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How can inclusive voice pedagogy be explored and operationalised through the practice-led design of a prototype mobile voice-training app that supports trans and non-binary actors to develop authentic, expressive, and sustainable performance voices?

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C1. Portfolio

Introduction

Voice pedagogy has traditionally been framed within cisnormative assumptions, privileging binary models of '*male*' and '*female*' vocal development. For trans and non-binary actors, such approaches can be exclusionary and harmful, limiting authentic expression and failing to acknowledge the diversity of lived vocal experience. Recent scholarship has increasingly highlighted the need for inclusive, ethical, and sustainable practices in voice training (Ragan, 2018; Azul, 2023). Building on this, Azul and Quoresimo (2022) argue for culturally responsive, person-centred approaches that challenge binary assumptions and frame voice as co-constructed through social, cultural, and biocultural forces. Their best practices emphasise flexibility, health, and authenticity as central principles in vocal pedagogy.

Recent work in digital Voice and Communication Modification Training (VCMT) (Alter et al., 2024) highlights the value of accessible tools for Transgender and Gender-Nonconforming (TGNC) users but also notes that such resources remain scarce within performance-focused contexts.

Existing TGNC-focused digital resources are predominantly situated within clinical or medically supervised contexts, where applications are designed to support therapeutic voice goals and are frequently framed through target-oriented outcome measures. While these tools are valuable within their intended scope, they do not typically address the creative, identity-sensitive and performance-specific needs of actors, nor do they prioritise exploratory, non-coercive practice. This project, therefore, positions itself within a distinct, underserved niche: a non-clinical, practice-led, performance-oriented resource that centres autonomy, creativity and sustainable exploration for trans and non-binary actors.

Despite these conceptual advances, there remains a notable absence of practical, accessible tools that embed these inclusive frameworks into the daily realities of performer training. This project addresses that gap through the design of a prototype mobile voice training app that translates inclusive voice pedagogy into an accessible, user-centred resource. Structured around warm-up, focused exercises, cool-down, and reflection, the artefact incorporates inclusive language, safety guidance, and reflective journalling. In doing so, it aims to empower trans and non-binary actors to develop sustainable, authentic, and expressive performance voices, bridging the transition from theory (Module 4) to applied practice in professional contexts.

Accordingly, this study asks: *How can inclusive voice pedagogy be explored and operationalised through the practice-led design of a prototype mobile voice-training app that supports trans and non-binary actors to develop authentic, expressive, and sustainable performance voices?*

Planned Programme of Study

The initial design phase of this artefact is informed by a combination of theoretical frameworks, best practice principles, and methodological approaches that situate the study within the wider field of voice pedagogy. The project builds directly on the conceptual foundations developed in Module 4, particularly the critical exploration of inclusive voice pedagogy and the ethical considerations surrounding trans and non-binary performers. The artefact — a prototype mobile voice training app — seeks to explore and operationalise these theoretical insights through an iterative, practice-led design process.

Theoretical Influences

The artefact design is underpinned by inclusive voice pedagogy, which has increasingly emphasised the need to challenge binary assumptions and create sustainable, authentic pathways for performers outside of cisnormative frameworks. Azul and Quoresimo (2022)

argue for culturally responsive, person-centred pedagogy that recognises the diversity of lived experience and frames voice as socially co-constructed through speaker, listener, professional, and biocultural forces. Their ASSEMBLE framework provides a conceptual foundation for understanding how identity, culture, and physiology intersect in vocal performance. Azul (2023) extends this position by highlighting the importance of reflexivity and sustainability in training, while Ragan (2018) introduces an evidence-based approach to pedagogy that prioritises transparency and accountability in practice. Together, these works create a robust theoretical basis for an artefact that integrates inclusive pedagogy with practical voice science and actor training methods.

Best Practice Influences

Current best practice in voice training stresses the importance of accessibility, inclusivity, and health. Azul and Quoresimo (2022) emphasise the use of inclusive language, advising against binary categories such as “male” or “female” voices, and instead encouraging function-based descriptors such as “higher resonance option” or “chest-dominant.” This principle directly informs the language choices within the exercise cards that form part of the app’s content library. Best practice also emphasises the importance of a scaffolded structure, starting with warm-ups, progressing through targeted exercises, and concluding with cool-downs and reflective activities. This approach has been embedded into the daily session design, which offers users short (8–12 minute) sessions that can be completed independently but which align with professional voice training pedagogy. Furthermore, the integration of journalling functions reflects best practice in reflective learning, allowing users to monitor their progress and adapt their goals over time. Accessibility standards, particularly the Web Content Accessibility Guidelines (WCAG), provide a further best practice framework, ensuring the artefact supports screen readers, high contrast modes, and captioned audio.

Methodological Influences

Methodologically, this project adopts a practice-led research approach, recognising the value of practitioner knowledge in shaping artefact design. By positioning practice as both subject and method, this approach allows the design of the app to be informed by professional experience as a voice coach and actor trainer, while also subjecting those insights to critical scrutiny. The project also draws on design-science methodology, which positions artefact creation as a valid form of research output in itself. The app prototype will be treated as both product and process, with iterative development stages documented and critically reviewed. User-centred design principles guide the structural choices within the information architecture, ensuring that navigation reflects user goals and pedagogical sequencing. While no participant testing will occur until Module 6, heuristic evaluation will be employed to assess the artefact against theoretical, pedagogical, and ethical benchmarks. This methodological positioning is informed by established literature in practice-led research, which identifies the artefact as both a generator of knowledge and a mode of enquiry (Nelson, 2022; Smith & Dean, 2009). The design-science framing aligns with Hevner et al.'s (2004) model of artefact production as a valid research output when rigorously evidenced and systematically developed. User-centred design principles are guided by Donald Norman's 'The Design of Everyday Things' (2013), which emphasises affordances, accessibility, and intuitive navigation. The use of heuristic evaluation follows Nielsen's (1994) criteria for assessing digital resources prior to user testing.

Aims and Objectives

The overall aim of this study is to design a prototype mobile app that explores and operationalises inclusive voice pedagogy within a practical, accessible training tool for trans and non-binary actors. This aim will be pursued through the following SMART objectives:

- ☑ To synthesise literature on inclusive voice pedagogy, actor training, and digital learning in order to produce a design brief *(27 August 2025)*.
- ☑ To create a product requirements document (PRD) including user goals, information architecture, and accessibility and ethics criteria *(10 September 2025)*.

- ☑ To develop low-fidelity wireframes for at least five core user flows (for example: onboarding, daily session, exercise library, Safety & Care, and journalling), comprising approximately 12–15 key screen variations *(24 September 2025)*.
- ☑ To construct an evaluation rubric mapped to Nelson's (2022) Know That, Know How, Know What framework *(22 October 2025)*.
- ☑ To draft a set of 20 exemplar exercise cards, each with clear cues, timings, and safety notes *(12 November 2025).*

Expected Learning Outcomes

The expected learning outcomes include: (1) the ability to synthesise complex theoretical frameworks within inclusive voice pedagogy and translate them coherently into a functional digital design; (2) the capacity to embed culturally responsive, ethical and trauma-informed principles into a digital pedagogical artefact; and (3) the development of advanced evaluative skills through critically applying Nelson's (2022) 'Know That / Know How / Know What' framework to assess the artefact's pedagogical integrity, relevance, and potential professional impact.

Activities and Assessment Criteria

The practical activities central to this project include literature synthesis, development of a product requirements document (PRD), creation of the app's information architecture and wireframes, the drafting of exemplar exercise cards, and the construction of an evaluation rubric based on Nelson's (2022) Know That, Know How, Know What framework. Each activity forms part of an iterative design cycle in which theoretical insights are translated into practical decisions and subsequently reviewed through reflective analysis.

The assessment of the artefact will be guided by criteria grounded in current literature on inclusive voice pedagogy, evidence-based practice, and user-centred design. First, the artefact will be evaluated for its coherence with the inclusive pedagogical principles articulated by Azul & Quoresimo (2022), particularly the ASSEMBLE model's emphasis on

autonomy, safety, and culturally responsive practice. This includes ensuring that all instructional cues and reflective prompts support user agency and avoid prescriptive or binary frameworks of vocal identity.

Second, the assessment will address the extent to which the app's language and content adhere to ethical, non-pathologising communication standards. As recommended by Azul (2023), terminology must be affirming, accessible, and free from assumptions regarding gendered vocal outcomes. This criterion is especially salient given the potential for voice training resources to inadvertently reinforce stigma or normative expectations within TGNC communities.

Third, the artefact will be examined through the lens of Ragan's (2018) Evidence-Based Voice Pedagogy framework, which positions robust pedagogy at the intersection of research evidence, practitioner expertise, and learner goals. The prototype must therefore demonstrate a clear integration of contemporary scholarship with professional knowledge derived from voice coaching and actor training, ensuring that exercises and explanations reflect both theoretical grounding and practical applicability.

Fourth, the information architecture and interface design will be evaluated using principles from user-centred design, drawing on Norman's (2013) work on affordances and intuitive navigation alongside Nielsen's (1994) heuristic guidelines. This criterion assesses whether the app's structure supports clarity, ease of use, and a logical progression aligned with user goals, while also incorporating accessibility considerations for diverse bodies, learning styles, and sensory needs.

Fifth, the artefact will be appraised for its integration of trauma-informed and identity-affirming pedagogical principles. This includes the clear presentation of safety notes, opportunities for user pacing, and the avoidance of coercive or high-stakes framing—practices widely recognised as essential in inclusive voice training for marginalised populations. The prototype must demonstrate sensitivity to intersectional experiences and varied vocal identities, acknowledging that TGNC users may bring a range of embodied histories to their practice.

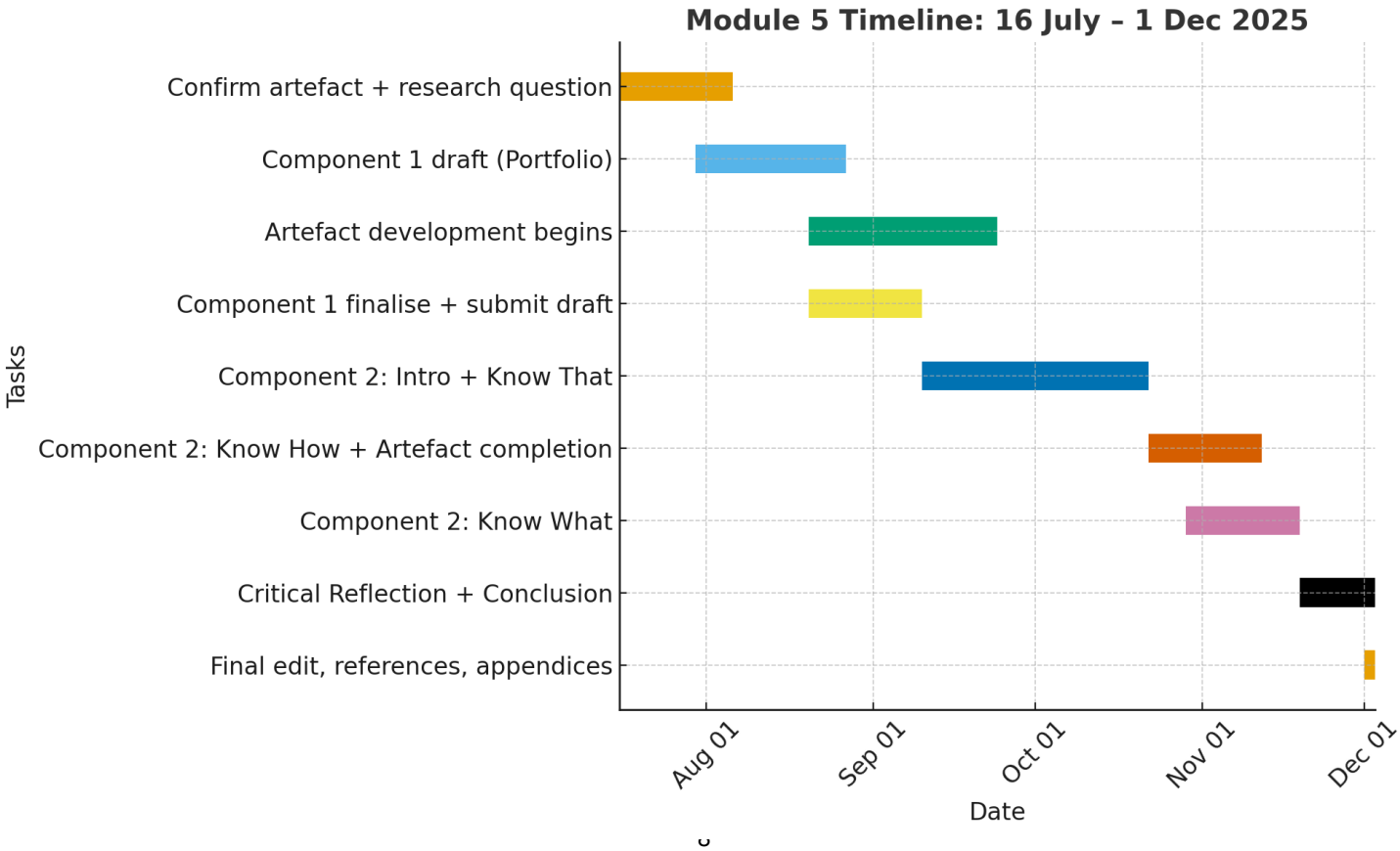
Finally, a heuristic evaluation will be conducted prior to any user involvement in Module 6, using criteria derived from design-science methodology (Hevner et al., 2004). This form of

internal review will assess the artefact's theoretical integrity, pedagogical coherence, and alignment with the project's aims and SMART objectives. It will also identify areas for refinement, establishing a clear developmental trajectory into the subsequent module.

Collectively, these activities and assessment criteria ensure that the artefact is grounded in rigorous theory, shaped by ethical and inclusive pedagogical principles, and critically evaluated through a robust methodological framework appropriate to postgraduate-level research.

Timescales and Review Dates

The project will follow a structured timeline from July to December 2025, beginning with literature review and design planning in July–August, progressing through portfolio submission in early September, and moving into artefact development and critical evaluation throughout October and November. The final phase will focus on reflective evaluation and preparation for submission on 1 December 2025. The GANTT chart below illustrates timescales and review points. This is also included and expanded upon in the appendix.



Methodology

The methodological approach for this study draws on practice-led research and design-led enquiry to support the development of a prototype mobile voice training application grounded in inclusive voice pedagogy. As Module 5 prohibits participant involvement, the project adopts a literature-driven methodology in which user needs are modelled through scholarship rather than empirical testing. The approach is intentionally iterative, reflective, and cyclical, enabling inclusive voice pedagogy to be explored and operationalised through successive phases of design, evaluation, and refinement. In this framework, theoretical insight and artefact development continually inform one another, positioning the creative process itself as a mode of enquiry.

A practice-led research framework is well-suited to the creation of pedagogical digital artefacts, enabling practice to function as both subject and method. Nelson's (2022) articulation of research-as-practice provides the overarching theoretical structure, emphasising the interplay of 'know-that', 'know-how' and 'know-what' as a means of understanding how practical, theoretical, and conceptual knowledge are co-constructed. In this study, the emerging prototype is treated as a site of enquiry: design decisions surface new pedagogical questions, while scholarship informs iterative refinements to structure and content. This dual positioning of theory and practice is supported by Smith and Dean's (2009) account of cyclic creative processes that evolve through reflection-in-action. In line with this methodological positioning, a Product Requirements Document (PRD) was developed at the outset. This decision was informed by both design-science and user-centred design methodologies — which advocate for a structured articulation of user needs, pedagogical constraints and functional specifications prior to prototyping — and by practice-led research conventions that emphasise documenting intentions and parameters early so that iterative developments can be critically examined and theoretically anchored (Hevner et al., 2004; Norman, 2013; Nelson, 2022; Smith & Dean, 2009).

The methodological framing is further strengthened by Cross's (2006) notion of 'Designerly Ways of Knowing', which positions design as a distinct epistemic mode grounded in

abductive reasoning, iterative problem solving, and knowledge generated through the construction of artefacts. Cross highlights the characteristic pattern of design as involving ‘iterative cycles of conjecture and analysis’ (p. 17), a pattern that closely aligns with the development of this prototype. The use of information architecture maps, low-fidelity wireframes, and evolving exercise drafts reflects Cross’s assertion that modelling and prototyping serve as tools of discovery as well as representation (Cross, 2006, p. 35). This methodological stance justifies treating the artefact not merely as an output but as a process through which understanding of inclusive voice pedagogy is deepened.

A structured narrative literature review forms the core research method. This approach supports a critically engaged synthesis of theoretical, pedagogical, and design-based literature. Search terms included ‘inclusive voice pedagogy’, ‘trans voice’, ‘non-binary vocal training’, ‘gender-affirming communication’, ‘culturally responsive pedagogy’, ‘mobile learning and voice’, and ‘digital voice training’. Searches were conducted across Google Scholar, university library databases, Journal of Voice, Voice and Speech Review, ResearchGate (for practitioner literature), and relevant grey literature from professional organisations. A date range of 2015–2025 prioritised contemporary, inclusive, and culturally responsive approaches in line with substantial developments in TGNC voice scholarship.

Inclusion criteria emphasised peer-reviewed research, practitioner scholarship with recognised credibility, foundational texts in voice pedagogy, and literature explicitly addressing gender diversity. Exclusion criteria removed pathologising or binary-centric frameworks, as well as materials focused on clinical testing methodologies that fall outside Module 5’s ethical boundaries. Azul & Quoresimo’s (2022) ASSEMBLE model and Azul’s (2023) work on culturally responsive voice practice were given significant weighting due to their centrality to current best practice for trans and non-binary performers. Ragan’s (2018) Evidence-Based Voice Pedagogy framework further supports the integration of research evidence, practitioner expertise, and learner goals.

Artefact development followed iterative cycles of reading, drafting, reflection, and refinement. The literature directly informed structural choices within the app, including user agency, accessible sequencing of warm-ups, trauma-informed safety notes, and reflective journalling prompts. The design-science approach outlined by Hevner et al. (2004) supports the positioning of the artefact as a legitimate research outcome when rigorously

evidenced and systematically developed. User-centred design principles draw on Norman's (2013) work on affordances and intuitive navigation, while Nielsen's (1994) usability heuristics guide early evaluation of flow, clarity, and accessibility prior to user involvement in Module 6.

Ethical considerations underpin all methodological decisions. The study avoids participant involvement, aligns with trauma-informed and culturally responsive pedagogical principles, and ensures that all language is identity-affirming and non-pathologising. The prototype purposefully avoids therapeutic claims, instead framing content as exploratory, supportive, and user-led.

Overall, this methodology establishes a rigorous, ethical, and theoretically grounded foundation for the development of an inclusive voice training prototype. It also establishes a clear methodological bridge to Component 2, where Nelson's framework will guide a critical evaluation of the artefact's development, impact, and contribution to professional practice.

How can inclusive voice pedagogy be explored and operationalised through the practice-led design of a prototype mobile voice-training app that supports trans and non-binary actors to develop authentic, expressive, and sustainable performance voices?

C2. Report

Introduction

The development of inclusive and ethically grounded voice pedagogy for trans and non-binary performers remains an emergent and critically necessary area within contemporary actor training. While recent scholarship has challenged the historical dominance of binary, cisnormative models of vocal development (Ragan, 2018; Azul, 2023), there remains a notable gap in practical, accessible resources that translate these principles into everyday training environments. This project addresses that gap through the creation of a prototype mobile voice training application designed to support agency, authenticity, and sustainability for trans and non-binary actors. Building upon the planning and methodological framework established in Component 1, this component critically reviews the theoretical, methodological and practical influences that have shaped the artefact's development, and evaluates how inclusive voice pedagogy has been explored and operationalised through the prototype's development and considers its potential impact on professional practice.

The artefact is underpinned by Azul and Quoresimo's (2022) culturally responsive ASSEMBLE model, integrating principles of autonomy, safety, embodiment, and reflexive listening. Alongside this, the project draws on evidence-based voice pedagogy (Ragan, 2018), relational and trauma-informed practices, and contemporary voice science, including recent work on acoustic-perceptual factors influencing gendered voice perception. User-centred design frameworks (Norman, 2013; Nielsen, 1994) and practice-led research methodologies (Nelson, 2022; Cross, 2006) further inform the artefact, ensuring that design decisions remain grounded in both pedagogical integrity and intuitive usability.

This component evaluates the artefact through Nelson's (2022) 'Know That / Know How / Know What' framework, drawing on excerpts from the designed exercise packs, warm-up and cool-down sequences, reflective tools, and safety guidance. Through critical engagement with literature and iterative practitioner reflection, the review examines how theoretical knowledge has been explored and operationalised, how procedural knowledge shaped the development process, and how factual and conceptual knowledge are embodied in the resulting app prototype.

KNOW THAT — Theoretical and Conceptual Knowledge

Foundations of Inclusive Voice Pedagogy

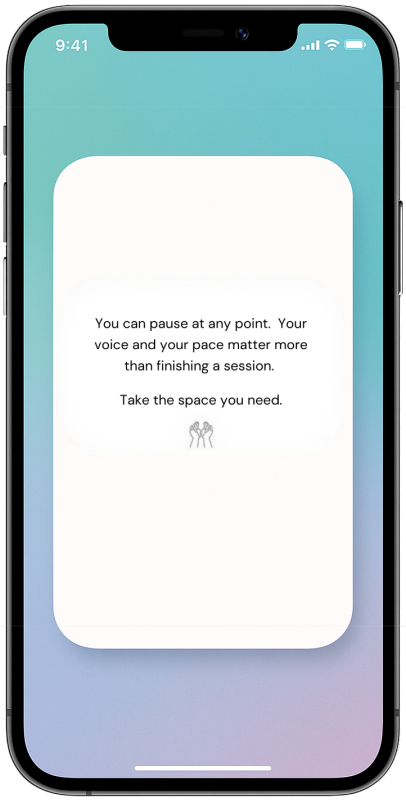
Contemporary scholarship in voice pedagogy increasingly critiques the historical dominance of binary and cisnormative models that conceptualise vocal development as fixed, sex-based, or tied to prescriptive notions of "male" and "female" voices. Such frameworks risk reinforcing restrictive and often harmful expectations, particularly for trans and non-binary performers seeking expressive authenticity rather than conformity to normative vocal targets (Ragan, 2018). The growing movement towards inclusive, culturally responsive, and trauma-informed voice pedagogy advocates instead for training approaches that centre autonomy, sustainability and identity flexibility (Azul, 2023). These developments form the conceptual bedrock of the artefact developed in this study.

Azul and Quoresimo's (2022) ASSEMBLE framework provides the primary pedagogical orientation guiding the artefact's design. ASSEMBLE emphasises seven interconnected domains—Agency, Safety, Strategy, Embodiment, Meaning-Making, Biocultural Context, and Listening—each of which repositions the voice as socially co-constructed, relational, and dynamic. Rather than viewing vocal goals as fixed outcomes, ASSEMBLE centres on user-led discovery, reflective noticing, and contextual decision-making. This aligns closely with the needs of trans and non-binary actors, whose training experiences often involve negotiating conflicting cultural expectations, embodied histories, and fluctuating capacities.

In line with ASSEMBLE, the artefact deliberately avoids gendered terminology or target-driven descriptors. Instead, it adopts functional, neutral language, such as *forward*

resonance, lighter airflow, or *rounder vowel shape*, to support sensory–motor awareness without implying any normative endpoint. Azul (2023) emphasises that sustainable practice requires non-coercive structures that protect user autonomy while offering accessible strategies for exploration. This principle directly informs the artefact's design, including short, manageable sessions, rest prompts, warm-up and cool-down sequencing, and journalling opportunities to reflect on emotional and embodied experiences.

Ragan's (2018) Evidence-Based Voice Pedagogy framework further strengthens this foundation. By emphasising the triangulation of research evidence, practitioner expertise and learner goals, Ragan argues for pedagogical transparency, contextualised decision-making, and the explicit articulation of rationale. This artefact reflects those principles through clear cueing, safety notes, brief conceptual explanations embedded in exercise cards, and open-ended reflection prompts that position users as co-authors of their training experience.



A brief microcopy example demonstrating non-coercive, autonomy-based safety messaging, emphasising user agency and psychological ease within the session.

Together, these frameworks shape an approach that moves beyond gendered norms and towards a pedagogy that is responsive, ethical, sustainable, and grounded in embodied autonomy. The app thus serves as a practical instantiation of inclusive voice pedagogy by embedding these values into its structure, tone, and user flows.

Voice Science and Acoustic–Perceptual Research

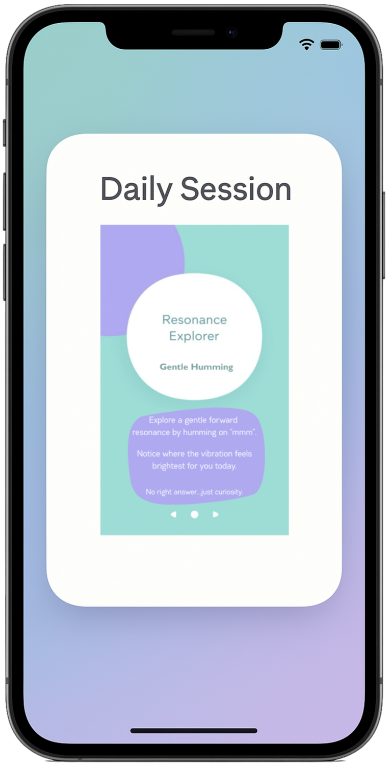
The artefact is further shaped by a substantial body of contemporary voice science, particularly research exploring how listeners perceive gender in voices, and how acoustic–physiological events influence those perceptions. These studies collectively support the artefact's emphasis on resonance, placement, clarity and flexibility rather than prescriptive pitch-based goals.

Research consistently identifies fundamental frequency (f0) as a strong cue in gender perception; however, formant frequencies (F1–F3), vowel shape, clarity and articulatory precision also contribute substantially to gendered judgements (Houle & Levi, 2021; Gallena et al., 2018). Importantly, these studies highlight that gender perception operates along a spectrum rather than binary classifications, and that listeners respond to multiple interacting acoustic cues—even when these cues are subtle.

The findings of Leyns et al. (2024) are particularly relevant. Their study demonstrates that short-term articulation exercises such as lip spreading or cork articulation can increase perceived femininity in speech without reliably altering vowel space. Listener perceptions improved despite inconsistent acoustic change, suggesting that clarity, resonance direction and articulatory engagement influence perception in ways not always captured by traditional measurements. This supports the artefact's use of gentle, exploratory articulation and resonance tasks that prioritise sensation and exploration without prescribing specific outcomes.

Similarly, Brennan et al. (2025) demonstrate that listeners across diverse identity groups perceive voice gender in broadly similar ways; however, LGBT+ listeners employ more varied descriptive vocabularies. This insight supports the artefact's inclusion of open-ended journalling prompts and non-binary descriptors that encourage the development of nuanced personal lexicons. Their rejection of binary categorisation tasks also aligns with the artefact's design of continuum-based reflection tools ('lighter/darker', 'brighter/rounder', 'more centred/less centred') rather than gendered classifications.

Physiological research further underscores the importance of exercising caution in voice training. Hughes et al. (2023) observe increased open quotient in transgender speakers following extended voice training, indicating that some vocal adjustments may produce unintended glottal behaviours. This reinforces the importance of warm-up and cool-down structures, safety notes regarding fatigue, and clear guidance on rest features, all of which are directly embedded within the artefact. Complementing this, Quinn et al. (2023) highlight diverse user experiences in intensive voice training contexts, noting that while some value rapid progress, others experience overload or emotional strain. Their findings validate the app's flexible, user-paced structure and the decision to avoid gamified "streaks" that may induce shame or coercive pressure.



A functional, non-gendered exercise cue illustrating resonance exploration. Highlights sensory noticing, curiosity and inclusive pedagogy aligned with ASSEMBLE.

Collectively, contemporary voice science provides a robust theoretical basis for prioritising resonance exploration, articulatory clarity, and sensory–motor awareness, while maintaining trauma-aware, non-coercive pedagogical structures. These principles are embedded within the artefact's exercise packs and reflective tools.

Digital Pedagogy and User-Centred Design

The app's digital structure is grounded in established frameworks from user-centred design, accessibility standards and digital pedagogy. Norman's (2013) work on affordances emphasises the importance of intuitive interaction design, where functionality is perceivable without explicit instruction. This principle informs the app's simple navigation, minimal screen transitions, and clear progression from warm-up to focus exercise to cool-down. Nielsen's (1994) heuristic evaluation model further reinforces the need for consistency, visibility, error prevention and flexibility, which shaped decisions such as clear icon labelling, optionality in session types, low cognitive load per screen and accessibility options including high colour contrast and captioning.

Digital pedagogy research additionally stresses the importance of designing tools that support autonomy, reduce cognitive load and enable self-directed learning. For TGNC users, whose experiences may include fatigue, dysphoria, or complex emotional relationships with their voices, these principles are particularly significant. As Quinn, Oates and Dacakis (2023) note, 'If a trans individual feels their voice does not reflect their gender or align with their goals for gender presentation, then this can be a source of significant ongoing psychological unease or distress.' Recognising this emotional and embodied sensitivity, the artefact avoids coercive engagement strategies such as streaks or rigid daily targets. Instead, it offers gentle, compassionate reminders and optional reflective prompts, supporting users in engaging at a pace that honours their fluctuating capacities.

This approach aligns not only with inclusive pedagogy but also with trauma-informed design practices that emphasise psychological safety, user pacing and choice architecture.

Furthermore, the integration of digital journalling supports metacognitive learning, enabling users to track embodied changes, note emotional responses and refine their own goals. These elements are framed through identity-affirming microcopy that reinforces user autonomy and rejects normative expectations. In combination, these digital design principles contribute to an artefact that is accessible, affirming and grounded in ethical, inclusive practice.



A short wellbeing-style microcopy example designed to reduce cognitive load, normalise rest, and support trauma-informed, user-led pacing in digital environments.

Practice-Led Research and Designerly Ways of Knowing

Finally, the methodological orientation of the artefact is informed by practice-led research frameworks that conceptualise creative processes as valid sites of knowledge production. Nelson's (2022) tripartite model of Know That, Know How and Know What provides the analytical structure for this component, positioning the artefact as a means of exploring and generating theoretical, practical and conceptual knowledge. Smith and Dean (2009) similarly argue for iterative cycles of action and reflection as core to creative enquiry. These cycles—drafting, testing, reflecting, and refining—characterise the development of the app, where early versions of exercises, user flows and safety notes prompted re-engagement with literature and subsequent redesign.

Cross's (2006) conception of "designerly ways of knowing" further elucidates this process. Cross identifies design as an abductive, iterative mode of enquiry in which knowledge emerges through the making and remaking of artefacts. This perspective legitimises the prototype's role as both a research product and a research process, where each stage of development surfaces new pedagogical questions and informs reflective refinement. The progression of the warm-up sequence, resonance packs, and journalling components

exemplifies this: each was shaped through a combination of practitioner insight, theoretical grounding and design experimentation.

Taken together, these theoretical frameworks establish the conceptual and epistemic foundation of the artefact. The subsequent sections examine how these ideas were operationalised through practice (Know How) and embodied within the artefact's structure, content and conceptual scope (Know What). These frameworks collectively reflect widely accepted methodological approaches within creative practice research, where the artefact operates simultaneously as method, outcome and site of enquiry (Nelson, 2022; Smith & Dean, 2009).

KNOW HOW — Procedural and Embodied Knowledge

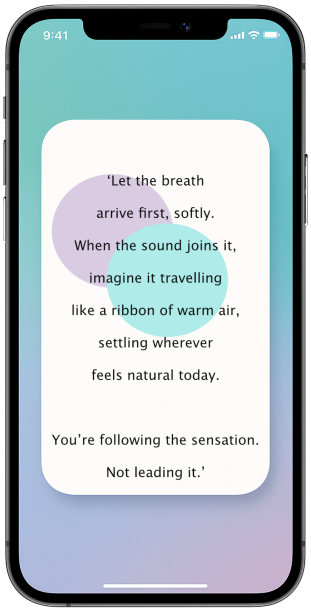
Practitioner Knowledge and Embodied Expertise



An example of practitioner-informed cues demonstrating the evolution from directive, technique-focused instruction (BEFORE) to a more metaphor-rich, invitational cue (AFTER) that supports sensory awareness and user autonomy

The creation of the artefact was deeply informed by my professional experience as a voice coach, actor, director and pedagogue. Procedural knowledge developed through years of working with performers—particularly those navigating identity, embodiment and expressive authenticity—played a central role in shaping the app's sequencing, tone and instructional style. Voice practice is inherently embodied and relational; expertise emerges through iterative encounters with students' needs, challenges and breakthroughs. The artefact therefore reflects a tacit but rigorous exploration and operationalisation of practitioner knowledge of how performers typically engage with warm-ups, regulate pacing, respond to resistance, and integrate new sensory-motor patterns into expressive practice.

This embodied practitioner knowledge influenced decisions such as keeping warm-ups short and fully accessible, ensuring that cueing remained invitational rather than prescriptive, and designing exercises that emphasise felt experience rather than external



A further example of a practitioner-informed cue illustrating the use of metaphor-rich, invitational language.

targets. Traditional actor training emphasises exploration through play, imagery and embodied presence; these principles informed the creative tone of the exercise packs, which aim to support curiosity and intuitive noticing rather than correction. Professional experience also highlighted the importance of predictable structure, including warm-up, focused task, cool-down, and reflection, to scaffold users' engagement and create a psychologically safe environment for exploration.

The artefact additionally reflects procedural knowledge regarding the emotional labour involved in voice training. Many performers experience critical inner narratives, perfectionistic impulses or vulnerability when engaging with vocal exploration. This awareness directly shaped the Safety & Care section, which reinforces pacing, rest, autonomy and emotional grounding as integral parts of the process, rather than optional add-ons or afterthoughts

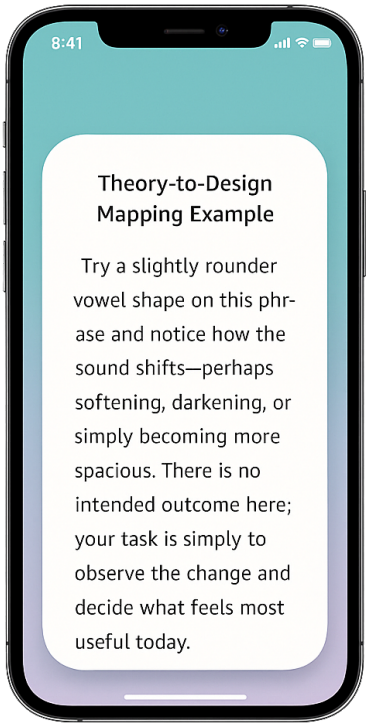
Iterative Cycles of Design and Refinement

The artefact evolved through a series of iterative design cycles characteristic of practice-led and design-led enquiry. Early drafts of the warm-up sequence, resonance exercises, and journalling prompts served as exploratory prototypes, generating new questions and highlighting gaps that required further theoretical engagement. These cycles mirror Smith and Dean's (2009) account of creative research as an ongoing dialogue between action and reflection, where the artefact continually reshapes the enquiry itself.

The first cycle involved translating inclusive voice pedagogy principles into digital formats. Initial drafts revealed challenges around maintaining nuance and flexibility without overwhelming users with information. This led to a refinement phase focused on clarity, pacing, and microcopy tone—ensuring that the app preserved the spirit of inclusive pedagogy without replicating the density of an academic text. A subsequent cycle responded to acoustic–perceptual research: findings from Leyns et al. (2024) and Gallena

et al. (2018) prompted the expansion of resonance and articulation options within the exercise packs, while also reaffirming the decision to avoid pitch-targeted exercises.

Further iterations addressed ethical tensions inherent in digital voice training for TGNC users. Initial considerations included the possibility of gamification to support engagement; however, reflective analysis informed by trauma-aware pedagogy, user autonomy principles and Quinn et al.'s (2023) findings regarding emotional strain led to the decision to exclude streak-based mechanics altogether. This shift required reimagining the reminder system at a conceptual level, a pivot that moved it towards compassionate, optional, and user-paced prompts rather than performance-driven reinforcement.



The text invites the user to experiment with a rounder vowel shape and observe acoustic–perceptual changes. This example demonstrates how empirical research on formants, clarity and resonance is operationalised into non-gendered, user-led exploration within the artefact, aligning with inclusive, functional cueing practices.

Subsequent concept iterations integrated principles from user-centred design theory. Draft session flows were simplified, reducing the cognitive load required to begin practice, and initial layout concepts were refined to emphasise clarity and emotional safety. Reflection prompts were shortened and softened to protect psychological well-being, guided by both inclusive pedagogical literature and practitioner experience. At each stage, these design-on-paper refinements were anchored simultaneously in scholarship and reflective practice, ensuring that even in its conceptual form, the artefact remained ethically grounded, theoretically coherent and sensitive to the needs of TGNC users.

One illustrative example of this process involved redesigning the Safety & Care entry screen. Early drafts adopted a conventional 'terms and conditions' style layout with dense text blocks outlining risks, rest advice and support options. On reflection, this format risked overwhelming users at the very point where reassurance was most needed. Drawing on ASSEMBLE's emphasis on agency and safety, together with trauma-informed design principles and Quinn et al.'s (2023) findings regarding emotional strain in intensive training contexts, the screen was restructured into short, visually separated statements with clear headings (for example, 'You can pause', 'Your pace is valid', 'Support if you

need it'). The microcopy was softened to invitational language, and the hierarchy was reversed so that messages about choice and permission appeared before any discussion of risk. This single design turn exemplifies how procedural decisions were repeatedly reworked to operationalise inclusive pedagogy at the level of tone, layout and user flow.

Integrating Literature into Procedural Design Decisions

A key aspect of procedural knowledge in this project involved the systematic integration of theoretical, empirical and practitioner literature into concrete design decisions. The ASSEMBLE framework informed the overall structure of user experience: Agency prompted the inclusion of flexible session navigation; Safety shaped warm-up and cool-down sequencing and guided the wording of rest prompts; Embodiment influenced the use of sensory descriptions; Meaning-making shaped the journalling tools; Listening and Biocultural Context informed the use of neutral, non-gendered language that acknowledges diversity in vocal habitus.

Evidence-based pedagogy (Ragan, 2018) shaped the explicit rationale embedded in exercise cards, including short descriptions of what each task supports. Instead of instructing users to 'achieve' a quality, exercises transparently communicate the function of each exploration, aligning with Ragan's principle of pedagogical clarity. Likewise, research demonstrating the influence of formants and articulation clarity on gender perception (Houle & Levi, 2021; Leyns et al., 2024) informed the inclusion of placement and texture exercises that explore these qualities without implying normative outcomes.

Digital pedagogy literature and heuristic models (Norman, 2013; Nielsen, 1994) further shaped procedural decisions. For example, Norman's emphasis on perceivable affordances guided the choice to keep navigation pathways minimal and clearly signposted. Nielsen's principles informed decisions to maintain consistency across exercise card layouts, limit the cognitive load per screen, and ensure that visual affordances matched functional behaviour. Accessibility considerations (including transcript availability, captioning and high-contrast options) were also integrated procedurally.

Research on TGNC voice experiences (Quinn et al., 2023) influenced the removal of coercive mechanics, the inclusion of emotion-aware journalling prompts, and the framing of all instructions as explorations rather than corrections. The decision to use only neutral descriptors emerged directly from findings that continuum-based language better reflects the perceptual nuance found among LGBT+ listeners (Brennan et al., 2025).

Ethical and Trauma-Informed Procedural Choices

Ethical considerations shaped every stage of procedural design. A trauma-informed approach recognises that TGNC users may carry histories of dysphoria, misgendering, medical gatekeeping or negative vocal experiences that influence emotional safety. This awareness informed decisions to prioritise choice, agency and gentle pacing. The artefact avoids prescriptive outcomes, directive language and high-pressure progress tracking, instead emphasising autonomy and flexibility.

The Safety & Care section explicitly foregrounds consent, rest and self-regulation. Users are encouraged to pause, skip, or adapt exercises according to their current physical, emotional and cognitive state. This not only reflects inclusive pedagogy but also aligns with trauma-informed design principles that emphasise user sovereignty over pace and intensity.

The decision to include grounding techniques, supportive microcopy and optional reflective prompts further reflects procedural knowledge of how voice work can surface complex emotions. Journalling prompts are crafted to validate a full range of experiences—curiosity, tension, surprise, discomfort, ease—while avoiding language that implies failure or expectation. Instead, prompts support meaning-making and embodied noticing consistent with ASSEMBLE principles.

Finally, ethical considerations influenced the app's boundary-setting during onboarding. Users can select their pronouns or opt not to disclose them; they can articulate goals in broad, expressive terms rather than focusing on gendered outcomes; and they can choose accessibility preferences that support their sensory, emotional, and cognitive needs. These

procedural decisions ensure that the artefact remains respectful, identity-affirming and grounded in the realities of TGNC users' lived experiences.

KNOW WHAT — Factual and Conceptual Knowledge Embodied in the Artefact

Conceptual Content Embedded in the Artefact

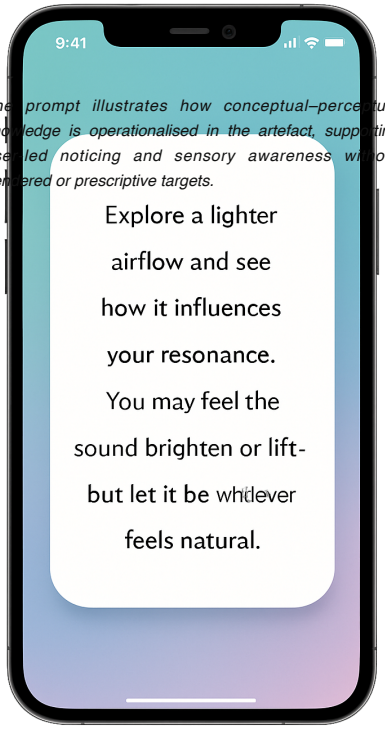
The artefact encapsulates a series of interwoven conceptual domains that collectively constitute a coherent model of inclusive voice training and demonstrate how conceptual knowledge has been explored and operationalised through design. These concepts emerge not as isolated technical skills but as relational, embodied, and contextually situated forms of knowledge grounded in current scholarship. Central among these is the shift from gendered vocal targets to functional descriptive categories, for example, *forward resonance, lighter onset, rounder vowel shape,* and *clearer articulation*, which support sensory awareness rather than prescriptive outcomes. This conceptual reframing is underpinned by acoustic–perceptual research demonstrating that listeners' judgments of gender operate along nuanced continua (Brennan et al., 2025) and that formant structure, clarity, and resonance direction significantly influence perception (Leyns et al., 2024; Gallena et al., 2018).

A second conceptual domain is the structuring of vocal practice as a cyclical process comprising warm-up, targeted exploration, cool-down and reflection. This sequence reflects established voice pedagogy that recognises vocal load management, physiological readiness and post-exploration down-regulation as essential components of sustainable practice (Ragan, 2018). The artefact's warm-up and cool-down sequences embed factual knowledge regarding breath flow, muscle tension, vocal loading patterns and the role of gentle semi-occlusion in preparing and stabilising phonation.

The artefact also integrates conceptual knowledge related to trauma-aware and culturally responsive pedagogy. These include: the necessity of user-led pacing, the rejection of binary descriptors, the recognition of diverse embodied histories, and the framing of voice as a co-constructed phenomenon shaped by culture, identity and interpersonal dynamics (Azul & Quoresimo, 2022). Such principles are operationalised through the Safety & Care

section, supportive microcopy, and non-coercive goal-setting features.

Digital pedagogy concepts further inform the artefact, particularly those relating to accessible interaction design, cognitive-load reduction and the use of reflective journalling to deepen metacognitive learning. These elements collectively support a conceptual model of voice practice that centres curiosity, autonomy, sustainability and identity-affirming exploration.

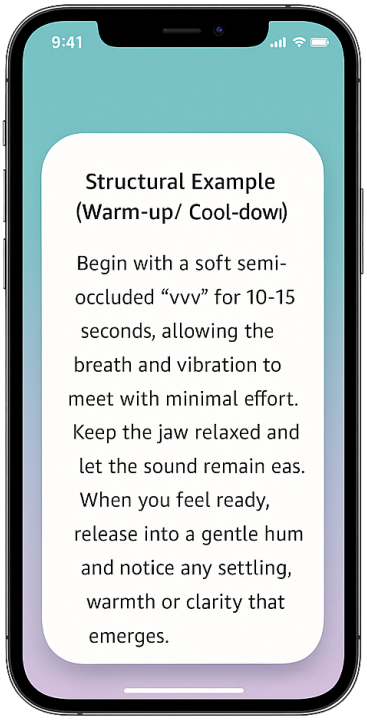


The prompt illustrates how conceptual–perceptual knowledge is operationalised in the artefact, supporting user-led noticing and sensory awareness without gendered or prescriptive targets.

Translation of Conceptual Knowledge into App Structure

The artefact's conceptual foundations are materially embedded in its structural organisation, demonstrating how factual and theoretical knowledge informed concrete design decisions. The daily session structure operationalises vocal load management principles by offering short, manageable sessions (typically 8–12 minutes), which align with research indicating that sustainable training for TGNC populations requires gentle pacing and low-intensity exploration to minimise fatigue (Hughes et al., 2023).

The warm-up sequence incorporates breath-focused exercises, gentle semi-occluded tasks and embodied loosening movements, reflecting factual knowledge about respiratory–phonatory coordination and its importance in preparing the voice without inducing strain. Similarly, the cool-down sequence integrates resonance de-intensification, stretch release and grounding techniques, drawing on established principles of parasympathetic regulation and vocal recovery.



The prompt demonstrates how physiological and procedural knowledge—such as reduced vocal fold collision, ease of onset, and gradual activation—underpins the artefact's session design. This example illustrates how evidence-informed warm-up structures are operationalised to support safe, sustainable voice use for trans and non-binary users.

The exercise packs embody conceptual distinctions between resonance, articulation, texture, intonation, and embodied expressivity. These distinctions stem from acoustic research that demonstrates the multifaceted nature of vocal perception. By grouping exercises according to conceptual domains rather than gendered outcomes, the artefact offers users a structured yet flexible system that supports exploratory learning.

The journalling system translates reflective pedagogy into a digital format, enabling users to capture embodied noticing, emotional responses, and shifts in confidence or sensory awareness. This reinforces conceptual understanding by encouraging users to articulate their experiences in their own vocabulary—an approach supported by Brennan et al. (2025), who found that LGBT+ individuals employ a broader lexical range when describing vocal qualities.

The app's choice architecture operationalises ASSEMBLE-based principles: users select goals framed around expression, grounding or exploration rather than identity transformation; they decide when and how long to practise; and navigation remains non-linear, allowing for autonomy rather than curriculum-driven progression.

These design choices collectively demonstrate how conceptual frameworks have been translated directly into app architecture, reinforcing the artefact's grounding in factual, evidence-based knowledge.

Evaluation Against Aims and Objectives

Evaluating the artefact against the SMART objectives established in Component 1 demonstrates the extent to which factual and conceptual knowledge has been realised.

Objective 1: Synthesising literature into a design brief.
This objective has been fully met. The design brief draws together inclusive pedagogy, ASSEMBLE principles, evidence-based voice science, acoustic–perceptual research and user-centred design theory. These sources have been synthesised into a coherent conceptual framework that guides the artefact's paper-based development. Although the artefact is not yet implemented digitally, the conceptual alignment demonstrates a successful translation from theoretical synthesis to structured design intentions appropriate for Module 5.

Objective 2: Producing a Product Requirements Document.
The PRD outlines the key conceptual requirements for the future build of the app, including accessibility parameters, session flow, user safety considerations, microcopy tone and content sequencing. These elements reflect trauma-informed pedagogy, user autonomy and cognitive-load reduction. At this stage, the PRD serves as an evolving conceptual scaffold rather than a technical specification, and remains open to expansion as the artefact progresses into prototyping in Module 6.

Objective 3: Developing low-fidelity wireframes.
Low-fidelity wireframes were created in sketch and draft form to explore how key conceptual principles—simple affordances, clear navigation, and minimal cognitive load—

might translate into a visual structure. These wireframes remain at a preliminary, design-on-paper stage, serving as conceptual mappings rather than functional layouts. This objective is considered met at the Module 5 level, with further refinement and digital prototyping planned for Module 6 through usability testing and iterative evaluation.

Objective 4: Drafting 20 exemplar exercise cards.

Twenty exemplar exercise cards have been drafted in textual form as conceptual prototypes. These exercises demonstrate strong alignment with theoretical and pedagogical principles across resonance, articulation, breath flow, texture, intonation and embodied expressivity. They use functional, neutral terminology grounded in inclusive voice pedagogy and acoustic research. This objective is fully met at the conceptual level, with digital formatting and multimedia integration planned for later stages.

Objective 5: Constructing an evaluation rubric mapped to Nelson (2022).

The evaluation rubric based on Nelson's Know That / Know How / Know What framework has been produced and informs the analytical structure of this review. It currently operates as a conceptual evaluation tool, designed to assess alignment between the artefact's intended principles and its developing components. This objective is fully met for Module 5, with further refinement anticipated once user testing and higher-fidelity prototyping begin in Module 6.

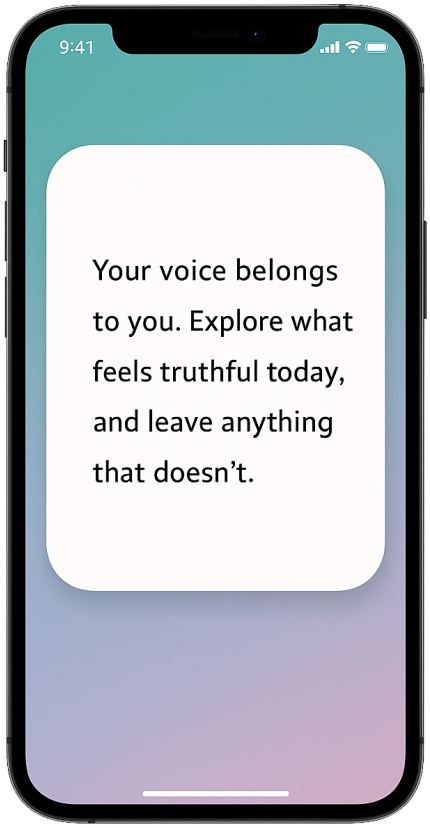
Across all objectives, the artefact demonstrates strong integration of factual, conceptual and theoretical knowledge. Remaining developments, including higher-fidelity wireframes, expanded PRD details, and digital prototyping, are appropriately deferred to Module 6, when empirical user insights and iterative testing can provide meaningful guidance for further refinement.

Potential Impact on Professional Practice

The artefact has the potential to make a meaningful contribution to voice pedagogy, actor training and the wider performing arts landscape by operationalising inclusive, sustainable and ethically grounded practice within an accessible digital format.

For TGNC actors, the app offers a rare, non-clinical, and non-normative resource that affirms autonomy and agency. It offers structured support without imposing prescriptive trajectories, making vocal exploration more accessible outside of institutional or clinical settings. This may facilitate greater confidence, self-expression and creative participation.

For voice pedagogues, the artefact presents a model of how inclusive and trauma-informed principles can be integrated into teaching materials. Its functional vocabulary and spectrum-based descriptors may support broader shifts away from gendered voice language, promoting more ethical and responsive pedagogical norms.



A digital mock-up of the prototype mobile app interface. The text exemplifies autonomy-supportive, non-coercive language aligned with inclusive and trauma-informed pedagogical principles.

For training institutions, the artefact offers a proof of concept for integrating digital tools into curricula in ways that centre identity safety, accessibility and cultural responsiveness. Its design principles could inform institutional policies on inclusive practice, while its content may complement traditional classes with self-directed, flexible training options.

For example, a drama school might integrate the app into a first-year voice curriculum by inviting TGNC actors and any other interested students to use a short daily session before studio classes. Tutors could then draw on the app's functional vocabulary and reflective prompts during contact time, explicitly linking in-room exercises to the same principles of autonomy, non-gendered description and sustainable pacing. Similarly, an independent voice coach could recommend specific exercise packs as between-session support, using the journalling entries as optional discussion prompts in tutorials. In both cases, the artefact functions less as a replacement for teaching and more as a scaffold that extends inclusive, identity-affirming practice into learners' own daily rhythms.

For the wider creative sector, the artefact contributes to the ongoing reshaping of vocal norms in performance contexts. By foregrounding autonomy, embodied awareness and expressive diversity, it challenges longstanding assumptions about 'standard' or 'neutral'

voices and encourages the development of training practices that reflect the diversity of contemporary performers.

Ethically, the artefact reinforces the importance of non-coercive, sustainable and identity-affirming practice at a moment when TGNC visibility is expanding within the arts yet met with ongoing structural challenges. Its emphasis on safety, choice and embodied agency has the potential to influence not only voice pedagogy but broader conversations about representation, wellbeing and creative inclusion.

Conclusion and Future Directions

The development of this artefact demonstrates how inclusive voice pedagogy, contemporary acoustic–perceptual research, trauma-informed practice and user-centred digital design can be explored and operationalised through the creation of a coherent, ethically grounded tool for trans and non-binary performers. Through the integration of ASSEMBLE principles, evidence-based pedagogical frameworks and accessible digital design, the app provides a practical resource that centres autonomy, safety, embodiment and exploratory learning. The iterative, practice-led methodology ensured that theoretical insight continually informed design choices, while the design process itself generated new pedagogical questions and refinements, exemplifying the cyclical nature of creative research.

The artefact successfully embodies the project's aims: to create a sustainable, non-coercive, non-gendered resource that supports authentic vocal exploration and reflects contemporary understandings of voice as a dynamic, biopsychosocial phenomenon. By embedding factual and conceptual knowledge into warm-up structures, exercise packs, reflective tools and supportive microcopy, the app offers both a training guide and an accessible pedagogical model for inclusive voice practice. However, the current iteration is inevitably limited by the absence of empirical user feedback, the constraints of low-fidelity prototyping, and the reliance on literature-derived user modelling, all of which will be meaningfully addressed in Module 6 through structured usability testing.

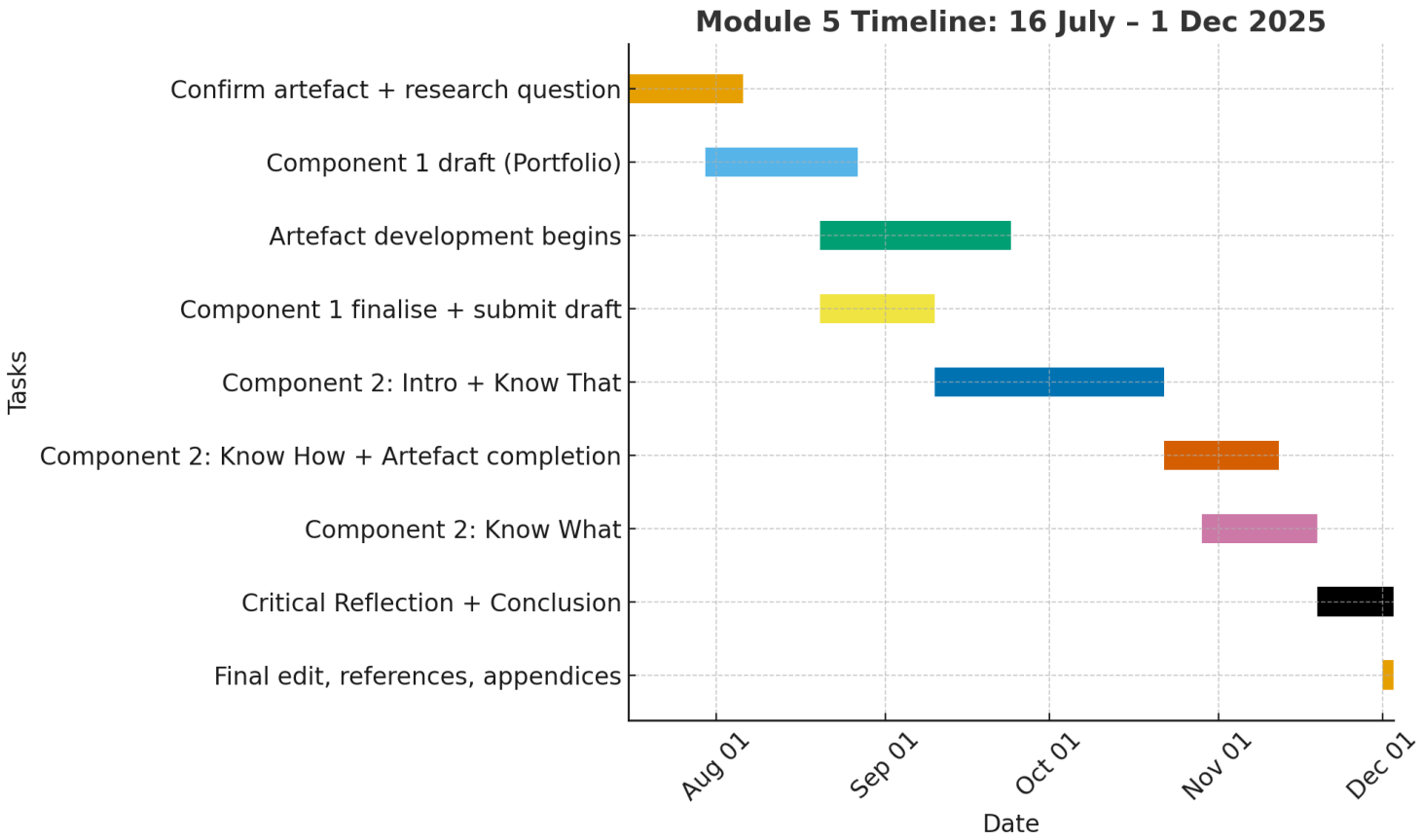
Looking forward, future development will focus on deepening user interaction through empirical testing in Module 6. Usability trials will assess navigation flow, cognitive load, microcopy clarity and emotional safety, enabling refinement based on real-world user experiences. Additional expansions could include adaptive pathways for varied user goals, extended resonance libraries, multimedia demonstrations and bespoke accessibility options informed by neurodiversity research.

Finally, the artefact holds significant potential for broader impact within performance training, offering a scalable model for ethically informed, identity-affirming digital pedagogy.

Its ongoing evolution will continue to reflect the reciprocal relationship between research, practice and creative design that underpins this study.

Appendix A:

Module 5 Timeline: Project Development 16 July to 1 December 2025



This Gantt chart maps the chronological structure of Module 5, showing the phased progression from initial research question confirmation through Component 1 drafting, conceptual artefact development, and the iterative construction of Component 2.

The schedule concludes with dedicated periods for critical reflection and final editorial work ahead of submission.

Appendix B:

Overview of the ASSEMBLE Framework

(Azul & Quoresimo, 2022)

ASSEMBLE is a conceptual framework developed by Azul and Quoresimo (2022) to guide inclusive, culturally responsive voice pedagogy for transgender and gender-diverse learners. Although not a letter-by-letter acronym, ASSEMBLE captures a cluster of interconnected principles that foreground:

- ☑ **Agency** – learners maintain control over goals, choices and vocal identity exploration.
- ☑ **Safety** – emotional, physical and psychological safety is prioritised through trauma-informed practice.
- ☑ **Self-determination** – the learner's lived experience and identity knowledge are central.
- ☑ **Embodiment** – recognition of the body as a site of cultural, social and biocultural experience.
- ☑ **Multidimensionality** of Voice – pitch, resonance, intonation, articulation, breath and communication patterns are addressed holistically rather than hierarchically.
- ☑ **Biocultural** Perspectives – teaching acknowledges how biology, environment, culture and socialisation intersect to shape vocal possibilities.
- ☑ **Linguistic** and Sociocultural Context – language use, accent, listener expectations and societal norms influence voice work.
- ☑ **Ethical** responsiveness – pedagogy is flexible, non-pathologising and attentive to learner wellbeing.

Relevance to the artefact:

ASSEMBLE informs the design of the prototype app by shaping its use of inclusive language, the sequencing of warm-ups and exercises, the integration of reflective journalling, and the development of clear safety notes. It reinforces the project's

commitment to autonomy, sustainability and culturally responsive practice.

Appendix C:

PRODUCT REQUIREMENTS DOCUMENT (PRD)

PRODUCT REQUIREMENTS DOCUMENT (PRD)
Prototype Mobile Voice Training App

Product Overview

Purpose
This prototype mobile app offers a gentle, accessible, and affirming space for trans and non-binary actors to explore and develop their performance voice. Drawing on inclusive voice pedagogy, trauma-informed teaching and creative mentoring principles, the app provides short, sustainable voice sessions that support expressive freedom, vocal authenticity, and embodied wellbeing.

Problem Being Addressed
Traditional voice pedagogy often assumes binary vocal paths and overlooks the needs, lived experiences and identities of TGNC performers. Access to inclusive, identity-affirming training can also be limited geographically and financially. This app aims to provide a supportive, accessible resource that centres autonomy, safety and creativity.

Target Users
- Trans and non-binary actors (training or professional)
- TGNC people exploring expressive voice for creative or personal reasons
- Actors who prefer flexible, self-paced training
- Learners who benefit from reflective practice and gentle guidance

Approach
The design integrates:

- **Inclusive voice pedagogy** (Azul & Quoresimo, 2022; Azul, 2023)
- **Evidence-Based Voice Pedagogy** (Ragan, 2018)
- **Practice-led design and reflective learning**

- **User-centred design principles** (Norman)
- **Trauma-informed, autonomy-centred pedagogy**
- **Gentle, empowering microcopy inspired by wellbeing design**

Pedagogical Foundations

ASSEMBLE Framework

This app is directly aligned with the ASSEMBLE principles of:

- Agency
- Safety
- Self-determination
- Embodiment
- Multidimensionality
- Biocultural responsiveness
- Linguistic and sociocultural awareness
- Ethical flexibility

Inclusive Voice Pedagogy

- Avoids binary voice categories
- Uses functional, descriptive terms *(e.g., 'forward resonance', 'lower placement option')*
- Encourages exploration over correction
- Rejects normative pathologising phrasing

Evidence-Based Practice (Ragan, 2018)

The app's content balances:

- research literature
- practitioner experience
- individual learner goals

Actor Training Principles

- Warm-up → focused work → cool-down

- Embodied awareness
- Breath, resonance, articulation, pacing
- Creative play and reflective noticing

User Needs & Use Cases

User Needs

- Training that affirms identity
- Gentle, time-efficient sessions
- Clear safety guidance
- Ability to customise goals and pronouns
- A calm, non-judgemental practice environment
- Accessibility adjustments
- Exercises that honour embodiment and pacing

Use Cases

- Pre-rehearsal or pre-audition warm-up
- Daily independent practice
- Gentle recovery after intensive vocal use
- Exploratory sessions for gendered/neutral performance styles
- Self-directed creative research
- Low-spoons practice on difficult days

Core Features

Daily Session

A guided short session including: **Tone**: *soft, encouraging, pressure-free.*

- Warm-up (2–3 minutes)
- Focused Exercise (3–5 minutes)
- Cool-down (1–2 minutes)
- Reflection Prompt (optional)

Tone: *soft, encouraging, pressure-free.*

Library

Contains: **Tone**: *gentle suggestions, not performance pressure.*

- Exercise Packs
- Individual Exercise Cards
- Search/filter by focus *(resonance, breath, intonation etc.)*

Exercise Cards

Each card includes:

- Purpose
- Time
- Step-by-step guidance
- Safety notes
- Variations
- Reflection cue

Safety & Care

Dedicated section including:

1. Rest signals
2. Alternatives
3. Hydration reminders
4. Support links
5. Gentle guidance to stop if distressed or uncomfortable

Goals & Pronouns

Users can:

- ☑ Set goals in their own words
- ☑ Update pronouns freely
- ☑ Change focus as identity evolves

Journalling

Reflective space with prompts linked to ASSEMBLE. For example:

1. ‘What felt supportive to your voice today, and what might it be asking for next?’
2. ‘Did anything surprise you in your sound, breath or sensations today? How did that feel?’

3. ‘Where did you notice ease, warmth or grounding in your voice in this session?’
4. ‘If your voice could speak back to you right now, what would it gently remind you of?’
5. ‘How did your emotional landscape show up in your voice today — and how might you honour that?’

Progress

- Gentle, non-linear display
- Focus on presence, not streak-based achievement

Functional Requirements

Daily Session

- Sequential flow through:
  - **Warm-up → Exercise → Cool-down → Reflection**
- Ability to pause or skip without penalty

Exercise Cards

- Playable audio/video placeholder
- Clear text instructions
- Safe alternative options

Journalling

- Text entry
- Voice note option
- Optional mood tags
- Local storage

Profile

- Edit pronouns, goals, and display name
- Privacy: no sharing

Content Requirements

Language Style

- Gentle, kind, encouraging
- Non-pathologising
- Non-binary, functional voice terminology
- Trauma-informed suggestions
- Creative, reflective tone

Examples:

- ‘Try exploring this.’
- ‘Notice how your breath feels today.’
- ‘If anything feels uncomfortable, it’s absolutely fine to pause.’
- ‘You’re doing enough.’

Exercise Structure

- Purpose
- Steps
- Safety notes
- Timing
- Reflective prompt
- Functional voice description

Accessibility Copy

INCLUDE:

(1) Captions
(2) ALT text guidelines and
(3) Contrast-friendly UI notes

UX & UI Requirements

Navigation

- Simple, uncluttered
- No hierarchical pressure
- Predictable transitions

Accessibility

- Text size

- High contrast option
- Captions on all media
- Screen-reader compatible

Tone

- Soothing colours
- Minimal noise

Ethical Requirements

- Identity-affirming at every stage
- No assumptions about goals
- User is the expert of their own experience
- Gentle guidance without coercion
- Clear boundaries around safety
- Support links for emotional distress
- No diagnostic language

Technical Requirements

(Not implemented in Module 5 but specified here for conceptual completeness)

- Mobile-first
- Content stored locally
- Hybrid offline capability
- Placeholder for audio/video

Success Criteria

- Alignment with ASSEMBLE and inclusive pedagogy
- Coherent UX structure
- Safe, accessible content
- Gentle and supportive tone
- Evidence-based exercises
- Clear reflection and user agency
- Meets all SMART objectives from Component 1

Appendix D:

REFLECTION LOG ENTRIES (sample)

GAMIFICATION

Activity / Decision:

Evaluating whether to include gamification and streak-based progress tracking within the app.

Reflective Analysis:

My instinctive response to streak-driven design was one of caution. Streaks inherently create a dynamic of pressure and shame: when a user misses a day, the system registers a 'break', which can provoke guilt, self-blame, or perfectionistic avoidance. This punitive undertone fundamentally conflicts with the calm, therapeutic-adjacent tone I am cultivating and stands in tension with the app's intended purpose as a gentle and supportive practice environment. For TGNC learners, the emotional risk is amplified. Streak disruptions can intensify dysphoria, trigger performance anxiety, or reactivate trauma-related responses linked to failure, scrutiny, or bodily monitoring. From a neurodiversity-informed perspective, breaks in a streak can feel catastrophic, leading to disengagement rather than re-engagement. These concerns pointed towards a significant ethical misalignment.

Although streaks have perceived benefits—habit formation, visible momentum, and structural clarity that echoes aspects of actor training cultures—these benefits are outweighed by the risks in this context. The motivations they support are fragile, externally driven, and short-lived; their psychological cost can be disproportionate for users who rely on emotional safety, flexibility and non-judgemental space.

The literature strengthened my decision. Azul & Quoresimo's ASSEMBLE framework emphasises agency, safety, and non-coercive pedagogy, placing clear responsibility on the practitioner to avoid mechanisms that undermine autonomy.

Trauma-informed and recovery-oriented voice literature also foregrounds fluctuating capacity, the need for rest, and the avoidance of punitive consistency metrics. Evidence-based teaching (Ragan, 2018) emphasises practices that foster intrinsic motivation, rather than compliance-based reinforcement. Neurodiversity-informed perspectives further caution against rigid gamified systems that can block return-to-practice once disrupted. Taken together, the literature presented a compelling case for a gentler, non-linear model.

The decision to reject streak-based mechanics reflects my core values as a practitioner. It aligns with my commitment to safety, dignity, and identity-affirming pedagogy. It reflects a firm preference for compassionate, autonomy-supportive design that honours varied embodied and emotional capacities. More importantly, it reinforces a trauma-informed, neurodiversity-affirming ethos that places agency above coercion and sees practice not as a metric to be 'tracked', but as a space for exploration, presence and self-connection.

Implications for Practice (Module 6):

This decision will shape the model I test with users. I will explore how non-linear progress displays support motivation without generating shame, and observe how TGNC actors respond to gentle, flexible tracking systems that privilege return rather than continuity. This will guide refinements toward a sustainable, inclusive digital pedagogy.

Beyond this artefact, the same principles are likely to inform how I structure accountability and progress within future coaching and training programmes. I anticipate placing greater emphasis on return-to-practice, cyclical engagement and compassionate tracking mechanisms across my wider voice pedagogy, rather than relying on linear metrics or attendance-based measures of commitment.

SAFETY & CARE NOTES

Activity / Decision:
Drafting the ‘Safety & Care’ section of the app.

Reflective Analysis:
Creating this section required me to bring together inclusive voice pedagogy, trauma-informed practice, and user-centred design in a very deliberate way. My primary intention was to craft a space that felt safe, spacious and agency-centred for TGNC users, many of whom may have experienced vocal work as a site of discomfort, identity conflict, or external scrutiny. As I drafted the guidance, I became increasingly aware of how much emotional and somatic activation voice work can bring up, and how essential it is to build in explicit permission to pause, soften or step away. This deepened my understanding of safety not as an ‘addition’ to pedagogy but as a foundational design principle.

Azul and Quoresimo’s ASSEMBLE model strongly shaped my choices, particularly its emphasis on autonomy, embodiment, and ethical responsiveness. Trauma-informed literature also prompted me to include grounding cues, emotional-regulation strategies and clear indicators of when to pause practice. I realised that safety guidance needed to support not only physical health but also emotional and identity-related wellbeing. This process also affirmed my commitment to non-coercive design: avoiding directive language, offering gentler alternatives, and foregrounding user choice.

What I Learned:
Writing this section reinforced the principle that inclusive voice pedagogy is inseparable from care. Safety cannot be assumed; it must be designed intentionally. The act of drafting this content highlighted the value of slow, compassionate cueing and helped me clarify how digital tools can model ethical, non-binary voice teaching.

Implications for Practice:
This section will guide how I frame exercises, transitions and journalling prompts, and will be a key area for user feedback in Module 6. I will explore how TGNC actors interact with safety cues and whether additional grounding strategies or alternative options are needed.

More broadly, the process of crafting this section has already begun to reshape my in-person teaching practice. I am increasingly foregrounding explicit consent, rest options and grounding strategies at the start of voice sessions, and I anticipate that future workshops and courses will incorporate clearer, more visible Safety & Care framing as a core pedagogical element rather than an implicit assumption.

WARM-UP/COOL DESIGN

Warm-Up Development: Influence, Adaptation, and Ethical Positioning

Designing the warm-up sequence was one of the earliest and most significant creative decisions in this artefact's development. I felt strongly that the first interaction users have with the app should feel safe, spacious, and welcoming, establishing the tone of the entire resource. As I began shaping this component, I drew upon my own experience as a practitioner while also considering the insights offered in Mills and Stoneham's Voice and Communication Therapy for Trans and Non-Binary People (2021). Their work foregrounds embodiment, resonance awareness, and the exploration of vocal function through accessible, low-pressure exercises. However, rather than transferring clinical content directly, I used their principles as conceptual catalysts to inform a warm-up that is original, non-clinical, and shaped specifically for actor training and creative voicework.

What struck me most from their text was the emphasis on physical grounding, gentle breath invitation, and resonance exploration without prescriptive targets—all of which align with my commitment to inclusive, user-led pedagogy. Their use of simple embodied cues, such as rib swings or yawn space, offered a reminder of how effective physical anchoring can be in early stages of vocal engagement. At the same time, their clinical framing reinforced the boundaries of my own practice. While speech therapists use these exercises to address specific therapeutic goals, my context—performance, creativity, and embodied exploration—requires a version that is softer, more open-ended, and oriented towards agency rather than correction. This tension invited me to interrogate not only what to include, but how to include it.

My warm-up sequence therefore emphasises invitation rather than instruction: users 'notice', 'allow', or 'explore', rather than 'achieve', 'correct', or 'fix'. This distinction feels ethically crucial, particularly when designing for trans and non-binary actors. As Mills and Stoneham highlight through participant testimony, vocal change—whether hormone-induced or practice-driven—can involve instability, grief, discovery, and fluctuating access. This complexity required a warm-up that accommodates the full range of embodied experiences without imposing normative expectations. The clinical descriptions of instability, pitch shifts, or

emotional responses during transition reminded me of the vulnerability many TGNC users bring into vocal work. As such, my warm-up intentionally embeds rest options, soft permission, non-linearity, and gentle sensory cues that reduce the likelihood of triggering perfectionism, dysphoria, or self-judgement.

Another reason I avoided directly replicating their clinical exercises was to maintain a clear ethical boundary. My work is not therapeutic, and Module 5 prohibits participant involvement or clinical claims. By designing original exercises grounded in performance pedagogy, I ensured the warm-up stays firmly within the remit of creative voicework: connecting breath, body, and resonance in ways that enhance expressive access without implying medical expertise. For example, I transformed 'smile tone' into a neutral 'resonant hum' that does not imply gendered vocal brightness, and reframed pitch glides as playful 'curves' rather than therapeutic 'passaggi'. These adaptations are small but significant, ensuring that the exercises remain safe while avoiding the binary-coded implications that sometimes appear in therapeutic feminisation/masculinisation work.

Throughout the design process, ASSEMBLE provided a conceptual anchor. The framework's priorities—agency, safety, sustainability, identity awareness, and culturally responsive practice—acted as a checklist for every design choice. Agency was supported by offering options and avoiding outcome-led prompts. Safety was embedded through rest cues and non-strenuous functional work. Sustainability informed the short duration and avoidance of extended glides or challenges early in the session. Identity awareness shaped the neutral language, refusal of binary framing, and acknowledgement that users' needs may shift day-to-day. The 'listening and attuning' aspects of ASSEMBLE also influenced the reflective question at the end of the warm-up, encouraging users to notice their own internal state rather than performing for external expectations.

Creatively, the process illuminated a tension between actor training conventions and TGNC-inclusive practice. Actor warm-ups often emphasise energising, expanding, and 'opening' the body, drawing on traditions that can be physically or emotionally demanding. But inclusive design requires a slower, softer beginning—one that respects dysphoria, binding, fatigue, trauma histories, and fluctuating embodiment. This tension prompted a valuable reframing: the purpose of a warm-up is not to 'prepare the voice for performance' but to prepare the whole person to

meet their voice with care. This reframing has started to influence my wider pedagogical practice beyond the artefact.

Designing the warm-up was a process of synthesising practitioner knowledge, contemporary scholarship, clinical insights, and ethical frameworks. Mills and Stoneham informed the foundational attention to embodiment and resonance, but the final sequence is fully original, crafted for performers rather than clinical contexts, and shaped by ASSEMBLE's emphasis on agency, safety, cultural responsiveness, and self-determined practice. The experience reinforced the central role of inclusive design in TGNC voicework and deepened my understanding of how creative resources can foster both artistic and identity-affirming growth.

These realisations will continue to influence my wider practice beyond the app. I was already aware of the importance of presence and of using warm-ups as a way of checking in with the body and voice, but as a result of this research I have begun approaching warm-ups in rehearsal rooms and classes less as a means of 'gearing up' for performance and more as an opportunity to invite whole-person presence, attunement and consent. This shift towards slower, softer entry points is likely to shape how I design future workshops, institutional modules and digital resources, particularly when working with TGNC and otherwise marginalised performers.

EXERCISE PACK DESIGNING

Designing Packs 1–5 as an integrated suite of voice-training modules highlighted a core realisation: inclusive pedagogy for trans and non-binary actors requires not only ethical content, but coherent, interconnected architecture. Each pack needed to stand alone while also forming a supportive sequence that mirrors how voice, body, breath and identity interact in lived practice.

From a pedagogical perspective, Pack 1 (Resonance Options) and Pack 2 (Placement & Texture) form the foundation of sound exploration—focusing on internal vibration, colour, and acoustic possibility without prescribing gendered categories. These packs emerged as inherently identity-sensitive. Resonance and placement hold psychosocial and aesthetic weight, and therefore need to emphasise curiosity over correction. This reinforced my shift away from performance-centric paradigms toward a user-led, consent-driven approach where sound exploration is grounded in agency.

Pack 3 (Breath & Flow) – though conceptually fundamental – became a bridge between embodied regulation and expressive possibility. Breathwork exposed a tension in my practice: a historical bias toward performance breathwork (support, control) versus the trauma-informed necessity of allowing breath to be small, variable, and self-directed. Breath thus became a meeting point between my traditional actor-training identity and my emergent inclusive pedagogy. Designing this pack helped me reconcile those identities, favouring somatic attunement over performative optimisation.

Pack 4 (Intonation & Expressivity) required me to reconsider the cultural and gendered layers embedded in speech melody. This pack deepened my understanding of prosody as both a communicative and a survival tool—particularly for TGNC users whose expressive patterns may have been shaped by masking, safety strategies, or social policing. Designing this content reinforced the importance of maintaining a gentle, non-stylised approach where expressivity becomes a site of affirmation rather than a behavioural target.

Pack 5 (Embodied Voice) served as the culmination of the suite, illuminating how movement, affect, and physiology underpin all vocal work. Here, embodiment was reframed as choice, intimacy, and grounding rather than performance readiness.

As I shaped this content, I became more attuned to how TGNC experiences of the body can be deeply complex and context-dependent. This prompted a design ethos rooted in micro-movements, consent, and accessibility—shifting embodiment from a demand to an offering.

What became clear across all five packs is that inclusive voice pedagogy is not defined by technique alone. It demands a structural commitment to autonomy, trauma awareness, and cultural responsiveness. The exercise packs collectively reflect a move toward voicework that centres the learner's lived experience, affective state, and self-defined goals.

In creating these packs, I found my own identity as a practitioner shifting: from director and trainer to facilitator, steward, and companion. The artefact design illuminated a new professional value system defined by spaciousness, attunement, and ethical presence. The packs do not simply teach vocal skills—they model a way of being with the voice that honours complexity, fluidity, and the legitimacy of each user's embodied story.

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ARTEFACT

Prototype Mobile Voice Training App — Full Conceptual Build

Overview

This artefact represents the conceptual design of a mobile voice-training application with the purpose of supporting transgender and non-binary actors in developing authentic, expressive and sustainable performance voices. While Module 5 requires the artefact to remain theoretical and paper-based, this section provides a complete, fully realised prototype blueprint including user journeys, design architecture, microcopy, exercise structures, safety systems, interface layout, and pedagogical rationale.

The artefact operationalises inclusive voice pedagogy by embedding the principles of Azul & Quoresimo's (2022) ASSEMBLE model, trauma-informed practice, evidence-based voice pedagogy (Ragan, 2018), and user-centred digital design (Norman, 2013; Nielsen, 1994) into every aspect of the user experience.

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1. User Journeys

1.1 First-Time Onboarding Flow

Welcome Screen
A calm, uncluttered introduction with accessibility toggles:

- High contrast mode
- Text size options
- Audio narration

Microcopy:

'Thank you for being here. This space is yours.'

Pronoun Options

- she/her
- he/him
- they/them
- xe/xem
- custom entry

- ‘Prefer not to say’

Goals (Open Text)
Prompt:
‘In your own words, what would you like your voice to explore or access?’

Accessibility Setup
- Low-spoons mode
- Short-session mode
- Caption default
- Movement-light mode

Consent & Care Screen
Clear non-therapeutic framing and pacing permission.

Outcome: user lands on a safe, identity-affirming Home Screen.

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2. Home Screen

Header: *‘Your Voice, Today’*

Primary Navigation:
1. Daily Session
2. Library
3. Safety & Care

Secondary Navigation:
- Journalling
- Your Goals
- Accessibility
- About

Design is intentionally low cognitive load with high whitespace.

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3. Daily Session (8–12 minutes)

3.1 Warm-Up Example

‘Arriving in the Body’ (2 minutes)

Purpose: grounding breath + gentle resonance
Steps:

- Notice natural breath.
- Gentle nasal hum (‘m’/‘ng’).
- Explore vibration without changing quality.

Reflection:

‘Where did the hum meet you today?’

3.2 Focus Exercise Example

‘Forward / Upward Option’ (3–4 minutes)
Purpose: explore resonance direction without gender framing
Steps:

- Hum, rolling sensation forward.
- Shift from round to brighter vowel shapes.
- Try 2–3 words to feel texture change.

Reflection:

‘Did any texture feel more easeful?’

3.3 Cool-Down Example

‘Soften + Settle’ (1–2 minutes)

- Loose lip rolls
- Gentle downward glide
- Hand-to-sternum grounding

Reflection (optional):

‘What is your voice asking for next?’

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4. The Library (Five Core Packs)

Pack 1: Resonance Options

— Forward, mid, back, light, warm, buzzy, rounded.

Pack 2: Placement & Texture

— Vowel shape, timbre, articulatory engagement, airflow balance.

Pack 3: Breath & Flow

— Regulation, grounding, micro-rests, gentle activation.

Pack 4: Intonation & Expressivity

— Melody, stress patterning, rhythm, emotional nuance.

Pack 5: Embodied Voice

— Micro-movements, grounding, pulse, somatic attunement.

Each pack includes 10–12 exercises built around functional, non-gendered cueing.

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5. Exercise Card Specification

Each card contains:

- ☑ Name
- ☑ Purpose
- ☑ Time
- ☑ 3–6 step sequence
- ☑ Safety notes
- ☑ Variations
- ☑ Reflection prompt

Example:

‘Round the Vowel’ (2–3 minutes)

Purpose:

Explore vowel shaping and resonance

Steps:

Gentle alternation between rounded and widened lips on ‘ah’, ‘oh’, ‘ee’

Reflection:

‘Which shape felt most available?’

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6. Safety & Care System

The Safety & Care area consists of four interactive tiles:

1. **Pause is Allowed**
2. **Listening to Your Body**
3. **Finding Support**

4. **If Emotions Surface**

Content includes:

- Rest signals
- Emotional grounding
- Dysphoria-aware cues
- UK-based support links
- Clear instructions to pause or adapt any exercise

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7. Journalling System

Three journalling modes:

- ⭐ Quick note
- ⭐ Voice memo
- ⭐ Prompted reflection

Prompt bank includes:

'Where did your voice feel most available today?'
'What surprised you in your sound?'
'What changed in your breath?'

Mood tags:

Grounded, Curious, Tense, Energised, Unsure, Neutral.

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8. UX & UI Principles

- ☑ Two-tap maximum navigation
- ☑ No streaks, scores or linear progress
- ☑ High-contrast option always visible
- ☑ Caption-on default available
- ☑ Soft palette (blue–lilac–teal gradient)
- ☑ Icons large and evenly spaced
- ☑ Text at 14–18pt minimum

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9. Evaluation Integration

Nelson's (2022) framework is embedded as follows:

- **Know That:** inclusive pedagogy + voice science

- **Know How:** sequencing, scaffolding, cueing
- **Know What:** exercise packs, warm-ups, UI objects

This provides a structured method for evaluating alignment between theory and operationalised design.

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10. Pathway to Module 6

Next-stage development (Module 6) includes:

- Convertible wireframes into Figma prototype
- Heuristic usability evaluation
- TGNC user testing
- Microcopy refinement
- Low-load animations
- Accessibility adjustments
- Expanded exercise library (Multimedia)

INFORMATION ARCHITECTURE

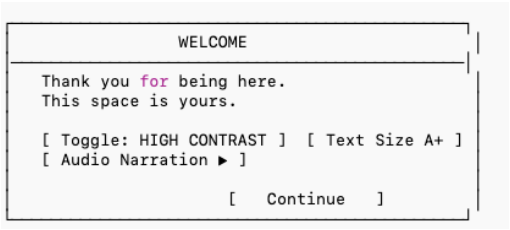
(ASCII DIAGRAM) APP HOME



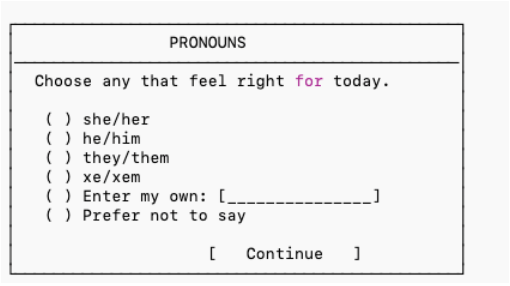
FULL ASCII WIREFRAME SET

1. ONBOARDING FLOW

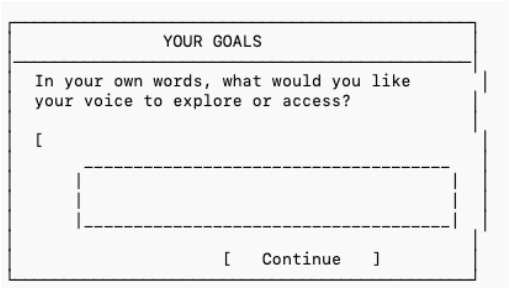
1.1 Welcome Screen



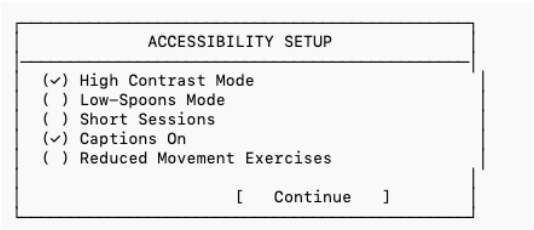
1.2 Pronoun Selection



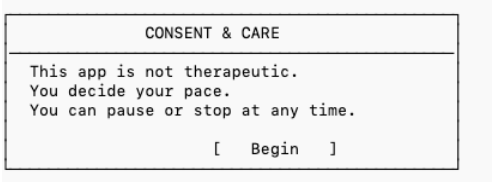
1.3 Goals Input



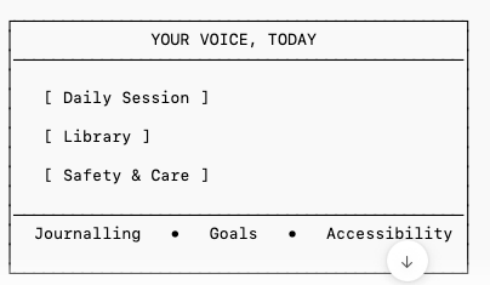
1.4 Accessibility Options



1.5 Consent & Care

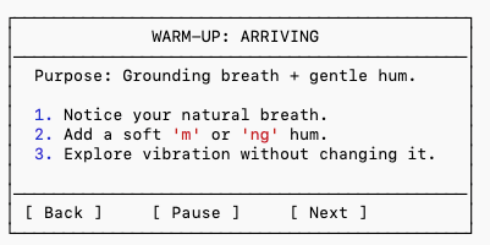


2. HOME SCREEN

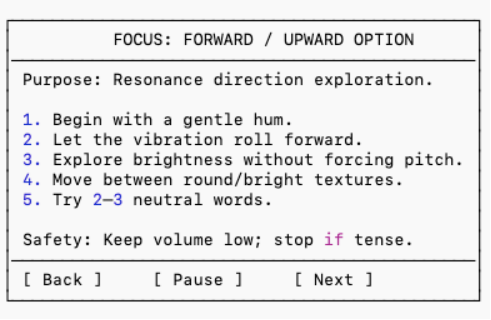


3. DAILY SESSION FLOW

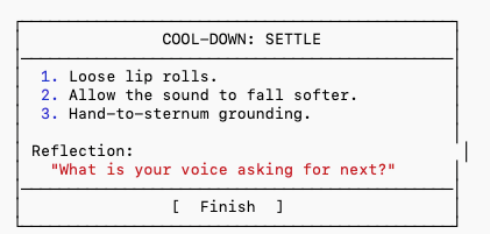
3.1 Warm-Up Screen



3.2 Focus Exercise Screen

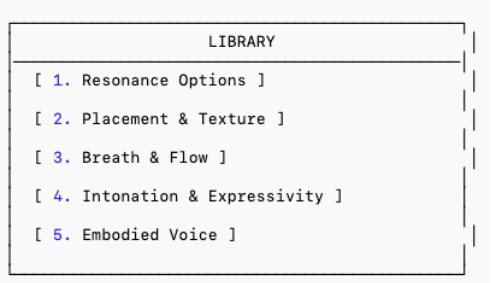


3.3 Cool-Down Screen

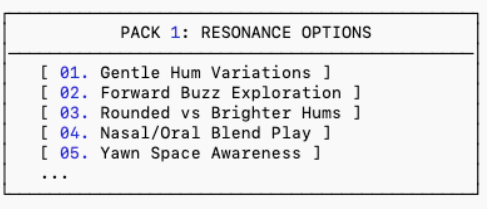


4. LIBRARY

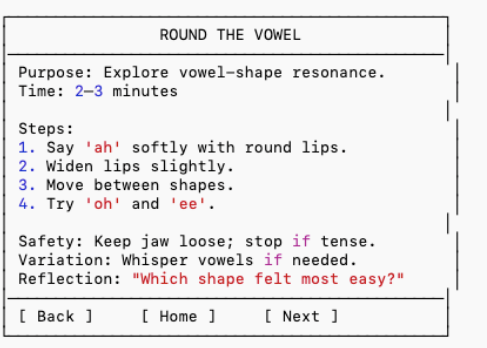
4.1 Library Landing Page



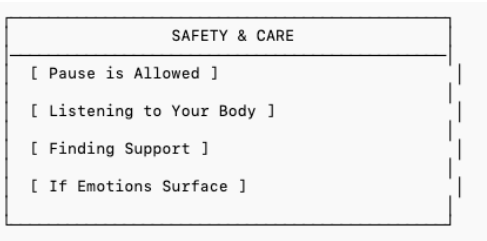
4.2 Individual Pack Screen (example)



5. EXERCISE CARD WIREFRAME

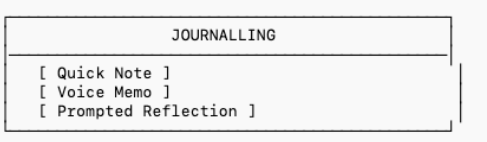


6. SAFETY & CARE SCREEN

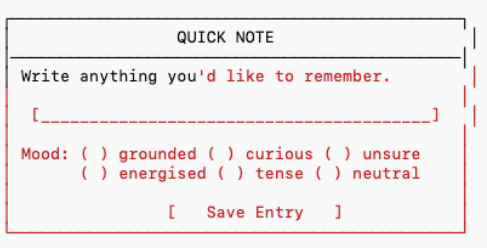


7. JOURNALLING (ALL MODES)

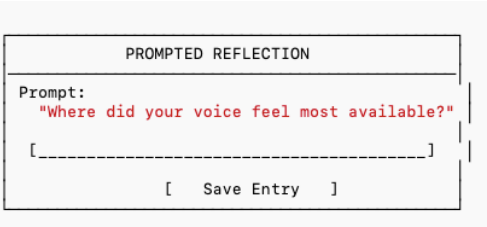
7.1 Journalling Menu



7.2 Quick Note

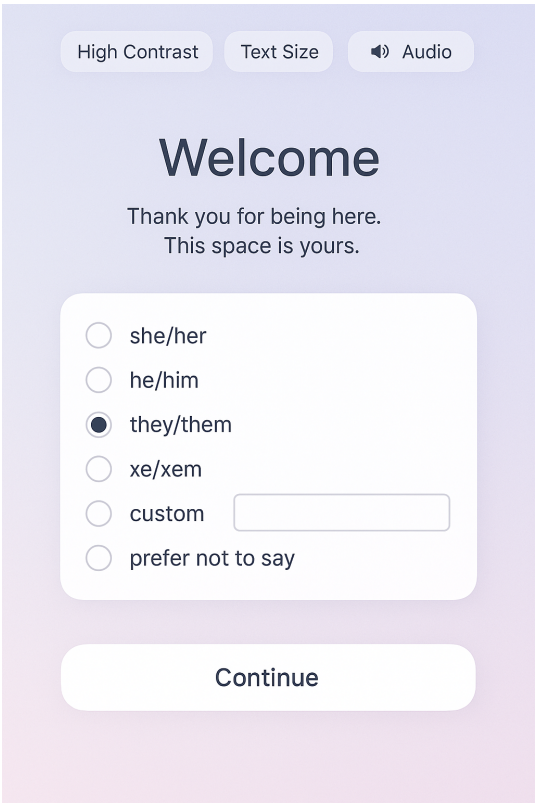


7.3 Prompted Reflection

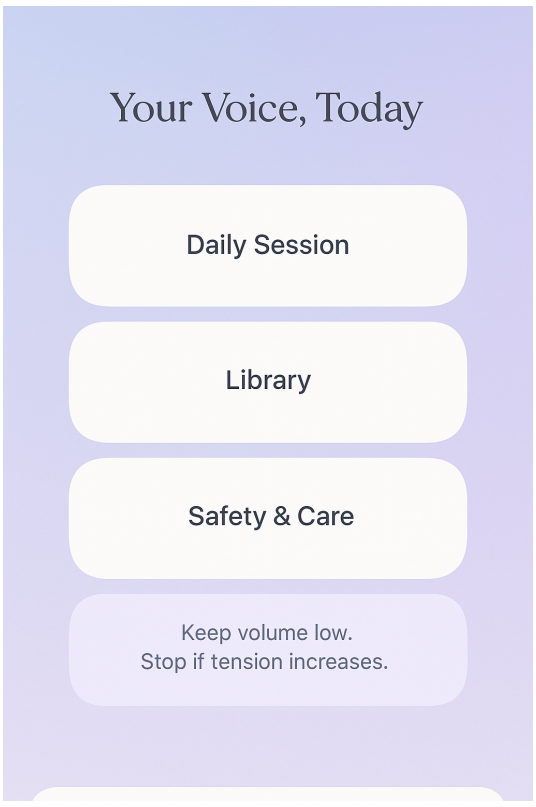


SCREEN LAYOUT EXAMPLE

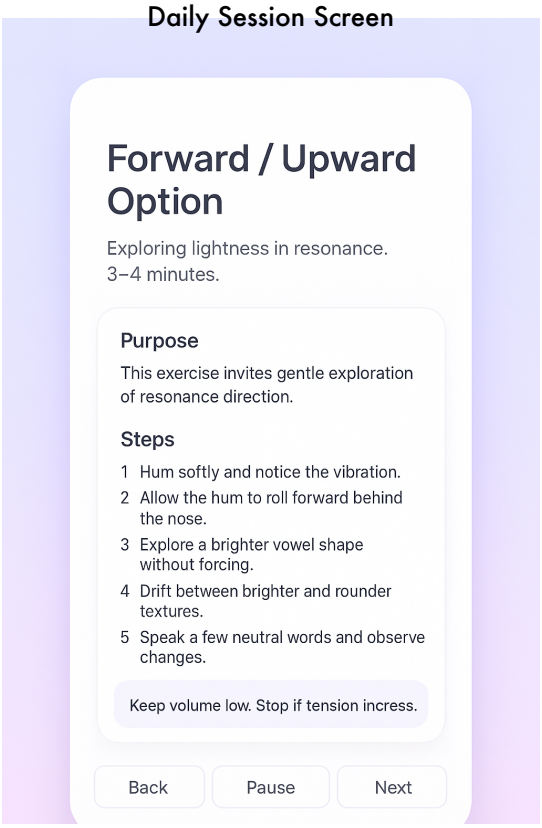
Onboarding Screen



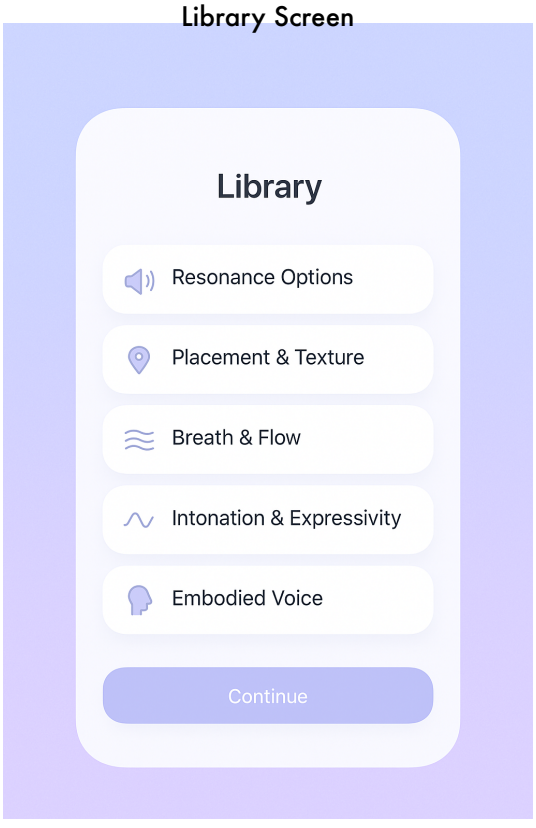
Home Screen



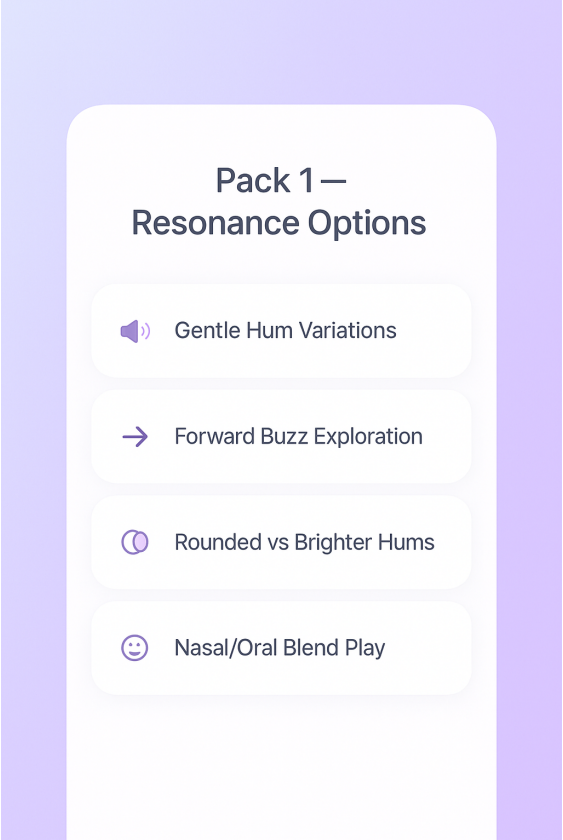
Daily Session Screen



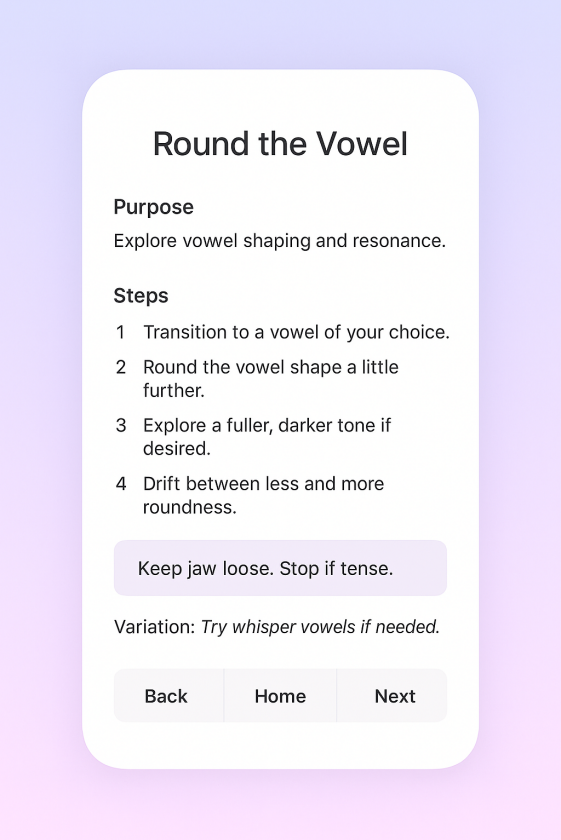
Library Screen



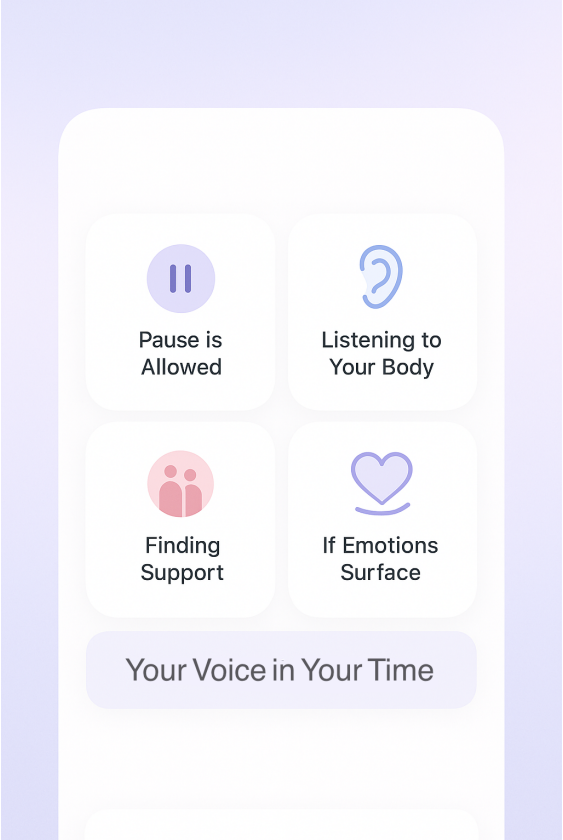
Individual Pack Screen



Exercise Card Screen



Safety and Care Screen



Journalling Screen

