Shams and Seitz’s (2008) principles of multisensory learning which demonstrate how engaging multiple senses improves both recall and comprehension. The overarching theme suggests that for AuDHD singing students, multi-sensory and embodied learning strategies are not just supplemental but an integral condition for accessible and lasting learning.

Theme 3: I Need to Feel Safe So I Can Trust the Process

This theme explores how emotional safety stands as a pre-requisite for AuDHD singers to learn effectively rather than a by-product of good teaching practice. Participants repeatedly stated that unless they felt calm, seen, and included, they could not access or retain new information regardless of how it was presented.

Participants were very clear about their readiness to learn depending on their emotional and sensory state at the beginning of a session, “please check in with me about my energy or sensory needs at the start as they can shift a lot day to day” (P7) emphasising that regulation needs are not fixed but mutable. Participant 3 suggested starting with “vagus nerve regulation” exercises which was echoed by other participants who also requested activities to help them “transition into the learning space”(P7), demonstrating a clear awareness of how their neurodivergence manifests and impacts their learning needs.

Participants found great value in their neurodiverse learning approaches being acknowledged and treated with respect. Participant 7 recounted that “having permission to be my quirky, expressive self...means everything.” Indeed other participants also felt that they learn better when teachers acknowledge and adapt to their learning style, seeing it as “different, not difficult.”

Structured feedback and its manner of delivery was shown to be critical for participants to feel safe enough to learn valuing “gentle, encouraging feedback” (P2) that highlights what was done well followed with prioritising one focus of improvement. Multiple participants voiced that they’d prefer feedback to “be framed as an invitation to experiment, not a correction” (P4), however they differed

in their opinions on when feedback should be delivered with Participant 2 “thriving” on real-time feedback and others preferring the space to experiment a few times first.

Emotional safety and trust in the student-teacher relationship emerged not as by-products but accessible learning accessible as reflected in current research that positions co-regulation, identity validation, and neuroaffirmative language as key aspects for inclusive learning (Fuld and McKelvie, 2024). The findings closely align with the neurodiversity paradigm which views neurological differences as natural variations rather than deficits (Walker and Raymaker, 2021; Botha *et al.*, 2024) a stance that supports a move away from pedagogical frameworks that centre dated neuronormative ideals. This is further underpinned by the double empathy problem which reframes difficulties in communication between autistic and allistic individuals as mutual misunderstandings rather than autistic deficits (Milton, 2012; Milton, Gurbuz and López, 2022). When neurodivergent students feel seen and heard, their self-efficacy and engagement in learning are significantly enhanced (Lebrón-Cruz and Orvell, 2023).

Theme 4: Let Me Choose

Participants expressed a strong preference for structured autonomy in their singing lessons. They described four key ways that choice and control supported their access to learning: through structure, choice, pacing, and personalisation/experimentation.

Knowing the lesson structure gave participants a sense of stability, allowing them to be present in the learning rather than anticipating what might happen next. As Participant 2 explained, “I like to know what is planned for the lesson...so I know what to expect and can relax.” Clear structure helped calm participants’ nervous systems whilst also giving them a map of the learning journey.

Beyond having structure, participants valued being able to influence how a lesson unfolded. Participant 7 highlighted the importance of moment-to-moment flexibility, “I appreciate being offered the choice to chat briefly or dive straight in depending on how I’m feeling that day.” Choice also extended to repertoire selection, with Participant 4 suggesting that teachers “provide choices in repertoire that aligns with the students’ interests or special interests.” For participants, choice over material was not a luxury but a vital aspect of engagement and ownership in the learning process.

Control over the speed of learning was equally important. Participant 7 reflected, “I tend to process information better if I can pause, reflect, or try it slowly first before speeding up.” Similarly, Participant 6 noted the need for adaptability when attention shifted: “I get bored very easily...so short bursts and recognising I wanted to change song was good.” This suggests that AuDHD learners benefit from pacing that is responsive rather than fixed.

Making the learning their own was a shared insight, Participant 7 said, “I love having the freedom to improvise or explore a little, especially once I’ve grasped a concept and this helps make it mine.” Participants also stressed the value of being given space to learn in ways that suited their processing style. Such opportunities for experimentation not only increased engagement but also helped embed skills in long-term memory.

Autonomy mattered deeply for participants but it was essential that choice was provided within clear structure and pacing was responsive to their needs. The findings seem to align with Cognitive Load Theory (Sweller, 1988) by which students are able to manage cognitive demands when structure and pacing is responsive. The emphasis on personalisation and experimentation aligns with constructivist learning principles in that autonomy and creativity enhance understanding (Vygotsky, 1978; Gorobet, 2024). Overall the research suggests that offering such structured autonomy promotes learning in a way that feels self-driven rather than imposed, supporting deeper understanding and retention as learners make the abstract personal.

Consideration of Limitations

The findings provide valuable insights into the learning preferences of adults AuDHD singers yet several important limitations need to be recognised. The research sample was both small and limited to self-selected participants who likely already felt comfortable discussing their neurodivergence and learning styles, potentially limiting perspectives from students with less reflexive experience (Collier and Mahoney, 1996). The asynchronous format restricted the possibility of observing immediate and embodied reactions to each teaching method which could have revealed further insight into real-time learning preferences (Roulston and Halpin, 2021), this was further limited by self-report data in that preferences were described rather than enacted (Greener, 2018). Illness prevented the implementation of the final co-devised lesson limiting the ability to fully realise the PAR model and how the co-designed hybrid teaching approach might function in practice. My own neurodivergent identity required ongoing reflexivity to reduce bias (Finlay, 2002) but as, Braun and Clarke (2022)

describe, this insider perspective also served as a strength, enabling me to spotlight the neurodivergent perspective with empathy and understanding. Finally, the lack of methodological triangulation, such as combining the self-report data with live interviews or lesson observations, potentially limits the depth and transferability of the findings (Fusch, Fusch and Ness, 2018). Despite this, the richness of the data and the strength of the emerging themes suggest meaningful patterns that align with wider neurodivergent and pedagogical literature.

Conclusion

The study set out to explore whether AuDHD adults showed any preference for imagery-based learning, technical explanation, or a combination of both. My aim was not to find a superior method but to challenge stereotypes about neurodiverse learning styles by investigating how dual diagnosis influences learning preferences. To achieve this, I aimed to follow the data while avoiding assumptions reflecting principles of reflexive and rigorous qualitative inquiry (Tracy, 2010; Braun and Clarke, 2022).

Summary of Findings

The research found that participants rejected the binary choice and showed preference for an integration of both metaphorical and mechanical teaching methods combined with a safe learning environment where emotional regulation and learner autonomy were prioritised. This preference challenges reductive narratives on neurodivergence (Kapp *et al.*, 2013; Botha *et al.*, 2024) and suggests that accessibility in learning could depend more on the teaching environment than on specific methods (Azuka *et al.*, 2024; Butcher and Lane, 2025). These findings are reflected in the principles of Universal Design for Learning (CAST, 2024) which emphasises multiple means of representation representation, engagement, and expression. As Coates (2022) and Panwar and Lata (2025) suggest, this style of flexible and co-created approach to pedagogical design are central to effective learning for AuDHD students.

Future Research and Recommendations

This study opens up multiple potential directions for future research and practice. For immediate practice in the singing studio, teachers could create inclusive learning experiences by combining both imagery-based and technical explanations (DeSantis *et al.*, 2022; Brown, 2023) with embodied cognitive strategies (Gallagher, 2005); embedding structure and clarity (Anggraeni, 2021; Tang, 2023); and allowing students to shape their learning (Walker and Raymaker, 2021, 2021). Future research in vocal pedagogy could explore how Universal Design for Learning (CAST, 2024) principles and similar inclusive frameworks could be tested and developed

specifically for singing lessons. My suggestions for practical applications of UDL are expanded upon in Appendix X. For my own personal development, I wish to realise the Participatory Action Research model in full through the future co-creation and testing of teaching strategies with neurodivergent singers and investigate how learning preferences change through time and environmental shifts. It is my hope that through these recommendations for practice and future research that pedagogy can move beyond labels and stereotypes and instead focus on creating learning environments where all singers can learn, explore, and thrive.

Critical Reflection

In relation to my original learning outcomes, this project has deepened my understanding of learning experiences for AuDHD students, especially how emotional regulation, structured autonomy, and multimodal explanations can be woven together to support learning.

Methodologically, I have learnt how to design and execute a qualitative study as well as improve my thematic analysis techniques using Participatory Action Research (Galletta and Torre, 2019) and Reflexive Thematic Analysis (Braun and Clarke, 2022) developing my ability to carry out ethically sound and inclusive research whilst recognising my insider researcher position as a neurodivergent teacher-researcher and how it shaped both data collection and interpretation, offering additional insights whilst needing ongoing reflexivity (Finlay, 2002).

On a personal level, these findings have given me confidence that my instinctive teaching approach, to observe each individual and adapt to them rather than apply a one-size-fits-all method, is supported by evidence (McDowall and Kiseleva, 2024; Bailey and Petty, 2025). This alignment between data and practice has perhaps been my greatest area of growth showing how research can affirm and refine my professional identity.

Most importantly, this study has shown and reaffirmed for me how much it means, and how deeply impactful it is, for the unique perspective of the AuDHD student to be seen, heard, understood, and respected throughout the learning journey.