

MODULE 6 - BMPF7329D

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Personalised Pedagogy in Adult One-to-One Voice Education: Implementation and Learners' Perceptions

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PROJECT PROPOSAL

Context

This study will examine pedagogical personalisation in adult one-to-one voice education, often referred to as “applied” lessons. Student-centred learning and personalisation focus on adapting to learners’ different needs (Tomlinson, 2014) and, more specifically, using strategies to help learners achieve goals (Akyuz, 2020). The literature generally presents personalised and student-centred approaches as beneficial to learning. For instance, Che Mat and Jamaludin (2024) observe that they enhance motivation, which Akyuz (2020) states stimulates the learning process. However, generalising what is intended to be individualised remains a challenge. This tension is particularly salient in applied voice lessons, where direct recommendations are scarce (Park, 2022). In response to this gap, this study addresses the following research question: how is pedagogical personalisation enacted in adult one-to-one voice education, and how do students describe their learning experience during a short personalised teaching process? The two strands will then be compared to examine areas of convergence and divergence between enacted personalisation and participants’ experiences. The research will be carried out within the context of my private voice studio.

Because “personalisation” carries shifting and context-bound meanings in the literature (Mincu, 2012), this study adopts the following working definition: personalisation refers to the teacher’s ongoing, context-sensitive design and adjustment of teaching, resources, and support in response to an individual learner, both during and between sessions.

Justification

Clemmons (2006) and Akyuz (2020) identify a tension between generalisation and individualisation. Enacted processes also remain under-theorised in the literature, highlighting a need for greater clarity regarding personalisation. Although this dilemma may be theoretically irresolvable, identifying recurring patterns of individualisation may support greater transferability. Furthermore, participants’ perspectives will provide insight into how enacted adjustments are experienced. This may contribute to the field,

particularly as learners' perspectives remain insufficiently documented (Goffi-Fynn, 2024).

In my professional context, decisions around personalisation are largely intuitive. As a practitioner, I seek to critically examine and articulate these processes. This project supports reflective professional development and contributes to workplace practice. During Module 5, I developed and tested a personalisation framework (see Figure 1 below and Appendix E) using fictional case scenarios. In accordance with Goffi-Fynn's (2024) stance that teachers who engage in reflexive practice can identify patterns within their own practice, I aim to move from intuition to articulation to conceptual clarity and examine how personalisation is shaped in practice.

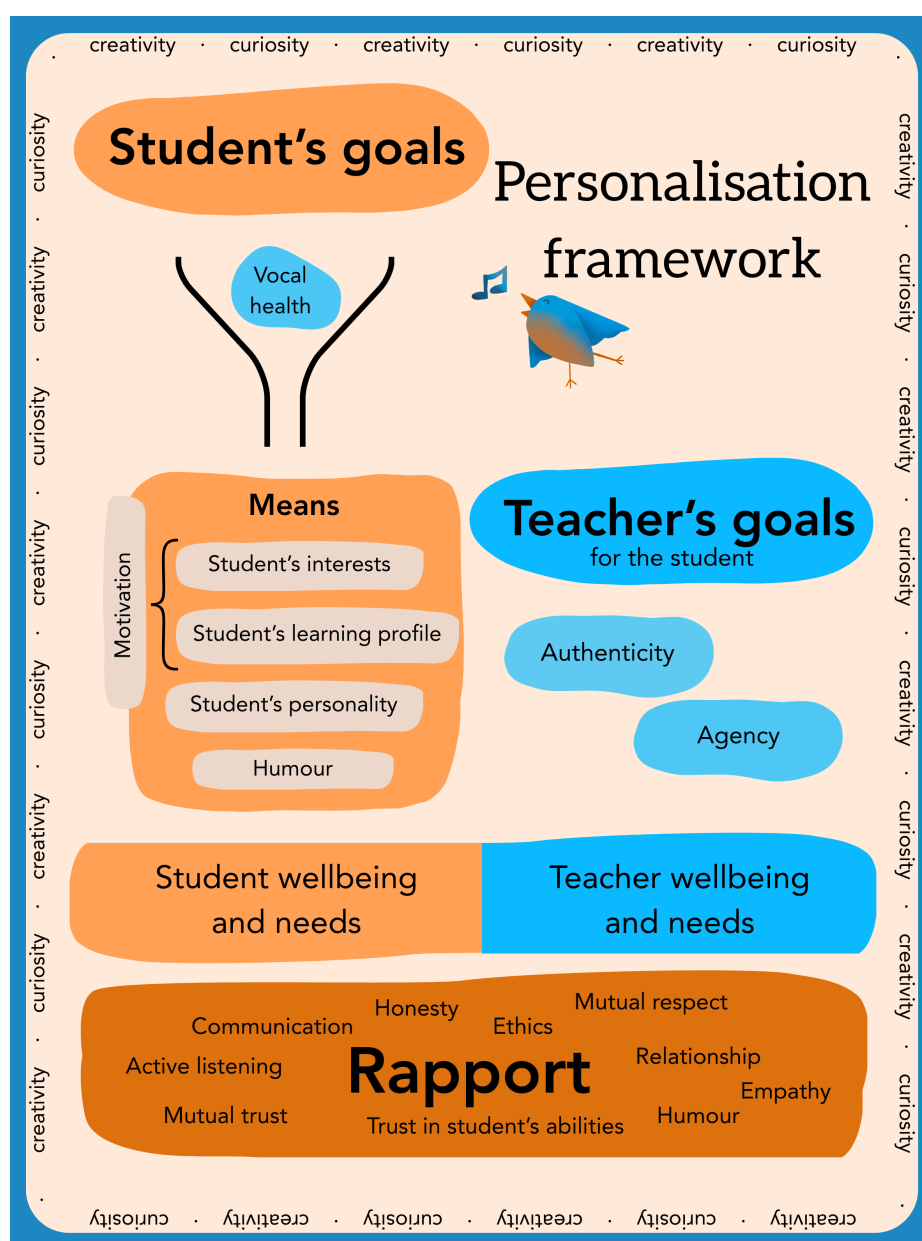


Figure 1. Personalisation framework: foundational principles

Intended impact

This research aims to:

- Explore how pedagogical personalisation is enacted in adult applied voice teaching, contributing practice-informed descriptive evidence in an under-mapped area of the field.
- Examine learners' self-reported experiences during a short personalised teaching process.
- Explore areas of convergence and divergence between enacted personalisation and learners' reported experiences.

To achieve this, the research will pursue the following objectives:

- Conduct a literature review to provide a conceptual and analytical framework for the study.
- Implement a brief personalised teaching process with adult voice learners.
- Collect pre- and post-intervention self-report data and document pedagogical adjustments made during and between teaching sessions.
- Conduct a thematic analysis to identify recurring types of pedagogical adjustments through which personalisation is enacted across participants, followed by descriptive quantification of coded occurrences.
- Conduct a thematic analysis of learner responses to identify recurring patterns in participants' reported experiences.
- Analyse questionnaire scores descriptively and examine pre- and post-intervention shifts.
- Explore areas of convergence and divergence between pedagogical adjustments, participants' reported experiences, and questionnaire findings.
- Situate the resulting interpretations within the relevant literature.

Outlined intention

The study will adopt an exploratory multiple-case study design, informed by Yin (2003), which is appropriate for investigating contemporary phenomena in real-life contexts.

This design will enable exploration of how personalisation unfolds across individual cases and how learners describe perceived changes.

Qualitative exploration of pedagogical processes and lived experiences will be combined with a quantitative examination of learners' self-reported scores and shifts.

The overarching methodology will therefore be a mixed methods approach, enabling complementarity (Creswell and Plano Clark, 2017, p. 290) across qualitative and quantitative data generated from teacher and learner perspectives.

Qualitative data will be analysed through two thematic analyses, following Braun and Clarke's (2006) approach, to identify recurring types of pedagogical adjustments and patterns in learners' experiences. Coded pedagogical adjustments will then be descriptively quantified to examine their frequency. Questionnaire data will be analysed using descriptive statistics to examine pre- and post-intervention shifts and post-intervention personalisation scores.

Findings will be compared across data sources to explore convergence and divergence between teacher-observed pedagogical adjustments and learners' descriptions of their experiences. This integration will support the development of meta-inferences (Teddle and Tashakkori, 2009), without implying causality.

The data collection process will include:

- Pre- and post-intervention self-report measures such as Likert-scale questionnaires to collect quantitative data on areas such as voice functioning.
- Recorded teaching sessions with participants.
- In-session and post-session written observations, focusing on pedagogical adjustments and decision-making.
- A reflective research journal to document pedagogical planning, in-session decisions, and between-session adjustments over time.

- Open-ended questionnaires to capture participants' descriptions of their learning experience.

The study will involve a purposive sample of five adults. Outreach will be conducted through social media, such as LinkedIn. Participants will be selected from among volunteers with whom I have no prior relationship. Ideally, the sample will reflect variation in vocal goals (e.g., improving range, preparing a speech, exploring voice for enjoyment), experience levels, and demographic characteristics. Each participant will engage in five individual sessions, adapted in response to learners' stated goals, expressed or observed learning preferences, and emerging needs within the teaching process.

Individual learning outcomes

- Critically examine and articulate my pedagogical personalisation practice, moving from intuitive teaching decisions to conceptually grounded and documented processes.
- Strengthen my capacity to differentiate between pedagogical adjustments driven by learner needs and those driven by creative impulse.
- Situate my professional practice within existing scholarship on student-centred pedagogy, strengthening my ability to defend and contextualise my approach academically.

Ethical considerations

Eligibility will require availability throughout the study. This might lead to unconscious selection based on subjective perceptions of dependability. To mitigate this, selection among eligible volunteers will prioritise variation in participants' demographic characteristics and vocal goals, rather than subjective judgements of dependability. The study anticipates potential attrition and will reinforce participants' right to withdraw at any point without justification by reiterating this right throughout the study. In alignment with Guillemin and Gillam's (2004) framework of ethics in practice, the design

will remain flexible. For example, partial trajectories could be analysed as bounded cases rather than requiring participants to complete the full process. Because lessons will be provided at no cost, participants may experience feelings of indebtedness, which could reinforce perceived hierarchy or obligation. I plan to demonstrate appreciation for their time and emphasise that their participation represents a contribution to the research, which may help mitigate these dynamics. Furthermore, participants and I will likely develop rapport. Social desirability bias (SDB) in participants' post-intervention questionnaire responses remains a risk. To reduce SDB, questions will focus on participants' subjective experiences rather than framing the process in terms of success or failure.

Mercer (2007) notes that the relationship between the researcher and the participant is not static but constantly fluctuates along a continuum, with insider and outsider positions shifting with interactions and the degree of shared intimacy. I enter this study with a dual role as teacher and insider researcher, which may influence both lessons and data interpretation. This shifting positionality requires structured reflexive practice. Framing this study within Mercer's continuum and Schön's (1983) concepts of reflection-in-action and reflection-on-action will provide a framework for managing this shifting positionality. Within sessions, reflection-in-action will remain situated within the teacher role. Pedagogical decisions made between sessions will likewise be treated as teacher-role activity. Reflection-on-action and analysis of recordings and notes will occur outside sessions within the researcher role. This structured distinction aims to reduce role confusion and support analytical distance.

Timeline

	ISO (International Organization for Standardization) WEEK #																
	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Literature research																	
PROJECT PROPOSAL																	
Draft each component																	
Proofread and send																	
GATHERING DATA																	
Recruit participants																	
Prepare pre- and post-intervention surveys																	
Ensure methods and methodology are sound																	
Conduct sessions																	
Journal, field notes, transcribe recordings																	
Analyse data																	
PROJECT REPORT																	
Draft introduction																	
Draft literature review																	
Draft methodology/ methods																	
Draft findings/results/ discussion																	
Draft conclusion																	
Proofread																	
Draft submission																	
Implement corrections																	
Rewrite and proofread																	
Final report submission																	
Prepare presentation slides																	
Presentation week																	

(a)

	ISO (International Organization for Standardization) WEEK #																
	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Literature research																	
PROJECT PROPOSAL																	
Draft each component																	
Proofread and send																	
GATHERING DATA																	
Recruit participants																	
Prepare pre- and post-intervention surveys																	
Ensure methods and methodology are sound																	
Conduct sessions																	
Journal, field notes, transcribe recordings																	
Analyse data																	
PROJECT REPORT																	
Draft introduction																	
Draft literature review																	
Draft methodology/ methods																	
Draft findings/results/ discussion																	
Draft conclusion																	
Proofread																	
Draft submission																	
Implement corrections																	
Rewrite and proofread																	
Final report submission																	
Prepare presentation slides																	
Presentation week																	

(b)

Figure 2. Project timeline: (a) ISO weeks 8-23; (b) ISO weeks 24-41

PROJECT REPORT

Introduction

Context

In the previous Module, I developed a framework for personalisation within the voice studio by delineating key student-centred principles identified in the existing literature. In the current research, I used this framework as an open-ended reference point for understanding how these principles were enacted in practice. The study was conducted in my private voice studio as the final Module of the Voice Pedagogy Master's programme.

Rationale and justification

Studies indicate that personalised or adaptive learning approaches may be more effective than uniform teaching models (Adam, Shariman and Siran, 2024). The literature covers student-centred learning across diverse settings and populations, including large and small groups (Tomlinson, 2014) and children or teenagers (Kladder, 2020). However, few studies address voice education in general (e.g., Sauerland, 2018; Stephenson, 2018; Sherwood, 2023). Even fewer studies examine adults taking voice lessons outside school settings (e.g., Clemmons, 2006; Goffi-Fynn, 2024). The literature remains particularly limited regarding how personalisation is enacted through ongoing pedagogical adaptations and relational processes in adult applied (one-to-one) voice teaching.

Accordingly, this study posed the following research question: how is pedagogical personalisation enacted in adult one-to-one voice education, and how do students describe their learning experience during a short personalised teaching process?

This multiple-case study provided insight into how broad recommendations identified in the literature (e.g., Goffi-Fynn, 2024) can manifest in a private voice studio. The study therefore offered a more detailed understanding of the pedagogical processes involved.

Aims and objectives

This research explored how pedagogical personalisation was enacted in adult applied voice teaching, providing practice-informed evidence in an under-mapped area of the field. It examined adult learners' self-reported experiences during a short personalised teaching process and explored areas of convergence and divergence between enacted personalisation and participants' reported experiences.

To achieve this, I:

- Conducted a literature review that provided the conceptual and analytical framework for the study.
- Implemented a brief personalised teaching process with five adult voice learners.
- Collected pre- and post-intervention self-report data and documented pedagogical adjustments made during and between teaching sessions.
- Conducted a thematic analysis to identify and categorise pedagogical adjustments across participants, followed by descriptive quantification of coded occurrences.
- Conducted a second thematic analysis of learner responses to identify recurring patterns in participants' reported experiences.
- Analysed questionnaire scores descriptively and examined pre- and post-intervention shifts.
- Explored areas of convergence and divergence between pedagogical adjustments, participants' reported experiences, and questionnaire findings.
- Situated the findings within existing research on student-centred learning.

Intended impact

The anticipated outcomes included providing practice-informed insight into how personalisation is enacted in adult one-to-one voice teaching and contributing data on learners' perspectives to research on personalisation.

Individual learning outcomes

I aimed to articulate my practice of pedagogical personalisation, moving from intuitive decisions towards conceptually grounded and documented processes. Furthermore, I sought to improve my ability to distinguish between adjustments based on learner needs and those driven by creative impulse. Finally, I aimed to position my practice within scholarship on student-centred pedagogy to better defend and contextualise my approach.

Literature review

This review adopts a narrative format, corresponding to the "traditional literature review" as initially defined by Doyle (2003, p. 324) and taken up by Winter (2023). The narrative format allows for a chain of reasoning between past and future studies (Doyle, 2003).

This aligns with the aims of this review: to clarify the concept of personalisation in education, explore and bridge diverse definitions, and justify my working definition.

Inclusion criteria focused primarily on research published within the past 25 years to examine the shift towards student-centred education, while earlier sources were included where relevant. Priority was given to peer-reviewed educational studies to strengthen the credibility of the review. Searches were conducted through the UWTSD's online library service and Google Scholar. Searches combined variations of "student-centred learning", "personalisation", "learner-centred teaching", "applied voice teaching", and related terms identified through the reviewed literature.

Personalisation as an under-specified concept in education

Personalisation in education lacks a universally accepted, precise definition (Bulger, 2016). It appears in the literature under various terms, such as student-centred learning/teaching, self-directed learning, active learning, or individualised instruction (Mavrič, 2020). Across the reviewed literature, these terms are used interchangeably. This makes the boundaries of the concept difficult to delineate. I read this semantic interchangeability as potentially reflecting a broader intention to distance education from the master–apprentice model (MAM) of teaching. This model has been associated with fixed roles and standardised approaches (Sherwood, 2023). From this perspective, moving away from the MAM may take precedence over definitional precision.

Indeed, a major convergence in the literature is that these concepts (e.g., differentiation, humanistic learning) represent a shift away from the MAM (Mavrič, 2020). Colahan (2022) compares the MAM with Freire's (1970) concept of banking education, in which

the teacher merely deposits knowledge into students' minds. A recurring critique across the reviewed sources is that the MAM establishes an undesirable hierarchy, placing the student below the teacher (Kladder, 2020; Sherwood, 2023; Goffi-Fynn, 2024). The model is criticised as lacking flexibility and failing to address the creative and psychological needs of contemporary students (Du, 2024), as well as neglecting their diverse backgrounds and learning preferences (Tomlinson, 2014). The MAM has also been associated with limiting learner agency (Sherwood, 2023), limiting the development of independent musicianship (Kladder, 2020), and being suboptimal for learning (Goffi-Fynn, 2024). While the literature favours shifting from the MAM, recent research on speaking and singing voice teaching remains scarce and heterogeneous in scope. Together, this scarcity and the interchangeable use of student-centred terminology (as seen in Kladder, 2020; Goffi-Fynn, 2024) limit both conceptual precision and the development of a clearly defined alternative model.

Furthermore, the literature appears to draw on different theoretical traditions. As these traditions conceptualise student-centred education in distinct ways, they may imply different pedagogical priorities. Additionally, although it can be inferred from the authors' conceptual framing, some studies do not explicitly state their theoretical basis. As a result, the underlying principles of student-centredness become harder to identify clearly. To explore these distinctions, I outline the main conceptual approaches identified in the reviewed literature below.

Table 1.
Selected conceptual and theoretical influences on student-centred education

	Literature on student-centred education	Literature on student-centred education in music and voice (singing/ speaking)	Advocating for...
Humanism	Cornelius-White, 2007; Mincu, 2012	Walton, 2018	...supporting the expression of feelings, recognising the whole student, encouraging intrinsic motivation.
		Budiawan et al., 2023	...students' intrinsic worth and agency, moving away from viewing learners as passive recipients of information.
		Sherwood, 2023	...honouring students' identities.
		Cazden, 2023	...the idea of identity, respecting individuals' values, boundaries, and preferences.
Constructivism	Brown, 2008	Daniel and Parkes, 2019	...Weimer's learner-centered principles: shifting the balance of power, encouraging reflection, motivating students by giving them control over their learning.
		Park, 2022	...actively creating, questioning, and transforming music.
		Goffi-Fynn, 2024	...guiding principles under an educational framework adapted from Weimer's facets. Teachers act as facilitators for students actively engaged in their learning.

	Literature on student-centred education	Literature on student-centred education in music and voice (singing/speaking)	Advocating for...
		Du, 2024	...designing “interactive, collaborative, and reflective learning experiences” (p. 69).
Social, cognitive and developmental psychology	American Psychological Association (APA), 1997	Blackwell, 2020	...adjusting instruction based on the cognitive and developmental stage of the student.
		Mikajlo, 2024	...music instructor Hendrickson’s process: “perceptions of tasks (...) ha[ve] to be prepared before lessons, so that the students’ sensory and nervous system [can] register stimuli, structures of motions, and transfer patterns of physical motions” (p. 7).
Universal Design for Learning (UDL)	Boothe et al., 2018	Lee, 2025	...shifting from performance to process.
		Anderson and Benson, 2025	...agency, a student-centred learning principle.

Table 1 presents approaches with different theoretical foundations that share key principles and overlapping concepts. Nevertheless, the approaches diverge in the extent to which personalisation is driven by the teacher, the learner, or the environment. This conceptual breadth becomes problematic when attempting to establish concrete best practices or categorise specific teaching methods. Both tasks would require greater conceptual precision and clearer operationalisation.

The closest the literature comes to defining student-centred teaching in the voice studio is through various lists of guiding principles. Certain core themes recur, specifically the need to foster student autonomy, cultivate interpersonal rapport, and nurture intrinsic motivation (Hicks, 1997; Clemmons, 2006; Daniel and Parkes, 2019; Goffi-Fynn, 2024; Kladder, 2020; Park, 2022; Sauerland, 2018; Stephenson, 2018; Walton, 2018). However, rather than presenting these principles as a hierarchy, Goffi-Fynn describes them as a “circle with many entry points” (as cited in Stephenson, 2018, p. 411). Because these concepts overlap so heavily in practice and vary across learners, disentangling their respective roles within personalised teaching is methodologically challenging.

Generalising individualised pedagogy

This learner-specificity raises a further issue: the more individualised an approach becomes, the more difficult it may be to generalise. Bulger (2016) offers one possible response to this tension by emphasising the inherent nature of personalisation in education. She argues that instructors rely on “interpersonal cues, combined with (...) knowledge of how people learn, and knowledge of each student, to determine individual needs” (Bulger, 2016, p. 4). Even in models not deliberately designed for individualisation, lessons may therefore still be adjusted “in response to questions and behaviors” (Bulger, 2016, p. 4). This account may be questioned, as it rests on the premise that instructors possess sufficient pedagogical knowledge. Daniel and Parkes (2019) challenge this premise. They observe that applied studio teachers may lack formal pedagogical training or skills in a context where applied voice teaching lacks a regulatory framework.

Ahlfeldt (2003, citing Brookfield, 1990) similarly notes that few speaking voice educators “come to the classroom with any formal training in educational theory or practice” (p. 24). Hence, Bulger’s (2016) claim that personalisation is inherent in teaching appears to depend on a level of pedagogical expertise that cannot be assumed across teachers.

Bulger's (2016) stance introduces another consideration: the teacher as a variable. If educators rely on "interpersonal cues" (Bulger, 2016, p. 4), what are the implications when a teacher lacks the ability to interpret them accurately? While speculative, this idea highlights a limitation of the assumption that education is inherently personalised: namely, that variability among teachers is insufficiently accounted for. Indeed, teachers are individuals with different expertise and needs (Tomlinson, 2014). Therefore, attempts to generalise individualised pedagogy must contend with the fact that teachers, like students, are inherently diverse.

Jennings and Greenberg (2009) argue that "the current educational system appears to assume that teachers have the requisite [social and emotional competence]" (p. 495). They note that this assumption may leave teachers insufficiently supported in managing emotional demands, increasing their vulnerability to stress and burnout. In voice education, suggested responses to potential limitations in teachers' pedagogical preparation include sharing tools within communities of practice or through mentorship (Stephenson, 2018; Daniel and Parkes, 2019), or engaging in formal training, a need identified by Carey et al. (2013). Relatedly, Jennings and Greenberg discuss emotional intelligence training and mindfulness-based interventions as possible supports for teachers' social and emotional competence and well-being.

Taken together, these arguments suggest that the conditions enabling teachers to observe, interpret, and adapt cannot be assumed to be uniform, further limiting transferability and generalisability.

Generalising personalisation through technology

Technology has been proposed as a means of making personalisation more scalable and alleviating some demands on teachers. Hume and Wong (2025) report that processes such as pre-recorded public speaking modules reduce recurring planning demands. This creates greater opportunity for teachers to focus on student engagement. In singing education, researchers have leveraged artificial intelligence (AI)

to develop exercises based on analysed vocal features (Yan, 2025) or to dynamically adjust teaching strategies (Su and Guo, 2026).

However, while the reviewed models enable prioritisation and adaptation, they operationalise personalisation largely through acoustic, performance-related, and emotional indicators. This operationalisation differs from broader accounts of student-centred teaching, in which students' personal backgrounds, prior experiences, and cultural contexts are considered foundational (Daniel and Parkes, 2019; Park, 2022; Goffi-Fynn, 2024). The AI models examined here do not yet appear to systematically incorporate these dimensions.

This contrast suggests that technological approaches may not operationalise personalisation in the same way as broader student-centred approaches, which appear to extend beyond technical optimisation. Indeed, relational and emotional dimensions are considered pedagogically significant in both speaking and singing voice education and performance (Ahlfeldt, 2003; Raun, 2020; Stephenson, 2018).

Because personalised learning systems alone struggle to fulfil the basic psychological need for relatedness in learning (Bulger, 2016), the teacher's relational presence and contextual judgement remain pedagogically significant dimensions of personalisation (Akyuz, 2020).

AI may therefore support scalable personalisation without reproducing all of its relational and contextual dimensions. Su and Guo (2026) themselves note that generative outputs can be unstable without alignment with pedagogical frameworks. This positions technology as a potentially valuable supplementary tool whose outputs still require contextual interpretation and pedagogical judgement within live teaching (Akyuz, 2020; Blackwell, 2020).

Towards an operational definition of personalisation

Within the reviewed literature, technology-enabled approaches and guiding student-centred principles provide the clearest basis for a general framework of personalisation. However, these approaches do not offer a sufficiently precise conceptualisation of

personalisation, possibly due to the diversity of theoretical foundations and the difficulty of generalising individualised processes. This lack of conceptual clarity and operational consensus emphasises the need for an explicit working definition for the present study:

Personalisation is defined as the teacher's ongoing, context-sensitive design and adjustment of teaching, resources, and support in response to an individual learner during and between sessions.

Methodology and methods

Research paradigm

The study sought to explore both observable pedagogical practices and lived experiences, requiring a paradigm that could accommodate different aspects of reality and different forms of evidence. Fryer and Navarrete (2024, p. 17) position much of pragmatism within “new realism”, which occupies an intermediate position between positivist and constructionist traditions. This positioning made pragmatism particularly appropriate for the present research.

Ontologically, the study treated both observable practices (such as pedagogical adjustments) and subjective experiences (such as participants’ perceptions of personalisation) as real and analytically relevant. This aligned with Fryer and Navarrete’s (2024) new realist account, in which people, meanings, material things and the relationships among them are treated as substantive elements of the social world with identifiable causal impacts.

The research’s epistemological stance was constructionist. From a constructionist perspective, meaning is constructed through engagement with the world, in which subject and object emerge as partners in generating meaning (Crotty, 1998). In this study, personalisation was understood as shaped through interactions between teacher and learner, with participants’ experiences developing in response to the evolving teaching process.

Methodological approach

The research used a mixed methods approach within a multiple-case study design (Yin, 2003), treating each participant as a distinct case while allowing comparison across cases. Figure 3 below illustrates the sequence of data collection. Quantitative data are shown in green, qualitative data in yellow; pink indicates the timeline.

	ISO (International Organization for Standardization) WEEK #							
	12	13	14	15	16	17	18	19
ADDITIONAL TIMING INFO								
All participants are recruited								
Sessions started for all participants								
Sessions completed for all participants								
DATA COLLECTION								
Reflective journal / pedagogical journal								
Sessions recordings and transcriptions								
All participants completed the pre-intervention Likert form								
Participants completed the optional personalisation questionnaire								
All participants completed the post-intervention (Likert)								
All participants completed the post-intervention personalisation questionnaire (Likert)								
All participants completed the post-intervention open-ended survey								
DATA ANALYSIS								
Thematic analysis: Pedagogical adjustments documented in the journal and sessions recordings categorised/coded								
Quants: Pedagogical adjustments counted								
Descriptive statistics: Likert shifts and personalisation scores								
Thematic analysis: Participants' experiences are categorised/coded								
Descriptive comparison: Comparison: adjustments vs experiences								
Descriptive comparison: adjustments vs personalisation score								

	ISO (International Organization for Standardization) WEEK #								
	20	21	22	23	24	25	26	27	28
ADDITIONAL TIMING INFO									
All participants are recruited									
Sessions started for all participants									
Sessions completed for all participants									
DATA COLLECTION									
Reflective journal / pedagogical journal									
Sessions recordings and transcriptions									
All participants completed the pre-intervention Likert form									
Participants completed the optional personalisation questionnaire									
All participants completed the post-intervention (Likert)									
All participants completed the post-intervention personalisation questionnaire (Likert)									
All participants completed the post-intervention open-ended survey									
DATA ANALYSIS									
Thematic analysis: Pedagogical adjustments documented in the journal and sessions recordings categorised/coded									
Quants: Pedagogical adjustments counted									
Descriptive statistics: Likert shifts and personalisation scores									
Thematic analysis: Participants' experiences are categorised/coded									
Descriptive comparison: Comparison: adjustments vs experiences									
Descriptive comparison: adjustments vs personalisation score									

(b)

Figure 3. Data collection and analysis timeline: (a) ISO weeks 12–19; (b) ISO weeks 20–28.

Figure 3 shows that the data were primarily qualitative, with quantitative data providing additional information, consistent with an embedded design (Creswell and Plano Clark, 2017). Both quantitative and qualitative data were collected at different points in time. Integration occurred at the interpretation stage.

Qualitative data were needed to capture the enacted process and lived experiences. Quantitative analysis was used to examine occurrences of adjustment types, changes in voice perception, and perceived personalisation levels. Bringing the qualitative and quantitative strands together allowed for complementarity (Creswell and Plano Clark, 2017; Denscombe, 2021); for example, personalisation could have been enacted but not perceived. According to Teddlie and Tashakkori (2009), meta-inferences can be understood as integrated interpretations of qualitative and quantitative results that support a more comprehensive understanding of the findings. In this study, meta-inferences were generated by examining areas of convergence and divergence across data sources. The procedure is detailed below under “Data analysis approach”, step 5.

Sampling strategy

The study used purposive sampling, which Denscombe (2021, p. 79) describes as “likely to produce the most valuable data”. Participants were recruited through LinkedIn and Reddit. Eligibility criteria included being an adult interested in developing their voice. Selection then sought variation across participant profiles. This emphasis on variation aligned with Teddlie and Tashakkori’s (2009) recommendation to maximise heterogeneity across relevant participant characteristics. It also aligned with the study’s focus on personalisation, as variation in learner profiles increased the scope for observing different forms of pedagogical adaptation.

Of the eight expressions of interest, five participants were selected to maintain a manageable number of cases for in-depth analysis, consistent with multiple-case study logic (Yin, 2003). Selected participants differed in gender, voice focus (speaking or singing voice), context of use (professional or non-professional), experience level, and

lesson format (in-person or online). One of the first five eligible respondents was replaced by the next eligible male respondent to increase gender variation. The remaining two were not selected because the five-participant sample was already complete and sufficiently varied.

Availability was an inclusion requirement but did not differentiate between eligible respondents, as all were available within workable timeframes. Each participant engaged in five lessons over five to 10 weeks, depending on scheduling.

Data collection methods

The personalisation framework developed in Module 5 (see Appendix E) synthesised principles identified in the literature on student-centred learning. In the present study, it served as a sensitising framework, providing a reference point without predetermining the analytical categories (Blumer, 1954). It also informed the design of some of the data-collection tools, as shown below. The data-collection methods are presented chronologically.

Table 2.
Chronological overview of data-collection methods and purposes

Qualitative data 	Element #	Element	Appendix	Purpose
Quantitative data 				
	1	Pre-intervention form (Likert)	F	Collect information on participants' relationship with their voice, voice functioning and agency in learning. These categories were drawn from the Module 5 personalisation framework as domains for assessing self-reported change from pre- to post-intervention. To reduce acquiescence response set (tendency to agree with items regardless of content), some items were reverse-worded and reverse-scored following Spector's (1992) guidelines. Items were randomised to reduce the salience of the three categories. Appendix I provides further details on the questionnaire design, item allocation, and scoring procedure.
 	1b	Optional pre-intervention personalisation form (Open- and closed-ended questions)	J	Gather optional self-reported information about participants (e.g., learning preferences, interests, neurodivergence).

Qualitative data  Quantitative data 	Element #	Element	Appendix	Purpose
	2	Session recordings and transcripts	Q	Capture pedagogical adjustments during sessions. Recordings were essential in managing the dual role of teacher/researcher: they allowed me to prioritise the teacher role during sessions and revisit interactions afterwards as a researcher. The insider-researcher position is discussed further under “Ethical considerations and insider research”, p. 36.
	3	Researcher notes	R	Collect post-session reflections and document between-session decision-making, including pedagogical adjustments developed through reflective planning.
	4	Post-intervention form (Likert)	F	Assess change over time. This form was identical to Element 1.
	5	Post-intervention personalisation form (Likert)	L	Assess participants’ perceptions of pedagogical personalisation. The Module 5 framework informed the development of participant-facing items reflecting aspects of personalisation that could be experienced and self-reported.
	6	Post-intervention open-ended questionnaire	N	Gather data on participants’ lived experiences during the intervention to capture subjective meaning.

Data analysis approach

Analysis proceeded sequentially, as described below.

1. I conducted a first semantic thematic analysis (TA1), following Braun and Clarke's (2006) process. The pedagogical adjustments made during sessions, as well as between-session support, were documented in transcripts and post-session notes. I coded these data and organised the codes under constructs derived from the Module 5 framework. The process is detailed in the Findings and Discussion section under "1. How was pedagogical personalisation enacted?", p. 39.
2. I then examined the relative distribution of coded adjustments across the themes, for each participant and across the dataset, to compare adjustment patterns across cases.
3. To analyse data on participants' experiences, I used responses to the Likert-scale pre- and post-intervention questionnaires and the personalisation questionnaire (Elements 1, 4 and 5). Each Likert-scale response was assigned a numerical value from 1 to 7, as follows:

Table 3.
Likert-scale response coding and reverse scoring

Response	Value for standard-worded items	Reverse-scored value for reverse-worded items
Strongly disagree	1	7
Disagree	2	6
Slightly disagree	3	5
Neutral	4	4
Slightly agree	5	3
Agree	6	2
Strongly agree	7	1

A shift score (SS) was calculated for each item by subtracting the pre-intervention score (Element 1) from the corresponding post-intervention score (Element 4). Item-level SSs were grouped by category (Relationship with voice, Voice functioning, and Agency in voice-related learning) and averaged to calculate a category SS. I calculated an overall SS by averaging the SSs across all 13 items.

A personalisation score (PS) was calculated by averaging responses to the items in the personalisation questionnaire (Element 5).

Both SSs and PSs were analysed using descriptive statistics.

4. A second TA (TA2) was then conducted using data from the open-ended questionnaire (Element 6) to identify recurring themes in participants' descriptions of their learning experience. This process followed Braun and Clarke's (2006) guidelines. Unlike TA1, TA2 was conducted inductively without reference to the Module 5 framework.
5. TA1 adjustment patterns, TA2 themes and PSs were compared descriptively to identify areas of convergence and divergence between pedagogical enactment and participants' experiences. I considered SSs alongside these comparisons to inform the overall interpretation. Together, these analyses informed the study's meta-inferences.

Ethical considerations and insider research

Because participants were unknown to me, judging their likely dependability could have introduced selection bias.

This concern prompted early reflexivity regarding my own biases, consistent with Guillemin and Gillam's (2004) framework of ethics in practice. To mitigate this, I relied on declared availability rather than assumptions about dependability and used variation across participant profiles to guide selection. Guillemin and Gillam (2004) also emphasise a flexible approach and responsiveness to emerging situations. This

planned responsiveness, combined with continuous ethical decision-making (Orb, Eisenhauer and Wynaden, 2001), allowed for potential withdrawals to be anticipated and managed as bounded cases. Participants were explicitly informed that they could withdraw at any time without providing justification. Ultimately, they all completed the study.

Even within a student-centred practice, I, as a teacher-researcher, held subject expertise and retained some control over the structure of sessions. This created the potential for a perceived hierarchy. This required ethical consideration because social-desirability bias (SDB) tends to be more prevalent where power differentials are perceived (Bergen and Labonté, 2020), as participants may feel pressure to conform to expected responses or behaviours. Aiming to reduce perceived hierarchy aligned with the study's pedagogical focus: Kladder (2020) associates reduced hierarchical dynamics with greater learner autonomy, a principle of student-centred education. Additionally, sessions were provided at no cost; thus, participants may have felt indebted, potentially reinforcing power imbalances. In Grant and Sugarman's (2004) terms, this benefit may be understood as an "incentive" (p. 720). According to them, offering such incentives within a dependency or authority relationship can be ethically problematic, as it may exert undue influence on participants. Mitigation involved expressing gratitude to participants for their time and contribution to the study from the outset, framing the research as a reciprocal exchange. In the post-intervention questionnaires, I addressed SDB through question design, which focused on participants' subjective experiences rather than asking them to evaluate their progress or me as an instructor.

A further ethical and methodological consideration concerned my insider position as teacher-researcher. Mercer (2007) views the researcher-participant relationship as fluctuating. She describes a continuum in which insider and outsider positions shift according to interactions and levels of shared intimacy. Schön's (1983) distinction between reflection-in-action and reflection-on-action provided a useful way of managing this positioning over time. During sessions, reflection-in-action occurred within the

teaching interaction, where I was more immersed in the relationship with the participant. Reflection-on-action took place after the session, through journaling and later analysis, allowing greater distance from the immediate interaction and its shared intimacy. While the roles of teacher and researcher, and the insider and outsider positions, were not entirely separate, I experienced reflection-on-action as facilitating a relative shift towards the outsider end of Mercer's continuum. Furthermore, formal data analysis began only after the interventions. This temporal separation reduced the need for frequent switching between positions and supported analytical distance.

Methodological limitations

Three main methodological limitations were identified.

First, the study was limited to five sessions per participant over a maximum of 10 weeks, keeping the research manageable for in-depth analysis given the study's timeframe. This represents a short observation window for vocal motor learning. Vocal production relies on highly complex fine motor control (Moss Erickson, 2022), and motor learning models indicate that transitioning to a stable motor coordination state requires extensive practice over time (Magill and Anderson, 2024). This short timeframe may therefore have limited the extent of change reflected in the pre–post shift scores, particularly in the Voice functioning category, where change may depend partly on vocal motor learning.

Second, the coding process in the thematic analyses was necessarily interpretive (Braun and Clarke, 2006). The themes were shaped through my interpretation and may have been further influenced by my insider perspective (Dwyer and Buckle, 2009). I addressed this subjectivity through journaling, researcher notes collected during the intervention, and an audit trail documenting the coding and theme-development process. These records made the interpretive and analytical decisions more

transparent, although they did not remove subjectivity.

Finally, participant data were gathered through self-reports, which are often critiqued for SDB and recall bias (Podsakoff et al., 2003). Although the strategies outlined above aimed to mitigate SDB, recall bias could not be eliminated and remained a limitation of the self-report data.

Findings and discussion

This section presents and interprets the findings in response to the research question: how is pedagogical personalisation enacted in adult one-to-one voice education, and how do students describe their learning experience during a short, personalised teaching process? It first examines the enactment of personalisation, followed by participants' reported experiences. The two sets of findings are then compared before an overall synthesis considers their implications and relationship to the literature.

1. How was pedagogical personalisation enacted?

Session transcripts, between-session support, and relevant research journal notes were examined through a thematic analysis (TA) to identify pedagogical adjustments.

Constructs were derived from relevant principles in the Module 5 framework, such as "Student goals" and "Creativity" (for the codebook, see Appendix P). These constructs provided an initial organising structure. Initial coding involved identifying and labelling all pedagogical adjustments in the data, whether or not they corresponded to a pre-existing construct. In practice, all identified adjustments were ultimately mapped onto at least one framework construct. Codes were then categorised inductively, and candidate themes were developed from these categories, helping limit the imposition of the pre-existing constructs (Braun and Clarke, 2006). Finally, candidate themes were reviewed and refined to create a more precise conceptual grouping. For an audit trail of the coding and theme-development process, see Appendix S.

1.a Distribution of coded adjustments

Table 4

	Theme 1		Theme 2		Theme 3		Theme 4		Theme 5		Totals
	Nurturing		Understanding the student's internal experience		Using interests, play, and relevance as routes into learning		Goals as pedagogical direction		Creative adaptive strategies in real time and between sessions		
	Occ.	%	Occ.	%	Occ.	%	Occ.	%	Occ.	%	Occ.
P1	87	38.5	37	16.4	19	8.4	20	8.8	63	27.9	226
P2	93	30.5	60	19.7	14	4.6	56	18.4	82	26.9	305
P3	47	30.5	24	15.6	3	1.9	36	23.4	44	28.6	154
P4	58	41.4	15	10.7	1	0.7	11	7.9	55	39.3	140
P5	43	20.6	19	9.1	34	16.3	32	15.3	81	38.8	209
	Theme 1		Theme 2		Theme 3		Theme 4		Theme 5		
Overall	Occ.	%	Occ.	%	Occ.	%	Occ.	%	Occ.	%	Occ.
	328	31.7	155	15.0	71	6.9	155	15.0	325	31.4	1034

Distribution of coded pedagogical adjustments by participant and overall, reported as thematic occurrences (Occ.) and percentages (%).

Table 4 presents the distribution of coded pedagogical adjustments across five identified themes. An occurrence refers to a coded adjustment. A single adjustment could be coded under more than one theme. Percentages do not measure the effectiveness of each theme.

Across the full dataset, Themes 1 and 5 were the most frequent, accounting for 31.7% and 31.4% of all occurrences, respectively. Themes 2 and 4 each represented 15.0% of occurrences, while Theme 3 was less frequent overall, accounting for 6.9%. Participant-level distributions suggest case-specific configurations of personalisation rather than a uniform pattern across participants. For instance, P4 had the highest proportion of Theme 1 (Nurturing) occurrences (41.4%), while P5 showed the lowest proportion of Theme 1 occurrences and the highest proportion of Theme 3 (Using interests (...) as routes into learning) occurrences (16.3%).

1.b Thematic analysis of adjustments

The analysis below (TA1) examines how each theme was enacted in practice, following Phase 6 of Braun and Clarke's (2006) TA process, relating "the analysis to the research question" (p. 87).

In quotations, "P" denotes the participant number and "S" the session number (e.g., P1S2 refers to Participant 1, Session 2).

Theme 1 - Nurturing

Adjustments were often grounded in reassurance, encouragement, emotional safety and a belief in the learner's capacity. For example, I consistently checked in with students about their emotional, mental, or physical wellbeing. I asked P1, "Would you like to stop [for a break]?" (P1S2), which I interpreted as necessary in the moment. This reflects an intention to remain attuned to students' stated or perceived needs and to adapt the session's pace accordingly. Within this "Nurturing" theme, I also acknowledged students' concerns and demonstrated that I was taking them into account. For instance, I told P3, "It's okay. You're almost there. Don't think about the sound when you're on the last note, just about the movement of the ribs" (P3S3) when she expressed a worry that the sound was "still coming off (...) at the end". The

consistent deemphasising of mistakes that did not compromise vocal health suggests an intention to nurture a safe space, while reinforcing belief in the student's ability. Additionally, this theme encompasses instances in which I aimed to create safe spaces before students were asked to take a potential emotional risk. For example, I asked P4, "Are you okay to keep going on (...) this weird way of exploring?" (P4S2) after I asked him to sing along with the piano without knowing the song's melody well, a task I considered potentially overwhelming. Keeping the emotional demands of tasks manageable, and adapting the exercises accordingly, demonstrates personalisation enacted through respect for students' communicated boundaries around what constitutes a safe environment.

This theme manifested differently for each student. For P1, "Nurturing" was evident in my perceived need to offer frequent breaks: "And now we take a break" (P1S1), "You can take a break" (P1S2), "Let's have a quick break" (P1S4). For P4, it manifested as ongoing reassurance: "I can sing with you if it's less intimidating" (P4S1), "So far do you have a preference? (...) It's okay if not" (P4S4), "Don't be sorry, it's really hard what we're doing right now" (P4S5).

Overall, "Nurturing" suggests personalisation enacted through adjusting to emotional and relational conditions: pace, pressure, reassurance, permission, and perceived safety. Across participants, this manifested as breaks, encouragement, checking consent to continue, or measures to reduce intimidation, tailored to what was pedagogically deemed necessary at each moment.

Theme 2 - Understanding the student's internal experience

Exploring learners' internal processes was a recurrent feature: how they thought, processed information, experienced sensations, heard, imagined, created meaning, and connected with their voice and the world. I used initial questions to understand students' internal experiences before making adjustments.

I often asked whether my perceptions, based on hearing, sight and intuition, matched what they felt or heard, e.g., when P2 experienced jaw tension. After a tension-reducing exercise that seemed effective, I asked, "Can you feel that your jaw is less tense when

you go up again?” (P2S1). This query exemplifies how external observations were checked against the student’s internal experience rather than assumed to correspond. This investigation took other forms, for instance, asking how students experienced certain capacities, such as visualisation or audiation. For example, I asked P3, “How do you visualise (...), if you do, your melody (...)? Do you see the words, do you see a line with the melody?” (P3S3). It seemed necessary to personalise tools by first checking whether a possible solution, in this case visualisation, was available and meaningful for that learner. The overall data showed that students differed in how they accessed or described internal processes.

Theme 2 also shows attempts to understand students’ beliefs and how they shaped meaning. When P5 asked for tools to build credibility when speaking, I said, “I would love to know about what ‘makes’ credibility for you” (P5S2): the meaning of credibility was not assumed to be universal. Repeated inquiry into students’ understandings helped clarify how their beliefs shaped their goals. In this case, I aimed to better understand the intended outcome based on her specific definition of “credibility.” For her, it was “clarity [in] (...) the message” without “sugarcoating”, and a “strong”, “unapologetic” voice (P5S2). Understanding this belief led us to work on clearer goals (speech logic and clarity) and on a voice that “fills up the space” (P5S2).

This need to make meaning explicit was present across all participants: the data show many instances of remarks such as “Can you tell me more?” or “Tell me if I got this right”. However, inquiries were less prevalent when they seemed to interfere with students’ wellbeing (see Theme 1). This points to a possible hierarchy between the first two themes, with “Nurturing” taking precedence when the two came into tension. For example, P4 confirmed my suspicion that too many questions overwhelmed him.

Therefore, I told him that I would ask no more than five questions during a session (P4S3) and made it a game. I displayed five blank slots and crossed one off each time I asked a question. This shows how I also adapted the level of inquiry to the participant. Theme 2 revealed that adjustments were informed by both external observations and the intent to clarify the student’s internal experience. “Understanding the student (...)” often followed a sequence: inquiry, clarification, and adjustment.

Theme 3 - Using interests, play, and relevance as routes into learning

During sessions, I used learners' references, interests, and contexts as routes into vocal and technical learning. Participants' interests were regularly incorporated when discussing voice concepts, e.g., the clarinet for P1. I used the clarinet as an analogy to illustrate how sound would be modified if "its shape change[d] as [he was] playing" (P1S3), to highlight the influence of collapsing ribs on the voice during a held note. This emphasis on meaningful topics suggests an intention to make theoretical and technical concepts more accessible by connecting students' frames of reference to new knowledge about voice.

Participants' interests also informed the exercises I designed. For instance, P5 is passionate about movement and dance. I asked her to create a movement that would embody the concepts of "clarity, competence, confidence, openness" (P5S3) that she wished to convey through her voice. This movement was simplified to a subtle anchor gesture she could perform just before speaking at work.

Interest-based exercises often acted as bridges towards a goal. The use of student interests within sessions became more evident when participants had shared information about their interests, contexts, or personal references that could serve pedagogical purposes. This suggests that interest-based personalisation depended partly on how much relevant information became available during the teaching process. Interest-based exercises were mostly developed in the between-session materials. For example, I designed a flowchart for P1 to serve as a practice plan, drawing on his passion for computer science and our session content. See Figure 4 below. Since this flowchart was tailored specifically for P1, it highlights the inherently personalised nature of such tools and their limited applicability to other students.

Theme 3 demonstrates that engagement through interests serves not merely to enhance enjoyment during sessions. It can also function as a pedagogical mechanism of personalisation, making vocal training more accessible by connecting it to learners' own contexts and goals.

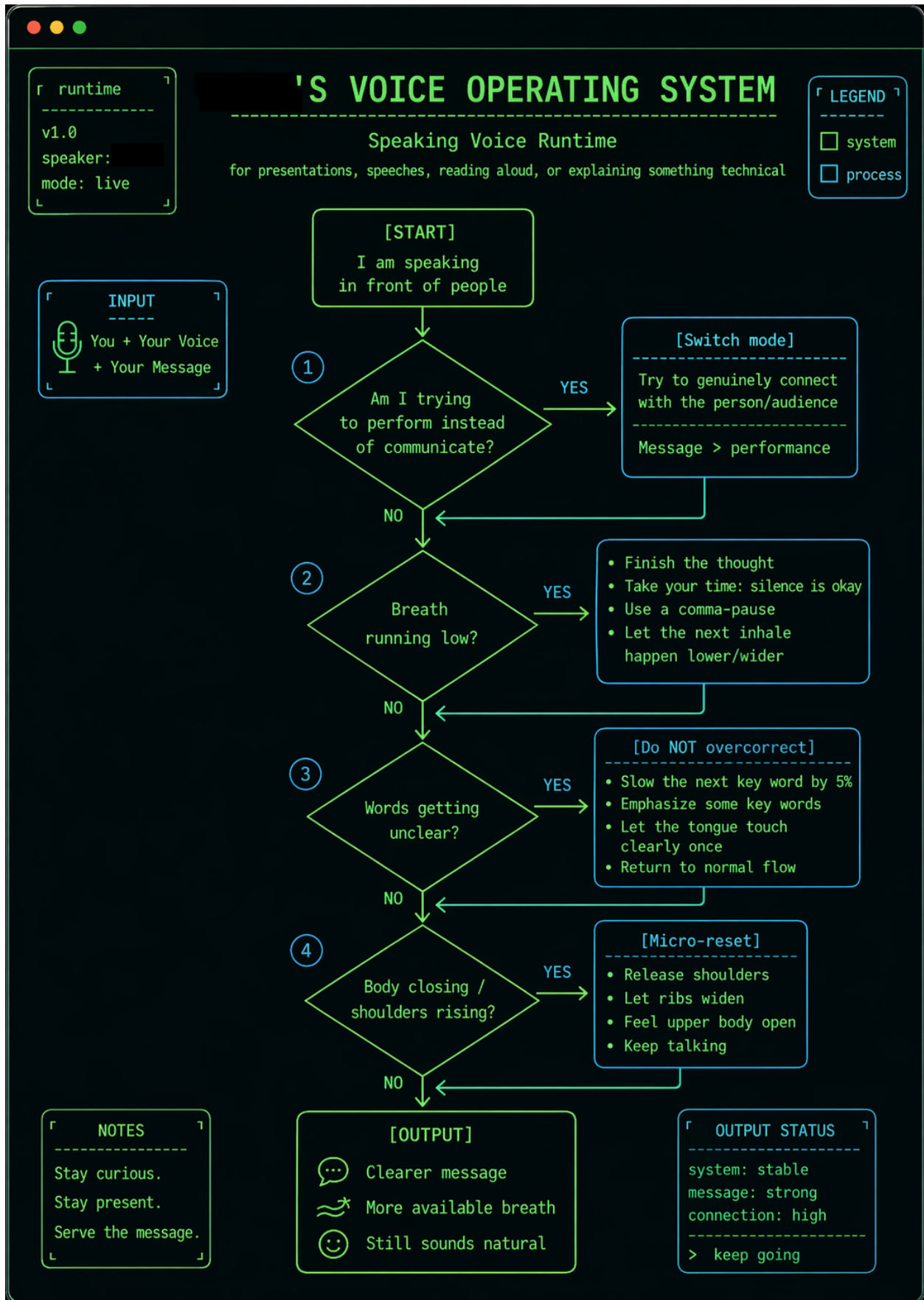


Figure 4. Post-session material example for P1 (participant's name redacted)

Theme 4 - Goals as pedagogical direction

Theme 4 highlights the role of goals, whether the learner's or my own. I used the student's vocal, personal, professional, expressive, or contextual goals to guide the session and the content between sessions.

At the beginning of the process, I asked all students about their expectations.

Sometimes objectives were explicitly stated; at other times, they were exploratory, emerging, or partly held by me as a teacher. P3 had clear aims and mentioned wanting to work on “power and strength, tone up in [her] higher register”, and finding her “it factor”, an “extra something that makes the audience really engage” (P3S1). Hence, in sessions, we worked on exercises to develop vocal range and power and explored contexts in which her “it factor” could become apparent. P4 participated primarily out of curiosity: “I was curious reading about the research project, and I'm just kind of coming to see what happens” (P4S1). In this instance, my pedagogical aims for him informed the design of the sessions, while I remained flexible rather than imposing fixed outcomes. For example, I aimed to help P4 recognise his vocal potential, as he had previously indicated that he was unaware of it. My overall goal was therefore to help him explore his voice and realise its possibilities. Occasionally, I had more precise goals for students, such as reaching a specific pitch or sound quality, which also influenced the session content. The data show how aims were regularly co-constructed, as goal-led personalisation was not always about following a clearly stated student goal.

I also adapted sessions and between-session material to specific contexts. If a student had a particular situation they needed to prepare for, I adjusted the class and/or the between-session material. For example, P5 was preparing for a series of asynchronous interviews; therefore, we rehearsed under the interview conditions, including “30 seconds to prepare and two minutes for [the] speech” (P5S3).

Tools were not simply tailored to context; they were further refined using pedagogical insights gathered during sessions. For example, P3 requested tools to improve her stage presence. In class, I noticed that her posture could be steadier and more upright. This led me to hypothesise that a more stable, open posture might also support her

stage presence. I then provided a between-session exercise that reframed her goal of theatricality through a posture-based exploration (see Appendix U, “Participant 3”). Theme 4 shows personalisation enacted through goals as a pedagogical compass: learner goals, contextual demands, and teacher pedagogical aims shaped the direction of sessions and between-sessions material. Goals were therefore not always fixed from the start but could be explicit, emerging, exploratory or refined through the process.

Theme 5 - Creative adaptive strategies in real time and between sessions

Theme 5 captures the concrete adaptive strategies through which personalisation became visible in practice. Across sessions, I continuously adapted or created exercises, songs, explanations, tools, practice tasks, pacing, keys, schedules, goals, and post-session support, in response to what seemed workable for each learner. These adaptations were often intuitive, although not arbitrary; they were informed by observation, learner feedback, technical knowledge, previous sessions, and ongoing pedagogical judgement.

These concrete pedagogical moves include small adjustments that demonstrate ongoing responsiveness to students and context, e.g., changing keys, simplifying exercises, using visual aids, and incorporating body movements or mimicry. A more specific example is colour coding for P1. When P1 said he was mentally tired, I colour-coded his song lyrics to indicate shifts from chest voice to mix or head voice. Each colour corresponded to a different vocal sensation, allowing him to rely on sensation rather than additional explanation: “While you [take a break], I will colour-code this so you don’t have to think about anything” (P1S4). See Appendix U, “Participant 1”. Other creative adaptations include more personalised ideas, such as “chang[ing] my [Zoom] background” (P2S2), so it displayed a large audience, simulating a more realistic public-speaking context as P2 worked on her speech skills. Another in-the-moment idea was to “talk about my life” while P4 was singing, creating an auditory distraction. He had “to not listen to me” (P4S5) and focus on the melody despite the competing auditory input, in preparation for harmony work.

This range of adjustment intensities suggests that Theme 5 operates on a spectrum from routine adjustments, such as key changes, to more highly tailored strategies. For example, I created a 20-day plan for P4, who wanted clear directions, to encourage spontaneous daily singing when this was not part of his usual routine (see Appendix U, “Participant 4”).

In conclusion, personalisation was enacted as an ongoing adaptive process, informed by learners’ needs, internal experiences, interests, goals, and contextual demands. This involved continually devising and refining strategies, ranging from small real-time adjustments to highly individualised tools, through observation, feedback, prior knowledge, and pedagogical judgement.

2. How did participants experience a short personalised teaching process?

The first part of the Findings and Discussion section examined how personalisation was enacted through pedagogical adjustments. This second part turns to how participants experienced the process. I first present descriptive analyses of pre- and post-intervention shift scores. I then examine participants’ descriptions of their learning experiences through their responses to a post-intervention open-ended survey in a second TA (TA2).

2.a Descriptive statistics of shift and personalisation scores

Shift scores were calculated from the pre- and post-intervention questionnaires. Appendix I details the questionnaire items, their distribution across the three question categories, and the scoring methodology. Categories were not communicated to participants. Shift scores (SSs) range theoretically from -6 to +6, with +6 indicating the greatest positive shift. Personalisation scores (PSs) were derived from the post-intervention personalisation questionnaire (Element 5, Appendix L). PSs range from 1 to 7, with 7 indicating the highest level of perceived personalisation.

Table 5

	Overall average shift score	Category 1 shift score	Category 2 shift score	Category 3 shift score	Personalisation score
		Relationship with voice	Voice functioning	Agency in voice-related learning	
P1	1.46	1.8	0.75	1.75	7
P2	1.62	0.8	1.25	3	7
P3	0.31	0.8	0	0	6.2
P4	0.62	-0.4	0.75	1.75	6
P5	1.08	1.2	0	2	7

Overall shift scores, category-level shift scores and personalisation scores by participant

Table 6

Measure	Mean	Median	Standard deviation	Min.	Max.	Range
Overall average shift score	1.02	1.08	0.55	0.31	1.62	1.31
Relationship with voice shift	0.84	0.80	0.80	-0.4	1.8	2.2
Voice functioning shift	0.55	0.75	0.54	0	1.25	1.25
Agency in voice-related learning shift	1.7	1.75	1.08	0	3	3
Personalisation score	6.64	7.00	0.50	6	7	1

Descriptive statistics for overall shift scores, category-level shift scores, and personalisation scores

Tables 5 and 6 show that all students had a positive overall SS. However, SSs varied across participants, ranging from 0.31 to 1.62. This variation became more evident at the category level, where distinct profiles emerged.

For example, for “Relationship with voice”, scores ranged from -0.4 (P4) to 1.8 (P1), with the score of -0.4 indicating that a positive overall shift score does not necessarily reflect a positive shift in all categories. This category therefore showed mixed shifts in participants’ self-reported experiences between the pre- and post-intervention questionnaires (Range = 2.2).

For “Agency in (...) learning”, scores ranged from 0 to 3 (Range = 3). The category presented the highest mean ($M = 1.7$), the highest median ($Mdn = 1.75$), and the highest individual category SS (3 for P2). The stronger shifts in “Agency in (...) learning” are consistent with later participant accounts describing active involvement in shaping and co-constructing their learning experience (see TA2 Theme 4, “Learner as co-creator”). For comparison, “Voice functioning” showed the lowest mean and median shifts ($M = 0.55$; $Mdn = 0.75$). These differences suggest heterogeneous patterns of change across participants and across dimensions of their vocal experience.

These descriptive scores do not establish a causal effect of the pedagogical process.

PSs were high and showed limited variation across participants ($M = 6.64$; $Mdn = 7.00$; $Min = 6.00$; $Max = 7.00$; $Range = 1$; $SD = 0.50$).

2.b Descriptive comparison: personalisation scores versus shift scores

Figure 5 shows that similarly high PSs co-occurred with more variable overall SSs across participants. No clear visual relationship emerged between PSs and overall SSs, suggesting that a process experienced as highly personalised does not necessarily involve uniform shifts. However, the small sample size and limited variation in PSs restrict the strength of this comparison. The absence of a clear pattern may also reflect limitations in the sensitivity of the SS measure, as the questionnaire was developed for this study and was not validated.

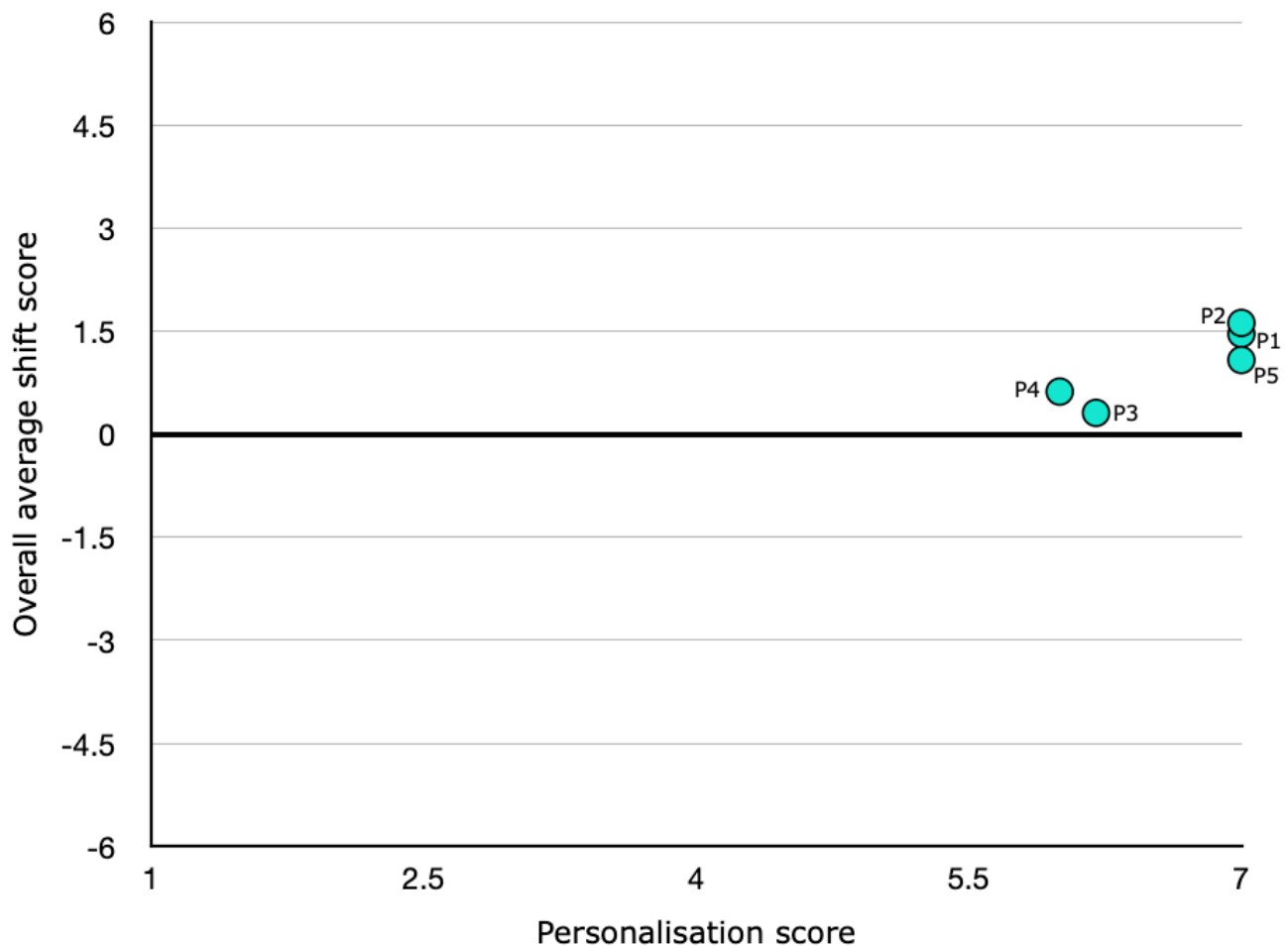


Figure 5. Scatterplot of personalisation scores and overall average shift scores across participants

2.c Thematic analysis of participants' descriptions of the learning experience

TA2 draws on responses to the post-intervention open-ended questionnaire (Element 6, Appendix O) to address the second part of the research question: how do students describe their learning experience during a short, personalised teaching process? Participants' responses were coded, then grouped into themes through an inductive process. See Appendix T for codes, candidate themes, code groupings, and details of the final themes.

Theme 1 - Feeling safe, supported, and at ease

Participants described the learning environment as relaxed, welcoming, supportive, encouraging, attentive, and patient. Feeling at ease also appeared to help some participants move beyond initial nervousness or uncertainty. Examples include P3 describing the sessions as “encouraging and supportive”, and P5 describing them as “relaxed and attentive to needs”. P4 gave a more detailed account, explaining that “the attitude and welcoming feeling [he] received from the instructor really helped [him] feel at ease” when he was “worried that [he] would feel embarrassed or shy”.

These examples suggest that participants’ experiences of the sessions were shaped by the emotional and relational environment. For P4 especially, feeling at ease appeared to facilitate exploration and participation.

Theme 2 - Experiencing learning as responsive and adaptable

The learning process was described as adaptable, flexible, responsive, or naturally flowing. Participants experienced the sessions as responding to their goals, feedback, comfort levels, interests, or emerging needs. For instance, P3 found the sessions “reactive and responsive”, and P4 mentioned variability in “the approach, lessons, or songs based on the feedback [he] gave”.

These accounts suggest that personalisation became visible to participants when they could directly perceive how in-session adjustments or in-between-session material responded to their broader goals or immediate needs. For example, P1 mentioned the “exercises [posted] on the website” and repitching songs as tangible evidence of adaptability.

Theme 3 - Experiencing the process as concrete and relevant

Participants described the learning as concrete, practical, understandable, and personally relevant. Examples include specific tools, technical explanations, personalised exercises, visual cues, song selection, and tasks connected to their interests, goals, or life and work contexts. P1 stated that he “enjoyed the sessions [with]

(...) biological details and mechanisms/theories behind different techniques and found them very useful in contextualizing [him]self". P2 mentioned "visual cues" to "work with (...) pitch" as a concrete strategy she took away from the sessions, and P5 identified practising "interview responses" and reviewing "the structure of the way [she] gave feedback for work purposes" as particularly well adapted to her needs. Theme 3 suggests that personalisation was experienced through practical tools and explanations that participants could readily understand, apply, and connect to their individual goals or contexts.

Theme 4 - The learner as co-creator

Participants mentioned their active role in shaping the learning process. They described giving input, influencing the focus or direction of sessions, and feeling involved in how the work unfolded. P5 valued how she "was actively shaping the focus and approach", and P1 appreciated "the amount of control and input [I] took from [him] on the direction of the sessions".

These accounts suggest that participants experienced personalisation positively when they could co-shape the learning process. Learner input formed part of the process itself rather than being limited to feedback after the fact.

Theme 5 - Experiencing voice as more accessible and developable

Several participants described changes in how they experienced, perceived, or used their voice during the process. They mentioned increased confidence, reduced fatigue, greater awareness, more independent exploration, and a shift toward seeing the voice as developable. Examples include P5 feeling "less fatigued using" her voice and P4 realising the voice "can be improved on and worked on".

P1, P2, and P4 described greater confidence alongside easier access to or exploration of their voice. For P4, this relationship was explicit: he "started to practice and sing when by [him]self far more often" and thought "it's a gain in confidence that has allowed [him] to do this". P2 felt "more confident in [her] range and hav[ing] some vocal tools to

lean on”. P1 similarly described increased confidence, noting that the “mental image of what [he] wants [his] voice to be has shifted closer to what [his] actual voice is”. Theme 5 highlights a stronger sense of vocal capability and a perception of the voice as more accessible and developable rather than intimidating or fixed.

In conclusion, participants described their experience as supportive, flexible, and relevant, with some highlighting their active involvement and changes in how they perceived or used their voice.

3. Comparison and integration

At a broad thematic level, two areas of correspondence were visible between teacher-enacted personalisation and participants’ reported experiences. TA1’s theme of “Nurturing” was reflected in participants’ accounts of “Feeling safe, supported, and at ease” in TA2. Similarly, “Using interests (...) as routes into learning”, together with aspects of “Creative adaptive strategies (...)”, corresponded with participants’ accounts of “Experiencing the process as concrete and relevant”.

The comparison below integrates these perspectives more explicitly across cases.

Adjustments and experiences were compared and considered alongside personalisation scores (PSs). “Prominent adjustments” were selected through interpretative analytical judgement based on their recurrence across sessions. “Participant-reported experience” summarises the most recurrent topics in each participant’s responses.

Table 7.
Comparison table

P#	PS	Prominent adjustments	Participant-reported experience	Comparison
P1	7	- Adapting to analytical/visual learning preferences. - Adapting tasks/materials to the student's interests and communication contexts. - Real-time scaffolding based on the student's performance, sensations, feedback and needs.	- Content, objectives and methods experienced as adjusted based on information and input he provided. - Welcomed physiological explanations and conceptual grounding of vocal sensations. - Validation, patience, increased understanding and challenges built confidence.	Strong alignment: - High PS. - Explanations/task content/in-session scaffolding align with the reported experience of personalisation and conceptual understanding. Visual-learning preference less explicitly supported in the reported experience.
P2	7	- Collaborative adjustment of goals, tasks and exercises (e.g., adapting to real-life contexts). - Iterative calibration through immediate learner feedback (i.e., comments such as "that feels more natural" shaping next step). - Building/reusing personalised cues that reduce tension and make vocal production easier through creativity (e.g., silly words, drawings).	- Relaxed and pleasant learning environment. - Perceived personalisation to the learner's needs. - Increased confidence and access to effective learning tools.	Strong alignment: - High PS. - Perception of personalisation consistent with my interpretation of ongoing task calibration/development of learning cues. - Access to useful tools consistent with strategies used in sessions.

P#	PS	Prominent adjustments	Participant-reported experience	Comparison
P3	6.2	- Artistic adjustments guided by the student's stated search for an "it factor" (e.g., using new modes to explore new vocal qualities) - Progressive technical challenges (e.g., pitch precision, register connection and strength, stability). - Scaffolded transfer from isolated coordination to song application, followed by gradual removal of support and increased student agency.	- Responsiveness and real-time adaptation. - Supportive and encouraging pedagogical environment. - Organic and naturally goal-aligned progression, perceived as less technical than previous voice lessons.	Strong alignment: - High PS. - Participant's description of the sessions as reactive/supportive/organically connected to goals. Difference in perspective: - Emphasis on artistic exploration not mentioned in participant's comments. - Transcripts show frequent technical work, while the participant described sessions as "somewhat less technical" than her previous lessons. Because no information is available about those previous lessons, the basis of this comparison cannot be determined.

P#	PS	Prominent adjustments	Participant-reported experience	Comparison
P4	6	- Reducing decision overwhelm. - Switching instructional cues or modalities in response to learner uptake. - Progressively adjusting challenge and support levels to provide more support or foster independence.	- Emotional safety enabling participation. - Adaptation based on learner feedback and preferences. - Growth in self-efficacy, autonomy, and belief in improvement.	Strong alignment: - High PS. - Participant's description of varied approaches/lesson content/songs in response to feedback aligns with observed adjustments. - Reported increase in confidence and autonomous singing consistent with gradual reduction of support. However, reducing decision overwhelm was not explicitly identified in the participant's responses. Conversely, emotional safety was prominent in the participant's answers, but not captured as one of the main adjustment patterns.

P#	PS	Prominent adjustments	Participant-reported experience	Comparison
P5	7	- Iterative real-time calibration based on the participant's responses, sensations and performance. - Contextual and embodied adaptation using participant's interests/experiences/meaning-oriented reflections. - Co-negotiated direction, sequencing and pacing.	- Learner agency and co-construction. - Personalisation through relevant and authentic contexts. - Increased ease and reduced effort in voice use.	Strong alignment: - High PS. - Co-negotiated direction/sequencing/pacing reflected in active shaping of focus and approach. - Use of relevant situations and adaptation to needs. - Connection to interests. Adjustments visible in transcripts but not mentioned in participant's responses: - Real-time calibration. - Adaptation to a reflective/meaning-oriented approach.

Most prevalent adjustments and participant-reported experiences generally aligned, particularly around responsiveness to learner input, adaptation to goals or context, and supportive aspects of the learning process. However, the two data sources appear to foreground different aspects: alongside descriptions of the process, participant accounts often emphasised perceived effects, such as increased confidence, greater understanding, or reduced effort. My analysis more often foregrounded process-level adjustments, such as cue adaptation or changes to sequencing or pacing. At the case level, the prominent adjustments I observed sometimes differed from those emphasised by the learner. For example, P4 emphasised emotional safety, which I had not identified as a prominent adjustment. I identified reducing decision overwhelm as prominent, although P4 did not mention it.

P2 was the only participant for whom no notable divergence was identified. Her transcripts did not reveal a distinctive interactional pattern that clearly explained this closer correspondence; its basis therefore remains uncertain.

Tangible adjustments appeared frequently in participants' written accounts, for instance, key changes (P1), visual tools (P2), or goal-oriented content (P3). Less concrete adjustments, such as real-time calibration (P5), were less foregrounded.

This suggests that some less tangible adjustments may have remained implicit and therefore less noticeable to participants. This implicitness is not necessarily problematic, as students may benefit from engaging in a responsive process without every pedagogical choice needing explicit clarification.

No expected response length was specified, and participants varied in the amount and precision of information they provided for the post-intervention open-ended questionnaire. P1's responses totalled 508 words, the highest among participants, and included considerable detail, whereas P3's totalled only 35 words and were more general (see Appendix O). This variation may have affected what could be identified for each participant.

All participants showed high PSs; however, their adjustment patterns varied. This suggests that an experience perceived as highly personalised may not rely on a specific set of adjustments. Given the highly concentrated PSs, I cannot determine whether certain configurations are associated with higher PSs.

Taken together, these findings suggest that personalisation may be better understood as an adaptive process than as a fixed configuration of adjustments, with teacher and learner perspectives foregrounding different aspects of that process.

4. Overall synthesis and implications

The findings reinforce the tension between generalisation and individualisation noted in the literature. They also reveal recurring processes through which personalisation was enacted and emphasise the central role of pedagogical judgement.

4.1 Connection to literature

Generalising individualised journeys

The reviewed literature highlighted personalisation as a broad and often underspecified concept (e.g., Clemmons, 2006), alongside the challenge of generalising a concept intended for individualisation (e.g., Akyuz, 2020). The findings supported the view that pedagogical responses resist standardisation, as they varied according to the individual learner. A concrete example was P1's flowchart (Figure 4), which had extremely limited direct transferability.

Nevertheless, TA1 may provide a descriptive map of the adaptive logic underlying these individualised responses. This suggests that generalisability may lie not in specific tools, but in the logic of continual adjustment through which they are generated. No clear counter-case emerged in which a highly individualised tool appeared to operate independently of this broader adaptive process. For instance, P1's highly specific flowchart depended on identifying his needs, interests and preferred ways of working. Across the findings, this adaptive logic formed a recurring cycle: observing and understanding students → adapting → observing the response → readapting. This complements the broad student-centred principles proposed in the literature (Daniel and Parkes, 2019; Goffi-Fynn, 2024) by illustrating how these principles may unfold through repeated acts of observation, adaptation and reassessment. Furthermore, this empirical sequence mirrors the “sensible cycle in teaching” described by Tomlinson (2014, p. 77), in which tentative plans are developed, continuously checked against student needs, and adapted accordingly.

In TA1, Theme 5 also suggests a continuum of adjustments that vary considerably in degree and specificity. They range from conventional voice-related adjustments such as key changes, through more specific adaptations such as using dance movements, to highly individualised tools such as a 20-day singing plan. The conventional adjustments at one end of the continuum are compatible with Bulger's (2016) account of personalisation as something that may occur through ordinary responsiveness.

However, because the teaching process was deliberately personalised and involved only my own practice, the study cannot establish whether personalisation is inherent in teaching more broadly, as Bulger (2016) suggests.

Existing student-centred principles as interdependent pedagogical actions

Existing accounts of student-centred teaching offer a set of guiding principles (e.g., APA, 1997; Goffi-Fynn, 2024), but often provide less detail on how they are enacted in practice. The findings broadly converge with these principles. Interpersonal rapport and supportive psychological conditions, emphasised by Clemmons (2006) and Blackwell (2020), were reflected in TA1's "Nurturing" theme and TA2's "Feeling safe (...)" theme. Principles of autonomy, agency and co-construction (e.g., Brown, 2008; Sherwood, 2023) were evident in TA2, which highlighted learners as co-creators. Table 6, which showed the highest mean and median SSs for "Agency in (...) learning", supports this further. Principles of relevance, motivation and learner-specific meaning (e.g., Park, 2022) were reflected in the interests, contexts and goals identified in TA1 Themes 3 and 4.

The findings add practical specificity by showing how these principles can be enacted. For instance, safety, a core factor of rapport (Clemmons, 2006), was identified in TA1, Theme 1, and was enacted through breaks or permission checks. The principle of relevance (TA1, Theme 3) was enacted, among other ways, through the use of professional contexts in pedagogical tasks.

Moreover, the themes identified in TA1 show that these principles do not operate separately, exemplifying Goffi-Fynn's idea of a "circle with many entry points" (in Stephenson, 2018, p. 411). P4's case illustrated this interaction: inquiries aimed at "Understanding the student (...)" came into tension with "Nurturing". This friction gave practical specificity to the circle metaphor and showed that principles may sometimes have to be balanced.

Student-centred principles may therefore need to be prioritised through pedagogical judgement, rather than applied as a checklist to each student journey. This conception

of an interconnected circle, together with the need to prioritise between principles, provides a practical contrast with the more fixed pedagogical structure associated with the master–apprentice model. This flexibility may also help explain why student-centred education resists a single precise formulation, although such conceptual breadth may come at the cost of definitional precision.

Pedagogical judgement: the teacher as interpretative and relational variable

Bulger (2016) suggests that interpersonal cues coupled with knowledge of the learner and knowledge of learning inform adaptations. Although I highlighted possible limitations to this stance, the sessions made visible how a teacher can gather, verify and use learner information. The findings included examples such as verifying the student's perceived internal state (P1; P2) or clarifying the meaning of “credibility” (P5). Although the findings reflect only my own processes, they concretely show what “responsiveness” can require of a teacher.

Furthermore, beyond exemplifying responsiveness in action, the results indicate that the way student-teacher relationships are established is an integral part of the process.

“Nurturing” (TA1) accounted for nearly one-third of all coded adjustments (31.7%; see Table 4). “Feeling safe, supported and at ease” was highlighted by all participants (TA2), with P4 explicitly stating that “the attitude and welcoming feeling [he] received from the instructor really helped [him] feel at ease”. This converges with the literature emphasising the importance of interpersonal rapport (Bulger, 2016; Akyuz, 2020).

In the present study, the teacher therefore appeared to be a variable in two related ways: through the pedagogical judgement used to interpret learner information (Daniel and Parkes, 2019; Park, 2022; Goffi-Fynn, 2024), and through the relational conditions within which those adjustments were enacted (Clemmons, 2006; Cornelius-White, 2007; Blackwell, 2020).

If the teacher is a variable in these ways, it is worth considering whether my own pedagogical background may have shaped the overall TA1 distribution. Daniel and Parkes' (2019) observation that teachers may lack formal pedagogical training makes

this question particularly relevant. “Nurturing” (31.7%) and “Creative adaptive strategies” (31.4%) together accounted for 63.1% of coded adjustments. While much of my earlier training was technical and scientific, I also pursued training in coaching, questioning, and listening approaches because of my existing interest in these areas. Training, personal interests, and pedagogical preferences are therefore difficult to separate in my own practice. Other characteristics, including intuition, experience, creativity and personality, may also have contributed to the adjustment profile observed. In line with Clemmons’s (2006) assertion that each teacher has a unique style and develops distinct pedagogical relationships, the TA1 configuration may therefore be partly teacher-shaped, which limits the extent to which it can be assumed to apply across teachers.

4.2 Implications for practice and recommendations

The findings highlight two significant implications for my professional practice. Firstly, my understanding of what constitutes a “good” or sufficiently personalised response has been recalibrated. I now contend that a highly individualised tool does not necessarily indicate a greater degree of personalisation: a straightforward adjustment can also serve as a meaningful personalised response when it effectively addresses the learner’s needs. Consequently, I should continue developing individualised tools when they appear beneficial, but prioritise the relevance of the adjustment to the learner. Secondly, developing highly individualised tools during the study proved notably time- and energy-consuming. In subsequent practice, should I continue to tailor resources to the same extent as during the research, it will be essential to remain mindful of time and energy management.

This distinction between personalising the pedagogical response and personalising the resource itself has implications for the sustainability of practice. Personalisation and reuse are not necessarily mutually exclusive: while a tool may ultimately be highly individualised, certain systems, structures, or formats underlying it can be retained and adapted. This suggests that it is possible to develop a set of foundational tools or templates that maintain sufficient flexibility for adaptation to individual learners. For instance, in the case of P1’s flowchart, a blank version could be preserved for future

learners who share his interest in computer science and whose information processing could similarly benefit from a structured, visual representation.

Moreover, visual resources such as Zoom backgrounds (P2) could be organised into a reusable collection designed for adaptation across various public-speaking contexts.

The intention would not be to standardise responses to learners. Instead, it would be to standardise only those design elements that can reasonably be generalised before resources become too personalised to be effectively adapted for others. Over time, I could develop a range of adaptable resources, potentially enhancing efficiency and sustainability in the personalisation process. Additionally, sharing these tools, pre-designed templates, or flexible frameworks within communities of practice could facilitate collective reflection on observation and adaptation in voice pedagogy.

Collaborative testing and refinement may also contribute to the development of more robust, adaptable resources.

4.3 Limitations

The study examined personalisation within my own practice. As identified above, I, as the teacher, functioned as an interpretative and relational variable. The findings may therefore partly reflect teacher-specific pedagogical judgement, experience, preferences and relational style, limiting their transferability across teachers. The study also involved only five participants, which limits the variability of student profiles and the ability to determine whether observed patterns would be consistent in other cases.

The amount and specificity of TA2 data also varied substantially across participants, which may have influenced the themes and divergences that could be identified in the cross-case integration.

The quantitative component presents further limitations. PSs ranged from 6 to 7, with 7 being the maximum, resulting in restricted variability and a possible ceiling effect (Hessling, Traxel and Schmidt, 2004). This restricted range also limited the possibility of

exploring whether different adjustment configurations corresponded to different levels of perceived personalisation. In addition, the questionnaires, along with their categories and items, were developed specifically for this project and were not psychometrically validated. Therefore, SSs should be viewed as exploratory indicators of shifts between pre- and post-intervention responses, and PSs as exploratory indicators of perceived personalisation.

Conclusion

Throughout the intervention, personalisation was enacted through various interdependent adjustments, structured within a recurring adaptive cycle. Configurations of adjustment types varied depending on the student. Participants described the experience as highly personalised, relational, flexible, and relevant, with some participants highlighting co-construction and some noting positive changes in how they perceived or used their voice. The teacher's and learners' perspectives converged broadly but focused on different aspects. Personalisation scores were high, and overall pre- and post-intervention shift scores were positive. Category-level shift scores, however, showed different patterns, suggesting that a process perceived as highly personalised was not accompanied by a uniform trajectory.

The study addressed the set objectives, and its aims were achieved. I explored how pedagogical personalisation was enacted in my studio. I examined participants' self-reported experiences and compared teacher-observed adjustments with participant-reported experiences across cases.

The individual learning outcomes were also met:

- While still intuitive, my teaching decisions are now more documented and visible through a recurring adjustment cycle. Indeed, since completing the study, I have observed a shift in my teaching; I now seem to second-guess my decisions less and have greater confidence in the process. This allows me to focus better on the student.
- Developing individualised resources strengthened my ability to distinguish between adjustments driven by learner needs and those driven by creative impulse. Analysis of the resources revealed that perfectionism and creativity sometimes led me to refine materials beyond what was pedagogically necessary, consuming time and energy without necessarily increasing their relevance or personalisation. I now recognise these tendencies more readily in practice.
- Finally, I feel more able to contextualise my approach academically.

As a practitioner, I observed that a relatively straightforward adjustment can be relevant without becoming an overly personalised tool. I also saw potential for using pre-designed adaptable templates. As a teacher-researcher, I applied Schön's (1983) reflection-in-action and reflection-on-action concepts, along with Mercer's (2007) insider-outsider continuum. The distinction between reflection-in-action and reflection-on-action proved effective in examining sessions retrospectively from a more analytically distanced position. As a researcher, I occasionally struggled to feel academically confident when working with highly interpretative data. Nevertheless, this experience highlighted that in qualitative research, establishing credibility does not necessitate the complete removal of subjectivity. Instead, it seems crucial to maintain transparency, reflexivity, and thorough documentation throughout the analytical process, while interpreting the data with appropriate caution.

Future research could apply the same methodological approach to a broader and more heterogeneous learner sample to examine whether similar or additional themes and processes emerge. Extending the design across multiple teachers would also allow teacher-related variability to be examined. Future studies could also involve a larger number of sessions to examine how personalisation evolves with the pedagogical relationship: adjustments may become more targeted as the educator gains better insight into the learner. Additionally, it would be valuable to explore whether the reported changes in voice perception or use develop over time.

Ultimately, this study suggests that the transferable element of pedagogical personalisation may lie less in specific adaptations than in the recurring adaptive process through which they are generated: understanding, adapting, observing, and readapting in response to the individual learner. This offers one way of addressing the tension between generalisation and personalisation: rather than standardising adaptations, teacher development could focus on cultivating adaptive capacity alongside voice expertise and pedagogical competence.

References

- Adam, I., Shariman, T.P.N.T. and Siran, Z. (2024). Development and Efficacy of Adaptive Personalised Learning Environments: A Systematic Review and Meta-analysis. *Pakistan Journal of Life and Social Sciences (PJLSS)*, [online] 22(2). doi:10.57239/pjlss-2024-22.2.00546.
- Ahlfeldt, S.L. (2003). Problem-based learning in the public speaking classroom. Dissertation.
- Akyuz, Y. (2020). Personalized Learning in Education. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*, 69(1), pp.175–195.
- American Psychological Association (1997). LEARNER-CENTERED PSYCHOLOGICAL PRINCIPLES: A Framework for School Reform & Redesign.
- Anderson, P.J. and Benson, S.K. (2025). Mapping Pathways to Inclusive Music Education: Using UDL Principles to Support Primary Teachers and Their Students. *Education Sciences*, [online] 15(9), pp.1200–1200. doi:10.3390/educsci15091200.
- Bergen, N. and Labonté, R. (2020). “Everything Is Perfect, and We Have No Problems”: Detecting and Limiting Social Desirability Bias in Qualitative Research. *Qualitative Health Research*, [online] 30(5), pp.783–792. doi:10.1177/1049732319889354.
- Blackwell, J. (2020). Expertise in applied studio teaching: Teachers working with multiple levels of learners. *International journal of Music education*, 38(2), pp.283–298. doi:10.1177/0255761419898312.
- Blumer, H. (1954). What is wrong with social theory? *American Sociological Review*, 19(1), pp.3–10. doi:10.2307/2088165.
- Boothe, K.A., Lohmann, M.J., Donnell, K.A. and D. Dean Hall (2018). Applying the Principles of Universal Design for Learning (UDL) in the College Classroom. *The Journal of Special Education Apprenticeship*, 7(3). doi:10.58729/2167-3454.1076.

Braun, V. and Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), pp.77–101. doi:<https://doi.org/10.1191/1478088706qp063oa>.

Brown, J.K. (2008). Student-Centered Instruction: Involving Students in Their Own Education. *Music Educators Journal*, 94(5), pp.30–35. doi:10.1177/00274321080940050108.

Budiawan, H., Gredy Aprianno, R., Joko Srimoko, G., Aditya Andriyanto, R.M., Supriadi, D., Nur Saputra, D., Saryanto and Bangkit Wijaya, B. (2023). Humanism Music Education: Suka Hardjana Teaching Style at Indonesia Art College. *Remittances Review*, 8(4), pp.892–907. doi:10.17632/xgksnrc3vr.2.

Bulger, M. (2016). Personalized Learning: The Conversations We're Not Having. [online] *Data & Society Research Institute*. Available at: https://datasociety.net/wp-content/uploads/2016/09/PersonalizedLearning_primer_2016.pdf [Accessed 27 May 2026].

Carey, G.M., Bridgstock, R., Taylor, P., McWilliam, E. and Grant, C. (2013). Characterising one-to-one conservatoire teaching: Some implications of a quantitative analysis. *Music education research*, 15(3), pp.357–368. doi:10.1080/14613808.2013.824954.

Cazden, J. (2023). Revising Authenticity: Case Studies of Media Actors in Voice Therapy. *Voice and Speech Review*, 17(2), pp.151–166. doi:10.1080/23268263.2022.2091708.

Che Mat, N. and Jamaludin, K.A. (2024). Effectiveness of Practices and Applications of Student-Centered Teaching and Learning in Primary Schools: A Systematic Literature Review. *International Journal of Academic Research in Progressive Education and Development*, [online] 13(3), pp.1025–1044. Available at: <http://dx.doi.org/10.6007/IJARPED/v13-i3/21733>.

Clemmons, J. (2006). Rapport and Motivation in the Applied Studio. *Journal of Singing*, 63(2), pp.205–210.

Colahan, E. (2022). Conducting a liberatory pedagogy: Empowering the music apprentice as a knowledge producer in the classroom. *College Music Symposium*, 62(1). doi:10.18177/sym.2022.62.sr.11559.

Cornelius-White, J. (2007). Learner-centered teacher-student relationships are effective: A meta-analysis. *Review of Educational Research*, [online] 77(1), pp.113–143. doi:10.3102/003465430298563.

Creswell, J.W. and Plano Clark, V.L. (2017). Designing and conducting mixed methods research. 3rd ed. Thousand Oaks Sage Publications.

Crotty, M. (1998). The foundations of social research : meaning and perspective in the research process. London ; Thousand Oaks, Calif.: Sage Publications.

Daniel, R. and Parkes, K.A. (2019). Applied music studio teachers in higher education: evidence of learner-centred teaching. *Music Education Research*, 21(3), pp.269–281. doi:10.1080/14613808.2019.1598345.

Denscombe, M. (2021). The good research guide : research methods for small-scale social research projects. 7th ed. London: Open University Press.

Doyle, L.H. (2003). Synthesis through meta-ethnography: paradoxes, enhancements, and possibilities. *Qualitative Research*, 3(3), pp.321–344. doi:10.1177/1468794103033003.

Du, Q. (2024). A Systematic Approach to Innovative Strategies for Vocal Instruction in Higher Education: Enhancing Student Performance. *Pacific International Journal*, [online] 7(5), pp.68–73. doi:10.55014/pij.v7i5.696.

Dwyer, S.C. and Buckle, J.L. (2009). The space between: on being an insider-outsider in qualitative research. *International Journal of Qualitative Methods*, 8(1), pp.54–63. doi:https://doi.org/10.1177/160940690900800105.

Freire, P. (1970). *Pedagogy of the Oppressed*. New York: Bloomsbury Academic.

Fryer, T. and Navarrete, C. (2024). *A short guide to ontology and epistemology (why everyone should be a realist)*. 3rd ed. [online] Available at: https://www.researchgate.net/publication/383296029_A_short_guide_to_ontology_and_epistemology_Why_everyone_should_be_a_realist_Third_edition [Accessed 30 Mar. 2026].

Goffi-Fynn, J. (2024). Applying Student-Centered Strategies in the Applied Teaching Music Studio . *Visions of Research in Music Education*, [online] 45(1), pp.99–113. Available at: https://digitalcommons.lib.uconn.edu/vrme/vol45/iss1/9/?utm_source=digitalcommons.lib.uconn.edu%2Fvrme%2Fvol45%2Fiss1%2F9&utm_medium=PDF&utm_campaign=PDFCoverPages [Accessed 14 Aug. 2025].

Grant, R. and Sugarman, J. (2004). Ethics in Human Subjects Research: Do Incentives Matter? *The Journal of Medicine and Philosophy*, [online] 29(6), pp.717–738. doi:10.1080/03605310490883046.

Guillemin, M. and Gillam, L. (2004). Ethics, Reflexivity, and “Ethically Important Moments” in Research. *Qualitative Inquiry*, 10(2), pp.261–280. doi:<https://doi.org/10.1177/1077800403262360>.

Hessling, R.M., Traxel, N.M. and Schmidt, T.J. (2004) ‘Ceiling Effect’, in Lewis-Beck, M.S., Bryman, A. and Liao, T.F. (eds.) *The SAGE Encyclopedia of Social Science Research Methods*. Thousand Oaks, CA: SAGE Publications, pp. 106–107. Available at: <https://doi.org/10.4135/9781412950589.n102> (Accessed: 22 July 2026).

Hicks, M. (1997). Using the Personalized System of Instruction (PSI) Model and the Forensic Laboratory to Modify and Improve the Basic Speech Course. Thesis.

Hume, A. and Wong, M. (2025). From Face-To-Face teaching, to Online and beyond: Redeveloping a public speaking subject for flexible delivery. *Voice and speech review*, 19(1), pp.89–97. doi:10.1080/23268263.2024.2318149.

Jennings, P.A. and Greenberg, M.T. (2009). The Prosocial classroom: Teacher Social and Emotional Competence in Relation to Student and Classroom Outcomes. *Review of Educational Research*, 79(1), pp.491–525. doi:10.3102/0034654308325693.

Kladder, J.R. (2020). Learner-Centered Teaching - Alternatives to the Established Norm. In: J.R. Kladder and D.A. Williams, eds., *The Learner-Centered Music Classroom*. Routledge.

Lee, M. (2025). A study on early childhood instrumental music education methods applying universal design for Learning (UDL). In: J. Mercer Young, J. Fuccillo Kook and K. Meltzoff, eds., *Education and human development*. London, United Kingdom: IntechOpen. doi:10.5772/intechopen.1012337.

Magill, R. and Anderson, D.I. (2024). Motor learning and control : concepts and applications. 5th ed. New York: Mcgraw-Hill.

Mavrič, M. (2020). The Montessori Approach as a Model of Personalized Instruction. *Journal of Montessori Research*, 6(2). doi:10.17161/jomr.v6i2.13882.

Mercer, J. (2007). The challenges of insider research in educational institutions: wielding a double-edged sword and resolving delicate dilemmas. *Oxford Review of Education*, 33(1), pp.1–17. doi:10.1080/03054980601094651.

Mikajlo, I. (2024). Lyndall Hendrickson's pedagogy: A learner-centred, multi-sensory violin teaching approach. *International journal of Didactical studies*, 5(1). doi:10.33902/ijods.202424272.

Mincu, M.E. (2012). Mapping meanings of personalisation. In: *Personalisation of Education in Contexts*. Rotterdam/Boston/Taipei: Sense Publishers, pp.191–206.

Moss Erickson, H. (2022). Between Time and Space: Coordination of Articulator Movements in the Motor Cortex. *Journal of Singing*, [online] 79(5), pp.665–670. doi:10.53830/dpmg9854.

Orb, A., Eisenhauer, L. and Wynaden, D. (2001). Ethics in Qualitative Research. *Journal of Nursing Scholarship*, 33(1), pp.93–96. doi:<https://doi.org/10.1111/j.1547-5069.2001.00093.x>.

Park, M.H. (2022). Adopting a Student-Centered Teaching Approach in the Private Studio. *American String Teacher*, 72(1), pp.23–25. doi:10.1177/00031313211064787.

Peng, L. (2024). A Study on Vocal Teaching Strategies in Higher Education from the Perspective of Aesthetic Education. *Art and Performance Letters*, 5(1). doi:10.23977/artpl.2024.050105.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y. and Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), pp.879–903.

Raun, P. (2020). Let your life speak: The art of connecting across difference. *Voice and speech review*, 14(1), pp.49–55. doi:10.1080/23268263.2020.1668713.

Sauerland, W. (2018). Voice Class: A Learner-Centered Approach. *Journal of Singing*, 74(5), pp.527–532.

Schön, D.A. (1983). *The Reflective Practitioner: How Professionals Think in Action*. Aldershot, U.K.: Ashgate, Cop.

Sherwood, T. (2023). Evolving the Master-Apprentice Tradition: A Pathway Back to a Student-Centered Pedagogy. *Journal of Singing*, 80(1), pp.13–22. doi:10.53830/gtoj3285.

Spector, P.E. (1992). *Summated rating scale construction : an introduction*. Newbury Park, Calif.: Sage Publications.

Stephenson, K. (2018). Critical Thought, Intrinsic Motivation, and the Voice Studio: Perspectives of Master Teachers. *Journal of Singing*, 74(4), pp.405–414.

Su, F. and Guo, Q. (2026). The optimization of vocal music teaching by integrating the STEAM concept with the intelligent recommendation system. *Scientific Reports*, 16(1). doi:10.1038/s41598-025-30288-8.

Teddlie, C. and Tashakkori, A. (2009). *Foundations of Mixed Methods Research : Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*. Thousand Oaks: SAGE Publications, Inc.

Tomlinson, C.A. (2014). *The differentiated classroom: Responding to the needs of all learners*. 2nd ed. Association for Supervision & Curriculum Development.

Walton, J. (2018). “Your fears are appreciated here”: Exploring a humanistic approach to public speaking instruction. *Administrative issues journal: Education, practice, and research*, 8(1). doi:10.5929/2018.8.1.2.

Winter, D. (2023). Exploring the Narrative: Voice Practitioner Research and the Literature Review Process. *Voice and Speech Review*, 17(2), pp.131–150. doi:10.1080/23268263.2022.2144971.

Yan, H. (2025). Design and Empirical Research on Personalized Vocal Practice System in Vocal Music Teaching Based on AIGC Generation Technology. *Proceedings of the 2025 International Conference on Generative AI and Digital Media Arts*, pp.31–35. doi:10.1145/3770445.3770451.

Yin, R.K. (2003). *Case study research : design and methods*. 3rd ed. Thousand Oaks ; London ; New Delhi: Sage.