Teaching Pitch Matching in Classroom Settings: Strategies, Barriers, and Post-Pandemic Adaptations

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Proposal

My name is Rachael Griffith, an elementary (primary) music teacher in Boise, Idaho, USA, and chair of the Idaho All-State High School Treble Honor Choir. With over a decade of experience teaching grades K–12 (ages 5-18), I am undertaking a research project to investigate the strategies, challenges, and innovations of classroom music educators in teaching pitch matching to their students.

Field of Interest

This study is situated in music education, focusing on vocal pedagogy for young singers aged 7–17. It explores how general music and choir teachers design and implement pitch matching activities, the tools they use, and the professional development resources they access. By examining teachers' lived experiences, the research aims to deepen understanding of effective instructional approaches for this developmental stage (Butler, Smith & Jones, 2010).

Justification for the Research

The COVID-19 pandemic has significantly altered both student and teacher experiences in music classrooms. Remote learning, social distancing, and interruptions to in-person instruction have affected students' vocal development and limited teachers' ability to provide immediate feedback (European Network of Music Teachers Associations, 2021). Many teachers I know, myself included, have adapted by developing innovative strategies in real time. This project seeks to learn from these adaptations and highlight

effective post-pandemic practices to inform my teaching and contribute to the professional community.

While research on pitch matching in children is well established, there is a gap regarding teachers' perspectives and decision making processes. Most studies focus on student outcomes, with less attention to instructional challenges faced by educators. This project aims to identify classroom practices that are effective but may not be documented in existing literature, filling a critical gap and providing practical insights for teacher training and curriculum design (Cooper & Humphreys, 2016; Pears & Shields, 2016).

Research Methodology

Objectives

- Document current instructional strategies and adaptations for pitch matching.
- Explore the impact of post-COVID-19 changes on instruction.
- Highlight successful, underreported practices.
- Provide actionable recommendations for educators and training programs.

How, When, and Where

The research will be conducted from April 2025 to July 2025 in Boise and surrounding Idaho regions. Data will be collected both online and in person, ensuring accessibility and context rich information.

Population/Sample

The target population is elementary and secondary music teachers working with students aged 7–17. The sample will include 10-30 teachers from public and private schools, selected purposely for diversity in experience and context. A subset of 3-5 teachers will participate in in-depth interviews, chosen to represent a variety of instructional approaches.

Methodological Approach and Design

A mixed-methods, sequential explanatory design will be used. Phase one involves quantitative data collection via surveys to identify trends and common practices. Phase two uses qualitative interviews to explore these practices in greater depth. This approach allows for both generalizable data as well as nuanced understanding of teacher experiences (Butler, Smith & Jones, 2010; Cooper & Humphreys, 2016).

Data Collection and Analysis

- Surveys: Online surveys will gather demographic data, instructional strategies, challenges, and reflections on post-pandemic changes.
- Interviews: Semi-structured interviews will allow teachers to elaborate on their experiences and share successful strategies.
- Analysis: Quantitative data will be analyzed using descriptive statistics and cross tabulation. Qualitative data will be thematically coded to identify recurring themes and innovative practices.

Ethics

All participants will be fully informed, with consent obtained. Data will be anonymized and securely stored. Participation is voluntary, with the right to withdraw at any time. The study will comply with institutional ethical guidelines.

Conclusion

By focusing on classroom teachers' experiences, this project will generate actionable recommendations for music educators and training programs. The mixed-methods approach provides a comprehensive understanding of teaching pitch matching to pre-adolescent and adolescent voices, supporting more effective and confident music teaching.

Individual Learning Outcomes

I aim to:

- Deepen my understanding of effective pitch matching pedagogy;
- Analyze post-COVID-19 impacts on music instruction;
- Develop mixed-methods research skills;
- Recognize study limitations;
- Contribute practical insights to the music education community.

Report

Introduction

“Pitch matching” - the ability to accurately reproduce musical pitches - is fundamental in elementary and secondary music education, forming the basis for vocal development, ensemble singing, and musical confidence (Morrison, 2001; Cardany, 2013; Green, 2014; Welch, 2016). Students with strong pitch-matching skills are more likely to be involved in music throughout their lives (Welch, 2016). Traditionally, interactive, in-person methods have been central to building these skills (Cardany, 2013; Adams, 2016). However, the COVID-19 pandemic in 2020 forced a rapid shift to remote and hybrid instruction (Crawford et al., 2020; Daubney et al., 2021; Biasutti et al., 2021; Harris & Wheeler, 2022), profoundly impacting the relational, embodied aspects of music-making vital to pitch matching (Biasutti et al., 2021; Harris & Wheeler, 2022).

In my own teaching, I adapted by exploring online tools and video assignments. While this allowed lessons to continue, students often faced technology barriers, reduced individualized support, and increased “Zoom fatigue” (McWhirter, 2020, p. 41). Still, this period encouraged flexible, blended strategies and innovation (Green, 2014; Crawford et al., 2020). Compared to research on student outcomes, there remains little focus on the classroom adaptations developed by teachers themselves (Cardany, 2013; Welch, 2016;

Hennessy et al., 2020), highlighting a need for practical research to support professional development (Daubney et al., 2021; Hennessy et al., 2020).

This study, grounded in my experiences as both practitioner and researcher, explores current and evolving pitch-matching practices in US classrooms post-pandemic, as well as teachers' professional learning needs. Through interviews and surveys, I aim to bridge research and classroom reality, offering actionable recommendations for teachers and policymakers.

Literature Review

Framing the Review

Relevant literature was sourced through academic databases (ERIC, JSTOR, Sage Journals, UWTSD Library), focusing on "pitch matching," "music education," "online learning," and "pandemic adaptations." Studies were included if they addressed pitch matching in K–12 or secondary settings, instructional approaches, or the influence of technology and psychosocial factors on music learning. The emphasis was on peer-reviewed articles from the last twenty years, with selective inclusion of practitioner reports when offering contemporary insights. Out-of-scope were studies centered on higher education, instrumental-only pedagogy, or adult learners, keeping the review squarely on school-aged students.

This review synthesizes research on pedagogy, cognitive development, technology, psychosocial influences, and educational adaptations, aiming to clarify best practices and persistent challenges for supporting pitch-matching in diverse classroom contexts.

Core Pedagogical Approaches

Effective pitch matching pedagogy is anchored in live vocal modeling. Teacher demonstrations, particularly when adapted to match students' vocal range and timbre, serve as crucial exemplars of accurate intonation and phrasing (Granot et al., 2013). Yet, research also notes that adult teachers can find it difficult to model in children's ranges, and students may sometimes respond better to models who share their gender or vocal

characteristics (Granot et al., 2013; Morrison, 2001; Hinkley, 2018). For students facing particular challenges, instrumental cues can sometimes be as effective as vocal ones (Moore, 2004; Cardany, 2013).

Echo singing, call-and-response, and harmonized rounds are widely used to build pitch discrimination, or the ability to distinguish subtle pitch differences. Such strategies promote repetition, aural focus, and participation, thriving within routines that offer frequent, short exercises (Pfordresher & Demorest, 2021; Demorest et al., 2015).

A key element is pedagogical differentiation. Younger or beginner students often respond best to playful games and slides, while older or more advanced pupils benefit from harmonizing, interval work, and improvisation (Moore, 2004; Cardany, 2013; Demorest et al., 2015; Hinkley, 2018). Peer practice and ensemble singing also promote inclusion and boost both individual and collective accuracy in pitch matching (Welch et al., 2020).

Influential Factors

Pitch discrimination is foundational to pitch matching, as those who excel at hearing differences generally learn to sing on pitch more quickly (Moore, 2004; Hedden, 2012; Demorest et al., 2015). There is debate over whether main challenges are perceptual or production-based, with calls for more research on this distinction (Hedden, 2012).

Strong evidence shows that early and regular musical training—including singing, instruments, and ensemble work—fosters auditory memory and vocal control, leading to long-term benefits for pitch skills (Demorest et al., 2015; Cardany, 2013; Moore, 2004). Frequent exposure to singing at home or in the community further develops these abilities, while a lack of early experience or negative cultural attitudes often means students need more school support (Moore, 2004; Cardany, 2013).

Developmental transitions, like puberty, present particular challenges—especially for students assigned male at birth, whose changing voices can impact pitch accuracy and confidence (Granot et al., 2013; Morrison, 2001; Cardany, 2013; Pfordresher & Demorest, 2021). Some studies report an advantage for students assigned female at birth during adolescence, but most research agrees that, with equitable opportunities, all genders

can achieve similar proficiency (Morrison, 2001; Welch et al., 2020). More global, longitudinal studies are still needed.

Neurodiversity also matters: students with strengths in memory or attention may progress faster, but those with dyslexia, ADHD, or autism display unique musical capabilities or require extra support (Morrison, 2001; Moore, 2004; Demorest et al., 2015). Flexibility and individualized pedagogy are widely recommended (Cardany, 2013; Granot et al., 2013), although specific guidance on inclusive practice is still emerging.

Technology's Role

Technology has increasingly impacted pitch matching instruction. Tools like Sing & See, Tonal Energy, or pitch-matching apps offer instant, visual feedback, making practice both interactive and accessible, especially for students needing extra affirmation or those practicing outside the classroom (Rutkowski, 2015; Wilson et al., 2017; Hinkley, 2018; Wise, 2021). Yet, whole-class implementation remains difficult due to logistical issues and device limitations (Murgia et al., 2020). Blended models, mixing digital feedback with traditional classroom methods, have become a pragmatic solution.

Psychosocial Dynamics

Technical proficiency is just one part of pitch matching. Students' self-perception, confidence, motivation, and sense of inclusion greatly affect their willingness to learn and sustain musical engagement (Pfordresher & Demorest, 2021). Mismatches between ability and self-image (either under- or over-confidence) are frequent (Morrison, 2001; Cardany, 2013).

A supportive classroom climate is therefore vital. Teachers who normalize mistakes, encourage risk-taking, and deliver constructive feedback help build resilience and a growth mindset (Hinkley, 2018). Communal and peer-supported singing nurtures belonging and motivation, and thoughtfully facilitated peer assessment can raise standards without undermining individual confidence (Cardany, 2013). Cultural and community context reinforce or hinder these dynamics: in environments where singing is normalized, students tend to report greater confidence and engage more fully,

whereas in less supportive or stigmatized settings, extra encouragement and culturally relevant repertoire are essential (Green, 2014; Moore, 2004; Welch et al., 2020).

Pandemic Adaptations and Ongoing Change

The COVID-19 pandemic drove a swift shift to online and hybrid music education, transforming pitch-matching instruction (Murgia et al., 2020; NATS, 2022). On the plus side, video demonstrations and asynchronous tasks offered flexibility and self-paced practice (Daubney et al., 2021; Harris & Wheeler, 2022). Digital tools allowed targeted feedback and facilitated virtual peer interaction (Wise, 2021).

However, technology also introduced barriers; particularly for students without reliable access or those struggling with the lack of hands-on, in-person correction and group singing experiences, key for developing ensemble tuning (Daubney et al., 2021; Harris & Wheeler, 2022; NATS, 2022). The normalization of blended instruction is now seen as an opportunity, fostering more individualized and flexible assessment, while also demanding more deliberate attention to social-emotional learning and inclusion (Welch et al., 2020; Green, 2014).

Remaining Gaps and Directions

Persistent gaps remain. Most studies are grounded in Western, monolingual contexts, and little is known about how gender, neurodiversity, and culture combine to shape pitch-matching development (Welch et al., 2020; Green, 2014; Rutkowski, 2015; Demorest et al., 2015; Morrison, 2001). The long-term impact of pandemic-era innovations is also unclear, as is the challenge of ensuring equitable technology access and community engagement in music instruction (Daubney et al., 2021; Harris & Wheeler, 2022).

Literature consistently highlights the value of early, engaging musical exposure, adaptive classroom climates, and culturally responsive instruction (Green, 2014; Welch et al., 2020; Moore, 2004; Granot et al., 2013; Cardany, 2013). Yet, fine-tuning strategies for students with limited prior experience or specific learning needs remains an evolving field.

In summary: This body of research informs my project by highlighting both established best practices and critical knowledge gaps. It calls for more qualitative, classroom-based documentation of teacher adaptations and underscores the value of focusing not just on instructional technique, but also on the broader social, cultural, and technological contexts that shape teachers' and students' experience, and success, with pitch matching (Daubney et al., 2021; Harris & Wheeler, 2022; Green, 2014).

Methodology

Research Paradigm and Theoretical Framework

This study adopts a qualitative dominant, pragmatist paradigm with elements of mixed methods, to explore pitch-matching pedagogy in elementary and secondary music education. The pragmatist paradigm is well suited to educational research where the primary aim is not only to understand practice but to inform actionable improvements (Creswell & Plano Clark, 2018). Given the focus on capturing teachers' lived experiences, adaptations, and professional needs during a period of rapid educational change, a constructivist lens also guides the work; recognizing that knowledge is discursively constructed through dialogue and context (Lincoln & Guba, 1985).
The study is informed by sociocultural theory (Vygotsky, 1978), which recognizes learning as a situated, social process deeply affected by context, tools, and relationships. This framework is appropriate for the investigation of music pedagogy, as it highlights the collaborative and embodied nature of musical learning, the impact of social disruptions such as COVID-19, and the mediated role of technology.

Research Design and Methods

Data Collection

To address the research objectives, a multi-method approach was employed:

1. Semi-structured Interviews:

   Semi-structured interviews were conducted with music educators in the US, purposely sampled to reflect different school settings, levels of resources, and pandemic responses. While all survey respondents were offered the option to participate in the interview process, only one was available to actually participate in the interview. The core interview topics (such as teaching adaptations, technology use, and assessment approaches) were selected based on gaps identified in the literature review. Specifically, the literature highlighted that while much is known about student outcomes, there is a lack of classroom-based research capturing teachers' adaptive strategies, the influence of school context, and evolving professional development needs. As such, the interview questions were designed to probe these areas in depth, ensuring the study addressed underexplored aspects of pitch matching instruction and post-pandemic practice. The semi-structured protocol enabled the exploration of both commonalities and differences in participant experiences, allowing educators to share their strategies, challenges, and professional learning needs in their own words. This approach ensured consistency across interviews while also allowing unique perspectives to emerge.

2. Surveys:

   An online survey, distributed via professional networks, was also given to a separate set of educators. The survey included both closed and open-ended questions, enabling collection of quantitative data (frequency of specific pitch-matching activities, perceived confidence with technology) and qualitative insights (open responses detailing classroom adaptations or requests for professional development). This dual approach offered breadth and depth, essential for mapping both widespread trends and individual nuances (Creswell & Plano Clark, 2018).

Justification:

Semi-structured interviews provide rich, contextually grounded narratives, while surveys increase sample size and diversity. Together, these methods strengthen validity through

triangulation, illuminating multiple facets of complex, evolving pedagogical practice (Denzin, 2017).

Interview Participant Table

Participant ID	**Role/Position**	**Years Teaching Experience**	**Grade Level(s) Taught**	**Location (State/Region)**	**School Setting**	**Gender**	**Notes (e.g., Specialty)**
A	Choir Teacher	18	K-12, University	Idaho, USA	Suburban, Rural	M	Choir, General Music
Z	Choir Teacher	14	K-12	Midwest & Pacific Northwest, USA	Suburban, Rural	M	Choir, General Music
B	Choir Teacher	10	6-8	Idaho, USA	Suburban	M	Choir, Instrumental
C	Choir Teacher	20	K-12	Pacific Northwest, USA	Rural	F	Choir, Jazz Studies, Instrumental, General Music

Survey (6 total, anonymous)	Elementary and Junior High Teachers		K-8	Idaho, USA	Urban	M, F	General Music, Choir

Procedures

1. Ethical Approval:
   Institutional ethical guidelines were followed, with research approved by the affiliated university's ethics committee. Participation was voluntary, and informed consent was obtained from all respondents.
2. Recruitment:
   Participants were recruited through purposive and snowball sampling via music education networks, ensuring a mix of primary/secondary teachers, experience levels, and geographic contexts. Information sheets outlining the research aims, confidentiality measures, and withdrawal rights were supplied prior to participation.
3. Data Collection:
   Interviews were conducted via video conferencing, recorded with permission, and transcribed verbatim. Surveys were administered online (Google Forms), accessible on multiple devices, and all responses anonymized at source.
4. Insider-Researcher Procedures:
   The researcher is also a practitioner in the field ("insider researcher"), so a research journal was kept throughout to monitor potential bias (Mercer, 2007). Member-checking was conducted by sharing interview transcripts with some participants for validation, enhancing credibility (Birt et al., 2016).
5. Data Management:
   All data was securely stored in password-protected, institutionally-approved

platforms, compliant with GDPR/Data Protection Act (UK) or equivalent local protocols.

Data Analysis

Thematic analysis was used as the primary analytic method for qualitative data (Braun & Clarke, 2006). Thematic analysis is well suited for educational research as it allows systematic identification, organization, and insight into core patterns across diverse participant narratives (Hammersley & Atkinson, 2007).

- Familiarization and Coding:
  Interview transcripts and open survey responses were read multiple times for immersion. Initial, open coding was applied inductively, with codes capturing significant statements related to pitch-matching pedagogy, adaptation strategies, challenges, and professional needs.
- Theme Development:
  Codes were collated and clustered, with themes defined through iterative cycles, comparing across cases and cross-validating with survey data. Themes were refined for internal consistency and distinctiveness, following Braun & Clarke's guidelines (2006).
- Integration with Quantitative Data:
  Quantitative survey data were analyzed descriptively (frequencies, cross-tabs) to illustrate the prevalence of key strategies and self-reported professional development needs. These data were used to contextualize and strengthen qualitative findings.
- Transparency and Reflexivity:
  Reflexive memos documented analytic choices, ensuring transparency and minimizing the impact of the researcher's professional background on interpretation (Berger, 2015).

Trustworthiness and Rigor

Rigour was established through multiple strategies (Lincoln & Guba, 1985):

- Credibility:
  Triangulation of interviews and surveys; member-checking; long engagement with data.
- Transferability:
  Thick description of context, participants, and teaching settings.
- Dependability & Confirmability:
  Audit trail of analytic decisions; reflexivity journal; external audit by a research supervisor.

Ethical Considerations and Insider Research

Ethical integrity was central throughout. Given the potential for dual roles, the researcher's positionality as an "insider" was openly acknowledged, with explicit efforts to bracket personal practice from analysis (Mercer, 2007). Anonymity and confidentiality were prioritized throughout the study; pseudonyms or participant codes replaced identifying information, and direct quotes are attributed to these codes rather than real names. All other findings are reported in aggregate to further prevent recognition. Power dynamics were minimized by emphasizing participants' expertise and voluntary participation. Participants had the right to withdraw without consequence at any stage. Recognition of work related stress, workload, and wellbeing was also integrated into recruitment and scheduling, ensuring that participation was flexible and respectful of teacher time and circumstances.

Findings, Results, & Discussion

Introduction

This section presents a thorough thematic analysis of qualitative and quantitative data collected through structured interviews and teacher surveys exploring pitch matching pedagogy among local American music educators.

Overview

Participants consistently described student pitch matching difficulties as rooted in a web of interrelated factors: biological, developmental, social, and pedagogical. Few participants viewed pitch matching as a singular, isolated skill; rather, they highlighted its mutable, learnable character shaped by classroom experience, confidence, and social context.

Findings

The Multidimensional Nature of Pitch Matching Challenges

Analysis of interviews and surveys with music educators reveals that pitch matching difficulties are fundamentally multidimensional. Participants consistently described these challenges as a web of interrelated biological, developmental, social, and pedagogical factors. Rather than seeing pitch matching as a discrete skill, teachers conceptualize it as dynamic and heavily contingent on classroom experience, individual confidence, and social context.

Survey respondents noted, for instance, that adolescent male students frequently struggle in the chest or mid-range during periods of vocal change; a pattern echoed in the literature (Welch et al., 2020; Cardany, 2013). As one anonymous survey respondent reflected,

"Some boys think singing high is for girls, or they've been told their changed voice can't sing in the treble range. We see both physical and psychological blocks."

Participants also underscored the role of early musical exposure and neurodiversity, observing that students who have had limited singing experiences at home, or who present with cognitive differences, may struggle to establish an 'auditory frame of reference'. These insights are supported by Moore (2004) and Hedden (2012), both of whom stress the complex interplay between physiology, cognition, and culture in pitch development.

"There's a small group every couple of years who just don't have the auditory frame of reference, maybe never sang at home—the issue's not just in the voice but what they're listening for."

—A

Physiological factors such as breath support and vowel formation also emerged as important. Teachers described how "under-supported breath" and "dark vowels" contribute not only to muddied group sound but also to individual tuning difficulties, providing in-the-moment evidence for the literature's emphasis on the interdependence of bodily and cognitive processes in vocal learning (Moore, 2004; Hedden, 2012).

Summary: The findings affirm that pitch-matching in school music is best understood as a multifaceted skill, shaped as much by social and cultural context as by physiological and psychological development. This directly supports the research question's focus on how classroom practice, confidence, and community shape pitch matching outcomes.

Pedagogical Strategies and Adaptive Routines

A rich tapestry of instructional strategies emerged across both interview and survey data, demonstrating teachers' active adaptation to the multiple challenges of pitch matching. Classic routines such as echo singing, solfège, and hand signs were widely used; 83% of teachers reported that "echo singing is my go-to," while 66% employed solfège or hand signs to reinforce interval sense and visual-motor integration.

Call-and-response songs and singing games were valued for their ability to lower anxiety and foster both attentive listening and collaborative risk-taking, especially among young or hesitant students.

Interview data further underscored the differentiated nature of support, with teachers scaffolding progression from basic pitch slides and unison singing to more complex intervallic and harmonic work. Peer pairing and solo/small group 'spotlighting' were described as beneficial:

"Placing my strongest pitch matchers next to the ones who struggle has been a game changer."

—C

These practices align with Cardany (2013) and Hinkley (2018), affirming the value of modeling and gentle exposure for confidence building.

Creative and kinesthetic approaches also figured prominently. Movement, gesture, and playful games were leveraged not only for engagement but for their tangible impact on pitch accuracy. As one teacher puts it,

"We use forehead-to-forehead singing, physical cues, or games like 'pop the balloon' for high notes. Getting them moving often gets them singing in tune."

—Z

This matches findings by Hinkley (2018) that kinesthetic and imaginative play can reduce self-consciousness and encourage fuller vocalization.

Summary: Findings support the argument that a combination of traditional, kinesthetic, and social approaches best facilitate pitch-matching growth in diverse classroom contexts.

Table 1: Most Frequently Reported Strategies

Strategy	**% Usage Among Respondents**	**Key Supporting Quotes**
Echo singing	83%	“Echo singing is my go-to…”
Solfege/Hand signs	66%	“Solfege reinforces interval sense.”
Call-and-response	66%	“Helps with group listening.”
Singing games/rounds	50%	“They’ll sing solo if it’s a game.”
Use of recordings	16%	“Playbacks help them hear errors.”

Assessment, Progress, and Evidence of Growth

Assessment of pitch matching relies primarily on informal, ongoing observation rather than formal testing. Educators described “circulating the room” during group singing to identify outlier voices and provide immediate feedback, which facilitated targeted support. They also noted progress in terms of both sound quality and student participation, demonstrating that growth is gauged as much by confidence as by accuracy.

“I listen for less ‘mud’ in the group sound at the end of the semester—the more in-tune, the clearer the sound.”
—A

Quantitative survey data shows clear improvement over the year: only 16.7% of teachers rated beginning-of-year pitch matching as high (4 or 5 on a 5-point scale), but this rose to 83% by year's end. All teachers noted at least "some" improvement. Consistent with Demorest et al. (2015), teachers observed that regular daily singing, even ten minutes, was sufficient to produce measurable gains in most students, suggesting that pitch matching is both learnable and malleable.

"Pitch matching is a learned, malleable skill. With daily singing—even just 10 minutes—almost everyone moves up a level by May."
—Survey

Specialized interventions were seldom necessary. The majority of pitch matching issues responded well to gentle support and confidence-building activities. In rare cases of severe deficit, one-to-one work at the piano or using creative "rainbow ears" methods was adopted.

Summary: Triangulation between observations, teacher reports, and quantitative data shows that regular, inclusive classroom singing reliably improves pitch matching. Both skill and confidence are key indicators of progress, underscoring the value of persistent practice and supportive feedback.

Barriers and Social-Structural Challenges

Findings highlight several enduring barriers to effective pitch matching, including student self-consciousness, gendered expectations, class size, and structural constraints. Adolescent anxiety was marked as the most pervasive challenge. The gap between self-impression and reality was also stated:

"The greatest barrier is when students think they are matching pitches but are not. This last year in particular… it was a struggle all year long. Eventually, it got easier but he still struggled through the end."
—Survey

Persistent reluctance to sing was linked to both vocal changes and fear of peer judgment:

“Generally, I have noticed a reluctance to sing because of fear of being heard. This reluctance has created a plethora of barriers that could be resolved just by using their voices correctly.”

—Survey

Gendered attitudes were especially pronounced among boys, many of whom saw singing in the upper register as “unmasculine” - reflecting stereotype patterns documented by Pfordresher & Demorest (2021).

Structural issues were similarly prominent. Large choir sizes limited opportunity for individualized feedback, with 66.7% of respondents rating this as a “major barrier.” Teachers also grappled with time pressures and the competing demands of performance preparation, which frequently left little space for targeted vocal support. These challenges echo findings from Welch et al. (2020), who call attention to the compounded difficulty of addressing pitch matching in under-resourced or time-constrained settings.

Pandemic-related effects added a further layer, as teachers noted increased anxiety and reduced engagement among students returning from remote learning. One participant stated:

“Building a relationship of trust and safety is harder in this experience than it ever was before the pandemic.”

—Survey

This highlights the intersection between psychological safety and instructional efficacy.

Summary: These barriers reinforce the need for differentiated, flexible instruction and indicate that confidence-building must remain central in contemporary pitch-matching pedagogy.

Technology: Benefits, Supplementary Role, and Constraints

Technology played a complex role in pitch matching instruction, particularly in response to pandemic-driven remote learning. While digital tools such as YouTube, Chrome Music

Lab, Google Classroom, FlipGrid, and custom rehearsal tracks increased access to models and feedback, their implementation was uneven. Teachers reported using technology less frequently post-pandemic, though about two-thirds continued to supplement lessons with digital resources. Specialized pitch-matching apps were rarely used, primarily due to impracticality with large ensembles and polyphonic settings—a limitation in line with Murgia et al. (2020).

The qualitative data indicates that technology's chief benefit lies in self-assessment; *"Recordings help students hear themselves and spot mistakes they'd miss in the moment." —C*

Asynchronous practice was facilitated by custom tracks, allowing individualized support. However, persistent equity issues, such as device and internet access disparities, limited broad adoption. This finding strongly parallels Daubney et al. (2021) and Harris & Wheeler (2022), who also note technology's dual capacity as a facilitator and a barrier in music education.

Summary: While technology offers valuable supplementary tools for pitch-matching practice and assessment, its impact is constrained by logistical and equity challenges, suggesting that digital solutions should be seen as complementary rather than central.

Table 2: Technology Use Patterns

Digital Tool/Platform	**% of Teachers Using**	**Role in Instruction**

YouTube	66%	Reference/Modeling
Chrome Music Lab	33%	Interactive exploration
Google Classroom/Microsoft Teams	66%	Sharing scores, tracks, feedback
Custom Rehearsal Tracks	66%	Home practice, individualized support
Tuner/Pitch-Matching Apps	16%	Mostly for individual, not group use

Social-Emotional and Community Factors

The analysis was unambiguous in highlighting psychological safety, trust, and group belonging as prerequisites for successful pitch-matching. Teachers repeatedly observed that when students “feel safe within the class to try as a group, small group or individual,” their willingness to participate and risk making mistakes increases, which accelerates progress. Collective games, spotlighting, and peer modeling were identified as crucial for destigmatizing error and nurturing self-assurance.

Community context strongly influenced students’ starting points. Those raised in households or communities with active singing traditions adapted more quickly to pitch-matching tasks, whereas those from backgrounds where music was absent or stigmatized required more foundational support and encouragement.

“If these steps are ignored in early stages, the ability to latch onto pitch-matching skills will be harder to access.”

—Survey

Teachers advocated for early and consistent vocal engagement in the curriculum as a preventive strategy, echoing claims from Green (2014) and Welch et al. (2020) linking community and cultural support to outcomes.

Summary: Social-emotional and community context fundamentally shape both access and engagement in pitch matching. Group belonging, developed through playful warm-ups, relationship building, and normalized error making, was seen as essential for progress. Teachers used collective games, small group "spotlighting," and role switching to foster engagement and inclusion.

Innovations and Post-COVID Adaptations

Post-pandemic teaching ushered in new routines and lasting adaptations. While some teachers reverted to pre-pandemic methods, most reported ongoing use of digital resources, especially practice tracks and video exemplars, to reinforce independent learning.

"Because of all the online materials we had to track down and create, I have access to a lot more videos, slides, etc. that incorporate vocal exploration." —Survey

Enhanced social-emotional focus, such as trust-building activities and small successes, was commonly described as necessary for rebuilding group confidence in the wake of collective disruption.

Flexible grouping and part assignment were also identified as critical, especially in navigating students' changing voices. By responding adaptively to individual comfort and skill levels, teachers sought to avoid the entrenchment of pitch-matching difficulties.

Summary: These innovations signal an evolution in pedagogical practice that is likely to remain integral to pitch-matching instruction post-pandemic.

Professional Development Needs and Gaps

Participants called attention to the inadequacy of current professional development (PD) offerings, expressing a desire for more practical, age-appropriate, and research-informed training. Direct requests included:
"A proper step-by-step methodology that can function like a flow chart… with real kids of similar age and gender so the instruments are as similar as possible."

—Z

Also mentioned were mentorship and workshops featuring real-life demonstration with students of varying ages and genders. Many teachers found existing PD,

"too elementary-focused or impractical for older students."
—A
They would prefer informal observation, peer learning, and access to video-based exemplars.
This aligns closely with the literature's observation that robust professional development is necessary not only for technical skill acquisition but for nurturing adaptive expertise in diverse, changing contexts (Cardany, 2013; Welch et al., 2020).
Summary: There is clear consensus among educators that professional development must be practical, contextually relevant, and inclusive, especially to address challenges of changing voices and severe pitch-matching deficits.

Table 3: PD/Resource Needs Expressed

Need	**Illustrative Quote**	**% Respondents Mentioning**

Sequential, video-based pitch-matching interventions	“Videos of this happening in real time…would be so insightful.”	100% (open-ended)
Workshops/games-based resources	“Workshops, possibly webinars, tried and true games or sings the kids buy into.”	67%
Cross gender demo and teaching techniques	“Cross gender teaching, male teacher to girls, female teacher to boys.”	33%
Digital pitch visualization tools	“Maybe a digital platform like a guitar tuner…show if they were matching.”	33%
Early and consistent singing in elementary curriculum	“Practicing singing at an early age… would all but eliminate the need for supports.”	33%

Table 4: Key Pitch-Matching Strategies Used by Teachers

Strategy	**Frequency (%)**
Echo singing	83
Solfège/Hand signs	66

Call-and-response	66
Singing games	50
Recordings	16

Table 5: Change in Perceived Student Pitch-Matching Proficiency

Timepoint	**% High/Very High (4–5)**	**% Moderate (3)**	**% Low (1–2)**
Beginning of School Year	16.7	33.3	50
End of School Year	83	17	0

Problems Encountered and Study Limitations

Like any study, this project had its share of constraints. One of the biggest challenges was timing. Because data collection fell at the end of the U.S. school year (right as summer break began) many educators simply weren't available. This meant that my participant group ended up being smaller and more self-selecting than hoped. Naturally, this makes it harder to claim that the findings represent all music educators, and any generalizations to broader populations should be made with caution.

All participants also were native English language speakers and worked in the U.S. While this focus provided rich insight into pitch matching in these classrooms, it does

leave some voices less heard; particularly those for whom English is a secondary language, or who reside outside the U.S. As the literature notes, most music education research still comes from Western, English-speaking contexts (Welch et al., 2020), so these findings may not fully translate into other educational or cultural settings.

In terms of data, combining surveys and interviews helped capture a range of experiences, but time and participant numbers meant it wasn't possible to make detailed comparisons, like between novice and veteran teachers, or across very different types of schools. Relying on self-report also introduces the usual risk that people present their practice in the best possible light.

Taken together, these limitations suggest there is real value in future studies with broader, more diverse samples, and in-depth, longitudinal research.

Conclusion

These findings present a nuanced and triangulated account of pitch-matching pedagogy, post-pandemic. Both survey and interview data reinforce that pitch matching is acquired through a dynamic interplay of personal confidence, cultural expectation, adaptive teaching, and the responsive use of technology and resources. Challenges persist, but educators demonstrate high levels of ingenuity, resilience, and commitment to fostering inclusive and differentiated learning environments. Barriers such as anxiety, class size, and limited professional development call for targeted interventions and innovation, while adaptations triggered by the pandemic are likely to leave a lasting mark on practice.

Each theme addressed above contributes to answering the research question by evidencing how pitch matching development is shaped by classroom strategy, social context, and individual support, highlighting specific needs and promising areas for future inquiry and action.

Critical Reflection

This research deepened my understanding of effective, classroom-based pitch matching pedagogy, particularly by highlighting the importance of psychological safety, peer mentorship, and flexible, inclusive strategies. Analyzing the post-COVID-19 landscape, I saw firsthand how technology and social-emotional considerations now play an integral role in music instruction, confirming the need for adaptive and student-centered approaches. The mixed-methods process, from data collection through thematic analysis, significantly developed my research skills and emphasized the importance of methodological transparency. I also gained a clear awareness of study limitations, including challenges around timing, sample diversity, and generalizability. Most importantly, by engaging directly with teachers and synthesizing both their experiences and current literature, I was able to contribute practical, context-sensitive insights that can inform and support the broader music education community. I hope to be able to continue this work by developing or finding PD opportunities for myself and my colleagues.

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Appendices

Appendix 1: Glossary

Glossary of Key Concepts

Pitch Matching

The psychomotor skill of vocally replicating auditory stimuli. This ability is shaped by a combination of cognitive, physiological, and psychosocial factors, making it foundational in singing pedagogy (Granot et al., 2013; Hedden, 2012).

Vocal Modeling

A teaching method involving live demonstration of target pitches by instructors. Research shows that live vocal modeling is more effective for improving pitch matching accuracy than instrumental or recorded models (Granot et al., 2013; Hinkley, 2018).

Psychosocial Barriers

Factors such as self-perception and confidence that significantly influence the acquisition of pitch matching skills. These barriers can sometimes lead to a misalignment between perceived and actual ability, impacting progress in vocal training (Pfordresher and Demorest, 2021).

Appendix 2: Research Instruments

Interview questions:
Section 1: Teaching Practices

1. What strategy for pitch matching do you gravitate toward more often?
    - Can you walk me through how you implement this in a typical lesson?

2. Are there any particular activities or routines you've found especially effective for developing pitch matching? Could you share an example?

3. How do you assess whether students are improving in their pitch-matching abilities?
    - What signs do you look for?

Section 2: Post-COVID Adaptations

4. Has your approach to teaching pitch matching changed since COVID-19?
    - Can you describe some of the most significant

changes or adaptations you've made?

5. What role does technology currently play in your pitch-matching instruction?
- Are there specific tools or platforms that have become essential to your teaching?
-

6. Have you noticed any lasting effects of remote or hybrid learning on your students' pitch-matching skills or their willingness to participate in singing activities?

Section 3: Barriers and Challenges

7.Can you elaborate on specific barriers, e.g., large class sizes, student confidence, lack of resources, that you see as a major challenges to student learning of pitch matching?

8. Could you share a specific instance where you encountered a barrier to teaching pitch matching and how you addressed it?

9. Are there any barriers that have become more pronounced since the pandemic?
- If so, how have you tried to overcome them?

Section 4: Student Engagement and Outcomes

10. How would you rate your students' pitch-matching ability at the start of the year vs. now?
- What do you think contributed most to any changes you observed?

11.Can you describe a moment when you saw a breakthrough or significant progress in a student's pitch-matching ability?
- What do you think made the difference?

Section 5: Professional Development and Support

12.What kinds of PD training or resources would be most helpful for you?

13.Have you participated in any workshops, courses, or professional learning communities focused on pitch matching?
- If so, what was most valuable about those experiences?

Section 1: Teaching Practices

1. What strategy for pitch matching do you gravitate toward more often? Can you walk me through how you implement this in a typical lesson?

2. Are there any particular activities or routines you've found especially effective for developing pitch matching? Could you share an example?

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Section 5: Professional Development and Support

12.What kinds of PD training or resources would be most helpful for you?

13.Have you participated in any workshops, courses, or professional learning communities focused on pitch matching?
If so, what was most valuable about
those experiences?

14.What advice would you give to a new teacher who is just starting to teach pitch matching?
What resources might you suggest to them?

Section 6: Reflection and Additional Insights

15.Looking back over the past few years, what has been your biggest learning or takeaway regarding teaching pitch matching?

16.Is there anything else about your experiences with pitch matching-successes, challenges, or surprises-that you'd like to share?
14.What advice would you give to a new teacher who is just starting to teach pitch matching?

- What resources might you suggest to them?

Section 6: Reflection and Additional Insights

15.Looking back over the past few years, what has been your biggest learning or takeaway regarding teaching pitch matching?

16.Is there anything else about your experiences with pitch matching-successes, challenges, or surprises-that you'd like to share?

Survey Questions:

Section 1: Background Information

1. How many years have you been teaching general music?
    - 0–2 years
    - 3–5 years
    - 6–10 years
    - 11–20 years
    - 21+ years
2. What grade levels do you currently teach?
   (Select all that apply)
    - Kindergarten
    - 1st grade
    - 2nd grade
    - 3rd grade
    - 4th grade
    - 5th grade
    - 6th-8th grade
    - 9th-12th grade
3. Have you received formal training in Kodály or other pitch-matching pedagogies?
    - Yes (please specify)
    - No

Section 2: Teaching Practices

4. How often do you include pitch-matching activities (e.g., echo singing, solfege exercises) in your music classes?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
5. Which pitch-matching strategies do you use most frequently?
   (Select all that apply)
    - Echo singing
    - Solfege and hand signs

- Call-and-response songs
- Singing games
- Use of recordings/CDs
- Other (please specify)

6. How often do you provide students with solo singing opportunities to assess pitch matching?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
7. How confident do you feel in your ability to teach pitch matching effectively?
    - Not confident
    - Slightly confident
    - Moderately confident
    - Very confident
8. How important do you believe pitch matching is in the overall music curriculum?
    - Not important
    - Slightly important
    - Moderately important
    - Very important

Section 3: Post-COVID Teaching Practices and Adaptations

9. Since the COVID-19 pandemic, how have your approaches to teaching pitch matching changed?
   (Open-ended)
10. To what extent do you currently use digital tools or online resources (e.g., YouTube, Chrome Music Lab, Soundtrap) to support pitch-matching instruction?
    - Not at all
    - Rarely
    - Sometimes
    - Often
    - Always
11. Which of the following digital platforms or applications have you incorporated into your pitch-matching lessons since the pandemic?
    (Select all that apply)
    - YouTube
    - Chrome Music Lab

- Soundtrap
- Google Classroom
- Other (please specify)

12. How has your use of technology for pitch-matching instruction changed since returning to in-person teaching?
    - I use technology less than during remote learning
    - I use technology about the same as during remote learning
    - I use technology more than before the pandemic
    - I do not use technology for pitch-matching instruction
13. Since the pandemic, how often do you integrate remote or hybrid learning strategies into your pitch-matching curriculum?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
14. How have student engagement and participation in pitch-matching activities changed in your classroom post-pandemic?
    (Open-ended)
15. What positive outcomes or innovations in pitch-matching instruction have emerged from your post-COVID teaching experience?
    (Open-ended)
16. How confident do you feel using technology to facilitate pitch-matching instruction post-pandemic?
    - Not confident
    - Slightly confident
    - Moderately confident
    - Very confident

Section 4: Barriers and Challenges

17. What do you consider to be the greatest barriers to teaching pitch matching in your classroom?
    (Open-ended)
18. How often do you encounter students who struggle to match pitch due to confidence or anxiety issues?
    - Never
    - Rarely
    - Sometimes

- Often
- Always

19. To what extent do large class sizes or limited time for individual attention impact your ability to teach pitch matching effectively?
    - Not at all
    - Slightly
    - Moderately
    - Significantly
20. How challenging is it to address pitch matching in group settings compared to one-on-one instruction?
    - Not challenging
    - Slightly challenging
    - Moderately challenging
    - Very challenging
21. How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier)
    - Students' lack of prior musical experience
    - Students' reluctance to sing alone
    - Classroom acoustics or noise
    - Limited access to appropriate teaching materials or instruments
    - Cultural or language differences
    - Inadequate professional development
    - Other (please specify)
22. How often do you find that students have difficulty matching pitch with instruments (e.g., piano) versus matching pitch with the teacher's voice?
    - Never
    - Rarely
    - Sometimes
    - Often
    - Always
23. Have you noticed any increased barriers to teaching pitch matching since the COVID-19 pandemic (e.g., reduced singing activities, technology limitations, student engagement)?
    - Yes (please specify)
    - No
24. What strategies have you found most effective in overcoming barriers to teaching pitch matching?
    (Open-ended)

Section 5: Observations, Outcomes, and Support

25. How would you rate the average pitch-matching ability of your students at the beginning of the school year?
    - Poor
    - Fair
    - Good
    - Excellent
26. How would you rate the average pitch-matching ability of your students now?
    - Poor
    - Fair
    - Good
    - Excellent
27. Have you observed improvements in students' pitch-matching abilities as a result of your instructional methods?
    - Yes, significant improvement
    - Yes, some improvement
    - No noticeable improvement
    - Not sure
28. What types of professional development or resources would help you teach pitch matching more effectively?
    (Open-ended)
29. Would you be interested in further training or workshops focused on pitch-matching pedagogy?
    - Yes
    - No
    - Maybe

Section 6: Additional Comments

30. Please share any additional thoughts or experiences related to teaching pitch matching in your classroom.
    (Open-ended)

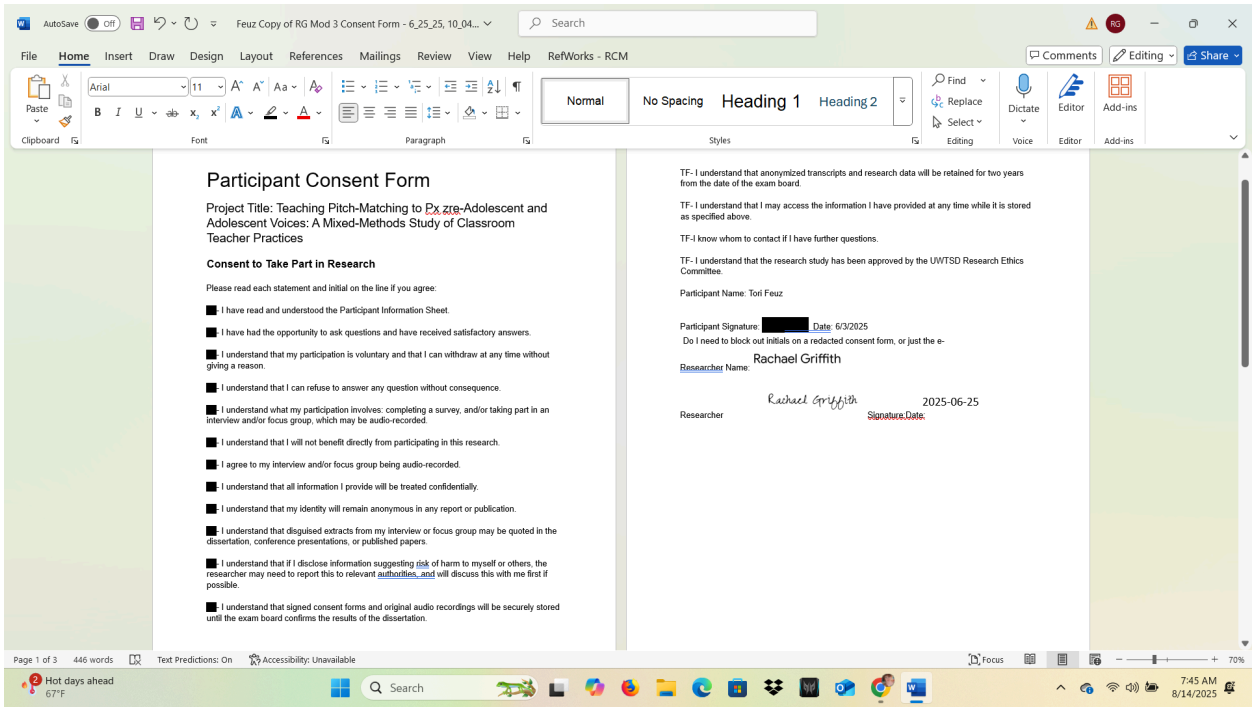
Section 7: Interview Opt-In

31. Would you be willing to participate in an interview or focus group discussion regarding your responses?
    a. Yes
    b. No

c. Maybe

Appendix 3: Redacted Consent Forms

1:



Participant Consent Form

Project Title: Teaching Pitch-Matching to Px zre-Adolescent and Adolescent Voices: A Mixed-Methods Study of Classroom Teacher Practices

Consent to Take Part in Research

Please read each statement and initial on the line if you agree:

[redacted]- I have read and understood the Participant Information Sheet.

[redacted]- I have had the opportunity to ask questions and have received satisfactory answers.

[redacted]- I understand that my participation is voluntary and that I can withdraw at any time without giving a reason.

[redacted]- I understand that I can refuse to answer any question without consequence.

[redacted]- I understand what my participation involves: completing a survey, and/or taking part in an interview and/or focus group, which may be audio-recorded.

[redacted]- I understand that I will not benefit directly from participating in this research.

[redacted]- I agree to my interview and/or focus group being audio-recorded.

[redacted]- I understand that all information I provide will be treated confidentially.

[redacted]- I understand that my identity will remain anonymous in any report or publication.

[redacted]- I understand that disguised extracts from my interview or focus group may be quoted in the dissertation, conference presentations, or published papers.

[redacted]- I understand that if I disclose information suggesting risk of harm to myself or others, the researcher may need to report this to relevant authorities, and will discuss this with me first if possible.

[redacted]- I understand that signed consent forms and original audio recordings will be securely stored until the exam board confirms the results of the dissertation.

TF- I understand that anonymized transcripts and research data will be retained for two years from the date of the exam board.

TF- I understand that I may access the information I have provided at any time while it is stored as specified above.

TF-I know whom to contact if I have further questions.

TF- I understand that the research study has been approved by the UWTSD Research Ethics Committee.

Participant Name: Tori Feuz

Participant Signature: [redacted] Date: 6/3/2025

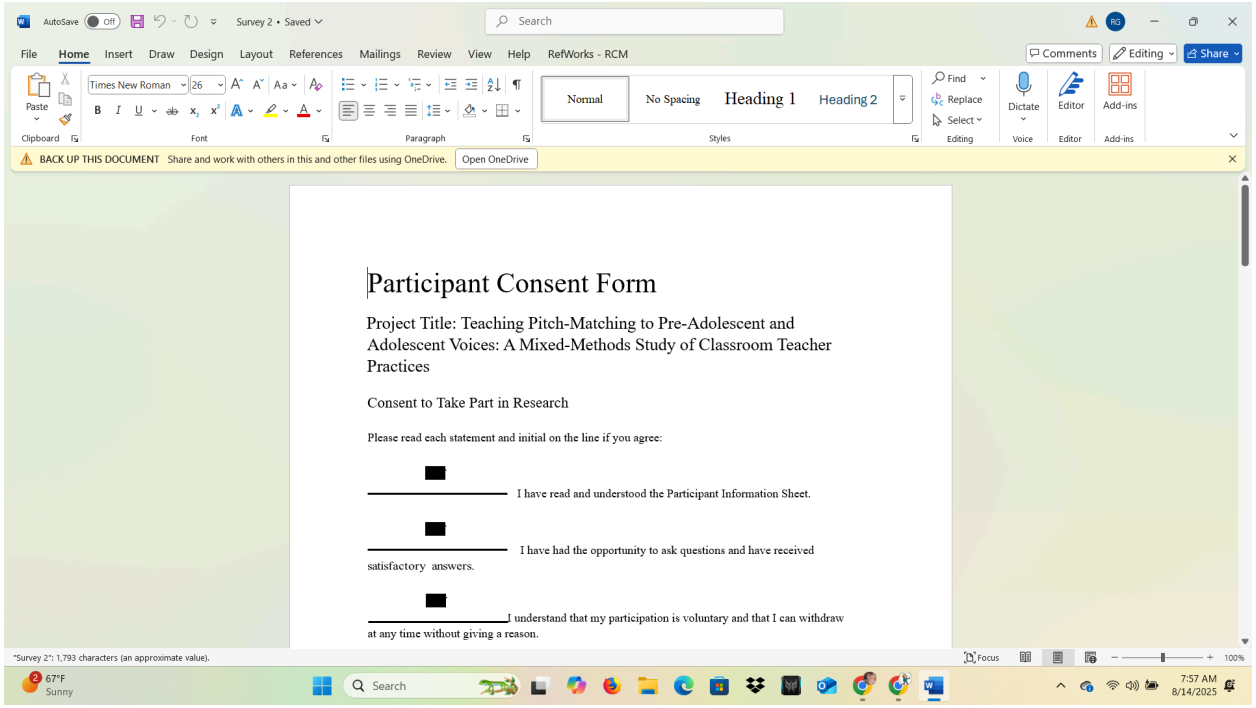
Do I need to block out initials on a redacted consent form, or just the e-

Researcher Name: Rachael Griffith

Researcher Rachael Griffith 2025-06-25

Signature Date:

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Participant Consent Form

Project Title: Teaching Pitch-Matching to Pre-Adolescent and Adolescent Voices: A Mixed-Methods Study of Classroom Teacher Practices

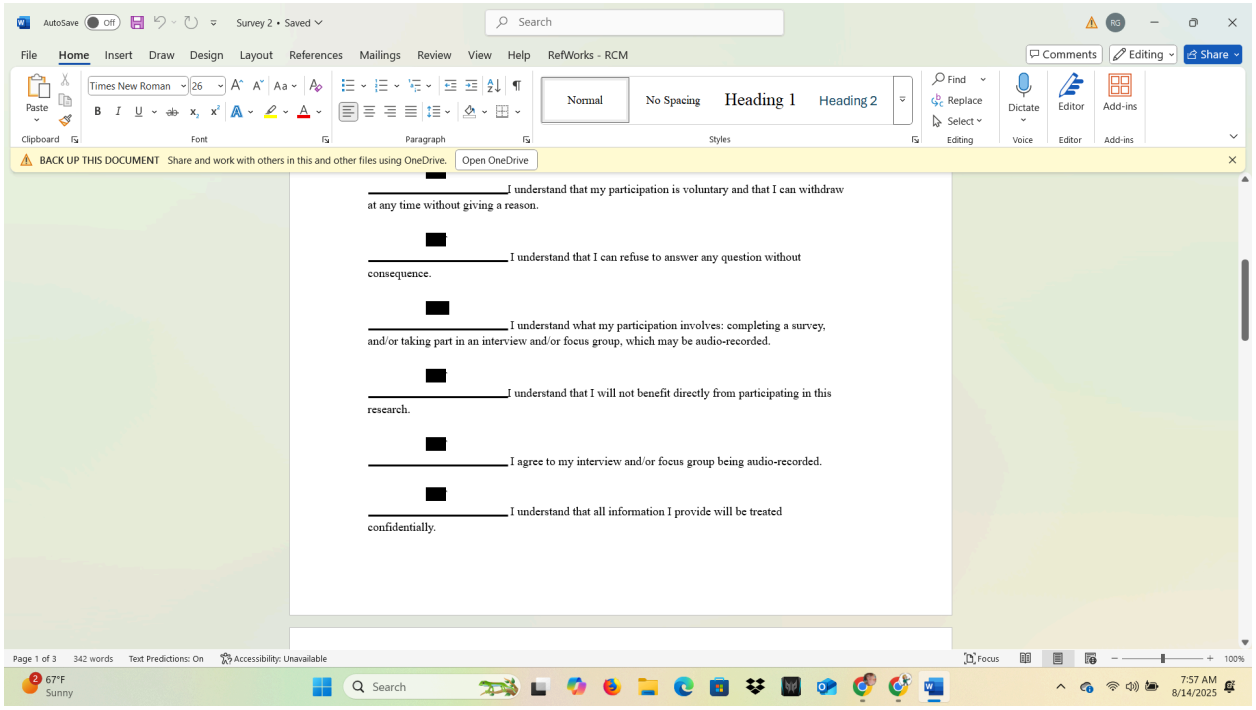
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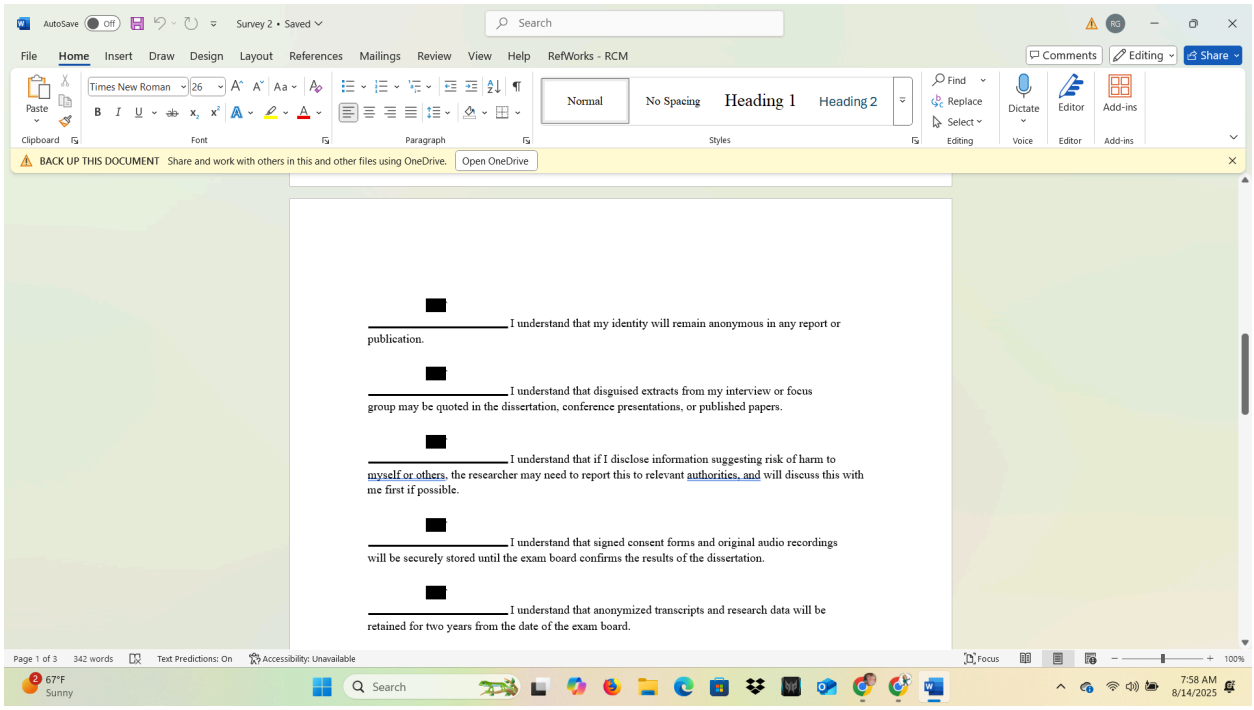
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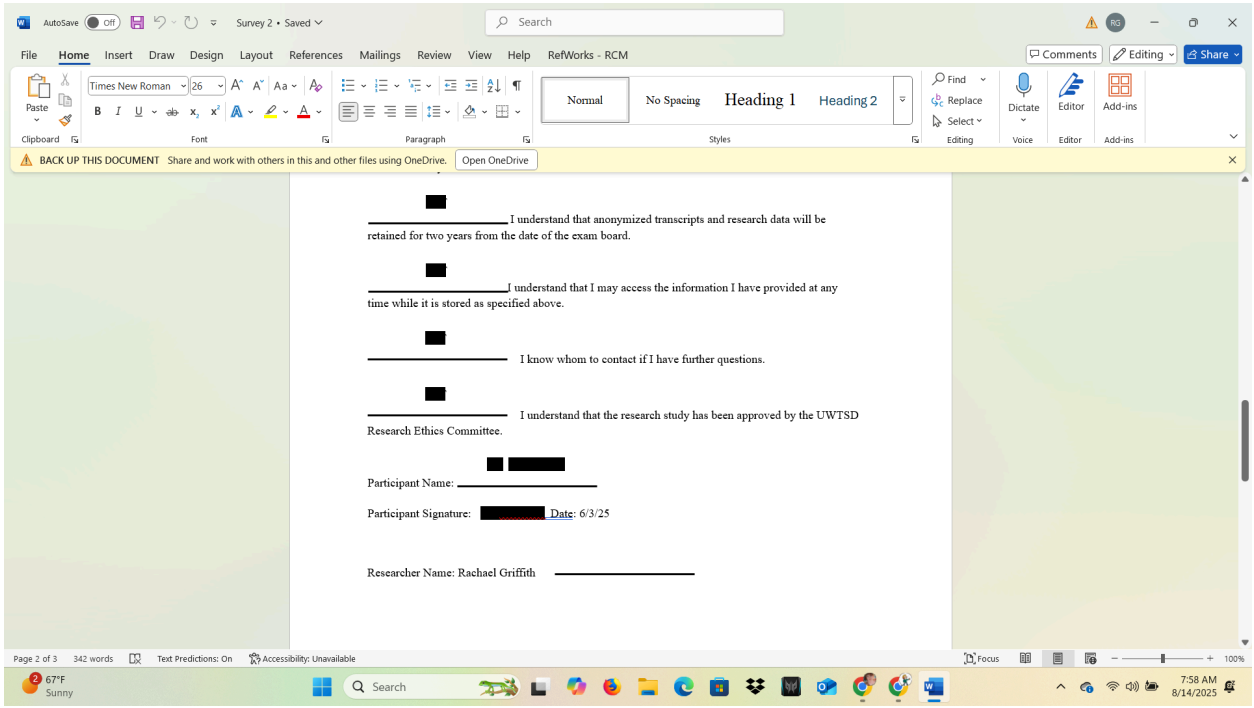
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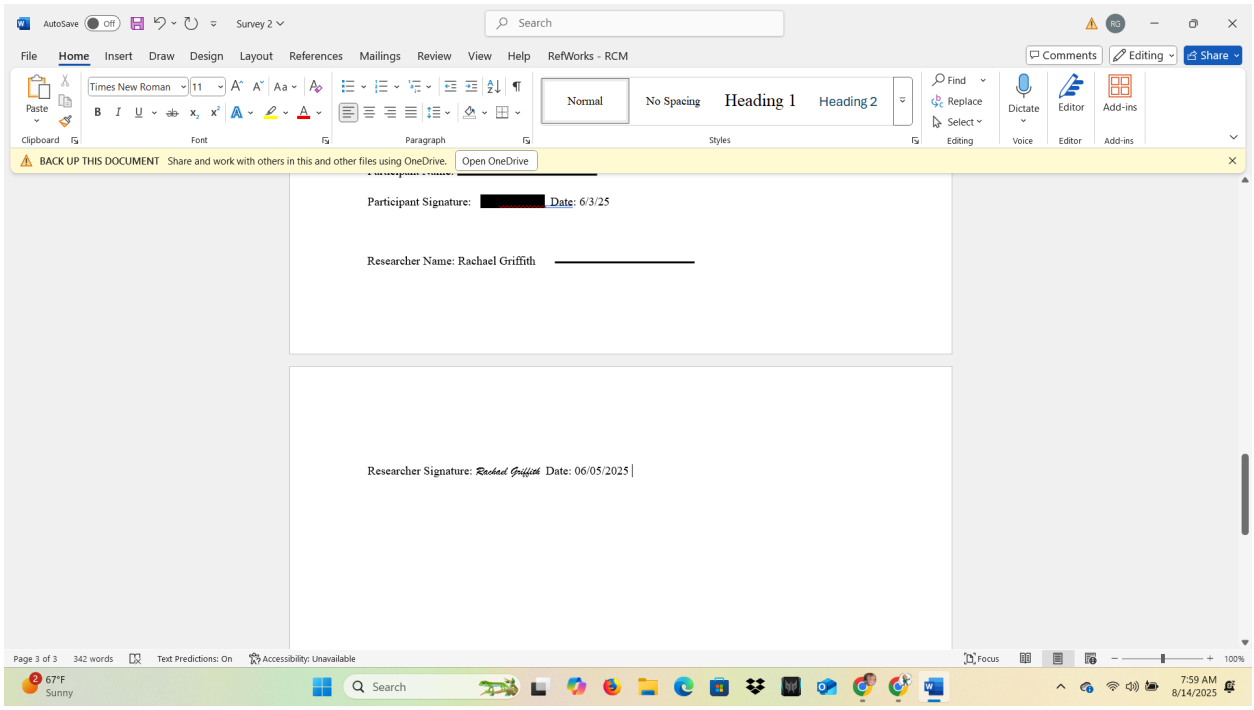
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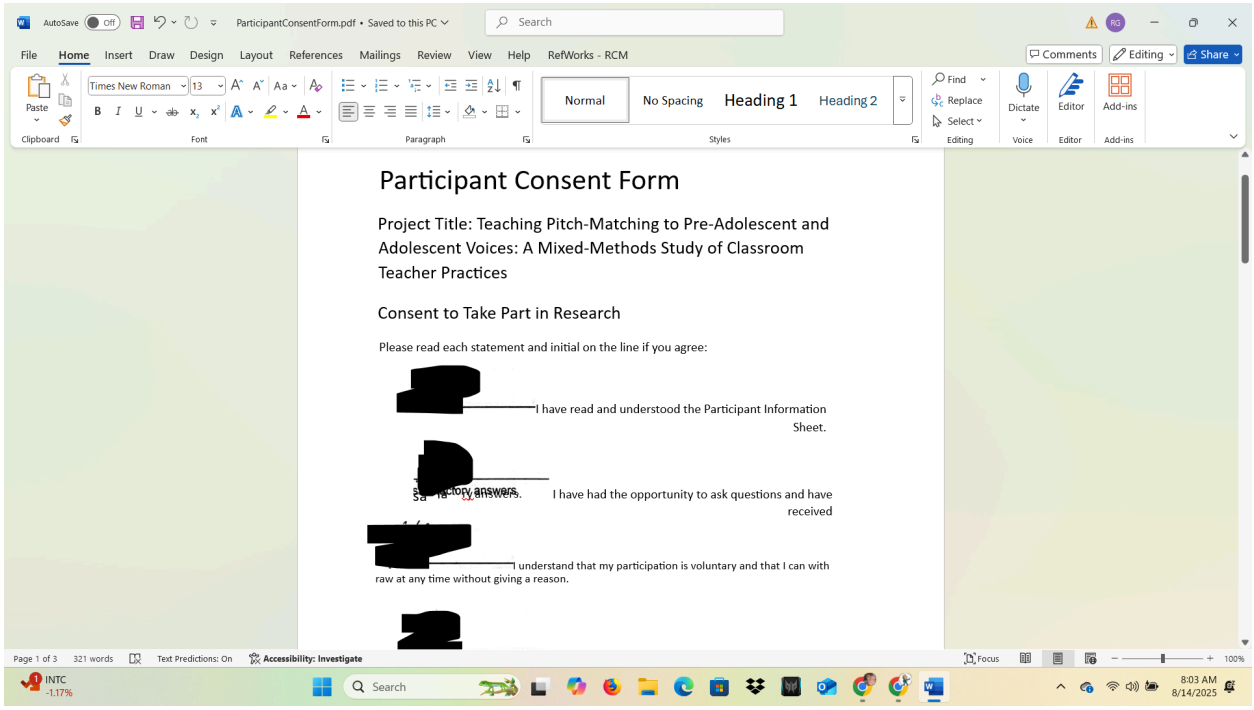
Researcher Name: Rachael Griffith [redacted]



Participant Signature: [redacted] Date: 6/3/25

Researcher Name: Rachael Griffith

Researcher Signature: Rachael Griffith Date: 06/05/2025



Participant Consent Form

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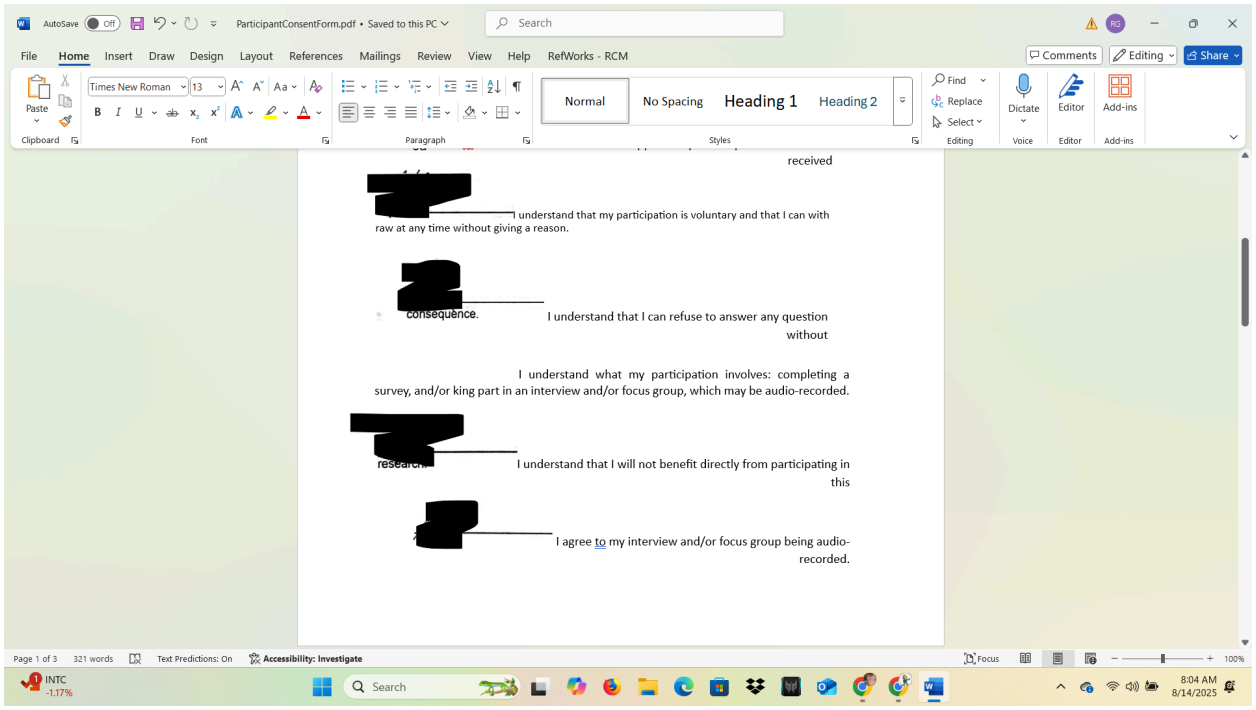
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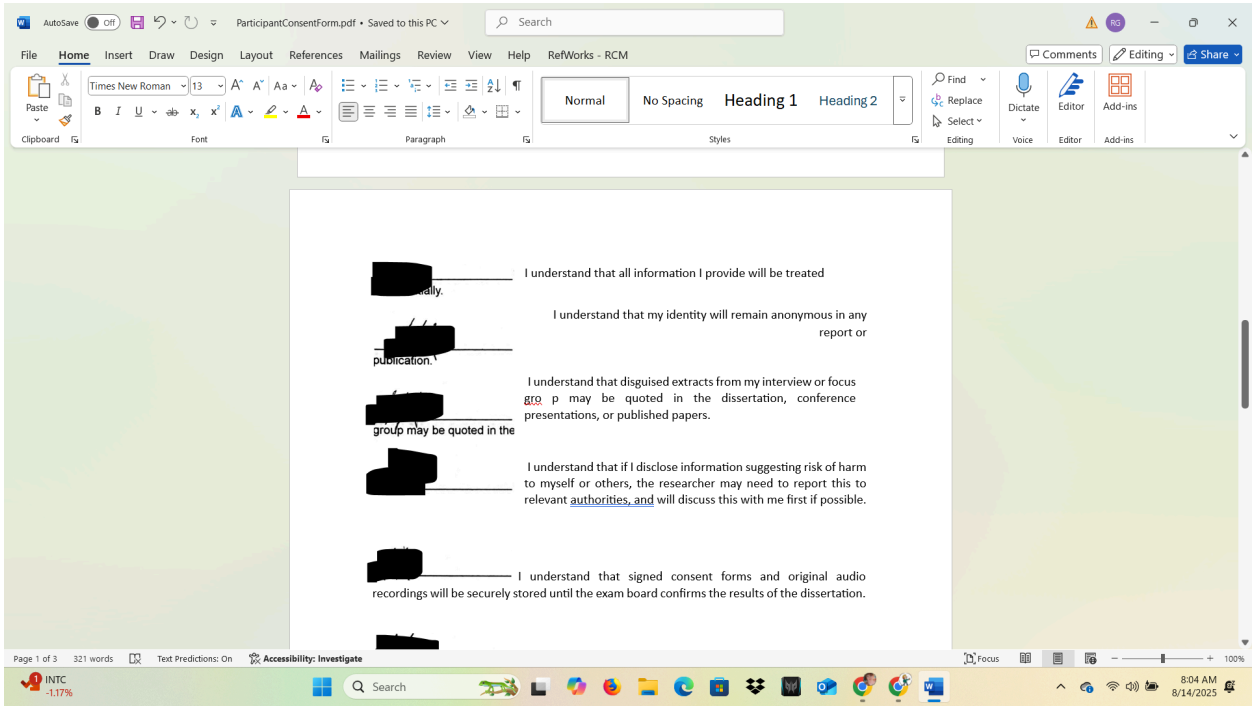
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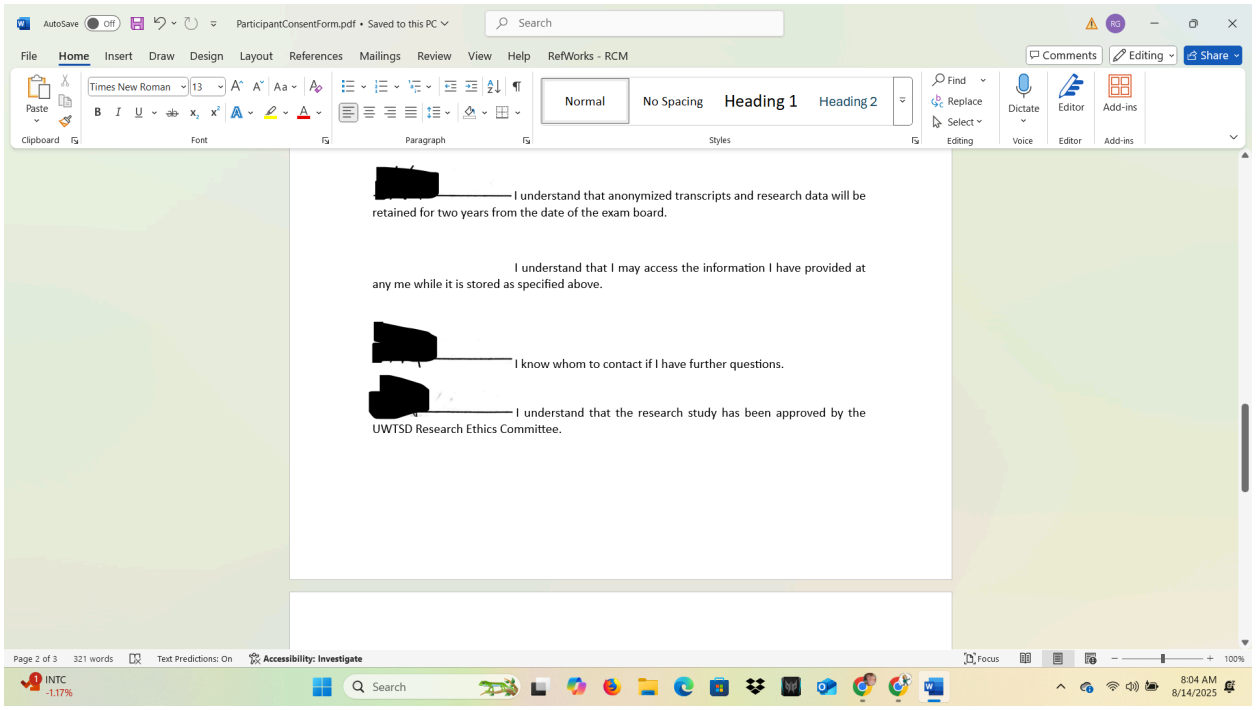
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[redacted]


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I understand that my participation is voluntary and that I can with
raw at any time without giving a reason.
consequence.
I understand that I can refuse to answer any question
without
I understand what my participation involves: completing a
survey, and/or king part in an interview and/or focus group, which may be audio-recorded.
I understand that I will not benefit directly from participating in
this
I agree to my interview and/or focus group being audio-
recorded.

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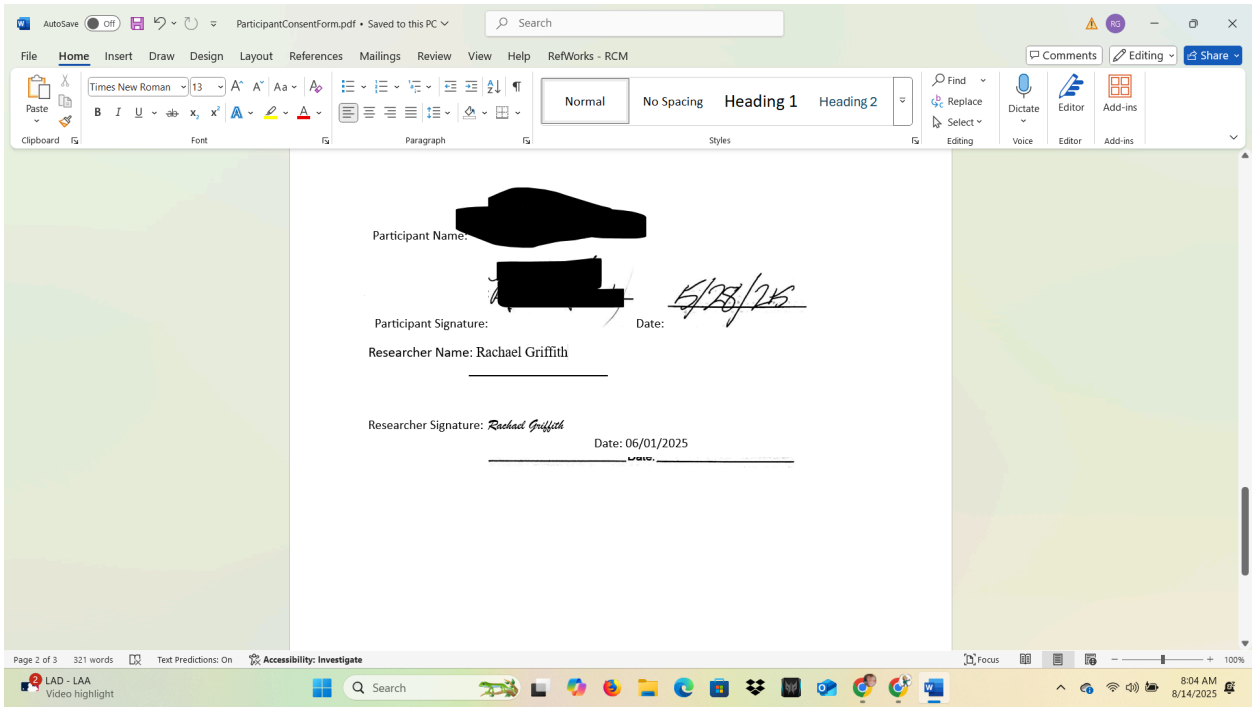


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Participant Name: [redacted]

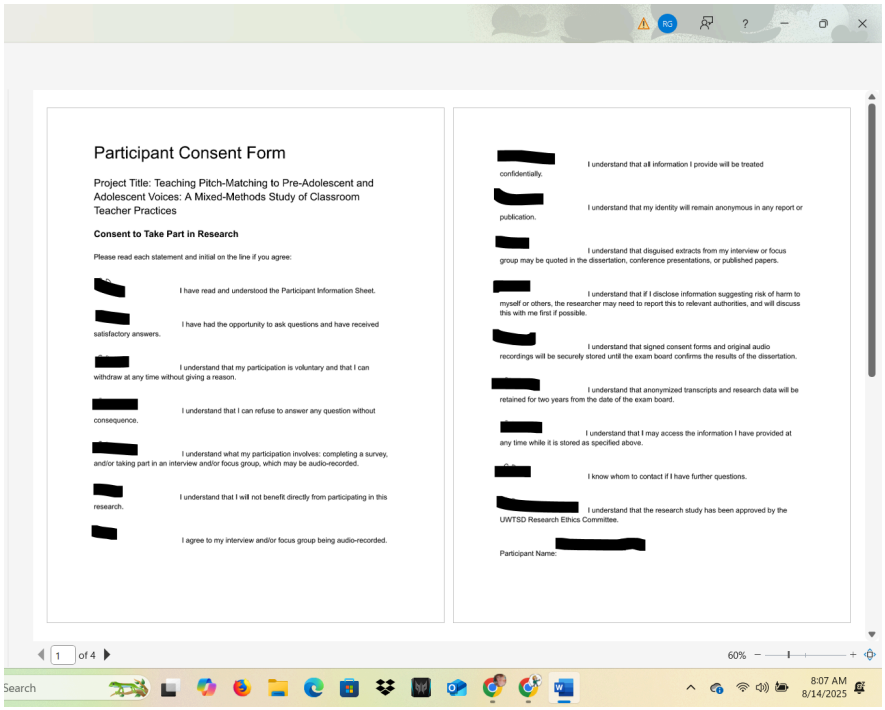
Participant Signature: [redacted] Date: 6/28/25

Researcher Name: Rachael Griffith

Researcher Signature: Rachael Griffith

Date: 06/01/2025

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Participant Consent Form

Project Title: Teaching Pitch-Matching to Pre-Adolescent and Adolescent Voices: A Mixed-Methods Study of Classroom Teacher Practices

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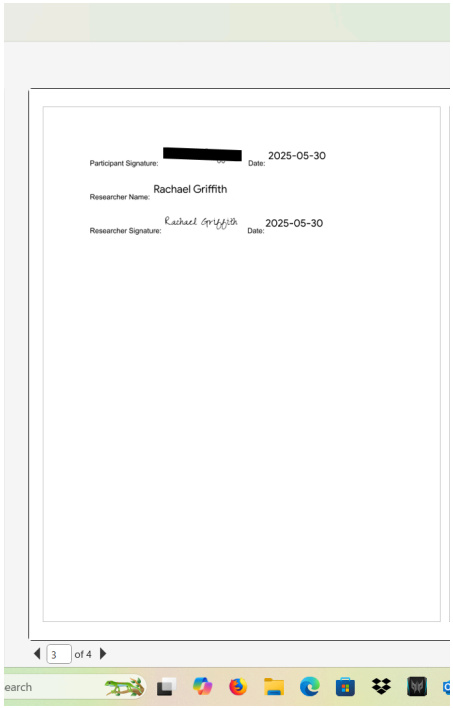
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Participant Name: [redacted]

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Participant Signature: [redacted] Date: 2025-05-30

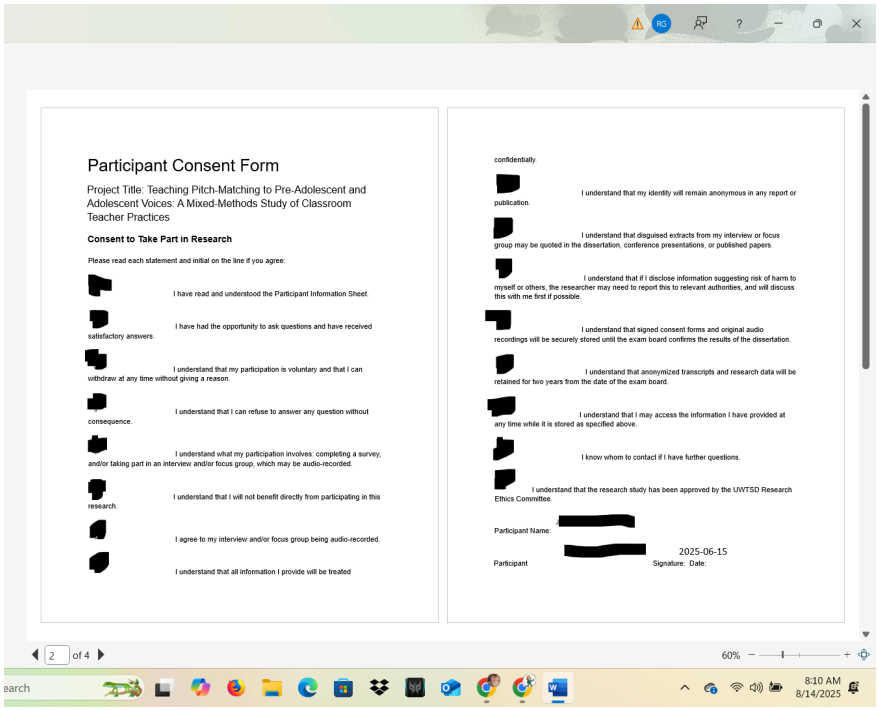
Researcher Name: Rachael Griffith

Researcher Signature: Rachael Griffith Date: 2025-05-30

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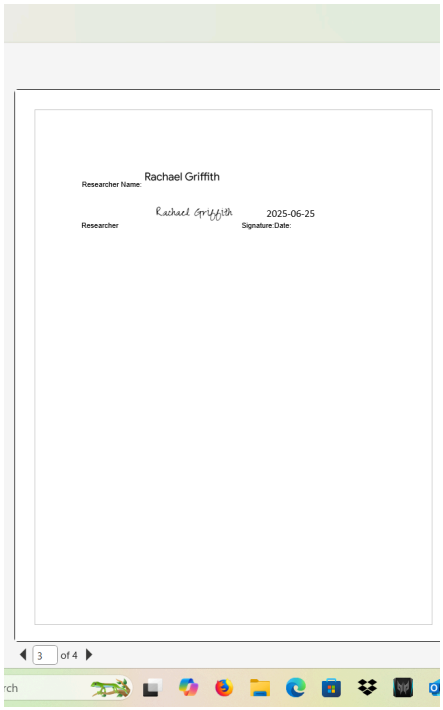
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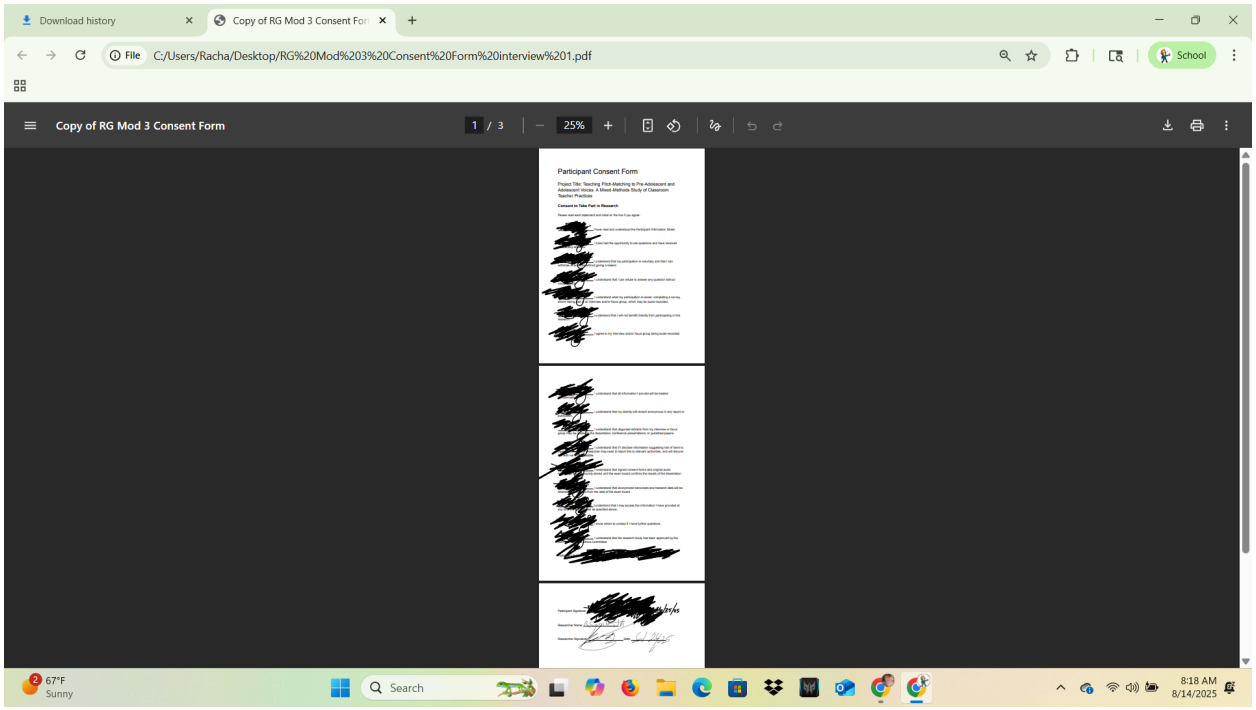


Researcher Name: Rachael Griffith

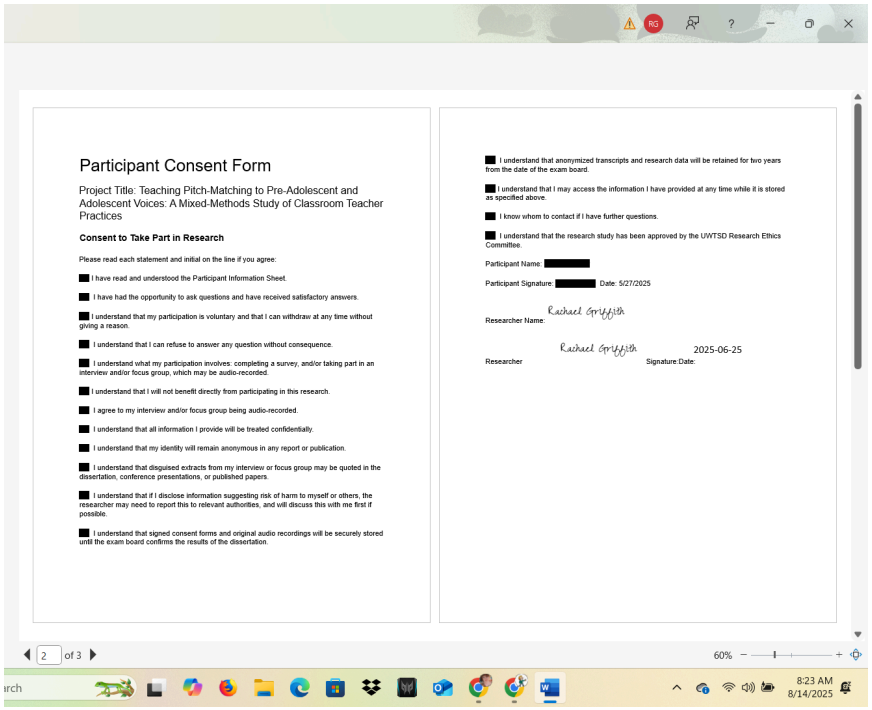
Researcher Signature: Rachael Griffith Date: 2025-06-25

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Participant Consent Form

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Participant Name: [redacted]

Participant Signature: [redacted] Date: 5/27/2025

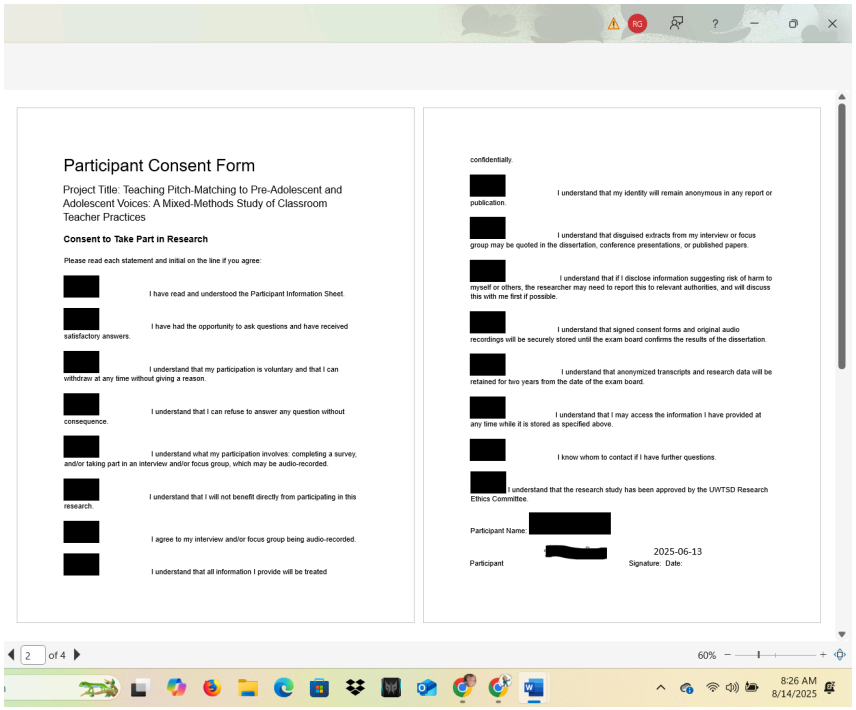
Researcher Name: Rachael Griffith

Researcher: Rachael Griffith Signature:Date: 2025-06-25

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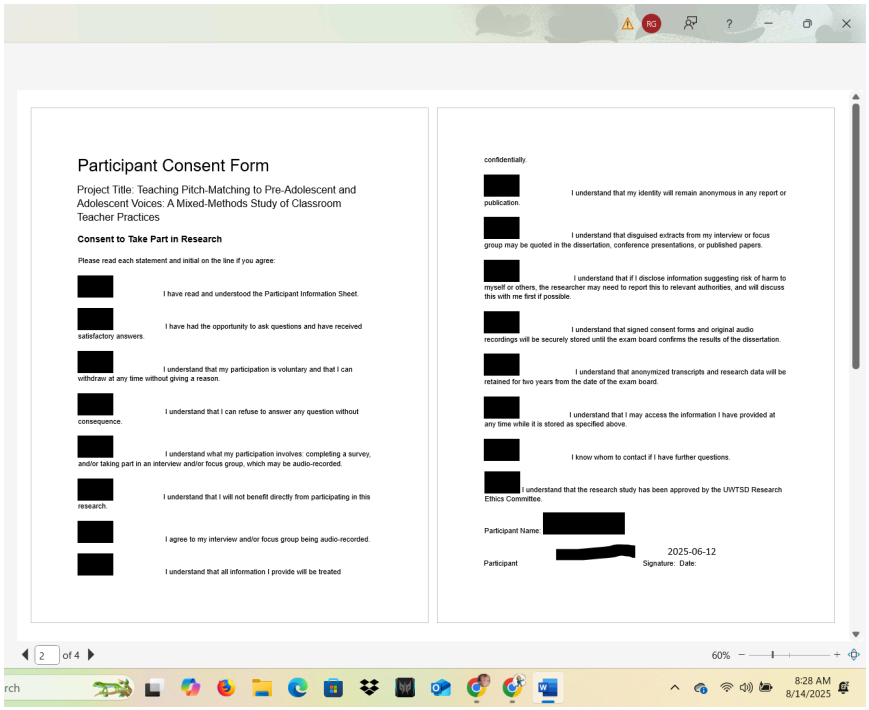
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Participant Name: [redacted]

Participant [redacted] Signature: Date: 2025-06-13

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Participant Consent Form

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Participant Name: [redacted]

Participant [redacted] Signature: Date: 2025-06-12

2 of 4 60% 8:28 AM 8/14/2025

Appendix 4: Raw Data

Transcripts:

Z: **A NOTE ON THIS INTERVIEW TRANSCRIPTION; THE APP THAT I USED FOR TRANSCRIPTION REQUIRED THE AUDIO FILE TO BE BROKEN INTO CHUNKS. AS A RESULT, SOMETIMES THE “SPEAKER 1” AND “SPEAKER 2” TITLES ARE REVERSED.**

ZG interview _recovered.m4a

{ 0:01 }
All right. I am here with my first interview subject. We are, he has been informed of his rights and is has given consent to this interview. So we're going to get started. So our first section is about teaching practices. So what strategy for pitch matching do you gravitate toward more often or most often?

Speaker 2: { 0:27 }
OK, what strategy? So first thing that I'll do because I teach high school is we'll just sing simple warm up exercises and I'll just be listening to the accuracy that's happening in the room and whether or not that's happening or not. And those who are doing that well, I really have little to no instruction for them.

{ 0:56 }
But when I do hear voices that are off slightly, we will continue the exercise. They'll keep going. And just to see if at one point in time things do start to sync up and lock in, cause the first sign of lack of pitch matching might just be range. You never know. So I keep going until and if it never fixes itself, that's fine for that first time through. But then after that exercise, if it's still not adjusted or fixed, I will say, those of you who might not be as confident of how accurate you're being in this singing, I encourage you to listen to the voices around you more than your own voice. And then we try the next exercise and see if that improves or not. And I don't really add any further instruction in that.

{ 1:55 }
But then what happens after that second exercise? If there's still voices that aren't accurately matching yet, I'll ask them to shift to some sort of semi occluded vocal tract exercise to sing along while everybody else sings. And that's self regulated. I don't tell them you, you, you, but like, I don't single the kids out. I just say if you still feel as though you're not sure about your accuracy, switch to one of these things and sing there. I typically every year actually pull students aside in about groups of three to four and listen to them, especially if they're new to me, so that I get to learn a little bit of what their voice has availability and has like capacity for.

{ 2:50 }
And then how I can do things in my choral classroom to help guide them and I can give them a little bit more special direct attention as we go through. There's a whole process by Donald Brinegar, Doctor Donald Brinegar about pitch matching that when students struggle with actually listening in a different way to be able to match the pitches that they think they are processing and hearing, I take them through that. When I have heard in those groups of three or four that they've gotten nothing compared to what's going around them, then I single those kids out and I go through that process instead. Which is a long doodad, sure.

Speaker 1: { 3:41 }

So can you walk? Well, you kind of did walk me through how you implement that in a typical lesson.

Speaker 2: { 3:46 }
Yeah, just in those warmups it's, it's that and then the the vinegar stuff is a whole different set of exercises that I tend to do one-on-one. OK.

Speaker 1: { 3:58 }
Awesome.

{ 3:58 }
When you're doing that one-on-one, is that happening like once a week or daily?

Speaker 2: { 4:04 }
Or it happens once, but then I give them these tools at the end of that lesson and then I also paired them up with a student helper that.

{ 0:00 }
Alright, we got cut off. But the second question is, are there particular activities or routines you found especially effective for developing pitch matching and could you share an example?

Speaker 2: { 0:12 }
OK, so the first steps that I'll do when I notice a student is struggling with pitch matching is I want to to discern whether it's a vocal production problem or if it's a listening problem or or where the deficit is. So if it's a vocal closure thing, I might ask them to play games of copycat with me where I'll have them create wispy sounds and then normal speech and then even like maybe even close to yell tambour things just to see what kind of vocal closure I can actually get in all of those things.

{ 0:55 }
And if they just normally speak with more aspiration and then asking them to do a yell tambour, I'll get maybe more closure. And then I have to work with them on, OK, how do we keep a comfortable, easy vocal closure? Because right now, speaking aspiratively, you're going to like run out of voice. So anyway, so that's part of it. The other part is just how do I manipulate my instrument? So I will ask them to speak as a robot and count their numbers one to 10. And when I ask them to do that, I don't ask them to speak monotone. They just they kind of automatically do that. And then I don't have to explain what monotone is, but I'll have them speak as a robot and do their numbers one to 10.

{ 1:52 }
And while they do that, often times going into monotone, I'm just plunking while I'm nearby a piano, plunking pitches and trying to find where they're speaking pitch wise. And I'll start there. And then I'll start asking them to sing exercises after that of doe Ray doe or scale degree one, scale degree two, scale degree one again. And I stick with major seconds or whole steps because they're easier to discern the height and the difference in frequency for younger ears and younger musicians versus like using half steps or using skips, those are not as intuitive as the major second is. So I'll use that. And I don't play along with the piano with them on the piano often. I try and let them manage it. I might sing along with them, I might hum along with them, but I try not to use the piano too much. And we'll get into that a little bit later.

{ 2:59 }
There's a whole like philosophy why we don't use the piano when we're doing that. So I'll have them do that and then I can find their range using that doe ray doe exercise. I'm trying to keep the number of pitches that I'm asking them to replicate for me small so it's easier to like actually respond to memorize the pattern, if you will. And the range isn't so crazy that we're already getting into like different registers quicker and all of that. It keeps things so much easier contained. You can hear when the register's about like it's on the precipice of shifting and all of that. It's

a lot easier to manage when it's that small. So I like using that. And I always start with their speaking voice and then move up and down away from there. That's why I have them do robot speaking.

{ 3:55 }
And then when it gets to the concept of going into different registers and just seeing if they have access or not, especially from that lower register into an upper register. Often times I'm asking students who don't naturally have access up here, I'm asking them to whimper like a dog. And then if they can whimper like a small dog, then I'll maybe ask them to shift into their Mickey or Minnie voice, Minnie Mouse voice to actually then get word clarity instead of like closed lip semi included vocal tract exercise things. And then I might even ask them to do some sirens like like that to see if they have access up there.

{ 4:47 }
And then if the real challenge for pitch matching is kind of happening in that break, in that passaggio, I'll ask them to do more like Tarzan yodel things in there just to see if they have the flexibility in their voice to do so. But when they show that they have little to no ability to even play with their voice, that's when I get into this Doctor Brinegar stuff called a rainbow ears. So his definition is students who demonstrate an inability to match pitch are exhibiting a behavior related to their perception of tambour, which I love that description because it's like, oh, it's involuntary. It's not their choice, it's not their fault. And it's really important that as teachers we focus on this is not a deliberate choice that they are making. Their ears aren't processing what our ears are processing.

{ 6:00 }
So oftentimes the pitches that are usually presented to a client with pitch matching challenges are usually rich in overtones and that's the quality of that of tambour and therefore challenge a client's perception of what the fundamental pitch is. When a client has rainbow ears, they hear more than just the fundamental pitch, they hear a rainbow of overtones, hence rainbow ears and sometimes resultant tones from that. So strategies give the clients an environment that is nearly all sine wave fundamental and devoid of the presence of overtones will help the client find the fundamental pitch you're after. So unhelpful contexts.

{ 6:54 }
The piano full of overtones you are you can very clearly hear by one strike of a piano key, at least the first two. No first 3 overtones in the overtone series. You have the fundamental pitch, then the octave above that, then the 5th above that, then the 4th above that. They can hear all four of those tones if they have rainbow ears, and often times they are heightenedly aware of the second overtone. And so when we hear people when we play a note on the piano and they start singing a perfect fifth or a perfect fourth above or below what we're playing, it's not their fault. They're literally hearing louder than the fundamental pitch. That overtone, the second series or the second in that series, It's kind of.

Speaker 1: { 7:53 }

Crazy.

{ 7:54 }
So when you encounter this sine wave would be something that might be available like on a keyboard, right?

Speaker 2: { 8:02 }
Possibly.

Speaker 1: { 8:03 }
So what? What tools are you utilizing?

Speaker 2: { 8:05 }
Well, yeah, yes, absolutely. So there there are some other unhelpful contexts that I think are important for us to also discuss. So a piano is not great for this. Your best, smartest, loudest singer is not a good answer for a student who's struggling with this. A singer with a big voice? Not helpful. A room full of singers? Not a great choice. A persistent teacher without understanding of what the client is perceiving? Also not helpful. So what things are helpful? A male falsetto takes a lot of the overtones out. It's not very rich in overtones unless you've practiced really hard. A breathy tone is helpful because it takes all those overtones out. Essentially.

{ 9:00 }
A recorder, a flute, an ocarina, those are all great things. A tuning fork is probably the best. one-on-one. Face to face demonstrations with eye contact is really helpful with previous helpful contexts. Breathy tone, male falsetto, something breathy sirens. Especially getting into that upper register. I've had that be so helpful for my amateur female singers. An accurate singer with a slight tambour is fine, but accurate so often times and it's so funny. We often think especially for like secondary high school choir, we want to have these singers who have such rich full timbre.

{ 9:53 }
But yet how important it is that we have the full array of vocal timbre and quality in our chorus. Because it's the students who struggle the most who need those softer, accurate voices. They are so needed and for us to shame those softer voices that are still accurate in our choirs going why don't you sing stronger? Why don't you project? Why don't you do these things? Think differently of them? They can be the reason that someone gets access to this beautiful art form that we get to explore each and every day, right? That's huge for me. I talk about that to my kids, especially my smaller voices, but that are accurate. I'm like, we're going to be best friends, OK. And then encouragement and acknowledgement of the client's condition and just helping through that.

{ 10:51 }
So then the procedure, what I do to help this student gain these the the gain access you have to face the client with eye contact and a smile doesn't hurt. Weird, but then sing in a high breathy voice. I, the teacher, it's do re MI re do small range and we're not looking for anything crazy. And I'm singing it slowly and breathily so that it's all

this more sine wave stuff. OK. And then after I'm done singing tha they, they only keep eye contact with me and listen. That's it. They don't do anything else that second time or the first time. The second time I sing it, they lip sync with me OK and I tell them I want them to not avert their eyes. They have to keep eye contact with me. I tell them it's going to be uncomfortable, but we're we're in it together because I want them to grow.

{ 11:57 }
So don't avert their eyes and make sure that they actually watch your lips as you sing. Mary had a little love Mary and they have to lip sync along. OK then have your student match your lip sync so both of you are lip syncing. There is no sound but you're both matching mouth movement. Then ask them, can you hear my voice in your head when we lip sync together? If they say no, then you try again. If you if they say yes, then you continue. And if they weren't, if they were like, oh, I didn't know I needed to or I didn't know that that was going to be part of the next step, then I go, great, let me sing it again. You lip sync. Mary had a little lap and that's all I sing.

{ 12:59 }
By the way, don't sing the whole song. Just sing that Mary had a little lap. That's it then. Then the almost every time. And actually from my experience, I've never had it happen where after I said, oh great, let me do that again. You lip sync and then we'll lip sync together and see if you can't hear my voice when we do that in your head, which we're already talking about the beginnings of audiation by that point, right? OK. But you give them the exemplar, you give them the example so that they go, great, I need to recreate that. Great. But every time that I've done it a second time, every time they say yes, heard it, got it. So then the teacher may do this lip syncing thing several times. And I've had to do that a couple of times. And then the student should sing that passage in a child's voice, right.

{ 13:57 }
OK, in that Mickey Minnie space, that Princess or damsel in distress sound OK, etcetera. But and if they don't match pitch, keep performing the lip sync version and the out loud version until they can internalize those pitches. If they say oh, ask them if they can tell whether they were above or below the pitch that they were meant to create, what they were meant to sing. If they say below, then you ask them to add more breath to what they're doing. If above, then you ask for a more relaxed posture and using a breath as if they were fogging up their glasses. Then demonstrate again with eye contact, breath and light. Please falsetto if you're able. If they match pitch, move to breathy sirens, high and low matching if there's a gap.

{ 14:59 }
Now we're starting to move into, let's play with the voice a little bit. If we can get them to do even some semblance of that. Mary had a little lamb. Great. Now let's play with the voice. Breathy sirens. And then if there's a gap in their siren, it's usually a pubescent male. Their chords are frozen, pressed adduction. The chords must learn how to vibrate, so unlock these with super breathy sounds to break that.

That ice up almost whispering will help break that that how frozen hat is. Then you can speak in a haunting voice underneath normal speaking pitches. This teaches breath energy needed to match pitch.

{ 15:46 }
If you can get them to do this slowly and or to do this and slowly increase the frequency of these pitches going higher, you'll see that they'll match right above their speaking voice. It's still going to be breathy, but you accept all of these like less than full vibrant tones when we get started and it often is a lot of like breathy onset and all that. That is a OK because the moment that they start doing that really consistently, that's when I change their partner. So the accurate voice that they have been singing and standing next to in class, who's been checking up on them every day, not just emotionally but vocally as well, that once you get word from that helper, like, yeah, they're matching me, they're actually anticipating it and they're with me. They're not behind me rhythmically anymore. They're In Sync with me.

{ 16:46 }
When they start doing that, I change their partner to be semi timber full and then they start gaining full vocal closure because they hear it constantly and then they start to develop their own timbre and then sometimes they become the biggest voices, but those that has been like super, super helpful. The last thing about this process is super important is that the students who struggle with pitch matching the most in a choral secondary choral setting should not be placed in the middle of the goddamn choir. They should not be in terms of like the middle, even like the front row in the middle. No, they literally need a spot where they have a way to self regulate as they sing.

{ 17:48 }
So it's helpful to have their their buddy, their vocal helper that you've assigned stand next to them on one side and they sing and see how accurate they are on that side and then flop them. Have them stand on the other side and see if their accuracy improves or lessens. And whichever side they sing better in tune with their helper on, that's where they're placed in the choir, on the end of the choir. So they are the last person in their row standing nearest the audience, essentially, which I know can be somewhat scary for ensembles who care about that sound. And I just encourage people to care more about the individual voice at that point because they will grow so much more if they have no one-on-one side of them so that they can actually hear their own voice and someone on the right side or the left side, whichever side that they can help and self regulate going, yes, great. I can hear that.

{ 18:56 }
It's not good for that helper to stand behind them. They need to stand next to our ears are not built to hear things behind us as well as they are next to or in front of us. I'm saying this not for you. I'm saying this for the recording, but that's super, super important because the moment that you put them in a context where they're standing around all of these tamber full voices, they won't be able to hear their poor tiny small little voice right now. And they need to be able to hear am I on, am I off? And the

first, I would say month and a half to two months is frustrating for hat kiddo in choir because they probably don't feel like they're very accurate or they're getting anywhere. But trust that after that month and a half to two months, that kid starts to gain confidence.

{ 19:52 }
They start coming to see you before or after class or get excited in the middle of class because they can finally hear what's going on. But they've been in the mix. I have had the the fortunate experience of. Having this one time, one-on-one experience, sometimes doing the rainbow ear thing with kids, giving them these tools and saying this is how you play the game in choir. So some of those tools are I want you to sing. I want you to listen louder than you sing. I want you to hear this person's voice louder than your own. Trust me, that's what I want. Whenever I say choir sing louder, I'm not talking to you. Whenever I say this thing, I'm not talking to you. You.

{ 20:46 }
I mean, you have to really be super specific with those kinds of kiddos because and you tell them the reason why is it's not because you are less, it's because this skill is a difficult skill to build when you don't naturally have it. This is why our society believes that singing is either you're born with it or you're not. No, it is a skill, but it takes time, work and dedication. Just like any skill, any skill requires that much love, attention, desire, right always. So when it comes to singing, the The problem with it is that singing is the most personal musical expression because your voice box and your skull are different than anybody else's. Your skull most especially is really what defines your voice.

{ 21:53 }
Morbid thought, if we cut everybody's heads off and we just have the vibrating cartilage, the vocal folds, we'd all sound the same. But it's how our how long our tongue is, how wide our tongue is, how deep, full tall our soft palate can go and how low it can go and how big your skull is that like that, all of that determines your sound. So your sound like everybody's voice. That's how we self identify. Like yes, that's my voice. My mom and dad can pick me out in a crowd because of specifically how my voice sounds, right? So all of that is, that's why it's so personal. That's why we need to have music educators who understand that this is not something the child is choosing to do, but rather this is part of their process on how they listen and how they process sound. And so we can't shame them for that.

{ 22:59 }
Instead, we give them things that they can process, what their ears can process and what they can listen to. So when I have a student or multiple, I had six in one classroom one year, six students have rainbow ears in my classroom. So it's funny, often times I, as a music educator and can I will play the piano just to get pitches taught quicker and all of those things depending on what the song is. And with that ensemble, I never could do that because that was offering less of an opportunity for those kids to hear it correctly the first time also. So instead I vocally demonstrated in a soft breathy voice, often for that ensemble when trying to learn those pitches. But

sometimes our cruxes will go to those things.

{ 23:58 }
So I'll even use a pitch pipe at times, which doesn't have nearly as many overtones in it. It's closer to more sine wave sound anyway. So pitch pipes are also good to use. I think I've sufficiently answered that question.

{ 0:00 }
All right. And was never taught in college.

Speaker 2: { 0:02 }
Right. OK. So how do you assess whether students are improving in their pitch matching ability? What signs do you look for?

Speaker 1: { 0:12 }
So First off, just looking at how they're responding to new material, OK, that's a great sign to go. You give them a brand new piece and they're still engaged. They're in it. They're and they don't seem like they're pulling away emotionally that they're really engaged in new material because repeated material, they're fine because they've practiced that plenty. And now it's time for like, let's learn something new and they remain engaged with it. That's a really good sign.

{ 0:48 }
It's impossible to to say there's one way to assess all of these students in the same way. They're just so very different in how they listen, how they process literally how their brain processes sound, but then how they themselves think about and process those things too. So often times what I'll do is in rehearsal, I will walk around as they're singing a section that they we've practiced. They know the rhythm to it. So they don't need a conductor and I can walk around the room and I can listen to how that's going. And then if I need to give them a couple of additional pointers, I'll do that. I'll even do warm up exercises where they they have a whole song or something that they have to sing and I just ask them to spread out and use the whole room and I'll walk amongst all of them and even my best singers, I'll be like a little bit more breath there. Let's put a little bit more buzz in that tone.

{ 1:50 }
So I'm individually assessing every kid as I go by, but that's also an opportunity for me to silently focus on that kid 02 and give them a little bit more one-on-one time, which they need. In terms of the assessment part of it, you'll be able to hear whether or not they're matching or not. And so if again, it goes back to the if they're too low, ask them to add more air flow. And if it's too high, often times it's manifesting in their posture and manifesting in their yes and in in the tensed muscles, whether seen or not. And so sometimes if I can't see a posture problem, I'll ask them to move instead, especially their upper body. I'll ask them to rock their shoulders back and forth, or the rock their torso back and forth, or maybe even just move their head side to side. Not up and down, but side to side so that it doesn't affect the pitch. The Pavarotti. That's right. I call it the Tim Warwick.

{ 2:59 }
Yeah, but he did that too. So, yeah, excellent.

Speaker 2: { 3:03 }

{ 0:00 }
We're doing great. All right. Our next section is about post COVID adaptations. So has your approach to teaching pitch matching changed since COVID-19? And can you describe some of the most significant changes or adaptations you've had to make, if you've made any?

Speaker 2: { 0:24 }
So in terms of teaching the content and the steps that I use, no, all of that pedagogy has stayed the same. I've not changed that. But what has changed is my approach to the human. That has been the most significant change.

{ 0:48 }
Is that because of the glorification of technology during that time, we hyper fixated on our ability to use that. And because their frontal lobes are not fully developed, there's an unspoken understanding that that's how they can communicate. And I think that's also how they prefer to communicate because that was part of their development and that was a year and a half of their development, which we know if you do any John Hattie, understanding that is a lot of instructional time and part of that development process. So to undo that takes some time, patience and understanding that they don't get it yet. And that's all right, but you have expectations that you need them to follow.

{ 1:51 }
So my approach to the human has always, well has since this experience has been nothing but encouragement, excitement for the smallest step that they might be able to do. You celebrate every inch of that because that's, I have found that's how sensitive many can be. And so I start there and if they have a little bit more resilience and wherewithal, then great, I'll move my expectation up too and not celebrate every little thing. But for someone who's super nervous, super shy, timid, doesn't really even make eye contact with you, that has been plenty of students that you have to start with building a reputation, A rapport with them and allowing them to feel safe teaching this art form and this vocal instrument. And we already talked about how freaking personal this is.

{ 2:59 }
There's more. I believe especially with with children whose frontal lobes are not fully developed yet, I think it's really important that we take the time to develop the relationship first before we try and do all of this stuff. Otherwise because it can build and drive a wedge between you and then you'll never see results unless you really do a 180 and change for them. So that relations like COVID taught me nothing else then like relationship is the number one most important thing. And if a child can feel safe under your tutelage and in your space, you've got it made you, you can you can then ask for a little bit more and they'll give you a little bit more and all of that.

{ 3:58 }
But that's COVID hasn't necessarily changed pedagogically what I do, maybe some assessment things because technology helped us assess those things. But in terms of like what I teach or how I teach, I guess the only thing that really has changed is how I teach is a more humanitarian approach to things and building the relationship first. Love that.

{ 0:02 }
All right. So what role does technology, we were just talking about technology currently play in your pitch matching instruction. Are there specific tools or platforms that have become essential to your teaching?

Speaker 2: { 0:15 }
So I have in terms of pitch matching, there are a couple apps that are out there and I think I have one on my phone. This one's kind of fun. It's not, I don't think it's that I used to have. I can't remember the name of the app. If I do, I'll send it to you. But it's fabulous.

{ 0:45 }
It is a pitch tool where you can learn to discern high or low and it gets really, it's a game. They game a fight it of course. So they give you a, a beginning pitch. They give you like a, a, a, a home essentially, or doe or tonic, however you want to label that. But they give you a tonic, they give you a pitch and then they say, great, we're going to play a second pitch. And I need to do to discern whether the second pitch is higher or lower than the first pitch that I gave you. And they start very obvious with bigger intervals and all of that. And then it really comes down and it does half steps, right. And then it gets into sense differences. This is, this is 3 cents. Well, no one can, no human ear can determine three cents. But like, it'll get to like, Yep, that was $0.30 higher than the pitch I just played. Oh, that was $0.40 lower than what I just played. Yeah. So it gets really nitty gritty.

{ 1:59 }
And then I think the highest you can go in terms of like, how close you can actually determine without like, just totally guessing. The human ear can perceive about 7:00 to 8:00 cents, but that's the lowest it can perceive. Isn't that crazy? It's crazy. It's crazy. And technically the like when you're trying to tune, like when you're trying to just intonation, when you're trying to do just intonation and tuning 1/5, technically that 5th is supposed to be two cents sharper. No one's got a fucking clip, so you're just guessing. Just think higher, right? But that so I can't even remember what the question was now. Oh, the technology. So so that app is really fun and it gamifies it.

{ 2:56 }
But then a student who's like struggling to determine some of those things. That's a great tool to use. I also I am a like I will live and breathe and die by this website musictheory.net. It has interval training and ear training as a part of the exercises on that website. It's free. Do it let and let them explore. I've given them, I've given students assignments using that when we're learning new Soulfesh or when we're trying to determine this very specific skip in our music that's happening all over the place. I would give them assignments through there to help identify some of those things.

{ 3:42 }
And then the other thing that I use, which is really specific to Microsoft now, it used to not be, but there was a thing called Flip Grid, which has now just been rebranded as Flip and it only works in Microsoft schools and things like that. But any audio and or video with audio recording device is super, super helpful. I will ask students to pass their music off a couple weeks before their concert so that I know that pitches, rhythms, all of that. We are ready to start moving towards the expressive part of our journey before we step out on stage. And so two weeks or so before the concert, I asked them in class, pull out this device. We are going to sing it as a class. I need the camera to face you and I needed to be close enough that I can actually hear your voice as you sing. It can't be so far away. But when they do that, then they submit it and they share it with me. And I don't watch the whole bloody thing.

{ 4:55 }
I only watch the usually it's for my like higher level singers. I'm I'm listening to the hardest sections of the music going OK, good, they've got it. Or if they don't, great, I need you to work on measures, blah, blah, blah. Right. With these pitch matching kiddos. I listen to the whole thing and I'm listening to the spots where they are bang on whole time and then the moments that they get off and trying to determine is that a register thing? Is that a vowel thing? What is happening there that's getting them off and how can I give them feedback, Right? That's at maximum one time for me, 6 kids that I listen to a full song. OK, so that's three minutes of song. So I listen to about 18 minutes of music. How terrible. I could take that and listen to the five to 10 seconds for everybody else on the hardest section of the song and go, OK, great, we're fine.

{ 5:58 }
So, but that's how I use that for the pitch managing kiddos specifically. And that is such easy data to pull from. They're standing in the spot that they would sing at the concert. They're singing in the environment. They will sing at the concert, and there's a room full of people so that I'm not asking them to sing individually at home with a track. And you have to keep the cat away and you have to close the door so that brother and sister and blah, blah, blah. I just do it in class. Yeah, makes it easier.

Speaker 1: { 6:31 }
That's brilliant.

{ 0:02 }
Uh, alright. Have you noticed any lasting effects of remote or hybrid learning on your students pitch matching skills or on their willingness to participate in singing activities?

Speaker 2: { 0:18 }
So my hybrid learning that I did at my previous school was half of the students were in class with me and half of the students were online at home watching and supposedly participating along with us. And I asked them, because of the technology that we had at the time, to mute their microphones. And I'm just going to assume that you're participating with us. And so sometimes those students kept their cameras on and many of them did not. They kept them off and I'm not sure if they stuck with us and and did it or not.

{ 0:59 }
And maybe there were ways that I could have done that better. But I just decided, you know what, I'm going to focus on the students who are here with me at this time. And I always kept the door open and me insight of my camera so that the students whenever, if they were at home and they were actually tracking along with us and had questions they could ask, but they would always still see me. But in terms of like their willingness to participate. Hybrid has my understanding of what a hybrid learning environment looks like in that context with live teaching and you're, you're at a different location has never been motivating whatsoever.

{ 1:51 }
I even did that with the Boise Quartzman where when I took over, we did some Zoom stuff and I, I would like, I would play a recording of rehearsal tracks of like or even a YouTube video. And then I'd, I'd conduct along with it and I'd have all the guys on and they would mute and they'd sing from home and I'd be like, great job. I don't fucking know. So it was for me, it was always like, how do I motivate? How do I get you to like? So I always try to make it fun and exciting, but there's just nothing compared to like being in person. Now the other thing that I've done in terms of like using technology to educate and stuff, I am a big fan of the flipped classroom model and asking them, great, I want you to look at this material. I want you to understand this material at home so that when we come together, we can work on it together. And that works great for our choral classroom.

{ 3:00 }
Great. I want you to learn this melody at home. It's on our teams, Microsoft Teams or it's in our Google Classroom, right? There's there's the melody. I want everybody to learn the melody tonight. Tomorrow I'm going to teach you the harmony parts, but I need you to come in with that melody known by tomorrow Go. So in terms of like that being maybe hybrid, I don't know how they're defining hybrid, but that might be another way that I've used it. And that can be motivating when you put steak to it as

well.

Speaker 1: { 3:34 }
So to reframe my question, when we came back from distance learning or from hybrid learning when we were All in all the time again, did you notice a difference with like the willingness of the kids to participate?

Speaker 2: { 3:49 }
100% and some. And I treat it like there are two kinds of people in this world, those who like Neil Diamond and those who don't.

{ 4:00 }
It was I had both sides of that coin and and there was no in between. It was, Oh my God, I'm so happy to be back and with people and with friends and I'm ready to learn and I'm ready to sing and I'm ready Bah Bah, Bah Bah Bah and the complete like I don't give a flying squirrel what happens.

Speaker 1: { 4:20 }
Are you still feeling the repercussions from that?

Speaker 2: { 4:22 }
Anywhere there are still students who come in completely and totally apathetic to what's going on and it's. I'm not sure. I haven't necessarily sat down and processed it, but the most recent freshman class that came in for where I'm teaching currently, there was a ton of apathy. But after me being who I am and how weird I am, I was able to convert some to the coral bug.

{ 4:55 }
But there were some who still remained distant and apathetic about it and I'm not. I'm sure there's correlation with how the home responded at that time and how the home has since responded from that time. Because if there was a a parental situation where people were like, well, but that's not how we treat other people. We don't really use screens. We just do this for this time because the world is falling apart versus those who are like, OK, this is our new normal, here we go. Let's embrace it fully. And then there's all this apathy that develops if you're not doing 100% only what you want to do. So I think it stems from that. And I think it also stems from when COVID hit you in your life that if you were in kindergarten or worse off, kindergarten's not bad. You can fix that, I think.

{ 5:59 }
But Oh my God, second grade and it hits you third grade and it hits you when you're so young yet and take such a year out of your learning essentially and your engagement that you that's part of a learned process now that's going to be way harder to fix. So those are things that I've been thinking about. The kids that are coming to see me now let's see, 9th grade. So they were in 4th grade. This last group, they were in 4th grade when COVID hit them. This next group will have been third grade, but OK, so they were in 4th grade. No wonder I had so much apathy in the room. Pray for me for the next two years. Crossed on the cross.

{ 0:01 }
All right, so no, you're good. The next section is on barriers and challenges. So I, I'm going to rephrase this a little bit. Are there specific barriers that you've come across so large class sizes, student confidence, lack of resources that you see as a major challenge to students learning of pitch matching?

Speaker 2: { 0:22 }
Confidence is like the biggest thing for me. Large class sizes are not a problem for me, but I focus a lot on student leadership and stuff like that, so I could still give them work to do and know that the student leadership will hold them to that while I do the pull outs and talk to kids about stuff, you know what I mean? So yeah, so the student confidence is like one of the biggest things. And again, talking culturally, they're like behind a screen so often.

{ 0:54 }
And they're constantly, and this is human, but constantly comparing themselves to what they see, what they experience, what they witness. And if, again, if they have a home situation that isn't focusing its energies on building self worth, self-confidence, self esteem, then I, as a core music educator, really can't do anything until I address that. Yeah, I can't. I can't because there's so there's so little that can be done with such a lack of confidence and allowing oneself to like collapse into themselves. Turtling is what I call it. So yeah, I just, I think that's one of the biggest things. Class sizes sometimes can be intimidating depending on the kid, but I also as a teacher at the beginning of the year and focusing on relationship 1st and content second.

{ 1:59 }
My kids get to know each other so quickly that yes, they often and with the big class sizes, they'll find their groups, they'll find their their little click. That's fine. But everybody needs a click. And so it's for me when I get that kid who is kind of a social outcast and also struggles with pitch matching, me giving them a person to be in contact with and they have to sit next to each other and make contact every day and talk to them, That person usually includes them into their clique. And so that also helps build some self-confidence like, Oh my God, I have friends now. So, but that's for me, that's been the biggest barrier.

{ 0:00 }
Yeah, my bread and butter is that second question.

Speaker 2: { 0:03 }
Oh yeah. So could you share a specific instance where you encountered A barrier to teaching pitch matching and then how you addressed?

Speaker 1: { 0:11 }
It OK, so I have talked a little bit about this where there was a a female biological female voice who came and sang for me and they struggled to move their voice up and down. And I brought somebody else in who I was thinking would be a potential help in being that point of contact for them in the chorus to do some pitch like some vocal acrobatics essentially, and doing some copycat exercises. And that student still struggled even with another female voice doing that copycat stuff. And I had just asked that student to do. There's a couple of tools that I asked them to follow through with each and every day of choir.

{ 0:57 }
First, they had to make contact and say hi to their person every day and to stand next to them. The second thing they had to do was they had to listen louder than they sang and make sure that they could hear that person's voice specifically louder than their own. And then third, I asked them to double check and check in with their person on how they were doing on a scale of 1:00 to 5:00 every day of of 1 is didn't match me really at all today. 5 is you anticipated me. 4 is like you were you matched me the whole way. 3 is you were a little lag but you were still matching. And two is there was some matching, but a lot of lag as well. So there's like I gave them all those tools, but they had to do all three of those things every single day.

{ 1:59 }
And I didn't make any additional contact with that student in particular. I did make contact with their person every day. Where were they today? What number did they give you? I said great. So then if they were at A2 and so that means they were really laggy with some pitch matching, great. I'm going to focus on a rhythm exercise for the next class period with them. And I'm going to work on maybe the specific spot, a passaggio problem or this area in this song where they got that too, so that maybe I can see improvement in that number. So then that student, who's that point of contact for the pitch matching student, I'm going to call them the point of contact.

{ 2:49 }
I would make the point of contact with that student every day and just help me cater my teaching for that student without that student feeling like I'm breathing down their neck. Yeah.

Speaker 2: { 3:05 }
OK, cool. I love that.

{ 0:00 }
OK. So are there any barriers that have become more pronounced since the pandemic? And if so, how have you tried to overcome?

Speaker 2: { 0:10 }
Them the biggest barrier that has been more pronounced over and over is the lack of self-confidence within students. I give them opportunities at the beginning of the year to get to know one another and build relationship and build rapport so that I can continue to build relationship and rapport with them using positive language and positive constructive criticism as we grow and as we learn.

Speaker 1: { 0:38 }
I love that. So when you were taught and this kind of refers back to the previous question too, how are you selecting these point of contact students? Yeah. And how how are you managing that kind of relationship between between colleagues? Essentially, yeah.

Speaker 2: { 0:57 }
So the students that I'm choosing to be that point of contact are often the softer voices. They're a softer voice, They're a smaller voice, but they sing accurately. Maybe they're breathy, maybe it's maybe it's not breathy at all, but it's just freaking quiet. And maybe it's not like full vocal closure 100% of the time anyway. So, but it's it's those students. And it's those students that I tell them at the beginning of the year when I meet them. Sometimes it's when I meet them. Other times I already know them. And so I'm like, great, here's the deal. I have a special assignment for you. Yeah. And then I keep them in on the secret and I said, this is just a secret for you and me.

{ 1:53 }
So then there's, I don't know, there's some excitement and mystery, I think to that, but that they know that they're also helping another student out with their growth and their learning. And I often will refer to a student that they already know who may have gone through that process and been like, hey, did you know this kid? They used to be this person and they could, I mean, we already know how amazing this other like the person that you know, now they might become that amazing, but they need somebody like you to be able to get them there. So it's it's not just building that relationship with that kid, but it's also like this is a really special assignment that I'm asking of you and we're going to partner together. We're going to do this together. And whenever you don't know what to say, are you are you get tongue tied? Are you not quite sure? You just say, I have questions I need to ask Mr. G. But for for right now, I'm just happy that we're able to do this thing together.

{ 2:59 }
And you focus on the relationship and build that that way. I have had a couple of like

9.m4a

freshmen experiences where I just met them. They have a soft but accurate voice, and I need to pair them with somebody else. I focus so much on building that relationship with that freshman in particular so that I I know that they will remain on the path and remain helpful. And when I see that that's deteriorating or not working because of friend groups or whatever is happening, then I make adjustments as I need to. Perfect. Yeah.

10.m4a

{ 0:00 }
This is wild and fun.

Speaker 2: { 0:02 }
All right. So our next section is on student engagement and outcomes. So how would you rate your average student's pitch matching ability at the start of the year versus now? And what do you think contributed most to any changes that you did?

Speaker 1: { 0:19 }
Observe, most of it is vocal production, most of it is are you using your folds fully and properly? And the moment that students allow themselves, I'm saying that very specifically allow themselves to do less than what they know they are capable of, that's when less pitch matching happens, when they don't give all of what they are capable of giving. So when they under sing, when they're just they're having a bad day and they're choosing to focus on 6 minutes of their life instead of the hour we're about to spend with one another, you know what I mean?

{ 1:01 }
Or the the 90 minutes that we're about to spend with one another. Why focus on 6 minutes of your day when there are 24 hours of it? I mean, there's so little time already you're going to focus on and you might be even focusing on something. That was a moment a girl gave me a weird look in the hallway. Oh, and that was less than a second long. OK. And so we're mad for 90 minutes. Oh, OK. So part of it is part of it's that part of it's like, so the the vocal production thing of like, I'm not going to give. I'm going to give myself an out and not work as hard and not do everything is like, OK, I need to motivate you to actually do this work.

{ 1:50 }
So I talked to them about what working as a team looks like versus working as an individual and that my classroom and any music classroom is always a group project and it's every day. And I know you don't like group projects. None of us like group projects unless we all in the group agree to certain terms. Here are the terms and then we go through that and how do we operate together. So in terms of where they start the year and where they end the year, the beginning of the year is not just pitch matching related. There's also rhythmic sync because emotionally they're not synced up. So all of that plays into it. That's why relationship, I mean, COVID taught me that or didn't teach me that, but it definitely reinforced it and was like, Yep, this has to happen a Lola.

11.m4a

{ 0:01 }
OK. So can you describe a moment when you saw a breakthrough or significant progress in a student's pitch matching ability and what do you think made the difference?

Speaker 2: { 0:12 }
So there's a student that I have a very specific, I have 3, but I'll chair 1. He was the most significant. So I had a male student who came in as a freshman and had maybe two or three pitches to his name. I went through my process or I went through the process that Doctor Brinegar had outlined, Rainbow Ears, and I go through that process with him and within the first month and a half to two months, I saw kind of the same sad look on this kids face. We started new material after our first concert and he lit up, his eyes widened and he came up to me at the end of class and he goes, Mr. GI think I get it?

{ 0:59 }
I think I get it. And I was like, OK. And I was so skeptical. I was like, uh huh, sure, you do. Prove it to me. And he goes, OK, I can't. I don't think I can right now, but I will next. The following week, he comes back to me and he plays his part on the piano first, which I didn't. He didn't know how to play the piano. So he came in, he played his part on the piano and then he sang it without him playing the piano and it was there. It was accurate. It was breathy as all hell. And it was, you know, all the, the in terms of tone wasn't pretty necessarily to listen to none of it, but all of the pitches were accurate. Every pitch was there. It's huge. So that was a big launching off point. Eventually that student became well, so that was his freshman year.

{ 1:58 }
His sophomore year, he remained in the same choir because tone had a lot to develop and lots of things to do. His junior year he skipped the intermediate ensemble and went into my top group. By his senior year, he was the section leader and the president of the choral program. The following year, he auditioned or OR that summer after his senior year, he auditioned for the college that he wanted to go into, and he made their top ensemble as a freshman. How can you beat that? But this is, I think, important for all of our listeners. Yeah, those of you playing the home game, that there's only so much that the teacher can do. I can give tools, I can give encouragement, and I can give guidance, but it's the student who has to take the responsibility and the ownership.

{ 2:58 }
If you want to see that development, that growth, the student has to be motivated internally to do so. And he was, and that's why we saw those kinds of results. I've given the same tools to similar students with less results because they were waiting for someone else to do it for them. So it does matter the responsibility of the student and their ownership of that process to see such dramatic results. We can see results

without and I've seen that with less motivation. But if you want to see really high results, that student has to be bought in. I love that. OK.

12.m4a

{ 0:01 }
Alright, the next section I'm excited about is professional development and support, K So what kinds of professional development training or resources would be most helpful for you to access? Like what do you want to see?

Speaker 2: { 0:17 }
And I assume this is all still within that realm of pitch matching etcetera. Umm, I would love to see more research based process, tools, resources and training on how to do this more effectively.

{ 0:37 }
I mean, the Doctor Brinegar thing I think is the only thing that I've ever been able to find that is a step by step process on how to guide someone to learning how to pitch match and accepting that the that is one of many skills that you're trying to develop all at once. And just that I would love to see more like research based procedures. And if there's something that can be further developed and added or or even taken away from that process that helps make it efficient, that'd be incredible. I mean, it also would be kind of amazing if there were some sort of like video tutorial step by step process thing that kids could do on their own. And I'm, don't get me wrong, the, the relationship that I get to build with that kiddo is so helpful in that time, but it also takes a great deal of time to do that and to be patient, thoughtful and responsive.

{ 1:57 }
But I guess there's no real way there is, there is a way that we could have a video tutorial process, but I could just sit down with the kid and then give them the feedback that they deserve because that's the only thing that would be missing. The reason why I'm saying that though, is I would rather have maybe a video tutorial process on like step for step how to follow along with that with instruments that match these age groups and these these kids. So if we're trying to get an elementary school kiddo to match pitch, there should be an elementary school kiddo of the same biological gender singing, because we know that that instrument is the same for for what we know as close.

Speaker 1: { 2:51 }
As.

Speaker 2: { 2:51 }
Possible, right? As close as we have access to.

{ 2:54 }
And I do believe, if my understanding is is correct, I do think race plays something into this because biologically, as far as I understand, African Americans are born with thicker vocal folds, so their instrument is different than white, Latino, Caucasian folk. So that would be incredible to have something of similar race or ethnic background and age appropriate for those students who are struggling with

this, that we can walk them through that with an instrument that is as close as we can get to what they're working with.

13.m4a

{ 0:01 }
OK. Have you participated in any professional development workshops, courses, learning communities, etcetera, focused on pitch matching and if or even in part right? And if So, what was most valuable about those experiences?

Speaker 2: { 0:19 }
Ironically, I think I was the person who offered this kind of workshop or thing. So I, I'm, I LED a workshop for teachers at a choral festival is a barbershop festival where we actually brought a kid from the festival who was struggling with pitch matching. We brought that student up and I went through the rainbow ears process in front of the other teachers and got that kid to sing.

{ 0:54 }
And the Oh my God, his teacher began to weep because of how much of A struggle and a problem that had been and how much she has seen that student's love of singing, even though he was maybe deemed by society as not good at it and shouldn't do it, and that he just gained the skills to be able to do it. And then not long after that, she sent me an e-mail saying this has been the best thing for this kiddo. He has lit up. He is on fire for all of this. And he's like the top singer now 'cause he had all that training of like the battles and things that we've been talking about. He's now doing bad with the proper pitches. I'm looking to him leading sectionals and all of these things.

{ 1:55 }
And now look at how much purpose that kid just got out of gaining the one skill that he was seeking and searching for. So the, the only communities that I've ever been a part of are the ones that initiate this conversation. And I, I think it's underdeveloped. It's underreported. It's so I I'm actually really mad at you for doing this because this is what I thought I was going to do my thesis on, but maybe I'll just go in and amplify it some way. Maybe I'll just do that. But yeah, so in terms of answering that question, no ideas.

14.m4a

{ 0:01 }
OK, what advice would you give to a new teacher who's just about to start teaching the concept of pitch matching, and what resources might you suggest to them? I.

Speaker 2: { 0:12 }
Guide them to the you or the not the YouTube video, but the Facebook video that I found years ago of Doctor Berniger talking about this and I'm not sure if it exists anywhere else. I've looked on YouTube, I've not found it, but that's the biggest thing. I, I sat down when I watched that Facebook video and I literally typed out his process. And that's what I read off earlier is really just what his process was. I actually the rainbow year thing, I literally read it verbatim of what I wrote down. But that's exactly what Doctor Breniger said.

{ 0:51 }
And I said, I was like, well, if I'm really going to try to do this and help kids manage this, I'm going to try and follow this to the letter. And I have and it's never steered me wrong ever. So that's why. So that would be my and I have already shared that that Word document with like four or five beginning teachers. And then I've also shared it with about 15 to 16. I like vetted teachers as well. And those vetted teachers have come back going. This is a game changer. It's incredible. It's finding the time that's the hardest part.

15.m4a

{ 0:02 }
All right, our last section here is on reflection and additional insights. So looking back over the past few years of teaching, what has been your biggest learning or take away regarding pitch matching?

Speaker 2: { 0:15 }
Not everybody's the same. Everybody is on their own path in terms of their musical listening journey. I had a kid years ago who I said OK, who also struggled with pitch matching. I go, great, who do you listen to? He goes, my parents. I said, no, no, no. Like what? What artist do you listen to? He goes, I don't really. He's the first person I've ever met in my life who really, like, doesn't actively listen to music.

{ 1:01 }
He doesn't seek it out, nothing. Isn't that wild? Yeah. OK, so that that like, blows. That blew my brain part. I was like, oh, hi, you're new. OK, so. But everybody's on their own path. So him like trying to teach him how to pitch match going to be way harder because now he has to go out of his way to do something he's not even used to doing, which is listening to music. Whereas someone who does listen to music, I say, great, I want you to listen to whoever you're listening to right now. I, I know you know the lyrics to the song. I want you to I want you to lip sync along with him. And if you can find a YouTube video of them doing the like the music video, uh huh, even better because then you can see their lips and practicing some of the Doctor Breniger stuff.

Speaker 1: { 1:59 }
Right.

Speaker 2: { 2:00 }
And that has been super helpful because they will do that happily all the time. And then they get all this practice for doing the thing that I need them to be doing in class. They do all of this practice that I'm like, I don't want you to sing at home for a month. I want you to lip sync along with this music video of theirs. Plenty of practice and then tons happens. So that's been a big take away. The Doctor Breniger thing was of course, like mind boggling and changing explosive. But the other thing that I need to say is that the other thing that COVID taught me is not just that relationship is everything, but in the choral classroom, you have no idea how much actual learning is being taken place.

{ 2:54 }
Just between the voices up on the risers, there's so much learning that's unspoken and no one talks about it. We don't have enough time or enough books to fill to talk about what kind of learning is happening standing next to other people doing this thing. So to do it in a vacuum doesn't quite work. And I've never seen it work in a vacuum. It's always been done with other people. That's where that growth can

happen. And therefore that means that's their community that helps cultivate and build that confidence in that human. They need that. We all need that.

16.m4a

{ 0:01 }
All right, So is there anything else about your experience with pitch matching successes, challenges or surprises that you would like to share?

Speaker 2: { 0:14 }
Don't be afraid to ask questions. Don't be afraid to ask for help.
I found myself when I first began this process, I got so snippy and quick to anger with my students when I first began this process. And after sitting back and thinking about why did I get so snippy at them, I know that they can't do it and that they're struggling with that skill right now. I know that. So there's no way that I was mad at them. I was mad at myself, but I didn't have the answers.

{ 0:59 }
So we have to give ourselves grace as educators that when we don't know, breathe and say, OK, I really don't know. I need to do more research and I need someone else's help to be able to do this. But when it comes to like trying to build this skill, which can be a life changing skill for some of these kids, and life affirming and value affirming skill for some of these human beings, it already takes a village to take care of that child and rear them and all of this, right? So what's wrong with asking for another person to be part of that village to help you remained in the village, if we're sticking with that analogy this whole time?

{ 1:56 }
So that it's like I learned that it was in frustration of myself not knowing and having answers. And the other thing of like being frustrated that it's like it's not ever going to happen in the amount of time that we wanted to. It has to take its own course. It will take time. So you're not looking for overnight answers. Please don't look for overnight answers. It won't happen. It takes time, it takes patience, lots of encouragement and never a response of like, well, good luck and apathy towards that journey. It's OK. This, this is where we are right now. Let's see if we can't learn from our mistakes and start to build on top of that. It's a completely like motivational language that has to be employed when working with students of various ages, including adults.

{ 3:00 }
In this process. And me being a director of a community chorus and having some men in that chorus who struggle to pitch match and do it consistently, there are some, like I have to be motivational and I have to be positive. But I also have the luxury, and some of us will have the luxury of saying some of the things that we're talking about right now are just biological. We know that in the biological female voice, there is a little gap in their voice literally where they can't fully bring their vocal folds completely together. We know this. It is scientifically grieving. So there's some biological factors that you can say you have no control over that That's just what your body is doing right now.

{ 3:55 }
We have to be patient and wait our turn until you develop out of that or in some of these community chorus guys case, it's like this is just where your voice is now. There's not much that we can do about this one particular thing. This is what we do have control over. We're going to focus on those things.

C:

Here we are with Miss Karina. She is my second interview. So our first question is, our first section, I should say, is on teaching practices. So what strategy for pitch matching do you gravitate toward more often? And can you walk me through how you might implement that in a typical lesson? Yeah, so there's a couple different things that I do that I've found are effective. One is sulfedge. I find that kids that come in that really can't match pitch for whatever reason can make a connection with sulfedge. And so unfortunately that doesn't always transfer to music, as weird as that might seem. The other thing is I I talked about the idea of a bullseye and, and feeling. I want them to start feeling what what what is correct, what is not correct. And they're like self correcting and have a self-awareness of their ears, how their ears work.

{ 0:59 }
I have several students that have come in that literally seem like a third below everything. That's how they hear pitch. And so teaching them to, yeah, scoop and slide up to where it is and feel that vocally where, where the placement of it is and all of that. And be aware of that because it's not just your ears. Sometimes your ears play tricks on you. It's also where you're feeling it and your voice and inside and the shape of your mouth and all the things. And so, so I will pull a student aside individually and I, I see that they're struggling like we'll, we'll, sorry, let's back up in class. We work soul pitch, you know, working in locking pitch, waiting, waiting until we're all there and then we can move on to the next thing. And sometimes even taking a kid and going up or low and like, do you feel that that's locked in, you know, just like a bullseye? And then we'll slowly work through all of those things. And if I see a kid that is struggling individually, I'll pull them aside and make them aware of it.

{ 1:58 }
And sometimes it's a, I've come to find that it can be what part of their voice they're using. They might just be using your chest voice instead of accessing your head voice or they might be bringing their head voice down and it's not working. Like it stops. And so they're like, so they just stay there and like, Oh no, there's another Voice Access. And so we work on like, hey, accessing all the, the whole range of the voice to try to get them to understand that. So I don't take an entire class period. It's like you have to do bits of hey, we're going to work on this thing which is pitch matching for everybody or scales or intonation, and then trying to take that and implement that and then use it regularly. So it's like a hey, we do it together, practice. Hopefully we can all lock it in. I'll oftentimes also place a kid and I feel bad, but ones that are very good at pitch, I might place them next to somebody who struggles with pitch and ask them to listen and lean in and see if you can lock into what they're doing.

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So these are all just little bits as we go, like observation. It's like course correction, I see it, let's try this, I see it, let's try this and take it for that kid and the other people as well. So I don't know. I'm like when I think about routines. Oh yeah, I don't.

{ 0:00 }
All right. So the next question is, are there any particular activities or routines that you found especially effective for developing pitch matching? And could you share an example like you talked about Soulfesh? Yeah. So like how do you how do you implement that? What does that look like as a routine in your class? When we start off the school year, we start off with just basic scales, learning self edge. And again, same thing, taking our time through each pitch and hearing and the interval and having everybody be locked in together before we move on. And then moving that from not just a scale, but also to jumps of intervals, OK, hearing 1/3. And how does that lock in? What does that feel like? And I speak that over everybody, not just like that kid, you know, that might really be struggling. And I know they're singing 1/3 below and that's how they hear pitch.

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And, and again, I, I try not to make kids feel, I don't know, I don't want to single them out necessarily in front of the class. So I might go to a section and say, OK, hey Altos, can we all do this for me? Like scoop up in there? Do we hear OK, yeah, over here, like in this area. And I'm pointing kind of to a section or area a little bit higher, a little lower, just to help them understand that something is off. And I want them over time to. And sometimes they do. What's crazy is they know something's off but don't know how to fix it. And so that's my job is to give them tools of like, OK, let's try it. Let's try a little bit of moving down, a little bit of moving up. And lock in and then does that align? Can you hear alignment there? If something's off, then let's kind of tweak things. And so, but no self edge. A regular practice, obviously site reading intervals. We do, I actually teach my students intervals. We go through an entire unit on that. And then we practice them regularly. And yes, I might use candy, but just getting all of them to go for it. I'm like, I want everybody. I wait for people, all of them to kind of like have a thumbs up.

{ 1:58 }
So they're trying and listening for it. And then I'll do like an interval quiz usually at the end of the first semester. I'm trying to make it relevant, right? So the stuff that we're teaching, even sulfedge, how is this relevant? How many times? And then I, we, we acknowledge it in the music. Do you hear that? Do you see that? That's a fourth. Remember what a fourth sounds like. And so I have come to find I, again, I have this one student in my mind right now that he's struggles so much, but yet for whatever reason, he can identify all of the intervals. And I'm like, how is it that you can do that, but that doesn't transfer into the music? Like he literally would have to sit down and be like, oh, that's a for, that's a this. That's a this for his brain to lock that in, which takes time trying to think. I also use auditions as an opportunity. When I'm doing auditions, I'll sing along with them and then I'll ask them the question, hey, are we aligned? And if not, hopefully they have that awareness. If they do, I'm like, that's a win. If they don't, that's even more challenging. I'm like, OK, let me demonstrate for you and I'll show them how, what's right, what's wrong, and so

give examples of that for them to get them in that process. I've also come to find, sorry this is totally not faithfully answering this specific question, but I've come to find that kids that don't really listen to music young, it has a great impact on their tuning and intonation. It's quite and and rhythm actually. So if they're in a family that's very musical, often times they will not struggle so much with it even if there are struggles in areas. But kids who don't in their family it is nearly impossible. It feels like it is always a constant battle to get them to understand the match pitch and or the type of music. There's some cultures that there's music that they listen to that don't go above the chess voice and therefore they have no idea how to access their head voice.

{ 3:59 }
Like they don't listen to anything. They don't need any demonstrator act that way. So I feel like culturally sometimes there are barriers because of that. Sorry. Anyway, that's good in my experience of years, but yeah, I don't know. That's yeah, it's it's I'm coming back to the question because I'm I'm a tangent. That's how it feels. But for me, I think connecting what we've taught, whether it's sulfage scales or intervals and putting that in the music and showing that connection to try to get them to their brain to, to vocally connect as well and their physical body. So that's love it mostly. Thank you. Yeah.

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The next question is how do you assess whether students are improving in their pitch matching abilities? What signs do you look for? Honestly, I look for those voice not sticking out so much and I walk around. I'm not a teacher that sits still. I walk around and I'm listening. I know who and what to listen for and I'll give them encouragements like, Oh my gosh, so good. You're like catching on. You're getting it. I heard you today really working hard. I'm so just trying to give him some encouragement and affirmations for when they are doing things well and doing right so that hopefully can retain that. Sight reading tests are ways to assess that as well.

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And those are things that I do, but I find like that's it's almost like studying for a test, OK, but versus like real time practical application. And to me, it's the practical application is what is the I love to hear that in those kinds of tests and things. But when in the music themselves, not hiding actually like being a participant and less moments of sticking out and then consistently getting correct melody or harmony. That to me is them improving that their their their understanding or they're figuring out how to be part of that team and what their role is in it and how to listen. And maybe, yeah. So those are those are the things that I do. It's not like a full on data analysis thing. Yeah, it's not formal assessment. My brain is like gone because it's summer. It's summer. Thank you. It's not a formal assessment from. Yeah, I don't think there's anything else.
I think moments of call and response as well in class, which I'll do. And so again, listening for those kids and seeing if they're catching on in that call and response of what I do and they're able to match. So that's.

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OK. Our next session is on post COVID adaptations. So our question is, has your approach to teaching pitch matching changed since COVID-19? And can you describe some of the most significant changes or adaptations you've made?
Some of the biggest issues that I've encountered is students not being willing to even phonate or put themselves out there. They've been very reserved and that makes teaching difficult because if they're not willing to make mistakes and, and maybe be off and take that risk, whatever then or be heard, it's very difficult to grow. It's very slow process and that has been the biggest issue that I've had. It's almost like any of them that had that bit of shyness it it even more so they went inward.

{ 0:58 }
And so it's been like pulling teeth for my students to actually have them be able to vocally express themselves without hiding in the shadows. And so, so I have had to do, I've had to be silly. I've had to model mistakes on purpose for them to feel safe and understand that that is part of the learning process and it's OK. Voice cracks. I'm like, let it happen. So should my boys. I'm like, Nah, it just means that we assess like, do we have enough breath movement and what's our mouth shape and like, where's the placement and all that stuff. So I feel like I've become more aware as a teacher of having to highlight those things for them in themselves and also continue to build strong community. It needs to be a safe environment where they're not going to be willing to take the risks they need to, to get better at pitch matching or even sing out or be a contributing member of the group. So I it's not, I don't feel for myself. I have changed like strategies per SE, but having I can't get there right away. I have to build the foundation first before pushing in there because it is vulnerable. It's an area of vulnerability that there are some kids that come in OK, but I would say since COVID-19, there is a higher majority of them that are not, that are not willing to go there. And so it it makes it quite a challenge to even hear and understand and know and be able to help them. Yeah. Let's see. Is this all? Am I answering all these questions? No, just. OK. Just the ones. So I'm trying to think if there's anything else there after the conversation. OK, here's another thing. And my students would even say this. We're now to the point again, finally, where they're like, Miss S, if we really were struggling, like, would you would you point us out? I'm like, you're.

{ 2:58 }
Wow, you want you're ready to be brave there. Okay, I love that because as long as I know and I just if I was working with people, I would do it in groups, not so much as individual for the sake of being a little protective, maybe overly protective of their psyche. And so I feel like this is we are now seeing another shift of, of many of them wanting to push back in like wanting to have more grit, wanting to be willing to take in the feedback and, and be vulnerable and take a risk. So it's been years of this, like in the shadows. And I'm just now seeing light at the end of the tunnel where where some of them are wanting to go, like really be bullet and grow. And so I don't

know what's to come, but that's, that's really that's it. I'm insane. Love it.

My recording 5.m4a

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OK, so the next question then is what role does technology currently play in your pitch matching instructions? Uh, so like, are there specific tools or platforms that have become essential to your teaching? I think the biggest tool for me is recordings. Umm, both good and not good. And, and again, my job is to grow their ears. And so technology provides so many options and opportunities to be able to hear different groups, different things, different examples, either other piece or something similar in time period. I am kind of old school, so I don't have like specific apps or anything that I use and maybe that's an area of growth for me.

{ 0:49 }
But but I do use technology for recording purposes and asking them to be observant of that into practice from those things sometimes. And I'm not talking about tracks. I don't, I don't tracks. There have been a couple times where I have only for very specific reasons, just because I like to promote them working in groups together and even if it's hard but or individual practice if they can do that. But I do, I do use it on occasion, right that I guess it's a horror technology. And then I also just use recordings of things for examples for them to be listening to. Do you to expand on that a little bit? Do you have them record themselves and listen back? Yeah, well, I report I've not not I should do it individually, but I do it as a group all the time. Thank you for that. No, I totally do. We listen like in the progress process of a piece of music. We'll listen very early of where we're at in our progress and then observations and then we'll listen again later.

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And listen again, because you can tell them that they learned so much more from hearing themselves. And so that is another way, I guess they use technology. I use my iPad for that, recording playbacks of them as an ensemble. But I haven't done that as individuals. And maybe it's time to step back into that. I think I've been a little afraid so.

My recording 6.m4a

{ 0:00 }
OK, the next question in this section is, uh, have you noticed any lasting effects of remote or hybrid learning on your students pitch matching skills or their willingness to participate in activities? Yes, umm, like I said, we're coming into Year 5 after COVID and I OK, I mean, honestly, I just remember very vividly, we went something to tell a story. We were invited NW ACDA and we had to sing with masks. And when I and I thought, oh, they're doing good and stuff and we came back and the masks are gone. And I was like, whoa, something is up with this sound. It's almost like they were manifesting things to try to get sound because of the masks, which I understand. So I had to undo a lot of things.

{ 0:56 }
And again, having not only that issue, but then they're very incredibly shy afterward. I it took a lot of rebuilding and reteaching of breath management and placement of sound and yeah, just relaxing muscles and things like that. And, and their willingness. It literally was like pulling teeth. So like I said, because of that, it was very difficult to find those kids that were struggling because they didn't even want to. They didn't even feel confident enough to share their voice. And I do work very, very hard at community trying to make it a safe space for them. So their willingness to participate in seeing activities, it's taken a while to get there again. Now they're willing to do it.

{ 1:53 }
And if we make it more playful and fun, less serious, just like like seeing rounds or or again, calling response different things, then it seems to be that they're willing to jump in and participate in those things. But it even then, even just getting back took a long time. And I still have students sometimes that will not. They'll just stare at me and I'm like, Oh my gosh, here's where we're at. This is fantastic. I yeah, I don't know. I don't know if I can understand it anymore from what I said earlier.

My recording 7.m4a

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OK. The next section talks about barriers and challenges. So the next question is, can you elaborate on specific barriers, for example, large class sizes, student confidence, lack of resources, etcetera that you see as major challenges to students learning of pitch matching? You mentioned a couple of things already.
So where I teach I have 6 choirs and they are incredibly varied. I have a 45 person trouble choir and while I try to choose students that are a bit more skilled and do have that confidence, sometimes they can get lost in the mix. And, and so I do see that as a barrier to identify those that are dealing with pitch catching issues in moments.

{ 0:58 }
I mean, the audition process should help, but also I view it, maybe I view it differently that I still think they're growing and developing. And even if they're not perfect, if they've got a good work ethic and want to want to go for it, then I want to give them the opportunity, then I want to work with them. The other thing is, and I wish I would have said this that I've come to find is they don't ask for help that has been lost by so many of them. It's that loss of advocacy and that courage to to just speak their needs. And so when you have a large class size, it's very easy to lose people in the mix because they won't advocate for themselves and won't speak up. And I don't know all the things. I try my best to know my students and walk around and have proximity and work with sections of things, but the reality is some of them can get lost in the mix because they also are not advocating for themselves. So that is a barrier. Student confidence is such a fascinating. Here's an example. This last year I have a beginning choir that's come y'all.

{ 1:55 }
No audition, nothing and a couple monotone angels. But for the most part not not, I mean really good. And then I have a concert choir that's supposed to be a step above. And it is so much about the attitude and the confidence. My beginning choir excelled. My concert choir did not excel very much. It was so rough because of that, that non growth mindset I suppose. And because of that, like for example, the kids that were struggling with pitch in beginning choir, they actually rose to the occasion. They were OK with like, oh, I'm not great right now, but I can get better. And they did. It is crazy how good this ensemble became. Almost getting the same score a festival as concert choir, like within two points and yet they literally are non auditioned right.

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And then this concert choir, yes, these kids have some sort of experience in choir before and had, you know, basic skills and stuff, but so many of them were not willing to actually contribute. It was like going to, which was shocking to me actually. And bigger numbers. My beginning choir I think had like 15. My concert choir had 25. You know, so it's like, I don't know, it's, it's a mindset of a lack of

confidence or confidence that makes the difference. The confidence means I'm, I'm OK if I, I'm like, I'm going to be OK if it's not perfect. And the lack of confidence is I don't want to contribute because what if it's wrong? And therefore we can't grow. I don't think that we have a lack of resources, which is great. I do think it's a mindset in so many ways with what I've experienced with my students. And I also think that there's other factors that are bigger than me in my classroom that affects that with them when they come into my classroom, whether it's family things or anxiety that they're dealing with. And those become barriers as well.

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And my hope is by being inquired that they can let go of some of those things a little bit. It could be a safe space for them so that there aren't barriers. But yeah, so I want to come back around to something you said a little bit earlier and have you talk some more about that, which is exposure in early childhood. And I would assume that would extend to grades coming up as well. Absolutely. So can you speak similar to that? Oh, my gosh, There's a huge difference. Kids that end up doing choir in middle school and the ones that that don't, they just think, oh, I did it in elementary or whatever and they completely bypassed middle school. And they are, they're often are the ones that I have struggled with pitch or and I think that part of it is through the change, especially for male voices. They're not working through it. Even with the cracks, even with the struggles, even with the it's not my voice isn't working the way that it did.

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Those that are working through it in that season of their life come out on the other side OK and and stronger. Those that don't, it is like taking 10 steps back and it is so, so difficult to even get them to ever consistently match pitch. And and it's not, it's not like if I was to do data testing, it's not like I can think of a couple students right now that did do a middle school choir and even then struggle. But part of it was that they were voiced wrong. So then they were hearing it wrong. So because if their voice changes fast or early, often times the middle school director will be like, Oh, you're a base because they want to do fun music. And so then they're like, you're a base. But then the problem is they actually don't hear pitch there. And then they come to me and I'm like, Oh my gosh, you're a tenor, you're not a base. And so all of a sudden it locks in for them. They're matching pitch, they're hearing everything right. And I and so I think that there's miss what's the word menis appropriating where they're supposed to be just because of the time of where they're at. And I get it. I really do.

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And it's hard to assess that when they're that young because they haven't fully gone through the change, which could take three years, you know, And so until things settle in. So I think it's good to give them flexibility in what they're singing and maybe even two-part is OK and doubling what, you know, a bass or a tenor, doubling what Sopranos doing and, you know, sort of maybe bera, bera. Yeah, bera tenor is what I call them. Doubling what the Altos are doing, if that works, or being creative with the music. I think it's important to to me, that could be a lack of resources. But I also think as teachers, it's our job to create those resources for our kids so they can.

And I've had to do that. Just last year with my concert, I actually did make it simpler. I did a two-part like, like all I did was, OK, tenors, you're going to lock in The Sopranos, you're going to lock in here. And they felt successful because of that. Then we were able to build from there. And if you're just like, Oh my gosh, I want to do all the cool music, here you go. And yet you have kids that don't even hear pitch, that's a problem. So finding that sweet spot and backing up a little bit, just back it up.

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Even unity, sometimes your unified pieces don't always work either. So sometimes the two-part is the way to go and that helps them to feel successful in matching pitch. And then maybe you can take the next step from there and try something that works and maybe move them around. Like don't I hate that, you know, you feel like I, I, we had taught this. They're locked in. They're not locked in. Like I have a young gentleman coming up this next year that he's probably going to sing with The Sopranos starting, but I'm putting an ensemble where he has that freedom where he can change throughout the year as his voice is changing. I'm like, you're going to be a soprano, but we'll put you here if you feel weird or whatever. And then we'll possibly might end up being an Alto and maybe you'll end up being a tenor or bass. I don't know. We're just see and have that open mind of flexibility for them and where their voices are at, so with pitch catching.

My recording 8.m4a

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OK. Our next question is, could you share a specific instance where you encountered A barrier to teaching pitch matching, A barrier to teaching pitch matching and how you addressed that barrier? Oh, man. OK, I have a kid in mind right now still struggling and it's been years and he did get through middle school. But I think that some of the things that could have been addressed then we're not. And so again, getting through those vocal change years and not establishing the importance of pitch through that and trying to listen for it and work through it has really done a disservice to the students. And they are, they may struggle the rest of their life. It doesn't mean they can't. I've seen winds. So something is locking in and happening. But I've had them in my like, just one-on-one and been like, OK, this student does not access a head voice at all.

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And again, in this case, I do think there is a cultural barrier only because of the music that has been listened to when you're asked. And I'm like, oh, it's chest voice. There's nothing. And so there's no concept. And so I've tried to be like, hey, what does a, what does a puppy do, you know? So like just trying to create funny sounds or whatever to get up in that. And that interpretation is still always in the chess voice. There's not even. And I, I feel defeated because I'm like all the tools and the things that I've been taught or shown or learned or seen from other people, This is supposed to work and it is not working with this kid. But I have not given up on him. And what's crazy like, OK, it's the thing that works for him. Sulfate, for whatever reason, he can totally like actually sing a scale and match the pitch and intervals. He can understand, he can hear them. Like he'll raise the first ones to raise his hand. And here's the interval. I'm like, OK, so you hear it, but somehow it can't connect with your voice. And again, I think it's a lack of access to where, where there's a shelf, right? And he's, he's getting stopped. So obviously he can't go further.

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So I've been putting him with other students, young tenor basses that that are in in his I, I guess have the tambor, the texture of the voice that he can listen for that and cut and copy. And so I'll be like, Hey, can I have you listen? And can you try singing with like, oh, you're so close, you're almost there. And so just kind of work on that. So this last year, this was his, this is third year going to choir. He just had an audition. He went higher than he's ever gone before. Now granted are there's is there still a shelf? Yes, but the shelf has been raised, which is a big deal. And I'm very excited for that for him. But sadly he is still not ready for the varsity group. There's still and I and I, I gave him some tips. I'm like, hey, I want you to listen to and I gave him names. I mean, I don't know if he'll do it of these high singing, awesome fun tenors and like for fun, like even though he still may not get the concept, but I was like, here's a summer assignment. Here's these artists. I want you to go find a song by them appropriate.

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And I want you to go listen and see if you can like sing that high pitch with them for fun, like let your voice crack squeaking and all the things. And we'll see. We'll see if he tried. But I, I feel like he's starting to get it. But it's taken three years. I mean, working with him consistently to get there and him, I don't know. So I feel like a little bit of a failure because I can't fix it all the way. But I've, I do see growth and improvement. So, yeah, thank you.

My recording 9.m4a

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All right, our next question, it's the last one in this section says, are there any barriers that have become more pronounced since the pandemic? And if so, how have you tried to overcome them?
It's so funny 'cause I know that when I answer these questions, I feel like maybe it's just my, my career. Maybe there's others around. I'm going to find out from your research. But I, I really do think the biggest barrier for my kids is the confidence, the ability to take risks. I don't even think it's so much the, the ability to match the pitch because I believe that it, I, I've seen it get taught and I've seen it grow and I've seen it developed better. But it, it does not happen with the other piece. And when that piece is lacking, I can't, it cannot improve nor does it improve quickly.

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And so one of the what I do at the beginning of the year, my biggest thing, if I was to rate it, you know, and like maybe do an assessment of having them sing something like here, copy this and I record you. If I was to do something like that, I could see that I would have probably like 70 or 75% really do well and spot on. A But and what my job is, is to, I think, build confidence and that confidence creates the ability for them to to be willing to do what they need to do to manage pitch well and have unity as an ensemble. So I don't, I think, I think it's the community part that leads to it better in in later. And, and yes, skills and working scales and hearing intervals and all of that continual practice to grow their ears. That helps throughout the year because the beginning it's a little rough sometimes.

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It's my favorite is when we first start singing like a scale, a self edge and I'm like, Oh my gosh. And and they Can't Sing like or around right. We can only do single. You can't do double. You can't do three groups or anything like that because they can't stand on their own 2 feet, right? They start to like fall, fall off the off the edge or whatever, fall off the, the wagon. And so it's building that confidence together as an ensemble. And then over time they're like, oh, we, we know this now we can do this. And then they'll split into two and then we can do this more than three. And my favorite thing is I don't start doing like harmonic stuff with them until later. And I show them I'm like, OK, think about the beginning of the year when we could not even sing a scale together matching pitch. And then as you progress further, do you hear what you just did? Because I do this, there's different kinds of scales that I do and ways that we end up doing like harmonic triad chords and singing together. Well, the beginning, if they're a beginning choir or even concert, it's just two-part.

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If that single, you know, unison, first two-part and just locking in like a doe to me or a doe to Pennsylvania or something like that. And then hearing that. And then we do this thing. Christopher Asbos, when I was at Northwest, all Northwest many, many years ago, this really cool thing where you lock in a cord together and they hold it in

their hand and they throw it in the ceiling like that and they have to hear the pitch and then they catch it and we catch it together. And you can use that to catch it at like piano, mezzo, piano. So they're all still using dynamic ideas, contrast and thinking about that, but then coming in on the picture, having tonal memory. And so I use that for any chords of things or whatever it might be. And so that over time we get to get to that point, but it doesn't start out that way. And so when they see that they can do that, it is such a sense of accomplishment and excitement about, whoa, we're progressing, we're actually doing a thing. And it's cute because by the end of the year, even beginning part is like, can we split into five groups now? Can we split in the beginning? Oh my gosh, they're terrified. There's no way they would nor sing in unison in any way. And then and then that that kind of builds over time.

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So it would be, I should probably test that in some way, like, OK, we're going to sing this the first day or like the first week and then we're going to go back later and listen and then see where we've grown because I think it's just so enriching for them to see growth and improvement. And that really works and it it does work, but the things that I think contribute are really building community and the safe space for them. I can't, I just it makes the difference in my groups. And you will always have those kids that you need to highlight the kids that are there and have, but also teach them to care about the other because that builds up the ones that are too scared to to be in that spotlight. And I always tell them that's a wonderful thing about choir is you're not alone. You have a buddy next to you and it's OK. And I also try to pair. I didn't even say this. One of the things that helps is something like AI say a bride and a blender, right? I don't just put all rights together or even confident. I look at personalities and I try very quickly to kind of assess that.

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And I'm like, Oh, I think this person's going to benefit from this person and this will teach them to care and to serve. So it's a little bit of both like a partnership. And that's a way to overcome some of those things as well. So, yeah. So just a question that came up in my mind as you were speaking. When you're talking about the lack of confidence or that sense of community, do you think that that is more a barrier to their learning or a barrier to your teaching or is it? I think it's both. Part of the learning portion is we talk about like fight or flight, you know, and if their lid is flipped, they're not going to retain information anyways. And so they're not going to be able to receive what I'm giving.

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But at the same time, if they don't feel safe, they sorry. You said it was a barrier for learning and for teaching. I think, OK, so the, the learning part, yes, they can't receive what's being taught and therefore the growing process is going to be extremely slow. But the teaching side is, I can tell like I, you just feel it in the room. It's like, and maybe it's teaching over time or a sense, but I'm like, things aren't getting through and I and, and I see the, the slow progress or the, the lights, light bulbs are going off and it feels like a wall. So it is both. So that's when I'm like, we need to do something different. Throw out the plan. OK, let's, let's do a game that has

nothing to do with singing or whatever, just so we can like be silly and like get off some of the things and then come back to it and then work on the things that we want to do. But I do it's teaching and not my like, I don't feel like I struggle to teach. I feel frustrated because I can see what's happening and I want to do something about it. I'm always a figure for fixers, right?

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We want to like solve a problem and yeah, so in that sense, it's a barrier to the teaching, but the the student and their growth and receiving that, yeah.

My recording 10.m4a

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Alright, our next section has to do with student engagement and outcomes. So, uh, question is, how would you rate your students pitch matching ability at the start of the year versus, let's say the end of the year since since we are no longer in the year, Uh, and then what do you think contributed most to any challenges that you observed?

And if that helps, this could be like overarching like if you wanted to select a single choir to think about as opposed to like your whole populace.

It's hard because I'm thinking of like you said, distractions and things like that, but like we just have cell phones taken away this last year, which has been fabulous. I don't I kind of want to look at it from that perspective that's I find that there can be more conflict, but also.
More engagements? Easy. I think taking those away have helped contributed to them being able to retain information and being more engaged with the process of what we're trying to accomplish throughout the year.

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They also are allowed to be kids a little bit and have fun and fun again. I also think can contribute to growth. I think learning to have conversations with real humans face to face has contributed as well because again, by doing that, you're familiar with the people around you and you're willing to be vulnerable and share your voice. So I start the year versus now. I think I, I mean, honestly, every year in my career, I've seen so much growth from the beginning to the end. There's never been a year that it hasn't happened. And as far as pitch matching specifically, it's all-encompassing. It's a part of it and and I think it is being engaged with the process of taking away distractions.

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I do a lot of things on paper also, not everything like I'll use, you know, like I said, technology for recordings of things and we all post things on Google Classroom. But I'm going to be real with you. More than half the time they don't check that anyways for mine. So it feels like a waste of energy on my part. I'm like, can I pick an Ave. That's what I feel like. And when they're in class, they know they will have their music with them every day and they will have a pencil. They didn't make markings of things and to to interact with the music and with each other. And so not having some of those distractions like the Chromebook not being out or the phone, they're able to engage more and challenge each other more, which is what they want to get hungry for it. Like, Oh my gosh, it's a thing. Yeah. I don't know if that really answers that. I just said some things that I didn't contribute to. The changes observed creates a willingness to try. Yeah. Fewer distractions. Yeah, for sure.

My recording 11.m4a

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Our next question is, can you describe a moment when you saw a breakthrough or significant progress in a student's pitch matching ability and what do you think made the difference? I think I've already spoken to that a little bit. But like I have two kids right away that popped on my mind, one of them. So the issue for him was he was identified as a base baritone and middle school and then when he came, I was like, Oh, you don't hear pitch there. And when I flipped him to he didn't believe me 10 or two-part of it was his testatura that he and I explained that to him and all of a sudden it like made all the difference in the world. He matched pitch. Yes, sometimes flat. I was like, well, let's talk about breath, you know, and like support and all of that. You're being lazy. But but like, Oh my gosh, it was literally night and day and had no idea. So that was one that was kind of cool.

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And then this other student, I said, you know, where we've, I've been working with him for a long time, the things that are clicking versus what aren't, which is such an anomaly to me. It's just he's like a science experiment and, and I think the consistency of pushing in and also I really do individually addressing him lovingly. I think it's really helped too, because then he actually has to be aware of it a bit. And and so to see the growth in him at this last audition where he was actually pushing up higher into that mixed voice, I was like, this is great. Yes, he may not be accessing way up high, but he's he's actually recognizing what he's capable of doing. And that is very, very cool. Yeah, I do think that sometimes you do need to, you have to address the individual too, where we can. And it's it is hard when you've got a lot. I want to be able to do that with everybody, but that's not realistic.

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But definitely can address the ones that I'm like, OK, it's a lot easier to when they take initiative, by the way, they're actually like, I know I need help with this, Will you help me? Yeah, I will give you my lunches, like let's do this. But I it has to go both ways. So I have another kid. I can, I think about that one too. It's a tenor and he would never like, he would not use his ears to actually align with anybody. He was just like, he's almost like a rocker sound, you know, which I like. I love it. Your voice is amazing. It has purpose. It's wonderful. However, in this genre or this piece that we're doing, I need you to align some things. I need you to listen differently. So for the first time in four years, he's finally a senior. It's like, Steinbach, I know I'm struggling with this thing. Can you help me? I said, let's do this. So he came in at lunch. We worked on a few things, and it fixed it. And it was just so cool. And it's not that he wasn't matching pitch, but because he wasn't aligning certain things or the placement of where he's putting a sound or even some of the tightness in this area, you know, his tongue or jaw was making it so that he was not able to align with his tender ones. And he did stick out. It was like a little frictiony, right?

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And so it made him aware of it a little and he it was like, Oh my gosh, look at you. So it was pretty. It was a cool realization, I think for him too. And pitch was there like actually with the group. I love it. So. So just for clarity on the recording, yeah, we were talking about how sometimes the pitch matching may not have to do with intonation, may have to do with tambor and placement. Perfect. Yes, love it. I think so. Actually. That's been my experience.

My recording 12.m4a

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All right, our next section has to do with professional development and support. So what kinds of PD training or resources would be most helpful for you to teach pitch matching? Honestly, I would like to get some modern data and information because here's what I do. I have a student who I had at Kuna High School many, many years ago. She's a professional singer in New York right now and she trained under people at Rochester and, and gosh, she was, she was, she went over to Germany for a while and was working German leader. And I reach out. I'm like, OK, teach me the new things that you've been learning. And it's different than what I was taught. And not all of it. Like obviously your breath support, things like that, like that is the foundational thing.

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But how to teach that in a group setting, not just as you know, single person voice, whatever the most effective way in a rehearsal, right? When you've got only so much time, but yet those things need to be developed and you don't want to spend the entire class period on breathing. No offense, but you're going to lose them. So I would love to have somebody actually give me relevant information that can be both like effective but fun to teach in the classroom in real time with real humans to build up those things like breath support and control, but then also the idea like of placement of sound. I learned that from another colleague and I'm like, Oh my gosh, this is right. This makes such sense to me that you always never talked to me before about placement of sound or what's appropriate for different genres of music. I've literally learned that like from the school of Hard Knocks as I've grown and observed and listened and I have gone to conferences and I and I kind of pull and take and, and experiment with those things that I've been taught. But I'm like, man, wouldn't it be amazing to actually have efficient, effective, not just here's the data.

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I'm like, I don't, I just want practical application in a classroom setting of how to develop these things in my students and, and quickly, you know, not I mean, it's not true. I shouldn't say that. I know that things take time. They're young. Their voices are not going to be like they would be at 25. That's not the goal. The goal is to build good habits now and having somebody who would teach that I would love to see like the end game. It would be cool to have a resource where I'm, I'm being shown this, but like here's what happens when you do this, like actual evidence or showing a real choir or because this is how we started developing all of it. I'd like to know the data on the things that I'm teaching because I am teaching placement of sound and teaching that it's not just the outs or the inside, it's the outside too.

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It's both like here, it's so many moving parts, and I just would love to have somebody that I could go to that I trust that that is telling me how to do it well with my students and effectively in the classroom. Question for you. Did you ever take, like, official

voice lessons in college? You did? Yeah, I took voice lessons in college. I also took pedagogy in college. And it feels like it's different now than it was then. Even what's being said, what's being taught, how it's being taught is not the same. Or maybe I should say, I never knew the why behind the what. It's like, do this. Why am I doing that? And I, I feel like for kids, you can tell them do this, but they don't understand. Like, I want them to know why they're doing it. And yeah. And some of the things were not affected. I'm sorry. Some of the things that I was taught in voice lessons, I'm like, that's not hopefully, you know, I don't know, just the thing that I've learned over the years, especially with the where the voice is at, right, development wise.

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And then it was never given. You're never given permission, like, oh, here's what's going on with you because of blah, blah, blah. You know, there's other physical factors that also impact your voice. We'll talk about that though. Anyway, we discovered another barrier, it sounds like. Yeah, I guess so.

My recording 13.m4a

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All right. The next question, have you ever participated in any workshops, courses or professional learning communities focused on pitch matching? And if so, what was most valuable about those experiences? I actually just did one this last Allstate and I was excited going into it thinking, Oh my gosh, yes, the answer somebody who has great experience and knowledge with young changing voices and all the things. And when I got there and when I was told, I'm like, this is not new information and I know I'm trying, I'm trying to be positive. And it wasn't, it was not practical. It was not realistic in the way that they approached us. And that was really disappointing to me because I'm like, I already know this. No, I'm not going to take 5 days and be able to like that's there are things that you can't take all the time for, but I'm not 5 plus days to individually, you know what I mean?

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Like bring down every person and this that and the other. And then somehow it's supposed to be a perfect science. But really it's not because let's be honest, our voice are going to keep changing. You're going to do this every whatever. So I just, OK, the most valuable thing I got out of the experience was I'm doing good things. That's really what I got out of it. I unfortunately when I go to those, I get excited and then I'm not, I'm not helped. I really am not. And it doesn't mean I know that anything you go to, you can take stuff from. That's, that's our job, right? Like, OK, what's a nugget that I can pull from? And I, I, I wrote down some information about, you know, where the voices are at based off of their range or whatever. And I thought, OK, yes, thank you for the reminder of that. But I also was reminded, oh, I because this person mentioned the same thing. Oh, maybe they should just double up. If they're singing here in this range and you know, you've got a high screen or whatever, then they can sing an octave from each other or whatever. I'm like, oh, I already do that.

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So there are things that I already am adapting and changing and adjusting for students to make them successful. So that is literally what I got out of it. But I'm very sad because most of the time I go to these things, I get nothing from it that actually is practical and valuable and going to help my specific community. Yeah.

My recording 14.m4a

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Seriously feel like a a mad scientist in my classroom. We're going to try this. All right, next question. What advice would you give a new teacher who's just starting about teaching pitch matching? And then what resources might you suggest to them, if any? OK, gosh. First off is to create a safe space for their students. I still like, for example, they make let him make mistakes like you demonstrate, like doing something and like, Oh my gosh, did you hear that? My voice just did that. Oh man, I guess I need to, you know, have a little rest support and laugh about it. Like give them permission in the learning process to explore their voice, which means voice cracking sometimes and things not being the best, especially in the younger years and the middle school years. And make it silly and make it fun. It doesn't mean you can't teach quality long, but still teach quality.

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But allow for that, especially in the beginning resources that I might suggest if you are a female singer, I would definitely suggest bringing in a male singer because just there's things that I can try to teach, but there's things that I don't do well. And oftentimes they're having to hear me in a different octave and learn how to work with that. And it's a challenge and I know that. So I would say don't be afraid to bring in people to work with your kids, especially if there's areas of weakness and you learn from them, which I'm still learning from people that come in. I've been after 20 years of teaching. Let's see, I do think playing pitch matching games is really good. You know, yes, at this high school level, especially upper level, and I get more serious. I'm like, here's the intervals, here's the nerdy side of it.

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But when they're younger, like do pitch matching games to just engage them, engage their voices and teach them to hit things on the right way on purpose and what that feels like and sounds like and just an awareness of that. I think that doing skills using soul fetch or some sort of form of music learning with pitch is important. Even if it's not soul fetch, there are other things out there that work very well too. See. Yeah. And don't be afraid, I guess, to to put yourself out there and don't be afraid to move kids around to different places, you know, like they don't have to be locked in right away. And and create a space where that's the expectation going into the school year. Hey, you might identify as a tenner right now, but actually my age to identify as baritone, you know, or whatever. And so that they just don't have this idea that this is who I am and this is all that I'm going to be in stay because their voices are very flexible, especially when they're young.

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So that is my advice.

My recording 15.m4a

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OK, our last section is on reflection and additional insights. So looking back over the past few years, what's been your biggest learning or take away regarding pitch matching? First thing that comes to mind is that I still don't even know what I'm doing sometimes. Like, I literally feel like a mad scientist that's just experimenting with ideas to try to get a, a formula to get the result that is needed. And I have had to shake off some of the ideas that were taught to me that were very boxed in. And I've had to take risks and actually look like a fool sometimes even as a teacher of being like, you know what? I, I have these ideas and I think I know, but I don't know, I don't have this perfect formula for you, but we're going to try this, this and this and see if it works. And that's really it. And I'm finally, it took me a while to get outside of the box.

{ 0:53 }
Like, like what I've been speaking about, kids are not, they don't have to be locked into a voicing, you know, move around or change the music a little bit for what are the needs of the students of where they're at so that they can have a foundational starting point and then grow from there. I don't know. I feel like the biggest thing I've learned is to really let go and be humble and like, not try to be perfect. And that sounds weird. That's been the biggest thing that has helped me to grow as a teacher, to be willing to look like a fool sometimes and just to take some risks. And maybe it doesn't look perfect, but gosh darn it, if we're caring about kids and and we're teaching healthy things and they're growing, then I think we're winning. I'm just going to tie this next one in on this same question. So is there anything else you want to share about your experiences with pitch matching successes, challenges, surprises? Anything else that you'd like to share? Any other thoughts? Yeah, I'm, I want to say again, after teaching 20 years and reading books and things like that, I'm still disappointed at the.

{ 1:59 }
It feels like we're not very far in this whole thing of kids matching and there really seems like there's not even a perfect formula. But I'm surprised the things that I have done and listened to people and tried and what does work. I, you know, I used to be so frustrated with selfish like, and when I tell kids is it's, it's a tool. It's not the end all be all. Like at the end of the day, I want to actually look at a piece of music and be able to read what they're looking at in the, in the language it's in and all the things. So it's not, I don't focus on that in the sense of that's everything. But it is a tool that helps them identify intervals and pitch. And so I use it and I didn't think I, you know, I didn't grow up doing that. And so this has been a learning process for me of learning new things to try to help the students challenges. I mess up sometimes I don't get it right all the time when I'm even singing Soulfedge, I'm like, I stumble sometimes and surprises are wow, I like this. Some of these things that I ever tried or listen to other people and worked on, they've actually worked.

{ 2:58 }
And it's been so cool and crazy to see growth in kids that you never thought would. There is something I'm like, oh, this kid is never going to get it. I literally feel like they never match pitch and all of a sudden what they're understanding some of these concepts, they're actually like able to take a hold of some of it. And that is really surprising. And then and then even thinking of the students that I had a different idea like, oh, maybe you're not hearing pitch here, so let's try this. And it wasn't something that somebody told me per SE. I was just like, this isn't working. So what if we flip it on its head and just try something different and it works. And so I'm like, oh, then later I'm like, oh, wait, this is a thing. It actually works. And I am now stumbling onto it. And I probably should have a long time ago. So again, we are always learning still. And yeah, and also not being afraid. I don't know. I think as directors we think that we have to do it all and wear all the hats, which we do, but we don't.

{ 3:58 }
Also, students are part of that learning process. And I've learned to allow kids to help me with it, some of those kids to demonstrate, some of those kids to kind of come alongside others bringing people in. Also, it's scary because you're like, oh, man, what if they judge my teaching? But at the same time, wow, it the the outcome is far greater than maybe a moment of feeling insecure. So that is. Yeah, I think I was trying to think, oh, challenges. Yes, there's challenges. Yeah, I I don't know. I think the challenge is finding the right time to really pull the individual side and then or let them kind of figure out from others. So it's really it's a game. It's it's not every kids the same not cutting cookie cutter unfortunately like some yes, but others no.

{ 4:51 }
And so the outliers, it's a lot of different angles to try to approach pitch matching and I guess not be afraid to think outside of the box. OK, I'm done. Yeah.

A: **A NOTE ON THIS INTERVIEW TRANSCRIPTION; THE APP THAT I USED FOR TRANSCRIPTION REQUIRED THE AUDIO FILE TO BE BROKEN INTO CHUNKS. AS A RESULT, SOMETIMES THE “SPEAKER 1” AND “SPEAKER 2” TITLES MAY BE REVERSED.**

My recording 1.m4a

{ 0:00 }
OK. I am here now with my third interviewee and we are going to begin this session of our interview process. So our first section is on teaching practices. What strategies for pitch matching do you gravitate toward more often or most often? And then can you talk me through how you might implement that in a typical lesson?

Speaker 2: { 0:28 }
In choir and voice lessons, I'm discovering that pitch matching issues are separate in many ways from boys and girls, and pitch matching falls into several categories that of problems. I mean, of course, there's, I can't remember the name of the, the term where your, your brain physically cannot differentiate pitches.

{ 0:51 }
And actually I think we're going to start seeing more of that as mothers are not singing to their children as often in their infancy because that helps develop their, their ability to detect pitch among other things with guys and gals. Another issue is largely registration issue that they they do well for a guy singing in his head voice and singing in a falsetto. They can match those pitches OK, but their chest voice they struggle with or their low range. They can hit pitches really well but that mid range they just they they lose the ability to to match the pitch. Sort of the same thing with with the girls, though I don't find the problem mid range as much as I find it in head that they're either good at head voice or chest voice matching pitches, but the guys tend to have problems middle range as well. Strategies for helping match pitch?

{ 1:55 }
I think the more they sing, the easier time they're going to have matching pitches and so just getting them in a group with other guys, that will help them naturally to develop the ear for it. I guess the other category of issues, they just don't know how to listen to themselves and have an awareness of of their input as to the rest of the group. And so having them to guide sections, singing unison and exercises and things like that will really help iron out several of those issues. And then finding if it's a registration thing, spending time in the registration that they're good at to develop, to build on their strengths and then work themselves down towards or up towards the other register that they are struggling with. So if a guy does really well matching in his low range, I'm going to sit him with the other bases. They're going to take some time singing unison exercises to try and match the pitches there. And then we're going to start doing some exercises that build some up higher and higher.

{ 2:54 }
And then with the awareness pointing out when they're off, another strategy that I've seen used and used somewhat in my classes is where two singers will put their heads and foreheads next to each other and they'll sing a pitch. And 1 singer will move the pitch up or down and the other singer has to match. And then the sing. First one will move, the second has to match, and so on and so forth where they take turns kind of

My recording 1.m4a

changing, changing the pitches there. I think that feeling the vibration and having the proximity of the other voice so close to them will help them learn to match the pitches. But it's a tactic. Tactical, not tactical, Tactile way. Kinesthetic way of finding the the notes rather than a an oral way. Other times I've had singers place their hands on my chest and on their chest to see if they can feel the vibrations. I've seen it done, but never did it myself, to have a singer place their head on someone else's chest and to match a pitch that way.

{ 3:57 }
But again, it seems like very or the piano, they'll do that as well. That seems pretty extreme. And I am paranoid of a sexual harassment suit, so I'm just not going to have girls put their hand on my chest or my hand on their chest. Vice versa. Just touching is not in our world anymore, which is I think we're going to lose a lot of pedagogical opportunities because of that, but here we are.

My recording 2.m4a

{ 0:00 }
Alright. Our next question says, are there any particular activities or routines that you found especially effective for developing pitch matching? And could you share some examples? And I know that you are in a particular situation where you do both private lessons and teach in a classroom setting. So whichever one of those speaks to you or if you want to speak to both, that's great too, actually. Yeah, that's a great question. I'm actually going to go back to my elementary school education and talk about fire, John fire events. Let's make music. Let's play music. Whatever his his version of conversational soul fetch for pre-K up to about first grade till 8 years old. I loved Ariozo Town that he used, which is this little city that the class would travel to where all they do is sing.

{ 0:55 }
And I created a little fantasy world where the king and a queen and a Princess and a knight and an ogre and a fairy and things. And each one had a different voice that they had to use. And so as we pass out the, the different puppets and the, the kids playing the ogre had to use their deep ugly voice and the kid playing the knight had to use their heroic voice and the Princess had a high voice and so on and so forth. And that allowed, that was a great activity for them to be creative, for them to create music and just sing and just make up the music on the spot and do it.

Speaker 2: { 1:30 }
Within the context of a different voice.

Speaker 1: { 1:32 }
Then they're exploring their high range, their low range, they're dark and they're bright. They're loud and they're quiet and.

Speaker 2: { 1:37 }
All sorts of things, all within the context of a game.

Speaker 1: { 1:40 }
I really think that's very helpful at young developing singers for that. I also loved he had a, he encouraged me to use my finger.

{ 1:52 }
But there's also you could do a bumblebee, you could do whatever and have the singers follow higher or lower as you draw visually higher and lower. I do struggle with the notion of up and down as a singer because singing isn't vertical. Singing is horizontal and linear in my opinion, because it's faster or slower vibrations. And so teaching young singers the notion that it's up and down can equal breath support issues in the future. But it visually it is the easiest way to say that this is a higher note, this is a lower note. So I, I really like that in my own personal study, I find that private teaching, sorry, I find that singers, when they start to push and when they sing louder than they're able, they actually will.

{ 2:42 }
When they sing louder than they're able, they, they push themselves flat and they can't hear that they are flat on, on pitch or not because their inner voices superseded their ears ability to detect what's on the outside. So within private lessons and within the choir, I will have them sing piano or pianissimo quite a lot. With the guys, I'll try to move them into their light, their thin folds technique and their flow to your voice rather than falsetto to try and get that. But this is difficult because they have to develop certain musculature before they're able to sing AD and E&F piano. With the girls, it's easier to keep them in their their head voice, and using an OH vowel or the dark part of an E vowel will help them hear themselves a little more easily. And I find that that those two vowels particularly will tune with the rest of the group really well too. So they seem to be a good vowel that helps build awareness.

My recording 3.m4a

{ 0:00 }
K, our next question says how do you assess whether the students are improving in their pitch matching abilities? At what signs do you look for?

Speaker 2: { 0:13 }
That's a tough one. Umm 'cause I, I guess you could I, what do I do? I don't know what could I do? I could potentially to get a, a good assessment, you would have to have a baseline at the beginning of the year. And so maybe it's the same 3 or 4 exercises that you do that have to be varied enough that they can't memorize the notes where they have to match pitch and, and see and you can calculate how many pitches they get right per time and things like that. This is really laborious and time consuming if you're a high school choir teacher with 230 students.

{ 0:58 }
My quick assessment in class is that the sound is no longer as muddy within context of the group. And there are several students that I usually can identify who is making the sound muddy as far as the pitch and tuning is concerned. And then I can help them build their skills individually within some of the exercises we talked about before. One of the things that's that's good about many students that struggle with pitch is they often are some of the more confident singers and often times kids that struggle with pitch sing out quite a bit, which is great because it helps with the assessment.

{ 1:42 }
But on the other hand, it also makes a choir not sound so good keeping that I identifying to someone that they have a fundamental issue like matching pitch and keeping the and balancing it with keeping their confidence and their ability to believe in their their growth and that they can overcome. This is is very difficult because it's easy to deflate a singer and their confidence. It's easy to deflate it by peers getting really frustrated at one person's inability to sing on pitch. But imagine you're on a track team or a basketball team and somebody doesn't know how to walk yet they're still crawling. That's a fundamental issue that's going to sort of retard the growth and development of that team that really needs to be addressed. Unfortunately, in the in the singing world, it's not as visible. And so it's we often view it as some sort of intellectual or character flaw on the part of the person when a reality, it's one small piece that when that piece of the puzzle is connected, it makes a bigger difference. That's a long answer, sorry.

My recording 4.m4a

{ 0:01 }
The next section has to do with post COVID adaptations to your processes. Uh, so has your approach to teaching pitch matching changed since COVID-19? And if so, can you describe some of the most significant changes or adaptations you've made?

Speaker 2: { 0:21 }
Umm, Covid's done a lot, but I think the big, the big one is my inability to, uh, use my hands to feel on another singer how they're, how they're singing or have them feel on me, how my breathing muscles are supposed to be working and so on and so forth. The big one with pitch is I used to have a teacher and I used this technique often where a student would place their hand on my chest and my hand on their chest and we would sing together and try to feel the pitch.

{ 0:50 }
Like I said, there's a kinesthetic angle to pitch matching that can be used also, especially because pitch matching reveals that the aural abilities are, are failing. So we've got to lean on other senses to be able to do that. And taste is out and smell is out. So what do you do? You got to go with feel. And so the the since COVID, I am much more acutely aware of a singer's ability to or my ability to touch and feel on another singer, how their body is working and them on mine. The other one is like I mentioned before, 2 singers will put their foreheads together and they will sing 1 singer will change the note and then the other singer will match. 1 singer will change the note, the other singer will match and so forth.

{ 1:37 }
Even that is more and more frightening as people are breathing literally inches away into each other and things like that as COVID has just made things made me a lot more hesitant, tentative, scared about being able to the close proximity with another student and to feel on another student how things are working.

My recording 5.m4a

{ 0:01 }
Alright, what role does technology play in your pitch matching instruction, if at all? And are there specific tools or platforms that have become essential to your teaching if you do use technology?

Speaker 2: { 0:16 }
Umm, technology is something that I use not as much as I probably should and not as much as I can. This last year I paid what, five, $6000 to have a camera and microphones set up in my classroom so that during rehearsal they can hear and see themselves and hear and see how they're how they're working. And it takes 2 seconds. All right, guys, let's sing this. They sing it. I push stop, I push replay. Then all of a sudden they go, Do I really look like that? And yeah, you do. One of the things that that the choir world has really neglected is that singers can't hear themselves very often.

{ 0:56 }
And the ability to record and playback has been monumental in the choir's ability to to assess on their own how things are actually going. We all do the Dunning Kruger thing and we all say, yeah, that was great every time we sing or that was horrible, but we don't really know what the audience is getting on the other side. On the other hand, when I'm talking about those one or two maybe individuals that really struggle with pitch matching in the in the classroom, I am not in the inner circumstances going to have them sing in front of the choir being recorded for everybody else to assess how they're doing. And so the technology fails in that instance there in my private studio, having the singers record themselves and listen is very helpful, especially as we talk about vowels and resonances. Ability to help bring people in tune when they're, they think they're singing the right note, they're actually flat on it.

{ 1:59 }
And opening the vowel to a more pure vowel will help that. Other other than that A it's been recommended to me that I get like a a guitar tuner on my phone and have the students sing into that. I I just think that it's tedious and slow. When you're working in the context of a song, you don't have time to take your phones out, open up the app, sing into it, making sure that you're actually singing AG. By that time, I could have rehearsed it 6 times through and adjusted things on the fly rather than having them assess. So and, and pitch matching software like a guitar tuner on your phone is only helpful within that one note, right? You, you can't, you can't really. You got to hold that chord stagnant to see that that note is G. And what happens when you want four part harmony, right? It's so anyway, those, those fall short. But I guess it's an option, yeah.

My recording 6.m4a

{ 0:01 }
Have you noticed any lasting effects of remote or hybrid learning on your students pitch matching skills or on their willingness to even participate in singing activities?

Speaker 2: { 0:17 }
I did it first. When I was at Renaissance. I was teaching band, choir and orchestra. I noticed several students and their parents were disinclined to have them join choir and band particularly Orchestras of course didn't take as big of a hit. But during the year after COVID, when it was half hybrid year and then we moved to full inclusion in the classroom, there were several parents and students that really struggled with with that having them be there. Since then, I haven't seen COVID as an excuse for lack of participation.

{ 0:52 }
What I what I will say, and it's hard to assess right within the classroom, I can't really say, well, Stacey isn't here because the effects of COVID within the classroom. I think that COVID and hybrid learning have really nailed our sense of community within the classroom and the the freedom that students have to to want to be together and and to know how to associate one with another. I would explain that as as cell phones as much as anything else though being in the digital world has hindered their ability to be in the the physical world. I guess the short answer is no, not, not really. Umm, there's other things that that could be a factor. Musical issues, you know, their inability to phrase or an inability to, uh, to harmonize the things with other people as we've hunkered down and, and been on our own. But really, no, not not outside of that that I can assess.

My recording 7.m4a

{ 0:00 }
Our next section discusses barriers and challenges. So can you elaborate on any specific barriers, uh, for example, large class sizes, student confidence, lack of resources, etcetera, that you see as a major challenge, uh, to supporting students learning of the skill of pitch matching. So elaborating on barriers, you kind of did this before when you were talking about like just the time frame, time constraints and sizes. I'd like to hear more about that.

Speaker 2: { 0:37 }
Say it again. Barriers that are preventing me from teaching pitch matching. Yeah.

Speaker 1: { 0:42 }
So like barriers and challenges to students learning.

Speaker 2: { 0:51 }
Yeah, a lot of the barriers are are a time constraint and the inability within it. I'll start with the choir world. In the choir world, I don't have a lot of time to be able to address individual issues with with solo singers. And as well as the singing is such a personal endeavour that a person will feel like they're, there's some sort of character flaw if they Can't Sing on pitch and they'll feel made fun of and it can really damage the community there. The more I draw attention to this, to the individual couple of that with I've, I've got 65 other singers in my class that are sitting around picking their noses while I'm trying to help Stacy get on to the right note and I lose their attention and things like that. And so I'm, I trust a lot in the, the group think sort of end of things with, with pitch matching, meaning that if they get together and they're the rest of the baritones are singing AG, then hopefully Bobby will figure out how to sing AG with them. I think that the best answer for that is exposure.

{ 1:57 }
And that's one of the first thing I said is to help solve pitch matching issues. Just sing, sing, sing, sing. Do it a lot. You'll, you'll get better innately as time goes on unless there's a, a severe mental deficiency like we talked about before there, there just is no technology that works in real time that is quick to assess and helpful for a singer to tell if they're on pitch or not. And even then that only builds the awareness that doesn't tell them necessarily how to get on pitch and how how to get back there. And so, but that is half the equation, the the singer's inability to listen and assess where they are in the context of the the note and the choir. And then how do they change it? How do they match pitch that the technology just doesn't really answer that for them in the same way that the physical world does. In my private lessons, I have more time to sit down and and work with those singers.

{ 2:57 }
But the old tech, the old Belkonto style techniques of just feeling and and hearing and and assessing where what kind of pitch matching issues we're finding seem to be

My recording 7.m4a

the old tried and true methods. And I, we haven't seen a technology that has that can compete with a teacher having a student put their head on the piano and feeling the pitch and trying to match it. There's it just kind of doesn't exist at this stage. Maybe it could?

My recording 8.m4a

{ 0:01 }
All right. Could you share a specific instance where you encountered A barrier to teaching pitch matching and tell me how you addressed it?

Speaker 2: { 0:12 }
Where I encountered A barrier to pitch matching instead of I had a student that struggled with pitch matching.

Speaker 1: { 0:18 }
Umm, yeah. Where or, or to put it differently, like a moment where, umm, the normal tools that you usually use weren't working and how did you overcome that?

Speaker 2: { 0:30 }
Well, the sad story was a student TA in my beginning men's choir. He was a freshman and so he was 14 going on 15 throughout the year, and he struggled with a pitch matching in his lower voice. He would sing very well in his falsetto and match pitches really well, but then all of a sudden when we open into full chord, full chord usage, he didn't know where he was.

{ 0:58 }
And I think that's typical for a lot of young males especially that aren't into singing at home and they're not exposed to it a lot. He eventually, and I worked with him and he got so much better, but the barrier was self esteem. The barrier was his yeah version of, of his own self, his self interpretation. And so he ended up quitting choir rather than sticking through fighting through the issues. And yeah, the the pitch matching was only one part of it, but I think he was feeling unsuccessful in choir because of pitch matching and therefore he quit because he's a rough and tough cowboy type and they just don't sing, I guess.

Speaker 1: { 1:47 }
So it sounds like it was also a cultural barrier a little.

Speaker 2: { 1:50 }
Bit it was a cultural barrier. Yeah, that's, that's a great way of saying that.

{ 1:54 }
The other there, there's a girl right now in my beginning women's choir as a junior sweet girl. And there's some special needs. They're also developmental disabilities that she, she can't match pitch. And I, I've tried a lot of the old techniques that's appropriate to do within the choral setting. And I just don't know if mentally if cognitively she has the ability to assess that. And So what do you do The the worst case scenario is that she gives up singing, right. I would rather have an enthusiastic and pleasant and bright and happy child singing poorly then having them feel like a failure and quit. And so my plan for now is to continue doing some of the old techniques and maybe trying a few new exercises that I might learn along the way to

help her address some of the pitch things.

{ 2:54 }
But again, going back to cultural issues, I'm much more interested in her ability to feel like she belongs and that she has a family at school than I am her ability to sing on pitch. And you know, with 77 in that choir this year, I don't think she's going to stand out all that much. And it'll it'll probably be OK.

My recording 9.m4a

{ 0:01 }
All right, So, uh, lastly in this section is are there any barriers that have become more pronounced that you've noticed since the pandemic?

Speaker 2: { 0:15 }
Not really. I talked uh, about some of the, the cultural barriers there and the fear of, of being close in proximity to one another and things like that. There's those have become more pronounced certainly since the pandemic. Umm, well, that's really it though.

My recording 10.m4a

{ 0:00 }
Our next section has to do with student engagement and outcomes. So, uh, how would you rate your students pitch matching ability, uh, at the beginning of this past year, uh, versus the end? And then what do you think contributed most to any of the changes that you observed?

Speaker 2: { 0:21 }
Sure. Within my choir, I have 230 students. This last year, I would say 5 struggled severely with pitch matching things, right? Most of them are in the 95% accuracy field or better. I mean, yeah, sure, The Sopranos, you're all a little flat here and so on and so forth. With regard to the bigger issues of tuning amongst the whole choir, which I wouldn't call those pitch matching necessarily. Well, I guess they are because they're not able to assess that they're flat in comparison with the harmony.

{ 0:55 }
So I'll take my Sopranos, for instance, they started off this year with a very dark and hooty sound. And because of that, they, they didn't really catch what was going on outside of them. The more I brought the sound forward. And by having them focus on their consonants and using exercises that start sound with AT or AP, that helped encourage a more forward placed sound. And that seemed to adjust things. Addressing vowel issues fixed a lot of intonation issues amongst the choir. And so it improved a lot throughout the year. On the other hand, those those 5 or 6 individuals that really struggle with pitch matching things, two of them are severely extended race resource room students with severe mental disabilities that they sing. They what, what they lack in pitch accuracy, they make up in heart.

{ 1:53 }
And they, I would trade all of my students for for a choir full of them because of how well, how well they love and they love singing. But outside of those, there were a handful that started this year pretty rough. I mentioned the boy that quit midway, but he showed significant improvement. And then the others also showed significant improvement throughout the year to to sort of discount myself a little bit. I think I simply think that exposure to singing in the choir world helps build pitch issues for those that can solve their pitch issues. And so I think, yeah, throughout, just by having them sing together a lot helped. I also within the context of exercises worked with them on accuracy on the pitches and I would do certain things, certain gestures that would help with pitch accuracy. One of the exercises I use is a domi sold dough on three or four different vowels and I would tell them to take their finger and pop the balloon on the top note.

{ 2:59 }
And by having them do a sharp gesture where they poked at the top notes seemed to encourage the voice and the body to to make that leap of a fourth that's that's difficult to make. So.

Speaker 1: { 3:11 }
Again, back to that.

Speaker 2: { 3:12 }
Kinesthetic. Back to the kinesthetic learning. Yeah, that helped. But overall, I think I saw tremendous improvement, mostly because they are singing together. They're aware of how their sound effects the rest of the choir more and they're just exposed to it a lot better. So yes, but I did see a lot of improvement.

My recording 11.m4a

{ 0:00 }
Uh, can you describe a moment where you saw a breakthrough or significant progress in a student's pitch matching ability and what do you think made that difference for them?

Speaker 2: { 0:14 }
Yes, let me find the right individual. Umm, I want to go back to that, uh, Domi Soldo, the triad and octave, uh, exercise, because there were several students that as they were, as we were singing, they, the whole choir would struggle with being on pitch on that, that top note there. And it's an unusual and, and challenging exercises, vocal backflips, more or less. And so the students struggled being accurate there. There were several students who joined choir to be in a fun and friendly environment where they have a family there with them. The cultural pull of choir is pretty huge.

{ 1:00 }
On the other hand, those that do join often don't want to stand out. And a lot of people are in my choirs wanting to hide behind the rest of them and they want to use their very quiet voice and they don't want to stand out in any way and things like that. One of the things that worked for one student, MA, that was very helpful, that it helped her grow, was that I called on several students in small groups before her. She's a junior, sophomore in the intermediate women's group, and that intermediate women's group really suffered with self identity issues. They're not in the advanced group and they're not in the beginning group. And so all year long, they sort of felt like they just weren't good enough to be in the good group. And that confidence really shattered her ability to sing on pitch and so forth.

{ 1:53 }
And So what I did throughout the year was I polled 5 or 6 students and I'd say, hey, you, you, you, you do this exercise. Nice job. Hey, let's support them and applaud. And I built their confidence that way. And then I called on smaller and smaller sized groups throughout the year until eventually I was calling on individuals having built the confidence and assurance that being in choir was OK, singing alone is OK, getting it wrong is OK, not doing great is OK. And from the beginning of the year to the end of the year, I saw significant improvement simply as her confidence was built and she actually applied a proper amount of breath support to the singing. That's another real issue behind pitch matching is under supported sound and then that's different than registration issues or hearing issues. It's just that you aren't putting out enough sound. So as I'm encouraging more athletic singing and as I'm highlighting individuals ability to stand out and it's OK, that really worked for her.

My recording 12.m4a

{ 0:00 }
All right, our next section has to do with professional development and support for you as a teacher. So, what kinds of PD training or resources would be most helpful for you to learn how to better help your students, uh, learn the skill of pitch matching?

Speaker 2: { 0:20 }
Umm, I would love a one second. I would love a mentorship to some degree where within the the classroom itself to have in the choir classroom to have somebody come in and work with my students specifically on accuracy and singing on in pitch accurately because that would show me some some techniques that would help me hear the results of those techniques as well within the context of the choir.

{ 0:55 }
I think if I were in a sit down lecture sort of professional development experience, it wouldn't hold quite the same weight as being within the context of the group. Singing is so multifaceted that is very difficult as a teacher to assess what is really the challenge underneath any deficiency tuning and pitch matching brilliance in the vowels and so on and so forth. There's just so many different things that could be the disease causing the symptom of, of the bad sound that it's as hard to go to. But I and so I think having somebody in the classroom to help build pitch matching rather than assessing pitch deficiency would be really good. As a private teacher, though, I think that the lecture style would be very helpful because then I would have more time to sort of to try to diagnose what some of the underlying issues are, uh, with pitches.

{ 1:59 }
I would love a series of exercises, a series of techniques, uh, that would help me know what to do.

My recording 13.m4a

{ 0:01 }
Uh, have you participated in any workshops, courses, or PD communities that focus on pitch matching? And if so, uh, what was your take away from those experiences?

Speaker 2: { 0:15 }
No, not outside of my education. Like uh, is working on a doctor degree, I and things like that, umm, at both my doctorate and bachelor's degree, but not during my masters. I took pedagogy classes, uh, and they addressed pitch matching, but the, the education there was really small. They, they so small that they didn't even try to differentiate what, what sorts of pitch issues we're facing, whether it's an awareness issue that they, the hearing sort of a thing, whether it was under supported breath, whether it was a registration issue or whether we're dealing with actual, I Can't Sing on pitch. My brain doesn't work that way. Sorts of things in in general.

{ 0:57 }
So, so those those educations were quite deficient. I found myself relying on my old voice teachers and calling them and saying, Hey, what did you do when you had a kid that Can't Sing on pitch? You know what else I would love is to talk to people about boys that Can't Sing falsetto. That would be big. I have several of those and I I never thought that that existed, but it's huge. Anyway, No, I don't. I haven't attended P DS. I don't know if any exist.

My recording 14.m4a

{ 0:00 }
Uh, what advice would you give a new teacher on how to approach pitch matching in their classroom, and what resources might you suggest to them?

Speaker 2: { 0:14 }
Umm my advice for the new teacher struggling with pitch issue students is don't give up. Keep working at it. Umm, anytime that they are with you and anytime that they're singing, they're improving. And always just keep that faith in yourself. Keep that faith in them that things can get better. Pitch issues is a very difficult thing to face as a choir teacher because it is so foundational and fundamental and the, the students lose heart quickly. The teachers give up pretty quickly on their ability to work with them. The techniques and exercises we talked about earlier still apply. I forgot to mention how effective echo singing is as well in the call and response and and getting them to really assess if they're singing on on the same pitch.

{ 0:59 }
But again, just just keep trusting that as much as they try the exercises that you're giving them as much as they're singing with their ensemble, that that things will improve. So keep hard. What was the other half of the question?

Speaker 1: { 1:12 }
What resources might?

Speaker 2: { 1:13 }
You suggest oh, resources. I don't. Again, I don't know if there are really any. As a high school choir teacher, I suggest getting in touch with the elementary school teachers. The good ones are dealing with pitch issues every single day, and they're trying to get those foundational lessons learned. As I've been teaching high school, I've been inviting other teachers into the classroom to workshop with my students. As time goes, I'm finding how ineffective bringing in college teachers are in comparison with bringing in junior high, middle school, and even elementary teachers are when dealing with fundamentals. The college teachers don't have to fight the battles of this everyday they they have the privilege of saying no, you're not good enough to be inquired to most of their those students.

{ 1:56 }
Whereas in the public school world we we get the privilege of teaching them and watching breakthroughs. So don't hesitate to go back to the beginnings and talk to your your elementary school peeps. They have some great ideas.

My recording 15.m4a

{ 0:00 }
Our last section has to do with reflection and any additional insights that you have. Uh, so looking back over the past few years, what has been your biggest learning or take away regarding teaching pitch matching?

Speaker 2: { 0:20 }
Umm. A big thing that I learned was how nuanced pitch matching could be over the last few years. Like we talked about at the beginning, there are several causes. Several uh, illnesses that might be showing the symptoms of pitch issues again, registration lack breast support or or hearing in awareness issue. The thing that I learned is to trust the process and trusted it that things often resolve themselves as time goes on and with regard to many of the choirs, there's bigger issues at play and such we've talked about with cultural issues of self esteem issues.

{ 0:54 }
Those are, those are far bigger concerns to me of whether or not the student is, is actually getting things out of the choir. Yeah, yeah.

Speaker 1: { 1:05 }
All right. And then piggybacking off of that, is there anything else about your experiences with pitch matching, successes, challenges, surprises that you'd like to share?

Speaker 2: { 1:17 }
No, I think that's that's a large one. Yeah. When when kids start to to gel and sing with their their neighbors in the choral setting or they make a realization that they need to adjust things with their breathing and posture that that will give them a more in tune singing. I love seeing the breakthroughs. I love seeing the, the light bulbs come on and the kids feel like they are successful at things. As I've compared before, thinking of pitch issues as often a high school or college track teacher trying to work with kids that don't know how to, to walk yet they're still crawling.

{ 1:54 }
And, and so the, the light bulb moments, the developmental achievements that they get are huge. And when they finally were able to do them, you get to celebrate the heck out of it. Of course, then there's all, all the rest of the road that they need to learn to walk and things. But you know, I I've learned to celebrate with each student frequently that are overcoming major foundational fundamental issues and it's fun.

Speaker 1: { 2:20 }
Thank you so much.

B:

My recording 1.m4a

{ 0:00 }
OK. I'm here with my fourth interview, fourth interview and I am with my colleague and we are going to begin. So our first section has to do with teaching practices specifically. So what strategy for pitch matching did you gravitate toward most often? And can you walk me through how you might implement that in a typical lesson? Absolutely. So I think the first thing to bear in mind in my experience is that it was a junior high situation. And so to say that we took pitch matching for granted is probably underselling because you're dealing and, and again, to be very clear to the transcription, junior high begins at 7th grade here.

{ 0:46 }
So we're dealing with 1112 year olds and really I never had to directly address pitch matching unless there was a massive deficiency, which I honestly can count on two hands over 10 years how many kids had that level of deficiency with pitch matching. But that being said, I would say that the things that I would do, presumed pitch matching a lot, a lot of the exercises we did presumed pitch matching. And with that presumption presented students with opportunities to do it almost immediately. Everything I'm doing, all the exercises that I'm starting, I play a certain note. All right, Everybody like hum this pitch and they just all do it. Now, that doesn't mean that everybody in the room could. It just means that some people could do it better and some people listen to others. And eventually overtime got in.

{ 1:50 }
The only time that I found myself directly addressing pitch matching and like I said, is when we'd gone through that process for a while and it was still like you could hear it. You could hear that one kiddo like, oh, and then it was Tyler, like Tyler can't dialer, can't match pitch. And so to get a little bit more specific and granular, with the limited amount of times that I did this, I was often reaching out to elementary professionals or my, like, my high school colleague to get a sense of like, OK, how do you approach this? Like when you have a kid that just cannot match pitch, like and they're 11 or 12 at this point, the presumption is there's something up. It may have just been a, a really intense lack of exposure to music early or music making in any way, shape or form. And then additionally, it might be, however rare it really truly is, it might be like an actual, you know, like sub deficiency in some way, either cognitive or physical deficiency. But that of course, I never, I'm not qualified to diagnose that.

{ 2:59 }
And So what I was doing more often than not was trying to get them one-on-one hands on the piano while we did it. You know, like here's the pitch. And then I would also fish around with them because very often kids who couldn't match pitch in a certain register, there was always like about a interval set of about 1/3 or 1/4 where they could lock in and then they would get it. And so it never, I don't think I ever found a kid who just truly fully across the board couldn't match any pitch. It

was more like, oh, I finally found it in this part of my voice I'm really comfortable with, like I live here all the time. And then we'd kind of grow from there. So the only other thing that I I don't like, I don't know if I ever actually did it, but I heard it and I knew it was like a really like it could work is doing it with a partner.

{ 3:54 }
So what they you put two kiddos together and like you theory do this all the way around the room where everybody like, Hey, everybody get a partner, put your hands against each other and then sing, you know, have one person sing and the other person sing and like press against their hands with each other and kind of like find that emotion. Like there's like there's some kind of like physicality to it. And so when a person hears that they're not quite there, like just kind of giving a little bit more and the person would like modulate their pitch based upon like what they were feeling. And I was like, that's kind of cool. So like a kinesthetic feedback. I feel like most of it that I got because that almost always felt like the answer that I was given is that there's some, there's a, there is a kinesthetic way to approach part of this. And I don't know why so many teachers went there so quickly, but probably because of the lack of kinesthetics that we experience in the classroom already. Like we don't do it very often, especially at the junior high level. We just don't do a ton of like touch each other because like they're junior high kids and you just like all I do all day is tell you to stop touching each other. So I don't know.

{ 4:59 }
We just didn't do that a ton. But every time I asked people for like, hey, I'm having this issue, they'd almost always go to some kind of kinesthetic activity. And I think it is because some kids can feel it. They can just, like, feel. And once they start to feel it and match the pitch, it just kind of starts building those neural pathways that in a way that makes more sense to them. Yeah. Love shot.

My recording 2.m4a

{ 0:01 }
So are there any particular activities or routines you found especially effective for developing pitch matching? And I kind of especially given the age that you are talking about, I wonder especially about those that are going through vocal changes. That's a really good question. Yeah. It's so funny that you mentioned that because it was in the last two years. I had a kiddo for a year when we first came in in 7th grade and he was, he had, he wanted to be there. He was a good kid. He had energy and like the focus was there, could not match pitch, save his life. It was a nightmare. And I was like, all right, but I just kind of kept going with him and, and he was, he didn't get embarrassed by it. He didn't, he was just like, yes, can't do it yet. It's just like not working. And so we just kind of kept going and going. And then, you know, like you do, we had a summer off. He came back and I just kind of like, well, he's just going to be doing the same thing.

{ 0:59 }
Like, here he comes. And he came in in the fall and it just had all clicked. And it really, this is, I mean, this doesn't help your study at all. No, it's OK. But it really was just like, unbelievable. I was just like, dude, you figured it out. Like he's like, yeah, I guess I did. I'm like, oh, my gosh. I was like, you actually like when I play a thing using a thing and like, you're just doing it like this is crazy to me. But but it was really cool. It was a really cool expat. I had never really had that happen where somebody just like as if by magic, which is like turned it over. So your original question, I'm gonna restate just to make sure that I don't get too far off track here. Sorry. I went. It's like what specific like pitch and matching exercises I do with these routines. Yeah, so like I said before, really, if you think about it, because I am presuming pitch matching is an already acquired skill, everything I'm doing is pitch matching, especially at the beginning of every exercise, because I am just hey, we're gonna sing this now. Like, hey, yeah, yeah, yeah, yeah, yeah.

{ 1:58 }
And it's like go like immediately. So every vocalist that I'm doing that is actually not my purpose in doing it, but it is just naturally addressing pitch matching 'cause they have to, if not listen to the piano, listen to each other and, and do it that way. And so like that is definitely one of the pitch matching things I do at the end of my exercises. I do really do something that is very much, much more aimed at, at building chord relationships, but it ends up being a pitch matching exercise 'cause I divide the class into groups and, and of course the amount of groups is largely dependent on the number of kids and the voice parts and yada, yada, yada. And so I'm going to talk about like my beginning choirs. That's really where we are. It usually would start off in the very beginning of the year with one note. Everybody's together, everybody's sing this note. And then we would practice about pure vowel sounds and kind of getting our like, you know, the idea like we're going to sing the same note, we're going to sing the same vowels. I'm going to course correct where I need to.

{ 2:59 }
We're doing kinesthetic movement while we do that to just all of these things to try to get your sound lined up. And then over the course of the semester, depending upon the, the level of the group, group is different. But this year, for example, we didn't split the groups out into two parts until the 2nd semester, which for me was a really long time because for whatever reason, like the overall level of the kids that came in this year was really was lower and shakier than it had been in years past. And so it was like, OK, like we're going to have to like, really like get it together. But by second semester, they had really shown me that like I could divide them up and I knew I had leaders on both sides that could like hold everybody together. And then, you know, and then we get like two things going. And but it, it's, it's working still on like the pitch matching idea of listening to your group, don't get sucked into the other group and also still keeping our vows nice and pure.

{ 3:56 }
And so I think that would probably be the one of the like the most direct things that I do. I mean, past that, it's more like there's other skills. Like for example, with my more advanced Squires, I would cut them up in like usually like 3 or 4 different sections, each representing a different part of the chord and have their sing, sing, sing their soulfedge syllable. And then I would walk around the room and one group at a time, I would shift them down or up. They loved it. It was like one of their favorite exercises because it really is more about like you get if, if you do it right, you get to hear a chord change in real time. And so they were just like, oh, they would, like, listen, like, they would do that. But it required them, one, to understand the concept of soulfedge, two, to be strong enough singers to hold their section, and then three, be able to agree and match on a pitch. Like, really, truly, like, find that center. But it was a really cool exercise. But it wasn't really an exercise I could ever do at the beginning of the year. Like, you know, like, I'd have to wait until second semester before we really got into doing that with most ensembles. Sure.

{ 4:58 }
So to follow up with that idea, do you think that the concept of pitch matching has in, in a, in a choral setting? So in a, in a school choral setting when you have a room full of kids, do you think it is more effective to focus on the vocal production or on the ear training portion of it? That's really, really interesting. Can I presume inside your question that if I'm working on pitch matching, is this the presumption that we're working on it 'cause it's not working well? Is that, is that like is that implied in the question or you're just saying like in working on pitch matching, is my value more from a vocal production place or am I coming at it from a near training place? I think that's a good question too.

{ 5:49 }
I think that I'm looking more for like the the kids that are struggling overall, like where do I see what, what would I see as like the best way in like how am I gonna parachute into this particular circumstance? I think for me, I don't know. And maybe it's just like the way that I rationalize how it works. I come at it from a vocal production place. And I'd only do that because I feel like they can get a better handle

on it. Like, for example, like the the metaphor I would go back to is like riding a bike. Like if I want to teach a kid how to ride a bike, I'm probably not going to try to discuss the finer mechanics of how to mountain bike. Gotcha. And the reason I say that is that like, they're going to be like they could certainly find a way into figuring out how to ride a bike. If I talk about all the many ways that mountain biking works and how you do it and how you do it competitively.

{ 6:57 }
Look, and I, I, that's how I kind of how I feel about it was pitch, you know, pitch matching in regards to vocal production or ear training. Ear training feels like a back door in. I don't think it's a bad, I don't think it's a bad approach because I do think if you did it very systematically and intentionally, you could get kids to naturally understand how pitches relate to one another and how like this is like, they're really close. And if you just like slide up, you know, things like that. But for so many kids, I just think that like they're so they're, they're actually fairly in tune with how their body feels. And so by attacking it that way and how are you making your sound? Where do you feel your sound coming from? How I mean, how much breath are you using? Like giving them awareness of breath and things like that, helping them in some cases use their instrument effectively and efficiently. Because in doing that you start to train in the right systems.

{ 7:57 }
But also like, I don't know, though it's a really compelling question that you ask. And I, I guess like, obviously I've given you like what I think is like my truest answer, but I do think that the correct answer is both only because with no awareness of your training, you won't know if you're not singing the right thing. You might. And, and I mean that like those moments where kids are singing a pop song and then you and I both hear them like fall out of tune for like a hot 2nd and you're just like, oh, you don't know. It doesn't, it isn't that you don't necessarily know how to use your voice is that you aren't hearing it because for whatever reason, there's some part of this ear training piece that has not clicked in yet and you don't literally don't realize that you're not singing it correctly. So I do think it's a little bit of both. And maybe the, the, maybe another answer is that it just comes down to the individual kid and what you're observing as the deficiency based on your experience.

{ 8:57 }
Because like, I mean, the experience with a kid is the thing that really like helps it fall into place.

My recording 3.m4a

{ 0:00 }
OK, The next question is how do you assess whether students are improving in their pitch matching abilities? What kind of science do you look for? Well, I mean, like I said, you know, this, this junior high level, so much of it comes back to the presumption of pitch matching. But OK, let's take, for example, a kiddo who I know is just struggling to pitch match. They're able to hide a lot inside the ensemble, which is why there are occasions, while I will, I would divide them out into groups mostly just to like, I want to hear how you're doing. I want to hear like what's happening. I also like want to allow them a space to hide too, because like some people just need places to hide to grow. Some people don't grow in direct sunlight very well. Some of our some of our kids grow better in the dark and then all of a sudden one day they just open up. I've had kids like I had a kid who was almost silent for me for three years and then went to Joey.

{ 0:57 }
And then I went to a concert and I, like, sat in the back and cried because listen to this girl who I'd never heard, like sing sing was like speaking into a microphone confidently and singing. And I was like, that's like, it's wonderful because she was growing. She just wasn't doing it. Like I didn't get to see it like bloom, but when it did, it was extraordinary. And so sorry, I'm. I'm digressing, but remind me that the the exact question, like how are you assessing whether they're improving or. Yeah, Yeah. So I hear them individually at the beginning of the year. It's really brief, but I just like, I'd always tell them that it's really just to like assign them a section. And that is true. But that's not the only reason because I just want to hear them, especially as an individual singer, because you and I both know there are many times where a kid, you will ask kids to sing and they will do it very differently on their own, as they will in a choir very differently.

{ 1:49 }
And so to hear them and to encourage the good things that might be happening here or to encourage the good things that might be happening here and just kind of like try to find like where they're like sense of self and, and, and goodness is going to like really land. So I hear them at the beginning of the year and then I inevitably will hear them at some point throughout the year again, if only for their audition for ensemble at the very end of the year. So it very well might just be the beginning and the end of the year, but I will kind of take their temperature there. But I do hear them sight read pretty regular. And that is really where I hear a lot of kids because they nobody wants to sight read loudly. So everybody kind of sight reads at the same generic level. And that's usually where I can, I can just like I can hear everybody in the room or I know you're not singing, but I hear, I hear that. And like, that is one of the ways that I'll start to make a, you know, make determinations as to like how people are doing. And then as a music teacher, I, we're always playing the long game. And I have had kids who I'm like, OK, I've got three years.

{ 2:57 }
Like where can we be at the end for you at the end of three years? And, and so I really like, try to like push them a little bit every year. Like I heard what you were doing last year. That was really good. But I think you've got more. And that's what we're going to be working on this year is to see if we can't pull a little bit more sound out of you this year. It's a lovely sound and you know what you're doing. And we've got to figure out whatever it is that's getting in your way of like making a more robust sound. More often than not in junior high, it's it's, it's anxiety about being out there. Like that's, I would say like 9 out of 10 times kiddos who show up and are like, yeah, it is. It's because they don't want to be there. But anyway, so that was kind of part of the question was how do I like, how do I know? How do I assess it? And then how do I know? And then honestly, the rest of it is just literally listening is hearing it. And you always know and acquire of predominantly kids who can pitch match, who can't. And then you also always know when they are matching.

{ 3:56 }
And that is something that I, when I hear it and I hear it, all of a sudden it's just like, oh, it flipped. It flipped in like, whoa, hey, hi, like look at you. Hey, hey, hey, we're doing it. We're doing it. And that is just like a long term game of just letting them kind of by trial and error, listen to the people around them constantly reinforcing like correct pitch. And I also, I don't spend a ton of time trying to call them out on it because like, that's a, a really, that's a good recipe for getting kids to quit. Just being like, Hey, you're still not matching pitch. Hey, what's the problem? And I'm like, well, if they knew what the problem was, they would have fixed the problem. Like they, they, nobody wants to come into any music room, but particularly a choir room and sing out of tune. It's probably because one, they more often than not, they don't know they're singing out of tune or two, worse, they do know they're singing out of tune, but they don't know how to correct it. And both of those are not a worthwhile thing to pull out and point at during a class.

{ 4:54 }
So like, I'll just usually catch them at like the end of class and just kind of try to do like a little like pep talk and just like, hey, just be listening. And like, we tried little things. But like I said, it's been vanishingly few kids too. So my experience with it is really that the elementary schools are doing fantastic work and that the kiddos who are were having trouble may have just stopped of their own volition, which is sad because everybody should sing. But I also understand it that when you're trying to juggle and you feel like you don't have one hand, it's really hard to juggle. And so you're like, I'm not going to sign up to go juggle with one hand for a year. Like, I don't, I wouldn't wish that on anybody either.

My recording 4.m4a

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All right. Our next section has to do with post COVID adaptations and, and these can be for clarity's sake, these can be either things that happened like some of them will be like things you might refer to that happened like recently after COVID, after coming back where it might be things that stuck around for a while. So the question is, has your approach to teaching pitch matching changed since COVID-19?
No, No, it didn't. And it was only because what we were trying to do during, especially during the heat of COVID-19 was so unsuccessful that like, it would have presumed that I had learned something specifically about pitch matching that was just better than what we had been doing.

{ 0:54 }
And what we had been doing was, was just fundamentally a better like decision, which is an in person interaction, not only one-on-one, but also in a group setting where where there's less at stake. And in COVID-19, the best you could hope for was a person to computer, a computer to person interaction. And the sound quality was a little bit rocky and it was one-on-one because getting more than one person to do anything at the same time was nearly impossible, even though, you know, they, they wouldn't have a sound on because it would, it would have blown up the, the, the, the chats. And so then when we came back with like masks, masks again were just like a necessary, but ultimately really problematic barrier for a lot of kids because it put something literally put something in between them and their production.

{ 1:57 }
But like they weren't hearing themselves because they were hearing themselves through this. So like, it was like everything COVID was like a problem like, but it was a problem that was necessary at the time. And so when it, when it went away, it was like, it really just gave me maybe a greater appreciation of all the things that we could do that we took for granted pre, pre COVID. I don't take for granted anymore. I don't have to teach a class and a mask, which we're trying to get kiddos to imitate sounds that you make in a very specific way. Not being able to see this part of the, you know, nose to chin of your face. Oh my gosh, like I'm having now to describe, literally describe or hey, everybody, I'm going to stand over here. I'm not going to say anything. I'm just going to take my mask off and now put it back on.

{ 2:54 }
Like that kind of stuff was, was so frustrating to me because it, it was, yeah, it was just really like, like like anger producing. So yeah, sorry, I, I to answer your question with the exact same answer I gave before. No, I have not changed. I didn't change anything. I just got a deeper appreciation for things I'm actually allowed to do post COVID but I was allowed to do pre COVID.

My recording 5.m4a

{ 0:01 }
What role does technology play in your pitch matching instruction? Are there specific tools or platforms that have become essential to your teaching for pitch matching? Not really, unless you consider the piano a piece of technology, which I think is a fair argument. You could because obviously like I don't have perfect pitch and even if I did, I don't trust myself. So I would just always defer to the piano. I didn't let students touch my piano in large part, and I would tell them is because if this goes out of tune, you're out of tune because I can't fix you in that moment. I'm not going to know that we're just South of a I'm just not going to know it. I but I do know it if I've got a pitch reference and then we can go that's that way. So I feel like the piano, I mean, is an invaluable tool because it is the grand arbiter of whether or not we collectively are in tune.

{ 0:58 }
And sometimes that might mean literally everybody's singing the same note at the same time or hey, we just built a chord that's a lovely chord that is in tune with itself. Is it in TuneIn reality, You know, and then finding whether or not we're actually there. And then of course, it's addressing like when we do fall out of tune, that is something, I think it is something to do with pitch matching, but it also is something to do with technique. And I would often find that when we were sliding out of tune, it was almost always due to either dynamics trying to do something fancy with dynamics, either too loud or too soft or, and or vowel modification that not everybody was using the same vowel. And so we were just way out of tune because we had like 6 different ah vowels and we had to coordinate and find the right one.

{ 1:51 }
And so sorry to kind of like circle back nothing new technology wise that I felt that was like a really strong like thing that I used post COVID that I wasn't using before very good.

My recording 6.m4a

{ 0:01 }
All right. The next question is, have you noticed any lasting effects of remote or hybrid learning on your students pitch matching skills or their willingness to participate in singing activities? The former, I would say nothing. There's nothing that I've noticed that I'm like, oh, it's way worse because to be quite frank, society does not prize what we're doing as much as it may have once done. Some very specific parts of people's communities do. So I'm, you know, I, I, the thing that comes to mind is like students who come from the Church of Latter Day Saints.

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There's a really strong emphasis on music and musicianship as a means of not only status but also of community building that the those kiddos, regardless of what they choose to do, always seem to just be really into it. But I didn't really notice or find as a result of COVID-19 that there was a stronger or a lessened emphasis on choir. It was the same. So I didn't, I did not necessarily have the experience when I got students back that they were better or worse at pitch matching because they were the same as they had ever been. They were just doing the same thing. They they weren't getting a ton of exposure experience with it at home. And so consequently it was only at the schools. And that was fragmentary at best, borderline negligent at worst. And so it was just like, it is I, I'm still getting the same kind of kids to answer your second question, Rachel, which was, are students more or less inclined to sing post COVID-19? Oh, heavens, yes. But that was actually part of a larger trend that I observed. And again, it's largely anecdotal.

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So when eventually you write your book, you may not, you're not going to be able to reference this from a scientific place. But what I noticed is that it followed the trend of largely being comfortable in isolation. Students felt more comfortable in circumstances that they could control. And so we largely witnessed that via the social lens where students, at least initially, weren't necessarily seeking each other out to be like little social pods. They were far more comfortable having their relationships in a virtual space and, and maintaining those relationships in the virtual space. And unfortunately, as many people know who have experienced a social, you know, social interaction in a virtual space is that they're the the possibilities of misreading tone and not building some of the soft social skills that you get elsewhere.

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They just are lacking. And so I say, I really, I know it seems like I have digressed, but really it goes hand in hand with being willing to be in a space and being vulnerable around other people in a community project that is choir. And so when you are more comfortable maintaining your social life in a effectively a vacuum that only you can control, and you can decide who can hear what you say, when you want to say it, and you can decide when you want to interact at all, Putting you back into a 45 minute block with a group of, I don't know, 13 other people who have a bunch of

different thoughts and feelings like, yeah, like kiddos initially were not not interested in coming back into that world. I think it's a lot easier to do to come back to band and orchestra because there's always a way to offload the issue to the instrument.

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If I hold my trumpet and it's out and a director says, you know, you're out of tune, I look at my trumpet and I think my trumpets out of tune. But when I'm in a choir and the director says you're out of tune, it feels at best like a diagnosis that you're not happy with and it works an indictment on your personality. And so I did notice a lot that it took a long time for kids to come back and they didn't come back for the music. They came back to the community. So I think that is something that I think I had not valued as much in the choral setting. And I, I did really start to find a lot more value from it is that this is kind of something that they chose and wanted to do, but they also just more than that were trying to fill a void that they didn't know exactly what it was.

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And they were filling their bucket in that room by having a group of people that built a community around a shared interest. And ultimately it transcended the, the choir that I, every year there was a group chat that I knew nothing about. Every year it was an extraordinarily active group chat where kids were interacting. And it was, and it almost was never negative. It was all very, very positive. And they know we have to remember to do this thing and like, hey, we're going over and we're going to like all go over to this person's house. And like they, they were doing this completely separate from me. But it built a community of kiddos that even when they, some of them drop out of choir, they never drop out of this, of the, of the chat. They stay locked in with each other.

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And I know that that was not necessarily part of your question, but I think it's, it's like, it's such a cool and neat thing to me that, yes, there was a reluctance to come back, especially with singing for a variety of reasons. I didn't get any of the health things. The health things never really came in. It wasn't like people weren't worried about like shooting their stead out like junior high. They were just like, whatever I'm gonna get, I'm gonna get COVID, like I'm gonna get COVID. Like they just didn't care when they came back in person. But they did care from kind of just like a, a social space. And that was for a few years was a little tricky to just kind of pull them back out. I, I really started to notice like last year, this year that it was, it was kind of like back to where it had been pre COVID where the kids just were there. They were there and they weren't, they weren't, they were uninhibited about who they were and what they wanted and really was because those were like the kindergarteners, preschool and kindergarten kids from when COVID had hit. So we started to see that it kind of just like starting to fade out.

My recording 7.m4a

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The next section we have talks about barriers and challenges. So can you elaborate on any specific barriers that you see as major challenges to students learning of pitch matching? These could include large class sizes, student confidence, lack of resources, all that. Yeah, I think the the number one barrier that I see, I do not have large class sizes. That's for a variety of reasons, socio and economic, you know, values also the, the values at home that a lot of families just do not put a large set of values on music making to be very specific. Some families do, but a lot of them don't and there's just not a lot of experience there. But anyway, sorry, I'm, I'm kind of going off on a separate element there, but I think that one of the biggest barriers for our students at my school is confidence level and a willingness to be vulnerable.

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Or another way of saying that might be a willingness to fail in front of others. And I don't necessarily mark that as a, well, my school's a little like lower on the SES level. It's like, no, I think that's a human quality. Nobody signs up for a class to fail spectacularly in front of others, especially one that is so specific to their biology and makeup. It's like if we had a class where everybody compared their teeth, you know what I mean? Like there'll be some kids who are like, I'm not sign up for that class. My teeth are jacked up. I got braces on. Like they don't want to do that mess. And that's what I feel like singing is sometimes where we're putting kids into a circumstance where it almost feels like a talent that must have been, they must have been born into. And you, you and I both know there are kids who have that experience.

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But by and large, kids come by that ability through practice and skill, but they have to have a strong enough personality already in order to overcome what will be a challenging circumstance through the process. And so it's just so very rare that I find kiddos who are terribly shy who also join choir. And that's one of the reasons I do think that the numbers in choir in our entire district have gone down is that it is, by its very definition, a vulnerable, you know, kind of like imperfection seeking class. And so that's the biggest one for me is that kids do not want to confront why the thing that they wish worked doesn't work. They don't want to hear that they're wrong. I don't think that is a student thing, although it is certainly not helped by their sudden awareness of social activity and social standing. But it is just nobody wants to fail. Nobody wants to do that. And like that is like, for sure, number one highest level.

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I would say if I percentage wise, 85% of the issues that I see in my class stem from that they do not experience it the same way in orchestra and band though, that that that circumstance still presents itself. But it's because everybody's so bad on their instrument in the beginning, but the instrument that we're dealing with is 1 they were

born with. And there is just this really weird unwritten expectation that if you're in there, you consider yourself a competent and functional singer, which does not and should not be true. But it's a real hard thing to just like turn that whole thing on its head for a society perspective. And so it bleeds out in a lot of different ways in the choir classroom, but specifically really in any specific technique building process, it requires the kid to be comfortable making mistakes and doing that in front of a a larger audience. And just kids aren't excited about doing that. They don't want to do it.

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So to to double back on something you said a little bit earlier about the difference in confidence level pre and post COVID. Do you think that or have you noticed a difference pre and post COVID on that confidence level? And and like you mentioned, maybe it's affecting your numbers, but also with the kids that are that are bought into your program, their willingness. Are they are they still struggling with their willingness? That's a good question. Yeah, that's a really good question. I noticed especially in like maybe like the three-year bubble of from when COVID started to win, you know, three years out from there really noticed a lot more self consciousness.

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And arguably, it wasn't just in the choir room, but that's where it would come to a head where even kids that maybe historically would have been a little bit more like, oh, I can do this or like I will do this would come into the room and and kind of like try to hide behind each other almost. Whereas historic before that, before COVID, maybe they didn't. And I mean, we could sit here and probably speak for hours. And I'm sure there's a ton of research about all the many ways in which kids became less excited about being vulnerable in front of each other and how the social structures changed. And when the social structures of any society change, we're just a symptom. Like that's what I feel like is happening is that like, choir isn't the problem. Or maybe the problems in choir aren't necessarily always a massive problem. It's the problem is is deeper than that. It's so much more enmeshed in what we're doing on a societal level. So it's just like you, you, you can't I I never presume to be able to change that.

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What I would try to do is make it an inviting place where they're, you know, very free of judgement in in in a way that was going to be like you name student, you're out of tune or you, you made the mistake this time. Like really try to like hands off on that one. Just give everybody a chance. It's almost like music petting zoo where we're just going to come in and we're all going to do it, but nobody's going to get, you know, nobody's going to get in trouble for making mistakes and doing things. So when I had my beginning choirs, it was more about making an environment that allowed them to feel safe. But I mean, that's just, that's just good teaching. Like, I'm not saying I invented that. Like I, I could tell you that. And so could a kindergarten teacher. Like a kindergarten teacher is going to tell you that if a student doesn't feel safe in their room, you're not getting anything done. Can have all the best intentions

and have the best pedagogical outlook, but if you don't, your students don't feel safe in that space, then it's over. The game's over.

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So I think that we were all engaged in the same project for about 3 years, which was reminding students that they are resilient and reminding students that it's OK to make mistakes and that ultimately community is a valuable resource. And I think that getting that reinforced, the only problem that my students had is that they didn't have, they had about a year or two where that wasn't pushed as hard because of the world that we were all living in.

My recording 8.m4a

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The next question is, could you share a specific instance where you encountered A barrier to the action of teaching pitch matching and how you addressed it? Huh, That's a really good question, a barrier of pitch matching. I think, you know, I'm thinking about a specific student who, like I've said, and this is a different than any other anecdote I've shared, so I'm not talking about the same student at this point, but a student who was really just like really, really shy. And that was their personality in the space. And I think anybody who has spent time in a music making classroom where the primary music making instrument is voice will find is that personality and voice are almost always very tightly linked.

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That doesn't mean that shy people can't be great singers or that, you know, great singers are only, you know, exotically flamboyant people. That is not true. But I do think that there is a stronger concurrence of ability at the younger age because there's so much more willingness to try and be things and just use your voice and throw it out there if you have a bigger personality. And so I remember a student who I had that was just just so deeply shy, but also just the most respectful, lovely student in class. No issues there. So it wasn't about willingness to be there. This this student signed up for choir for three years in a row. This student barely spoke unless spoken to and when spoken to nearly silent. And so.

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And that ended up being in and of itself a bit of a barrier because I was trying to crack the code on clearly something that was deeply embedded in this kiddo. This is not necessarily a, a, a personality of choice. This is just a personality of nature and it has been reinforced and who knows how many different ways, but this is who this person is. And then and then there's me like, try this thing out. And it, it just felt like I was like, I was just giving a kid like a color from the crayon box that they had just never seen. And they were like, what do I do with this? And so I feel like the, and that's why I say it's a barrier because it was something that I could never ask them to change, nor would I. I don't want anybody to become different people to be in my room. But it was asking them to step so far out of their bubble to meet the minimum requirement.

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I think we all kind of know as educators that we really want, we're always asking you to like just put a toe outside the bubble and then maybe your bubble got bigger. OK, cool. Maybe we just put another toe outside the bubble and we're constantly increasing the size of the bubble. But with this particular student, because of just how deathly shy that they were, in order for me to get them to just like I said, like the minimum goal, it was like I was asking them to just take a full body dive out of the bubble and two steps over and I'm like, this is going to take forever because there's like, I don't even know how to stair step you to where I need you to be. Like I just

need you to make noises. Like I, we would have circumstances where it was just getting her to come into the room and being willing to try to sing, to make a noise. And so we, I would just so many things. I won't even look at you. I'm just going to, I'm just looking down. I'm going to play this pitch. Would you please make this, you know, make this noise and like, I will cover my eyes and play the note and you just sing the pitch. And it took three years.

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And even inside of three years, though there was significant growth by the student, especially socially and emotionally, there was still a reluctance to like go just just a little bit further. And so that was my biggest like 100% barrier with that kiddo. And I've, and I've had variations on that particular student several times. And I don't know why they were in choir, not that they shouldn't have been. I'm delighted that they were and they certainly got something out of it, but it was always such a surprise for him. Like wow, for saying that you want to be in a choir where like the number one activity is singing, you sure don't seem to want to sing. Like this was a unique choice. Like you could be in a lot of different places right now. But I'm happy they came.

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It was just it just always felt like I I something I just didn't or couldn't understand fully are like what were some of the the things you mentioned like closing my eyes, playing the note, please sing. But how are, how were you actively working to foster that sense of community to help that student out a little bit? So what I, I mean, a lot of it was especially the other kids in the room. And I wouldn't, when I, when I said that I would like not look and like listen to this person sing, it was never in front of a crowd ever. It was always in my room. And what was interesting about that is that they were actually far more willing to sing out in the room with other kids than they were to sing on their own in front of me, which was like a nightmare scenario. And so I would often like, pull another teacher in the room just like have another person. That's for a variety of reasons, one of which I like teaching. And I wanted to keep doing it. And I didn't really want to get fired for like, you know, becoming the Scarlet Letter, but also like there's a little bit more there. And like, I think with that particular student, at least once I let another student come into the room, They did it together. That helped on occasion, especially a student that they had a strong relationship with.

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I could kind of get a little bit more juice on that one. But I remember the very first time I tried to get this kiddo to sing just like hard pass Just no, I, I, and, and it wasn't that I don't want to, it was, it was that I can't, I can't do this. And it would often just kind of devolve into like crying and like, and I again, I, that's not something that you want to ever attach to your room. And so I tried to mitigate those circumstances a little bit. We eventually got to a place where I understood how much I could push this particular student. And I'm like, no, we're going to do it. We're doing it. It's happening. Thank you so much for coming in. Yep, we're doing it. Here we go. We're just doing it today as but then there was especially early in our relationship, it was

like, Oh, no, no, you're telling me that this is a no. And now we have to pause, you know, And then it was finding that comfort level and building the community in the classroom, showing that person over many years that I was a safe person and that it wasn't a dangerous thing to come in and do. And then just, you know, just taking really tiny baby steps, even baby steps inside the bubble, just making sure we were getting somewhere. But it, it got dramatically better over the many years that we worked together to the extent that, like now, like, I was OK. Like, they can go to high school. It's not gonna be great, but it's gonna be way better than it was. And so, yeah, it was a it was, it was cool. It was cool. Yeah.

My recording 9.m4a

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The next question is, are there any barriers to teaching pitch matching that have become more pronounced since the pandemic? None that I've experienced, no. Something that the kids did a lot during COVID, more than they may have necessarily done otherwise. They listened a lot more. They listened to a lot more music. At least that was my experience with them. Is that like they were kind of like shut down. And so they just all started listening more. And I don't care what kind of music you listen to. I care that you're listening. The more listening you do, the more just like kind of like passive learning you're doing about music and music making. And so that in some ways made them better, maybe just better musicians. I, I, I really hesitate to say better performers, but definitely just, there was a level, there was a slight uptick in musicianship because they had been listening more because there just wasn't as much to do.

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But I, again, the deficiencies that I was talking about had nothing to do largely with the COVID space. It, it did exacerbate especially like the social isolationism or the willingness to be vulnerable because that was just the nature of that space. They, they weren't confronted with that as early in their educational career. So in some circumstances they weren't as ready to do it when it came time or just didn't even put themselves in the place to have to do it. Like I'm not going to do choir. I want to do choir. Like that's the place where you go to find out that you're not a good singer. It's like interesting that you that that's how you would choose to define that. Like could it be also a place where you learn how to sing? I would always go out and pitch elementary schools to join choir. I'm like the only thing that you have to want is to want to be here. That's it. You don't have to be a good singer. You don't have to know how to read music. You like all of it.

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But, you know, like, I could say that until I'm blue in the face, but it's like, there's still this kind of like, yeah, that's what he says. But is that really the way it's going to play out in real, in reality? And it's like, it is like, I can, I can make you. I can make you better at all the things. The only thing I can't make you better at is wanting to be here. If you don't want to be here, I cannot make you want to be here. And I don't know, there's probably a different way to make that pitch. Like I know what I mean and most adults know what I mean. But I do think that sometimes kids would hear me say that and they would think wanting to be in a place means that you, you already know that you belong. You already know that this is a skill set that you have. And I and I and going back now, if I were to do it again, I probably would try to re articulate to really drill into kids like you don't have to be good at this, you probably aren't. The incidence of kids coming in and being good at this is really small.

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And in fact, I would argue that it is the same percentage of kids that I have

experienced that have pitch matching problems. Vanishingly few kids come in really good. Most people come in mediocre at best. So I think there is a misconception about that, and I don't know why. Again, like we've talked about that like, man, the orchestra students don't come in assuming that everybody's just a wizard already. But for some reason, because you've had this instrument since you were born, people just expect that you're just good at it because you sang along with your favorite song on whatever streaming platform you're listening to. It's like, no, that's not true. This is a learned skill. And now is when most people learn it. It's not something that people learn when they're like, at home on their own. Like, it's like, yeah, you can get more comfortable with it, but like, to really learn the skill. It's happening right now in real time. You don't have to be a good artist to go be in an art class. So why are the rules different for music? But they really, I think they really are. I think there's a broad assumption in a way that is really hard to crack.

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It's a tough nut to crack and I don't think I fixed it or figured it out, but I do feel like I know what the issue is and it's more about addressing the issue effectively that's hard.

My recording 10.m4a

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So our next section has to do with student engagement and outcomes. So how would you rate your students pitch matching ability at the start of the year versus the end of the year? And that could be as individuals or as a unit, as a coral unit. And what do you think contributed most to any changes that you didn't observe? OK, I'm going to speak specifically about my beginning choir because I think it's a little bit unfair to start doing any advanced choirs because I've had them. And so beginning of the year is just not a thing. Like if you've had a, if you've had a group of kids for a year, when you get them the second year, it's not a new year, it's just a continuation of the process. So I'm really talking about like my 7th grade kiddos who I just got.

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I would say that by and large as individuals and as an ensemble, if we're if we're judging on a scale of one to 10 where one is just they're terrible, you know, pitch matching and 10 is any note you would play almost instantaneous reproduction. I'd say that most of my ensembles were starting off at around A4 or A5, which is kind of right in the dead middle. We didn't have perfection, but there was still noticeable issues inside of the ensembles for a variety of reasons. And then I would say by the end of the year, most ensembles would jump at minimum up to A6, usually to A7 or an 8 that like they just they and, and I and kind of follow up, which is really answering your second question is the thing that contributed most to that was their comfort level with each other 100% that they learned over the course of the year. It's OK to make mistakes in here. It's OK to try new things in here. Here are some things that I should try as an individual and as part of this group to get better at this thing. But the Step 1 was just literally knowing that they were around people, that it was OK to try this around.

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And when you're in there in the very beginning of the year, you don't know what everybody's personality is. You don't know. And like, I've had choirs, though, that always were terrible. And it was because the atmosphere in the room was toxic and I couldn't fix it because I couldn't make some people fundamentally different than what they are. I had to accept what they were going to bring into the room, try to mitigate some of their toxicity to the extent that it was possible. But there was always just kind of like this, either non value of the of the project at hand or just disruption. And often they were the same thing. They often were happened simultaneously. And so but I those were the exception of the rule. The rule was really four or five to start 678 depending upon the group that year, like in terms of just like how they would change and almost entirely due to just how comfortable or safe they felt in their their feet, in their shoes in that space.

My recording 11.m4a

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Can you describe a moment when you saw a breakthrough or significant progress in a students pitch matching ability and what do you think made the difference? Well, we talked about this a little bit before in previous answer. I am going to go back to it and maybe we'll dig, we'll dig a little deeper on it. But it was this kiddo who had been just completely tone deaf for a year in my class. And again, lovely kid, really liked him, did really good work, had some, you know, behavioral issues, you know, here and there, but nothing that was like, you know, like inflammatory where like it was going to, you know, pull him from the room. But his behavior issues largely or actually exclusively were outside of my room. Never happened in my room, but it did happen in the school. So like that was kind of a problem for other reasons. But anyway, he was just, he was just completely tone deaf and again, was pretty aware of the circumstance, but just didn't care.

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And, and part of that I actually attribute to the fact that he was also a wrestler and and he was wrestling at a pretty high level. And so he just knew what it was like to work on something. So he just didn't care. He was just like, yeah, I'm just doing this thing, but I'm not good at it. But I will, I will be or I can be. And so I didn't, you know, I didn't necessarily like drill down on him very much. I just kept giving him the opportunity to participate and reinforcing the correct thing around him. And then like I said, this is like, this is where, sadly, the magic trick trick kind of happened as we just went away for a summer, came back and all of a sudden like Ding and he's got it. I think two things happen. One, he felt very comfortable in the space. He'd done it for a year. He knew I wasn't coming in with a chip on my shoulder about XY and ZI also think because it was a boy, because he had fully gone through his vocal change. He he was, you know, the thing that I always tell I'm I I am going to come back to this. I'm going to get a little diversion and come back right back to where we were.

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The thing I always tell boys is like, you know, like what's really cool about your voice is that you, you know, women get a bicycle and they ride the bicycle all the time. And then they just get better at riding the bicycle. You start off on a tricycle and you'll ride your tricycle for a while and then eventually we're going to take your tricycle away from you. We're going to give you the bicycle. But what's really amazing is that you never have to just ditch the tricycle. You can actually come back to it and then you'll have both. I was like, so you actually get these really cool thing where you get to have two different ways to get around. It's awesome. I was like, it's so cool, but you just have to know that eventually we are going to level you up to a bicycle. Everybody's going to do it at a different time and it's going to be awful and you're going to crash a lot. Just get ready. So anyway, what I found with this kiddo is that it was like he had been, his issues really weren't a complete voice change, although it was happening throughout the year and the year previous, but that wasn't

the only thing because he was still like, voice change doesn't do that. I'm sorry. Like it does a lot of things, but it doesn't do what was happening to this kid. But I think he had finally just gotten his feet down.

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He really felt comfortable on his bicycle and that just like he knew where his voice was. And so when he came in, he was just like, it finally clicked and he just knew like, Oh yeah, you play this, my voice does this. And I feel like that is that was a big part of it too. I think it it was time. And that time was development of not only physiologically, but also being comfortable in the space. And so I think that those two elements are really like contributing factors to that that breakthrough.

My recording 12.m4a

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So our next section is professional development and support. So what kinds of PD trainings or resources do you think might be most helpful to you and, and being more effective at teaching pitch matching? Well, I mean, I think you probably have heard from every single person that you interviewed is like anytime we can have a, a PD on the changing male voice, always, always because you can never spend enough time there. Nobody feels comfortable with it. I'm a guy. I went through it, still don't feel comfortable with it because it's really, really hard to do. It's really, really hard to navigate. It's hard to keep kiddos inspired and motivated through the process. Like that's one. I'm just going to leave that there like, because I think that's just a universal answer.

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I've never seen one of those PDS with nobody in the room, especially when it's somebody like Dan Davison is going to talk about the changing male voice and like, it's like, oh, they're standing room only because this is somebody who knows what they're talking about really specifically. So I just want to hear everything this person has to say. I do think that like it would be really interesting to me personally to have APD specifically on pitch matching with students who are struggling at, you know, like that are effectively what we would maybe colloquially call being tone deaf and more than just one strategy. Like I would love to have had a deep well, like a a deeper pocket of tricks. I feel like I didn't really have a lot and everything that I got was theoretical and not always the most practical for my room or maybe the way that it was presented to me. I'm like that would really work at an elementary level. It doesn't really work at a junior high level for any variety of reasons. Too much touching too, like kind of quote baby ish or just like little kid oriented.

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And so it just never really felt like I had a deep well to pull from in that space. And so I would have appreciated a lot just having more resources to pull from it. So like, if I had seen that on APD list, I totally would have gotten in, gotten into it. So yeah, I think those are like the two. I think like anytime we can talk about changing male voice because it's so directly attached to not only keeping and getting men into singing, but just like matching pitch in general because that's the time where like all of a sudden your voice just completely flies out the window. And then also just specifically drilling into pitch matching with tone deaf students because that is something you're going to deal with. It's coming to a theater near you and it's not going to and it's not going to happen on a timetable. It's going to be comfortable. It will happen in the like, you know, in like, Oh no, it's like you're here. And then we have a choir of 20 and and I can hear you better than anybody. Like you're the loudest one. Like we have to address it.

My recording 13.m4a

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Have you participated in any workshops, courses, or professional learning communities focused on pitch matching? No, and I, I want to at least once chance to defend myself. And the reason that I haven't is that almost from the jump, when I started this job, I got the position at IMEA to be associate chair of the mixed choir. And so I, I literally never went to IMEA and never, never sat in one session because I was always with the mixed choir and I had and prior to going and working in that capacity, I had not gone to that. I think the only time I went to any PD for music was when a CDA used to happen in Sun Valley. It was because everybody went and it was just like a community based thing. And then when it transferred to Boise, that was when I made the switch to doing the IMEA, you know, Co chair. And so like I had to just kind of like work my PD days out in a way that was manageable and sustainable.

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And so the long, you know, that is my answer. I don't think that they're not valuable. I wish that I had been able to do more of them, but it just ended up being this weird kind of like confluence of things that I just never got to go and actually sit in on PD. So yeah, I'm very uninteresting. No. So let's dig into that a little bit. First of all, for the record, can you tell me what IMEA is? Yeah, the Idaho Music Educators Association. And when I'm saying IMEA, I'm specifically talking about the kind of like the all the opportunity for Allstate ensembles, but it's also a music educators conference that happens with the educators around the entire state. It's not located in one location. It's located in kind of a rotating location that kind of basically goes from North Idaho, East Idaho, and then the Treasure Valley. So it's constant like rotation back and forth.

{ 1:50 }
So it allows everybody to show up at the same time, but there's always an Allstate choir group and I just happened to be attached to them every single year that I went. So then would you say that you have had adequate opportunities not just with your your IMEA obligations, but outside of IMEA, have you felt like there have been adequate opportunities for you to pursue musical professional development opportunities? I think that there are a lot of resources in the Treasure Valley. I don't think it's easy to find those opportunities. I think that if you know who's here or you know what you're looking for, you can get what you want, but I think that it does require you to go looking for it. This really is a circumstance of there. There is gold in them Var hills, but you got to go find the gold I.

{ 2:54 }
I believe that firmly that we are not bereft of expertise, knowledge and professionals. We are at a deficit in making those readily available to teachers on a regular basis. For example, why isn't the Boise School District providing music specific PD for all of its various levels? Why are Why isn't there a regular PD for general music

teachers? Why isn't there a regular PD for band, choir, and orchestra directors? Why are we waiting for the national conference, so sorry, the state level conferences which really are IMEA for everybody, ACDA for choir, Why are? Why do those have to be the only PD things that are available, especially in a district that champions their art programs? Where are we? Where are our opportunities?

{ 3:57 }
Because we should be doing that, if only in house and paid. So what I mean by that specifically is we're not necessarily going to pay the people who are attending, but by God we better be paying the people who are presenting because that is some real next level tomfoolery. When we ask our in house professionals to volunteer their time, that is garbage. These are people who deserve to be paid for their expertise. When because you get exactly what you pay for. If you ask people to volunteer, you get something that is kind of thrown together and understandably so. But if we're paying people to show up and give professional level PD to their colleagues, then they have a standard by which they should be showing up to the party. And so I guess I'm sorry, I, I did take my soapbox for a moment there to say that it is not very easy to, to experience PD outside of conferences.

{ 4:52 }
And if you are not a regular conference goer for who knows what reason, you somewhat similar to me, could basically be on an island of PDI just didn't really get any. And that is I, I am part of that problem. So like, I, I own that in myself. That is actually something that I am actively changing as I switch careers right now that I am actively not only seeking, you know, going to PD things that are offered, but also actively seeking out things that are outside of not only our district and our state. I am looking for things that are going to give me progressive ideas to make me better, in large part because I know that I ran a deficit as an educator and wish that I had been doing that more as an education professional. And again, for the record, what is your new career? My new my new career as an administration, I am moving from the classroom, specifically the junior high 789 chordal classroom into school administration. And so I'll be an assistant principal in the junior high next year. Excellent. Thank you.

My recording 14.m4a

{ 0:00 }
What advice would you give a new teacher as they are just starting the process of teaching pitch matching, and what resources might you suggest to them? Oh yeah. Well, it's a really good question for a variety of reasons, but I think for for a new teacher, the advice that I would give them is this is something that you will work on every single day. And I would say that about anything that I thought was a fundamental necessary skill. And so I would say the same thing about sight reading. I would say the same thing about focusing and honing in on a coral blended sound. Like there are certain things that if you don't work on it every day, it will never manifest when you need it to. And these kids will never have control of this skill that we're basically asking them to lasso like a tornado. It's like they're never going to get it unless it's literally an everyday practice. So like that is kind of ground floor, which is like you at the practices now. Now the nice thing is that you will practice this particular skill while also working towards completely different things. So you don't necessarily have to write down every time you do it because I think you're just going to do it by nature of your job. And then in terms of like resources, I would ask them to pull out is and I do this now. I'm like I tell every new educator you can call me anytime forever. My e-mail address will not change. I'm not skipping this districts. I will be here forever until I retire. And even then, you can always reach out and don't just reach out to me. You are not on an island. You need to talk to every person that teaches, in particular the ones that you respect.

{ 1:53 }
Find the people that you think are just the cat's meow and just write them regularly. Because there are, I mean, there are so many people and I'm not thinking about just one person. There are so many people in our district that are so good at specific things. So if you listen to a choir and you're like, gosh, that was good. Like I know right now, like off the top of my head, like if I needed help with something that was a maybe like cultural, I had a feeling like maybe I was in danger of culturally appropriating something. I would call Sean Kane 'cause I know he's thought about it and I know he would be like, yes, you are. Here's how you can fix it or no, you're actually not and here's why. If I wanted to talk to somebody about picking like what I thought was like monster repertoire for the junior high level, I would go to Emmanuella because that woman, just every time she programs, I'm like, OK, like that was really good for like all these reasons. Like, I just know she's good at it.

{ 2:57 }
And so like, there are like you, the longer you're around, the more you see. And like, I think sometimes we witness people and we witness their strengths and we witness all the amazing things that we do. And then we're like, I wish I could do that. And then we walk away into the sunset and it's like, no, go talk to him, write him an e-mail, buy him coffee, get inside their brain, dance around like you need to pull everything from everybody you've ever met and you will learn something from literally everyone. Even bad circumstances have something to offer. Go and learn

from your colleagues. I was like, that is just, I cannot shake people enough because especially in other districts, it's a lot harder. I think basically you're effectively encouraged just be building level, only stick inside of your little box. But I just spent as much time as I had in the Boise School District telling people to do the opposite. Find your people, find all of them, and then talk to them regularly.

My recording 15.m4a

{ 0:00 }
OK, our last section has to do with reflection and additional insights. So looking back over the past few years, what has been your biggest learning or take away regarding the act of teaching pitch matching? My biggest take away is that it is not a. It is not a students aren't are are changing beings. And what I mean by that is that I think very often when a any music professional is encounter encounters a student that is quote tone deaf, that is having trouble pitch matching, it feels like it's like they're missing an arm. The arm isn't going to grow back. And so you're just like, OK, I guess I'm just stuck in this space. And I think something that's really important to remember is that it is changeable.

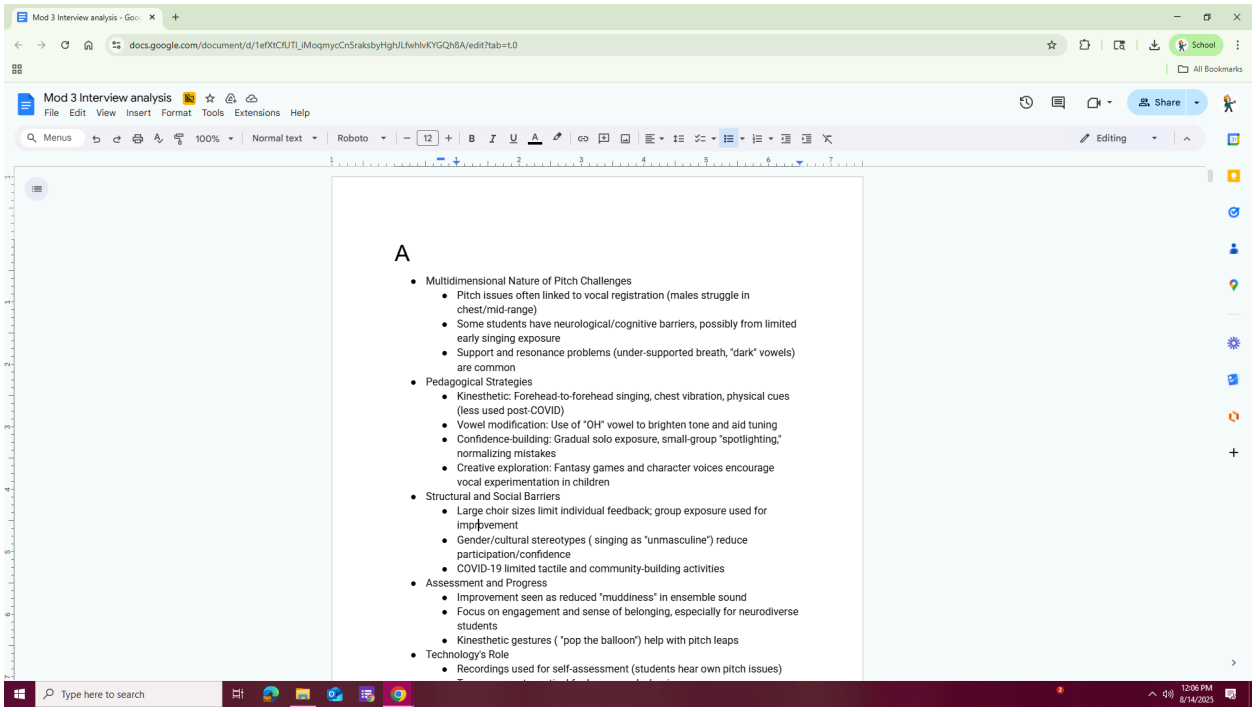
{ 0:50 }
Change is possible and I think that's it's just you gotta know that's true and believe it because with pitch matching, especially when you're trying to create corrected efficiency, it's a long game. It is not a oh, I fixed it in a week or oh, I fixed it in a month. It's like you might fix it maybe or you'll see growth over a year or two, but you gotta really like it's a deep pitch for that one. So that's what I would say is probably my biggest like take away with that. Something to remember, Love it. Is there anything else about your experience with pitch matching successes or challenges, prizes, anything like that that you would like to share? You know, the only thing that I haven't really talked about at length, and I'm not going to really like dive deep on it here, but I do think it's something that is relevant because we were talking about as I talked, I was like, Oh, I'm kind of thinking like when we're not in tune as a choir, that is technically like it's an element of pitch matching. And so if I'm tying in kind of like an an out of tune choir, I I cannot stress enough matching vowels.

{ 2:00 }
Just I just wanted to, I wanted to say that on tape so that you don't get to walk away thinking that I didn't think that or know that, that it's just vowel matching. Vowel modification is so important that you can actually have a room of functional students that are all actually very, you know, good musicians and know how to use their instruments and are singing in a healthy way and can sound just so out of tune. And it's because they just have not matched that one ah vowel. Even if it's not the one you want, they just pick one and do the one. Just find one. Like everybody sings ah together. Like, I don't care. I don't want to hear you all do the same thing at the same time because I think it is unfortunately, when you don't know that you will diagnose kids with having tuning issues that they don't, they don't you're, you're diagnosing it with the for the wrong reason. It's like, oh, I guess my choirs just don't sing in tune.

{ 2:59 }
It's like, no, your choirs just need to match their bowels. And if they did that, it would correct a lot of tuning issues in choirs. And I'm happy that I had heard that early in my career and knew to listen for it and knew to ask for that correction

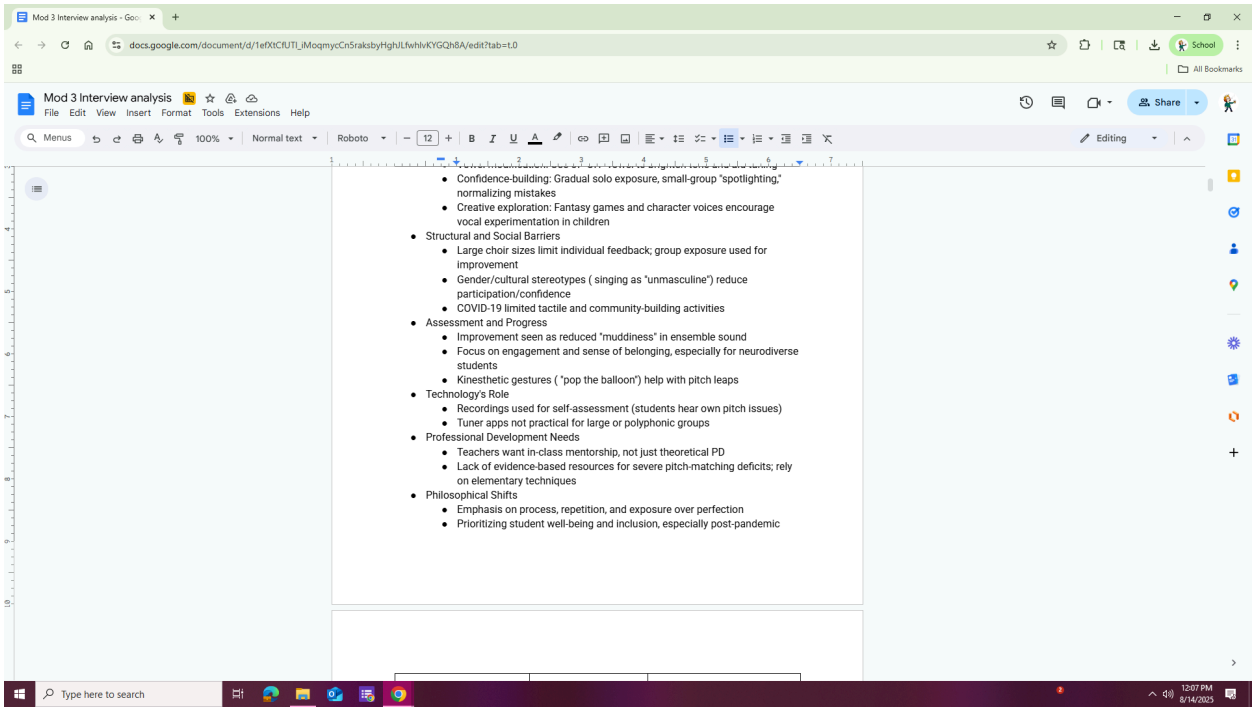
because more often than not, they don't. And then all of a sudden we're dealing with choirs that really don't have that many issues. They just have that one like that one fundamental is lacking. And so that's that's it. I'm that was my only soapbox moment.

Interview Analysis:

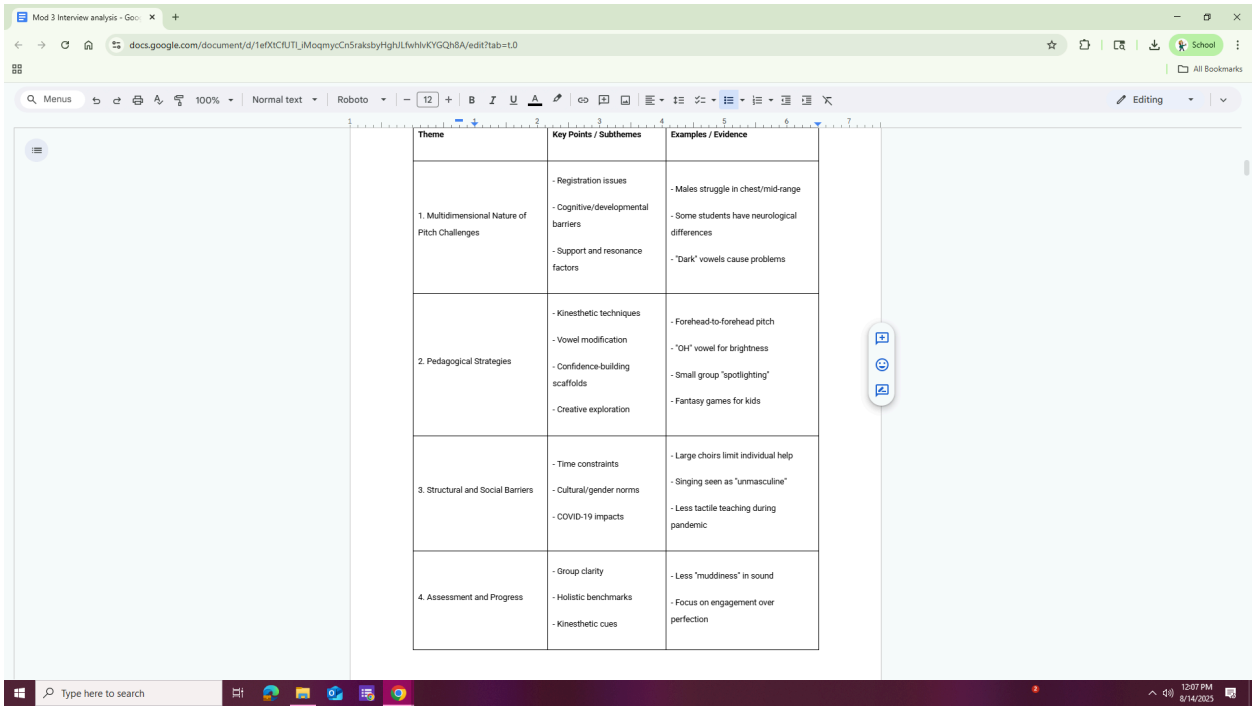


A

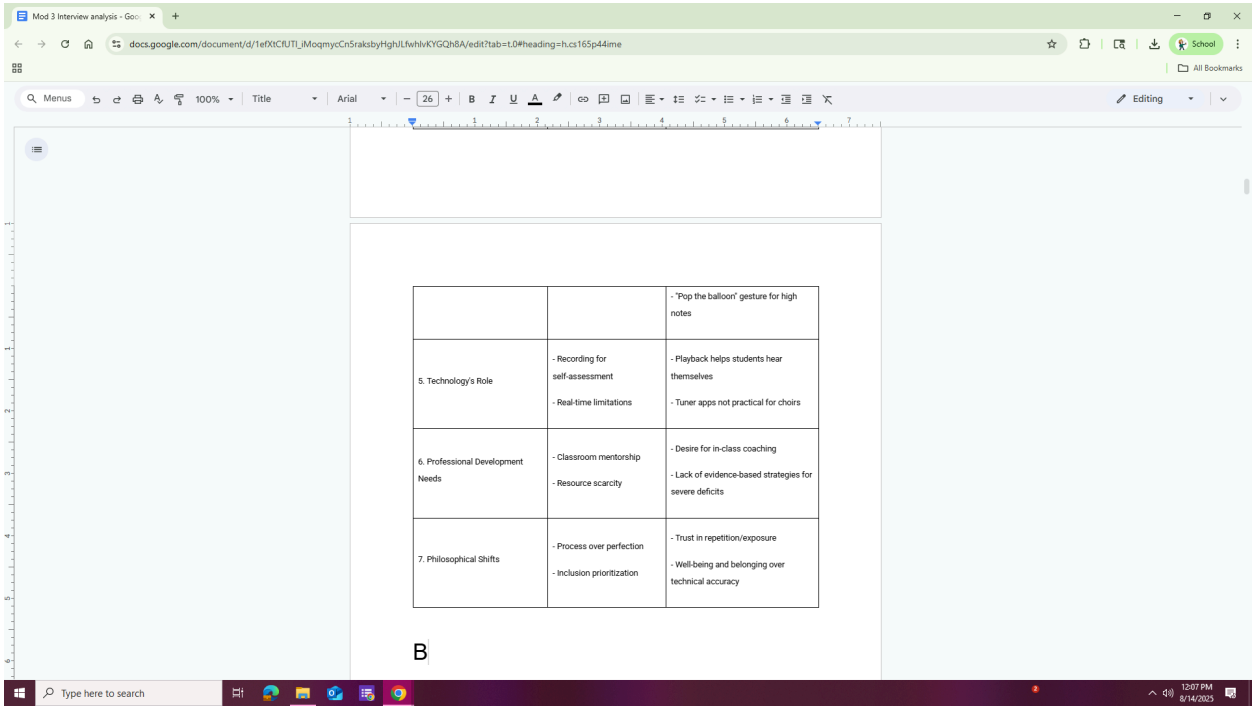
- Multidimensional Nature of Pitch Challenges
  - Pitch issues often linked to vocal registration (males struggle in chest/mid-range)
  - Some students have neurological/cognitive barriers, possibly from limited early singing exposure
  - Support and resonance problems (under-supported breath, "dark" vowels) are common
- Pedagogical Strategies
  - Kinesthetic: Forehead-to-forehead singing, chest vibration, physical cues (less used post-COVID)
  - Vowel modification: Use of "OH" vowel to brighten tone and aid tuning
  - Confidence-building: Gradual solo exposure, small-group "spotlighting," normalizing mistakes
  - Creative exploration: Fantasy games and character voices encourage vocal experimentation in children
- Structural and Social Barriers
  - Large choir sizes limit individual feedback; group exposure used for improvement
  - Gender/cultural stereotypes (singing as "unmasculine") reduce participation/confidence
  - COVID-19 limited tactile and community-building activities
- Assessment and Progress
  - Improvement seen as reduced "muddiness" in ensemble sound
  - Focus on engagement and sense of belonging, especially for neurodiverse students
  - Kinesthetic gestures ("pop the balloon") help with pitch leaps
- Technology's Role
  - Recordings used for self-assessment (students hear own pitch issues)



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- Technology's Role
  - Recordings used for self-assessment (students hear own pitch issues)
  - Tuner apps not practical for large or polyphonic groups
- Professional Development Needs
  - Teachers want in-class mentorship, not just theoretical PD
  - Lack of evidence-based resources for severe pitch-matching deficits; rely on elementary techniques
- Philosophical Shifts
  - Emphasis on process, repetition, and exposure over perfection
  - Prioritizing student well-being and inclusion, especially post-pandemic

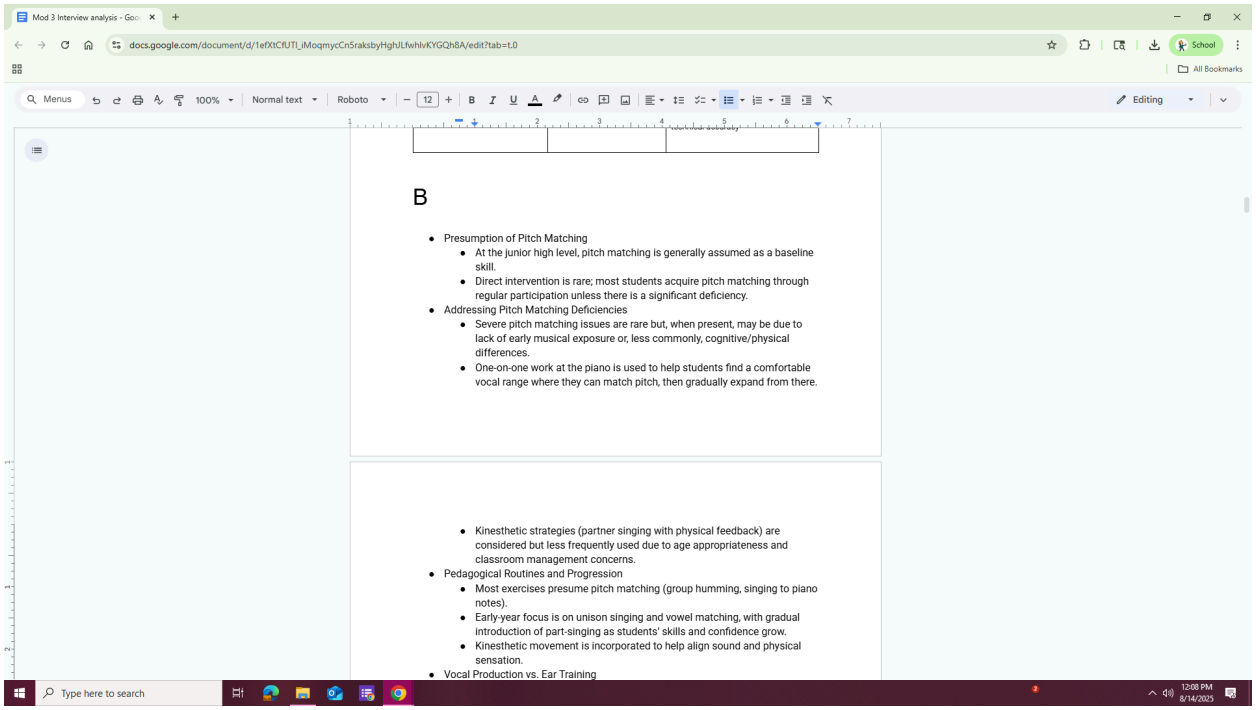


Theme	Key Points / Subthemes	Examples / Evidence
1. Multidimensional Nature of Pitch Challenges	- Registration issues - Cognitive/developmental barriers - Support and resonance factors	- Males struggle in chest/mid-range - Some students have neurological differences - "Dark" vowels cause problems
2. Pedagogical Strategies	- Kinesthetic techniques - Vowel modification - Confidence-building scaffolds - Creative exploration	- Forehead-to-forehead pitch - "OH" vowel for brightness - Small group "spotlighting" - Fantasy games for kids
3. Structural and Social Barriers	- Time constraints - Cultural/gender norms - COVID-19 impacts	- Large choirs limit individual help - Singing seen as "unmasculine" - Less tactile teaching during pandemic
4. Assessment and Progress	- Group clarity - Holistic benchmarks - Kinesthetic cues	- Less "muddiness" in sound - Focus on engagement over perfection



		- "Pop the balloon" gesture for high notes
5. Technology's Role	- Recording for self-assessment - Real-time limitations	- Playback helps students hear themselves - Tuner apps not practical for choirs
6. Professional Development Needs	- Classroom mentorship - Resource scarcity	- Desire for in-class coaching - Lack of evidence-based strategies for severe deficits
7. Philosophical Shifts	- Process over perfection - Inclusion prioritization	- Trust in repetition/exposure - Well-being and belonging over technical accuracy

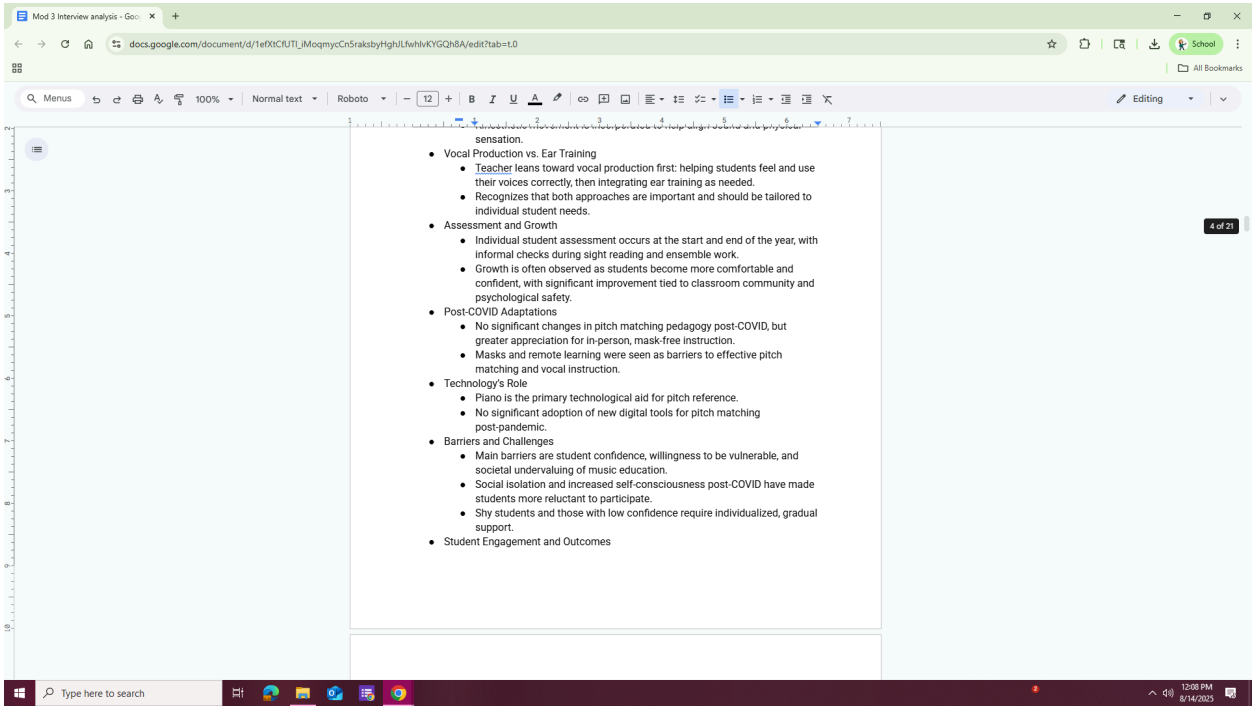
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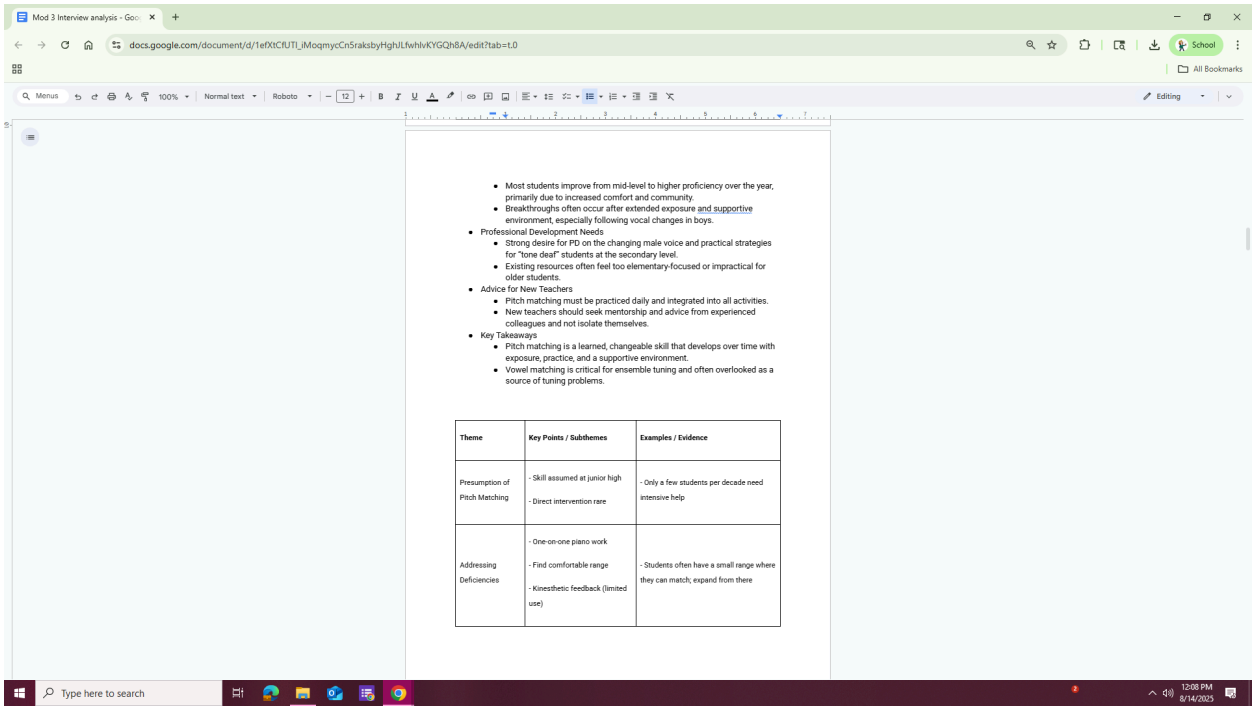
B

- Presumption of Pitch Matching
  - At the junior high level, pitch matching is generally assumed as a baseline skill.
  - Direct intervention is rare; most students acquire pitch matching through regular participation unless there is a significant deficiency.
- Addressing Pitch Matching Deficiencies
  - Severe pitch matching issues are rare but, when present, may be due to lack of early musical exposure or, less commonly, cognitive/physical differences.
  - One-on-one work at the piano is used to help students find a comfortable vocal range where they can match pitch, then gradually expand from there.

  - Kinesthetic strategies (partner singing with physical feedback) are considered but less frequently used due to age appropriateness and classroom management concerns.
- Pedagogical Routines and Progression
  - Most exercises presume pitch matching (group humming, singing to piano notes).
  - Early-year focus is on unison singing and vowel matching, with gradual introduction of part-singing as students' skills and confidence grow.
  - Kinesthetic movement is incorporated to help align sound and physical sensation.
- Vocal Production vs. Ear Training



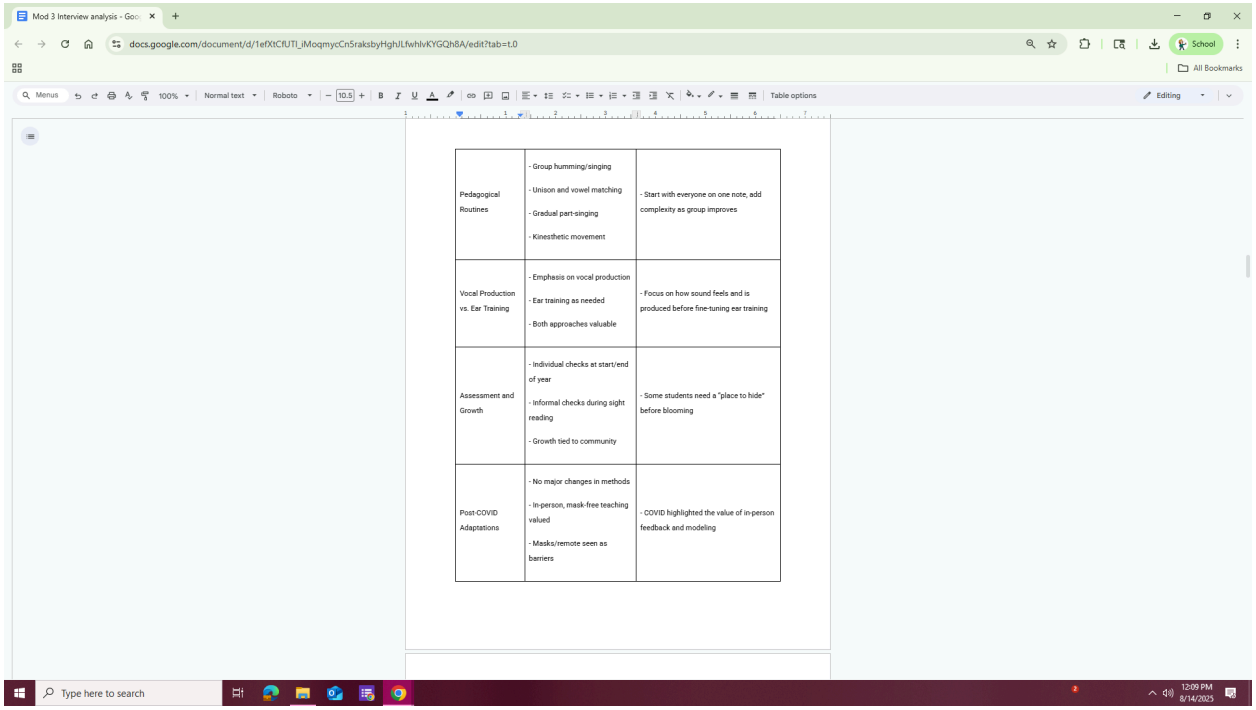
sensation.
- Vocal Production vs. Ear Training
  - Teacher leans toward vocal production first: helping students feel and use their voices correctly, then integrating ear training as needed.
  - Recognizes that both approaches are important and should be tailored to individual student needs.
- Assessment and Growth
  - Individual student assessment occurs at the start and end of the year, with informal checks during sight reading and ensemble work.
  - Growth is often observed as students become more comfortable and confident, with significant improvement tied to classroom community and psychological safety.
- Post-COVID Adaptations
  - No significant changes in pitch matching pedagogy post-COVID, but greater appreciation for in-person, mask-free instruction.
  - Masks and remote learning were seen as barriers to effective pitch matching and vocal instruction.
- Technology's Role
  - Piano is the primary technological aid for pitch reference.
  - No significant adoption of new digital tools for pitch matching post-pandemic.
- Barriers and Challenges
  - Main barriers are student confidence, willingness to be vulnerable, and societal undervaluing of music education.
  - Social isolation and increased self-consciousness post-COVID have made students more reluctant to participate.
  - Shy students and those with low confidence require individualized, gradual support.
- Student Engagement and Outcomes



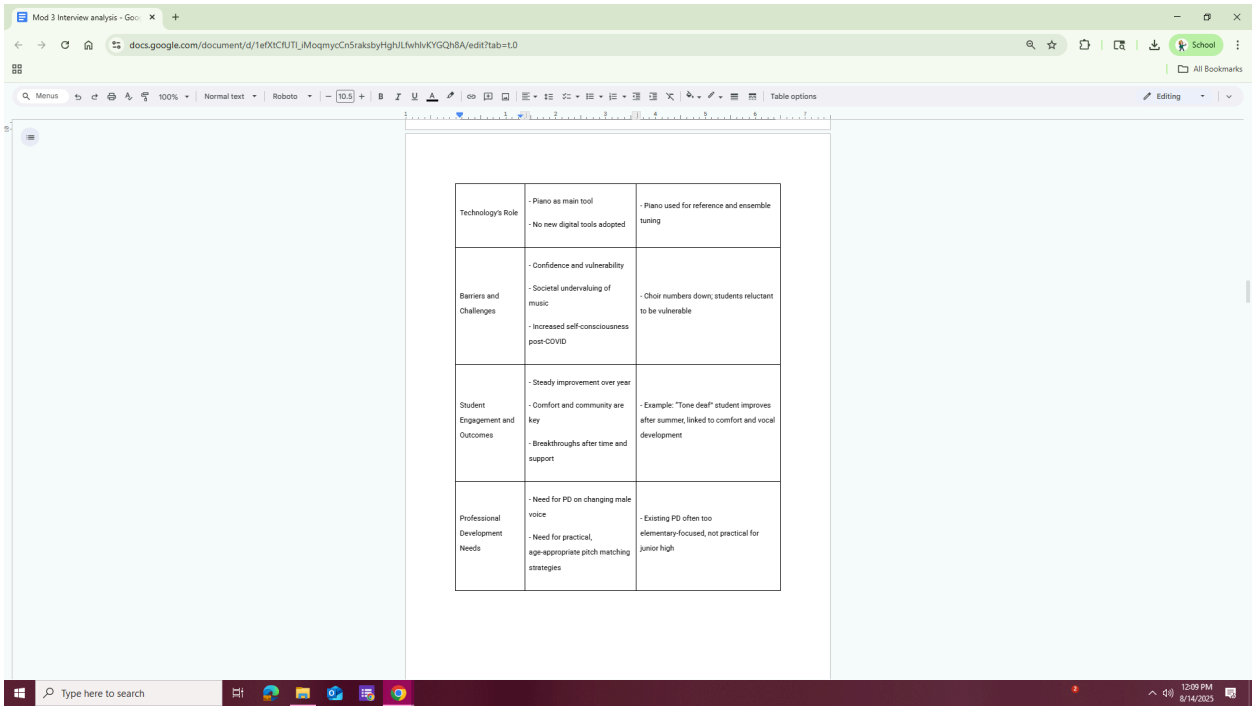
- Most students improve from mid-level to higher proficiency over the year, primarily due to increased comfort and community.
- Breakthroughs often occur after extended exposure and supportive environment, especially following vocal changes in boys.

- Professional Development Needs
  - Strong desire for PD on the changing male voice and practical strategies for "tone deaf" students at the secondary level.
  - Existing resources often feel too elementary-focused or impractical for older students.
- Advice for New Teachers
  - Pitch matching must be practiced daily and integrated into all activities.
  - New teachers should seek mentorship and advice from experienced colleagues and not isolate themselves.
- Key Takeaways
  - Pitch matching is a learned, changeable skill that develops over time with exposure, practice, and a supportive environment.
  - Vowel matching is critical for ensemble tuning and often overlooked as a source of tuning problems.

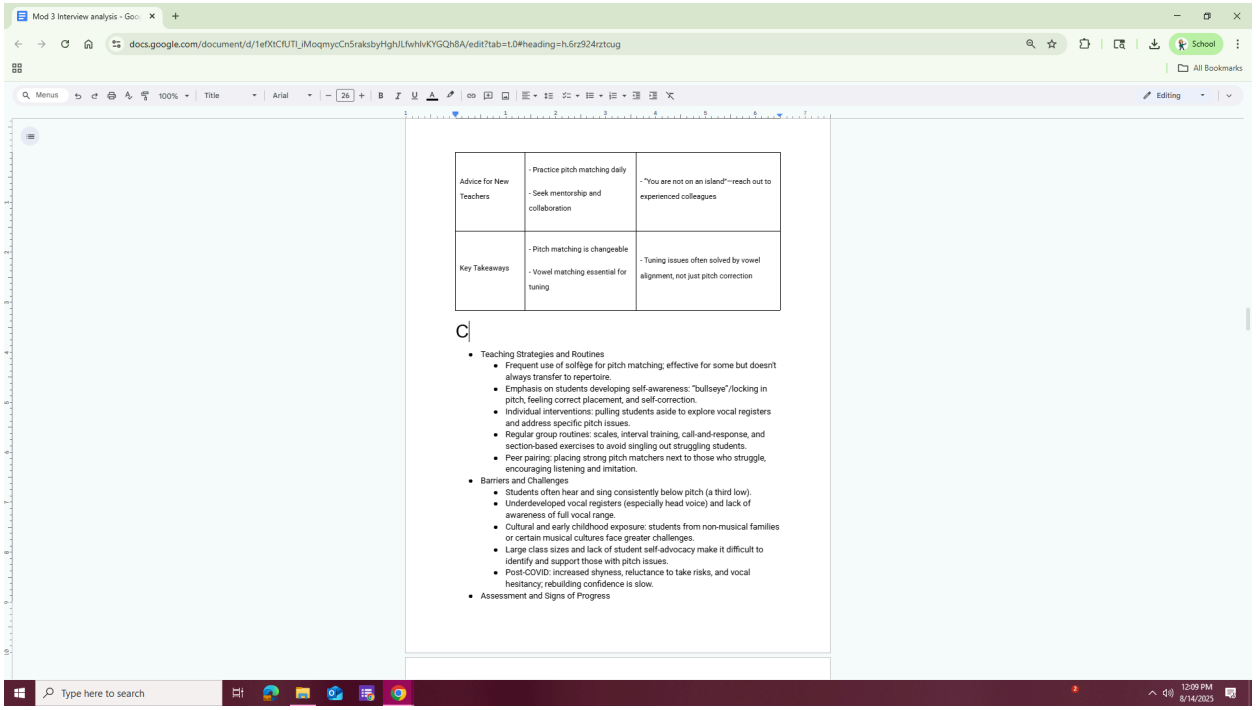
Theme	Key Points / Subthemes	Examples / Evidence
Presumption of Pitch Matching	- Skill assumed at junior high - Direct intervention rare	- Only a few students per decade need intensive help
Addressing Deficiencies	- One-on-one piano work - Find comfortable range - Kinesthetic feedback (limited use)	- Students often have a small range where they can match; expand from there



Pedagogical Routines	- Group humming/singing - Unison and vowel matching - Gradual part-singing - Kinesthetic movement	- Start with everyone on one note, add complexity as group improves
Vocal Production vs. Ear Training	- Emphasis on vocal production - Ear training as needed - Both approaches valuable	- Focus on how sound feels and is produced before fine-tuning ear training
Assessment and Growth	- Individual checks at start/end of year - Informal checks during sight reading - Growth tied to community	- Some students need a "place to hide" before blooming
Post-COVID Adaptations	- No major changes in methods - In-person, mask-free teaching valued - Masks/remote seen as barriers	- COVID highlighted the value of in-person feedback and modeling



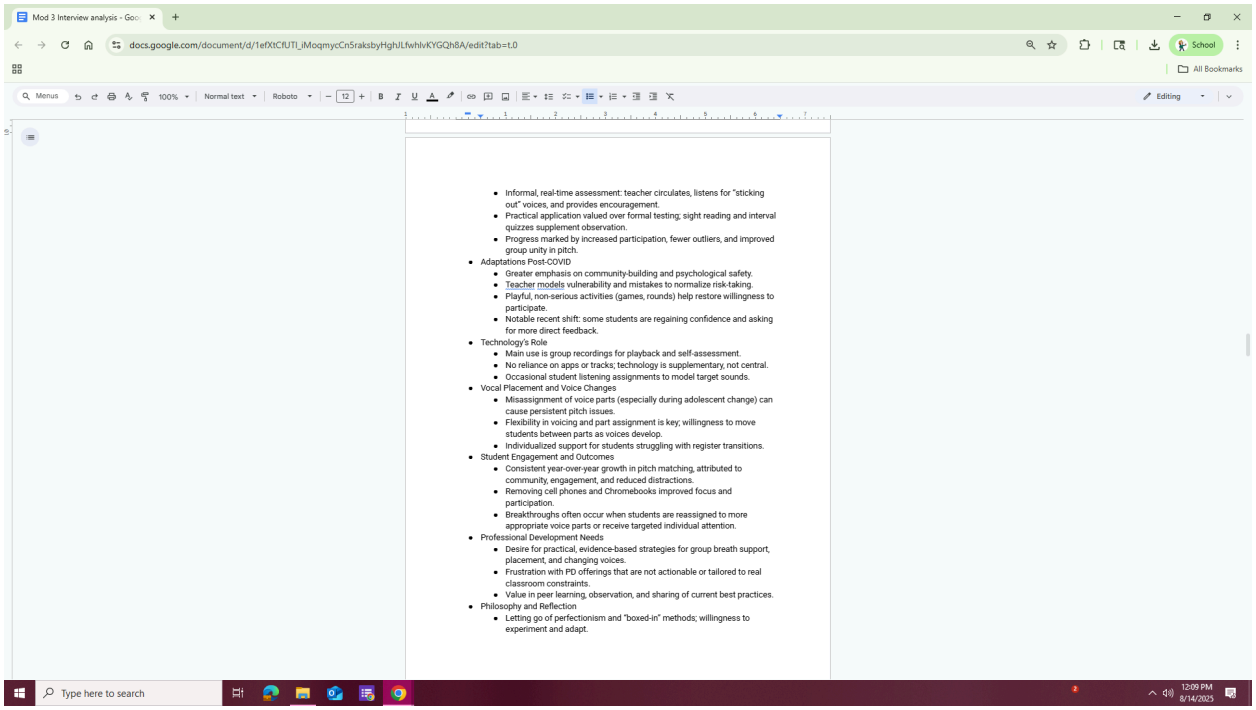
Technology's Role	- Piano as main tool - No new digital tools adopted	- Piano used for reference and ensemble tuning
Barriers and Challenges	- Confidence and vulnerability - Societal undervaluing of music - Increased self-consciousness post-COVID	- Choir numbers down; students reluctant to be vulnerable
Student Engagement and Outcomes	- Steady improvement over year - Comfort and community are key - Breakthroughs after time and support	- Example: "Tone deaf" student improves after summer, linked to comfort and vocal development
Professional Development Needs	- Need for PD on changing male voice - Need for practical, age-appropriate pitch matching strategies	- Existing PD often too elementary-focused, not practical for junior high



Advice for New Teachers	- Practice pitch matching daily - Seek mentorship and collaboration	- "You are not on an island"—reach out to experienced colleagues
Key Takeaways	- Pitch matching is changeable - Vowel matching essential for tuning	- Tuning issues often solved by vowel alignment, not just pitch correction

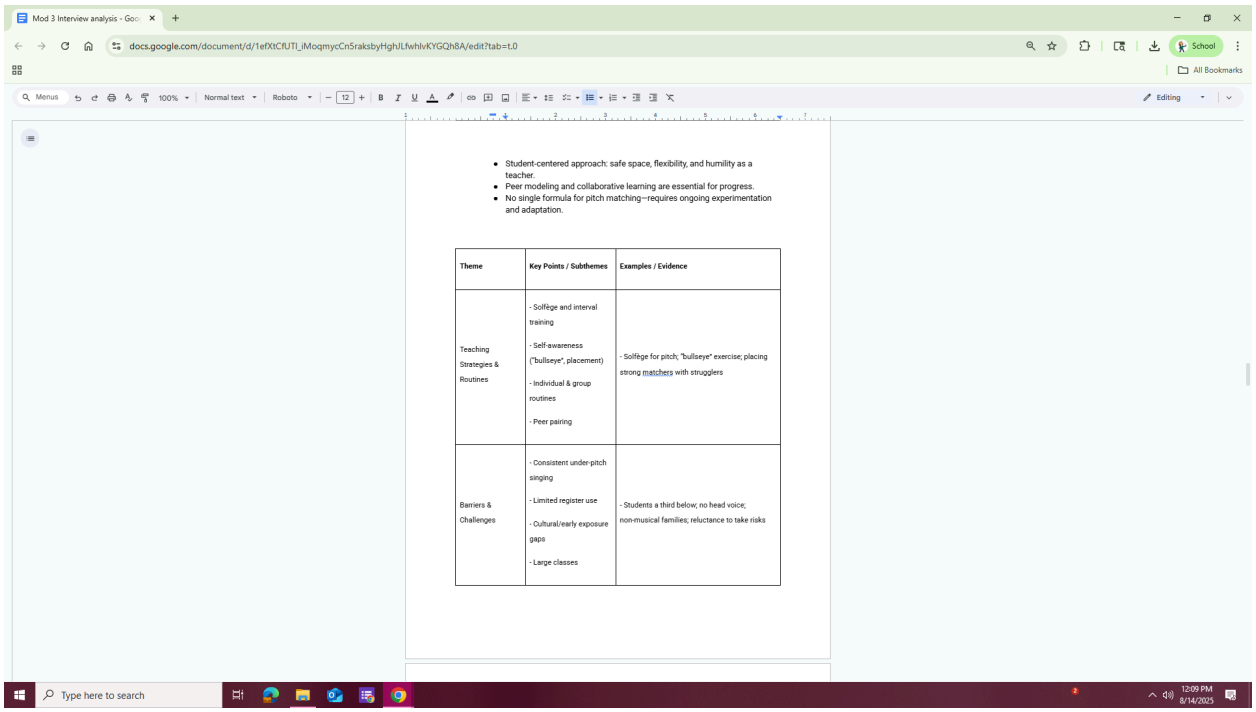
C

- Teaching Strategies and Routines
  - Frequent use of solfège for pitch matching; effective for some but doesn't always transfer to repertoire.
  - Emphasis on students developing self-awareness: "bullseye"/locking in pitch, feeling correct placement, and self-correction.
  - Individual interventions: pulling students aside to explore vocal registers and address specific pitch issues.
  - Regular group routines: scales, interval training, call-and-response, and section-based exercises to avoid singling out struggling students.
  - Peer pairing: placing strong pitch matchers next to those who struggle, encouraging listening and imitation.
- Barriers and Challenges
  - Students often hear and sing consistently below pitch (a third low).
  - Underdeveloped vocal registers (especially head voice) and lack of awareness of full vocal range.
  - Cultural and early childhood exposure: students from non-musical families or certain musical cultures face greater challenges.
  - Large class sizes and lack of student self-advocacy make it difficult to identify and support those with pitch issues.
  - Post-COVID: increased shyness, reluctance to take risks, and vocal hesitancy; rebuilding confidence is slow.
- Assessment and Signs of Progress



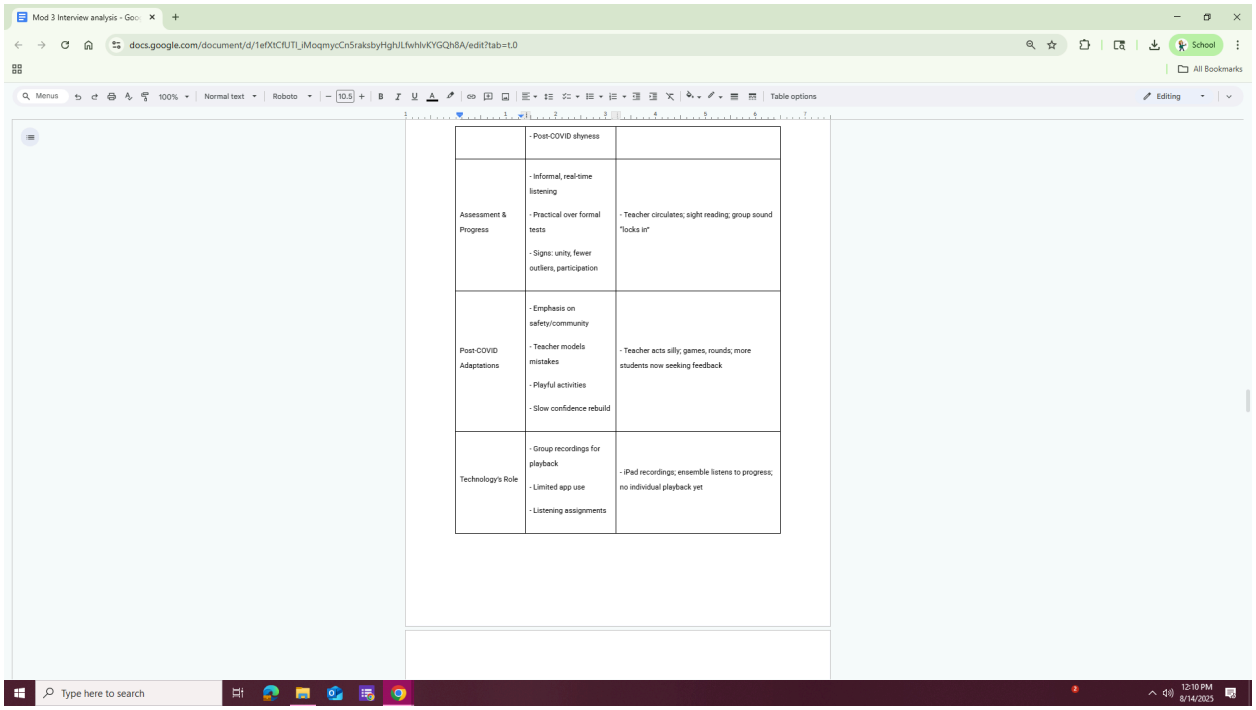
- Informal, real-time assessment: teacher circulates, listens for "sticking out" voices, and provides encouragement.
- Practical application valued over formal testing; sight reading and interval quizzes supplement observation.
- Progress marked by increased participation, fewer outliers, and improved group unity in pitch.

- Adaptations Post-COVID
  - Greater emphasis on community-building and psychological safety.
  - Teacher models vulnerability and mistakes to normalize risk-taking.
  - Playful, non-serious activities (games, rounds) help restore willingness to participate.
  - Notable recent shift: some students are regaining confidence and asking for more direct feedback.
- Technology's Role
  - Main use is group recordings for playback and self-assessment.
  - No reliance on apps or tracks; technology is supplementary, not central.
  - Occasional student listening assignments to model target sounds.
- Vocal Placement and Voice Changes
  - Misassignment of voice parts (especially during adolescent change) can cause persistent pitch issues.
  - Flexibility in voicing and part assignment is key; willingness to move students between parts as voices develop.
  - Individualized support for students struggling with register transitions.
- Student Engagement and Outcomes
  - Consistent year-over-year growth in pitch matching, attributed to community, engagement, and reduced distractions.
  - Removing cell phones and Chromebooks improved focus and participation.
  - Breakthroughs often occur when students are reassigned to more appropriate voice parts or receive targeted individual attention.
- Professional Development Needs
  - Desire for practical, evidence-based strategies for group breath support, placement, and changing voices.
  - Frustration with PD offerings that are not actionable or tailored to real classroom constraints.
  - Value in peer learning, observation, and sharing of current best practices.
- Philosophy and Reflection
  - Letting go of perfectionism and "boxed-in" methods; willingness to experiment and adapt.

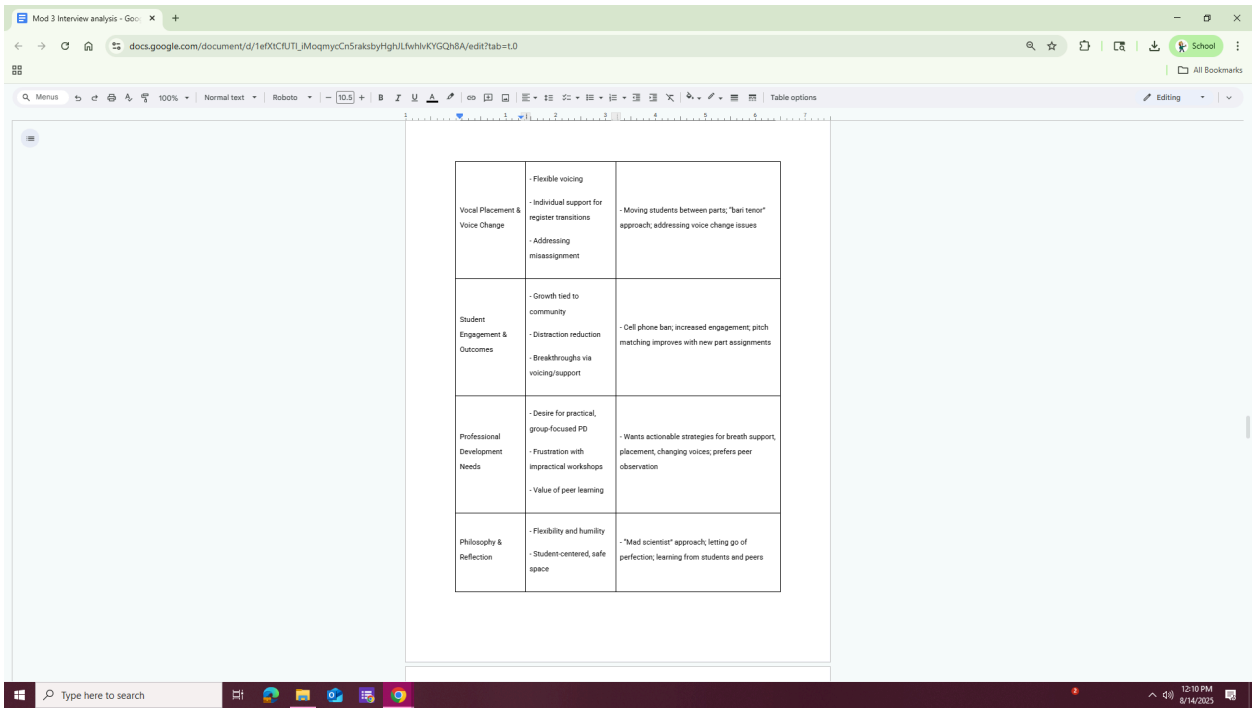


- Student-centered approach: safe space, flexibility, and humility as a teacher.
- Peer modeling and collaborative learning are essential for progress.
- No single formula for pitch matching—requires ongoing experimentation and adaptation.

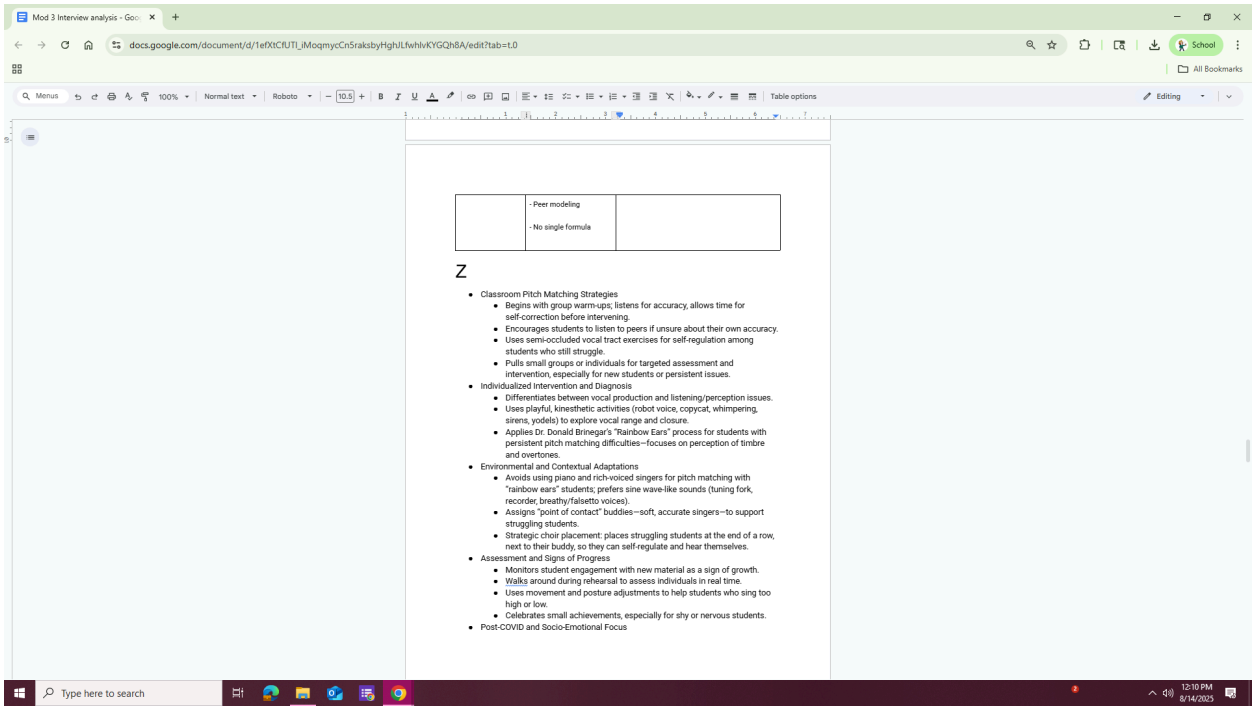
Theme	Key Points / Subthemes	Examples / Evidence
Teaching Strategies & Routines	- Solfège and interval training - Self-awareness ("bullseye", placement) - Individual & group routines - Peer pairing	- Solfège for pitch; "bullseye" exercise; placing strong matchers with strugglers
Barriers & Challenges	- Consistent under-pitch singing - Limited register use - Cultural/early exposure gaps - Large classes	- Students a third below; no head voice; non-musical families; reluctance to take risks



	- Post-COVID shyness	
Assessment & Progress	- Informal, real-time listening - Practical over formal tests - Signs: unity, fewer outliers, participation	- Teacher circulates; sight reading; group sound "locks in"
Post-COVID Adaptations	- Emphasis on safety/community - Teacher models mistakes - Playful activities - Slow confidence rebuild	- Teacher acts silly; games, rounds; more students now seeking feedback
Technology's Role	- Group recordings for playback - Limited app use - Listening assignments	- iPad recordings; ensemble listens to progress; no individual playback yet



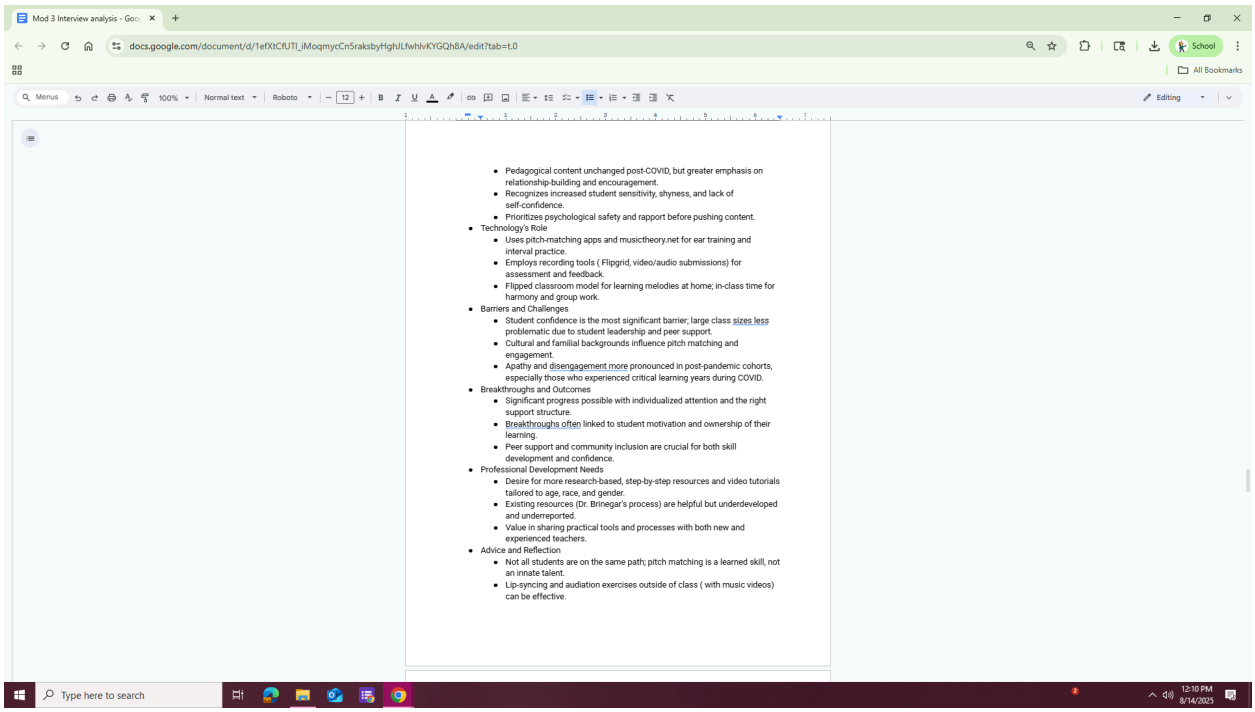
Vocal Placement & Voice Change	- Flexible voicing - Individual support for register transitions - Addressing misassignment	- Moving students between parts; "bari tenor" approach; addressing voice change issues
Student Engagement & Outcomes	- Growth tied to community - Distraction reduction - Breakthroughs via voicing/support	- Cell phone ban; increased engagement; pitch matching improves with new part assignments
Professional Development Needs	- Desire for practical, group-focused PD - Frustration with impractical workshops - Value of peer learning	- Wants actionable strategies for breath support, placement, changing voices; prefers peer observation
Philosophy & Reflection	- Flexibility and humility - Student-centered, safe space	- "Mad scientist" approach; letting go of perfection; learning from students and peers



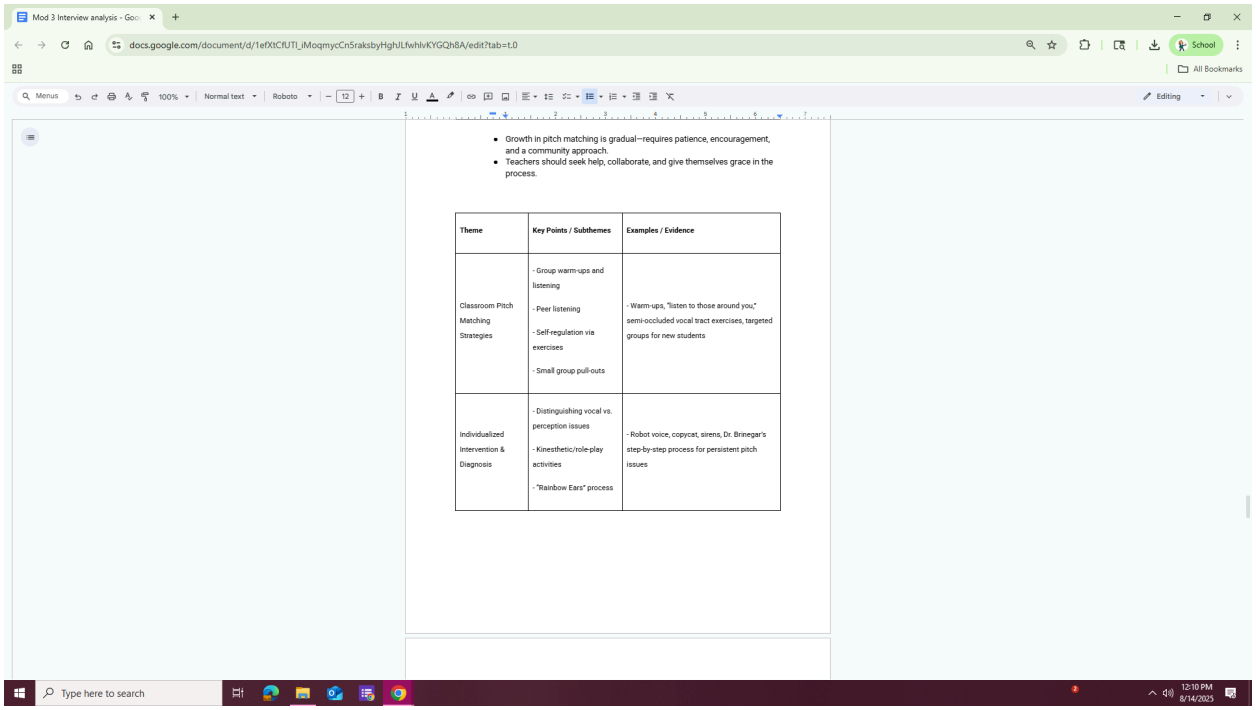
	- Peer modeling - No single formula	

Z

- Classroom Pitch Matching Strategies
  - Begins with group warm-ups; listens for accuracy, allows time for self-correction before intervening.
  - Encourages students to listen to peers if unsure about their own accuracy.
  - Uses semi-occluded vocal tract exercises for self-regulation among students who still struggle.
  - Pulls small groups or individuals for targeted assessment and intervention, especially for new students or persistent issues.
- Individualized Intervention and Diagnosis
  - Differentiates between vocal production and listening/perception issues.
  - Uses playful, kinesthetic activities (robot voice, copycat, whimpering, sirens, yodels) to explore vocal range and closure.
  - Applies Dr. Donald Brinegar's "Rainbow Ears" process for students with persistent pitch matching difficulties—focuses on perception of timbre and overtones.
- Environmental and Contextual Adaptations
  - Avoids using piano and rich-voiced singers for pitch matching with "rainbow ears" students; prefers sine wave-like sounds (tuning fork, recorder, breathy/falsetto voices).
  - Assigns "point of contact" buddies—soft, accurate singers—to support struggling students.
  - Strategic choir placement: places struggling students at the end of a row, next to their buddy, so they can self-regulate and hear themselves.
- Assessment and Signs of Progress
  - Monitors student engagement with new material as a sign of growth.
  - Walks around during rehearsal to assess individuals in real time.
  - Uses movement and posture adjustments to help students who sing too high or low.
  - Celebrates small achievements, especially for shy or nervous students.
- Post-COVID and Socio-Emotional Focus

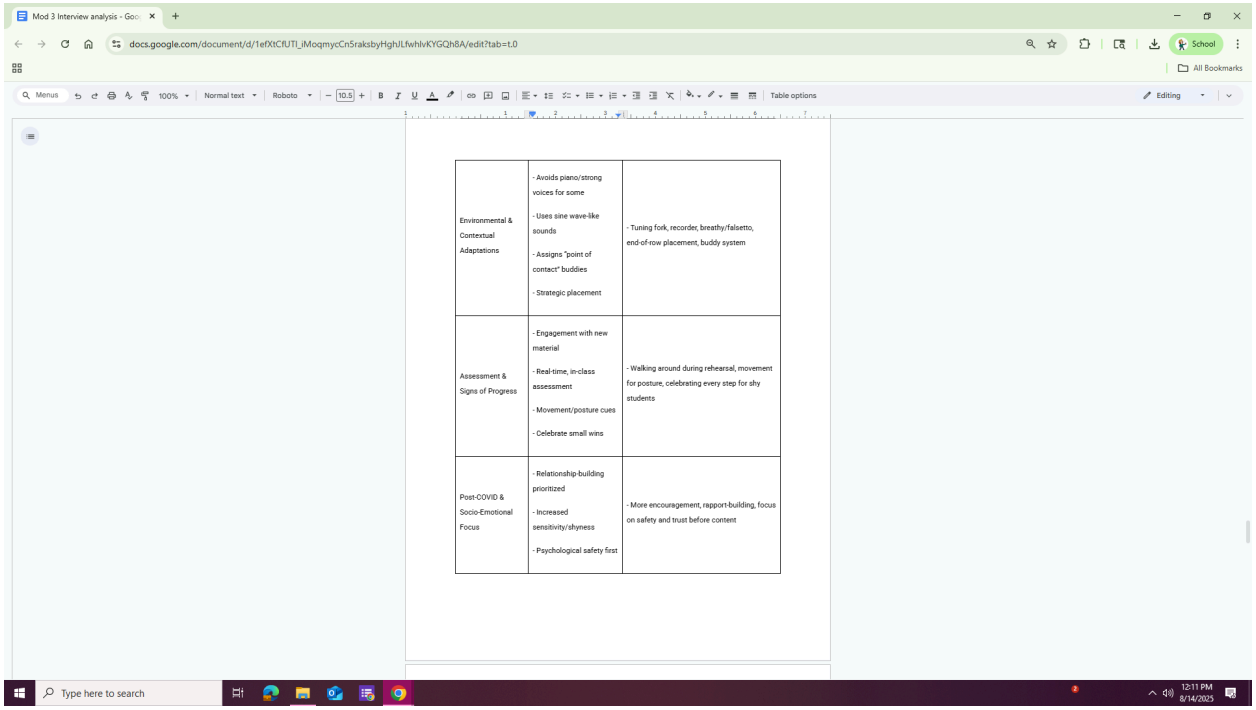


  - Pedagogical content unchanged post-COVID, but greater emphasis on relationship-building and encouragement.
  - Recognizes increased student sensitivity, shyness, and lack of self-confidence.
  - Prioritizes psychological safety and rapport before pushing content.
- Technology's Role
  - Uses pitch-matching apps and musictheory.net for ear training and interval practice.
  - Employs recording tools (Flipgrid, video/audio submissions) for assessment and feedback.
  - Flipped classroom model for learning melodies at home; in-class time for harmony and group work.
- Barriers and Challenges
  - Student confidence is the most significant barrier; large class sizes less problematic due to student leadership and peer support.
  - Cultural and familial backgrounds influence pitch matching and engagement.
  - Apathy and disengagement more pronounced in post-pandemic cohorts, especially those who experienced critical learning years during COVID.
- Breakthroughs and Outcomes
  - Significant progress possible with individualized attention and the right support structure.
  - Breakthroughs often linked to student motivation and ownership of their learning.
  - Peer support and community inclusion are crucial for both skill development and confidence.
- Professional Development Needs
  - Desire for more research-based, step-by-step resources and video tutorials tailored to age, race, and gender.
  - Existing resources (Dr. Brinegar's process) are helpful but underdeveloped and underreported.
  - Value in sharing practical tools and processes with both new and experienced teachers.
- Advice and Reflection
  - Not all students are on the same path; pitch matching is a learned skill, not an innate talent.
  - Lip-syncing and audiation exercises outside of class (with music videos) can be effective.

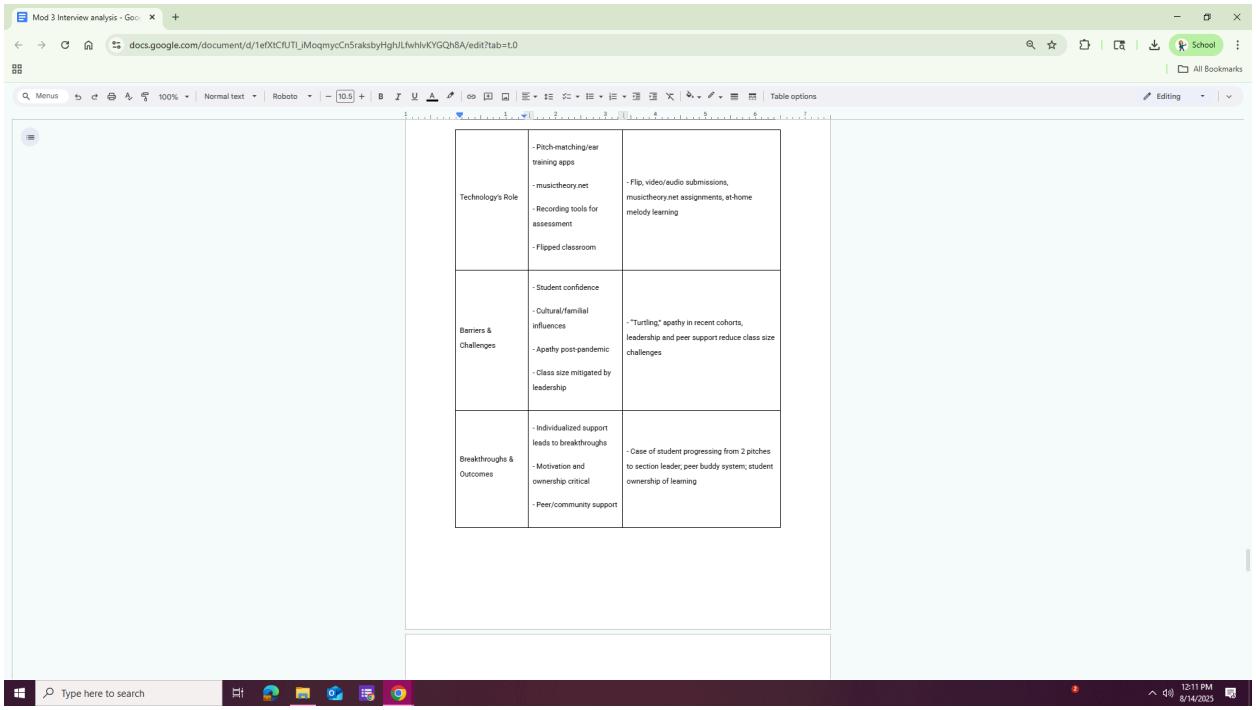


- Growth in pitch matching is gradual—requires patience, encouragement, and a community approach.
- Teachers should seek help, collaborate, and give themselves grace in the process.

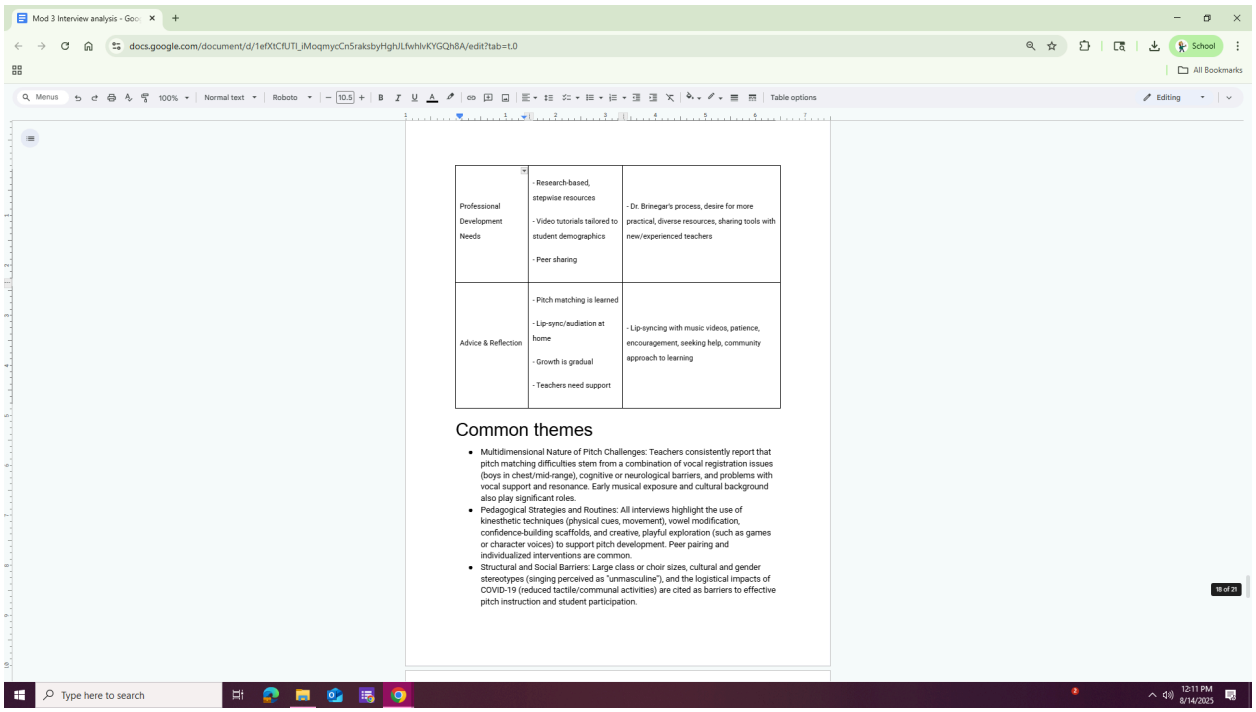
Theme	Key Points / Subthemes	Examples / Evidence
Classroom Pitch Matching Strategies	- Group warm-ups and listening - Peer listening - Self-regulation via exercises - Small group pull-outs	- Warm-ups, "listen to those around you," semi-occluded vocal tract exercises, targeted groups for new students
Individualized Intervention & Diagnosis	- Distinguishing vocal vs. perception issues - Kinesthetic/role-play activities - "Rainbow Ears" process	- Robot voice, copycat, sirens, Dr. Brinegar's step-by-step process for persistent pitch issues



Environmental & Contextual Adaptations	- Avoids piano/strong voices for some - Uses sine wave-like sounds - Assigns "point of contact" buddies - Strategic placement	- Tuning fork, recorder, breathy/falsetto, end-of-row placement, buddy system
Assessment & Signs of Progress	- Engagement with new material - Real-time, in-class assessment - Movement/posture cues - Celebrate small wins	- Walking around during rehearsal, movement for posture, celebrating every step for shy students
Post-COVID & Socio-Emotional Focus	- Relationship-building prioritized - Increased sensitivity/shyness - Psychological safety first	- More encouragement, rapport-building, focus on safety and trust before content



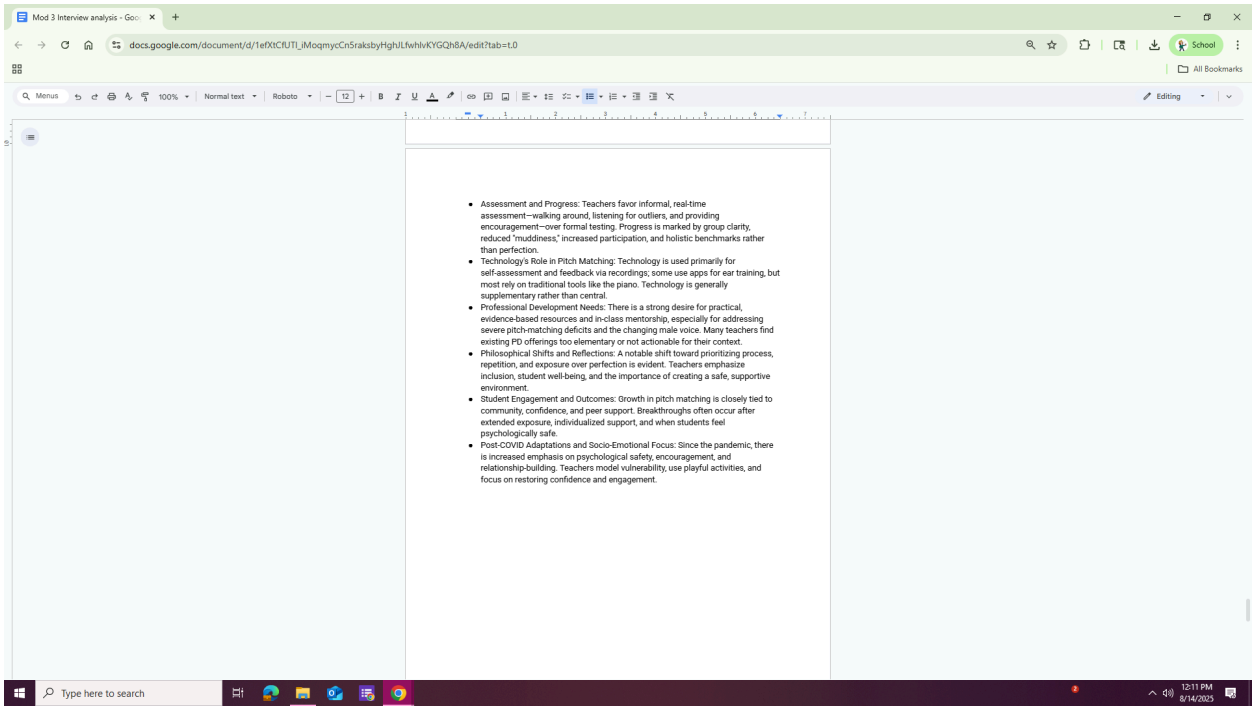
Technology's Role	- Pitch-matching/ear training apps - musictheory.net - Recording tools for assessment - Flipped classroom	- Flip, video/audio submissions, musictheory.net assignments, at-home melody learning
Barriers & Challenges	- Student confidence - Cultural/familial influences - Apathy post-pandemic - Class size mitigated by leadership	- "Turtling," apathy in recent cohorts, leadership and peer support reduce class size challenges
Breakthroughs & Outcomes	- Individualized support leads to breakthroughs - Motivation and ownership critical - Peer/community support	- Case of student progressing from 2 pitches to section leader; peer buddy system; student ownership of learning



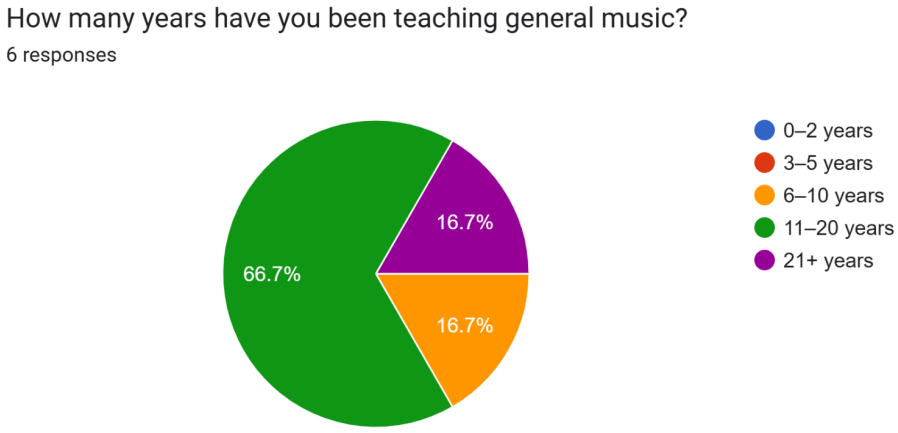
Professional Development Needs	- Research-based, stepwise resources - Video tutorials tailored to student demographics - Peer sharing	- Dr. Brinegar's process, desire for more practical, diverse resources, sharing tools with new/experienced teachers
Advice & Reflection	- Pitch matching is learned - Lip-sync/audiation at home - Growth is gradual - Teachers need support	- Lip-syncing with music videos, patience, encouragement, seeking help, community approach to learning

Common themes

- Multidimensional Nature of Pitch Challenges: Teachers consistently report that pitch matching difficulties stem from a combination of vocal registration issues (boys in chest/mid-range), cognitive or neurological barriers, and problems with vocal support and resonance. Early musical exposure and cultural background also play significant roles.
- Pedagogical Strategies and Routines: All interviews highlight the use of kinesthetic techniques (physical cues, movement), vowel modification, confidence-building scaffolds, and creative, playful exploration (such as games or character voices) to support pitch development. Peer pairing and individualized interventions are common.
- Structural and Social Barriers: Large class or choir sizes, cultural and gender stereotypes (singing perceived as "unmasculine"), and the logistical impacts of COVID-19 (reduced tactile/communal activities) are cited as barriers to effective pitch instruction and student participation.

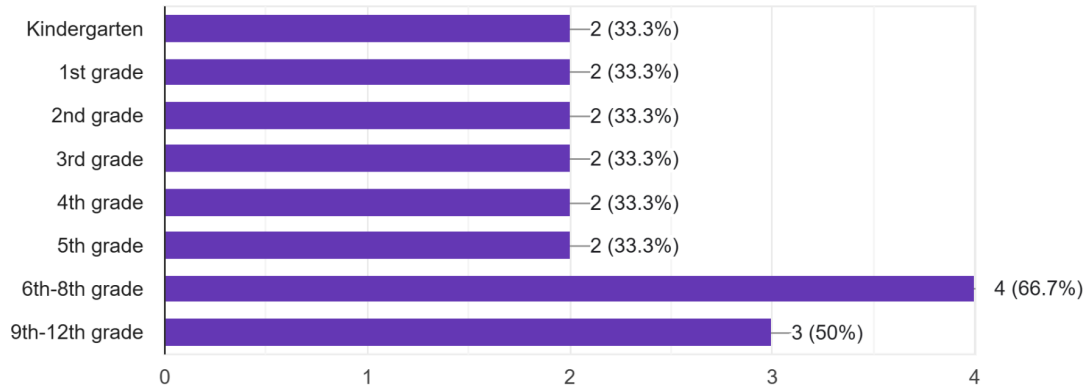

Mod 3 Interview analysis - Goo
docs.google.com/document/d/1efXtCfUTI_iMoqmycCn5raksbyHghJLfwhlvKYGQh8A/edit?tab=t.0
School
All Bookmarks
Menus
100%
Normal text
Roboto
12
Editing
Assessment and Progress: Teachers favor informal, real-time assessment—walking around, listening for outliers, and providing encouragement—over formal testing. Progress is marked by group clarity, reduced "muddiness," increased participation, and holistic benchmarks rather than perfection.
Technology's Role in Pitch Matching: Technology is used primarily for self-assessment and feedback via recordings; some use apps for ear training, but most rely on traditional tools like the piano. Technology is generally supplementary rather than central.
Professional Development Needs: There is a strong desire for practical, evidence-based resources and in-class mentorship, especially for addressing severe pitch-matching deficits and the changing male voice. Many teachers find existing PD offerings too elementary or not actionable for their context.
Philosophical Shifts and Reflections: A notable shift toward prioritizing process, repetition, and exposure over perfection is evident. Teachers emphasize inclusion, student well-being, and the importance of creating a safe, supportive environment.
Student Engagement and Outcomes: Growth in pitch matching is closely tied to community, confidence, and peer support. Breakthroughs often occur after extended exposure, individualized support, and when students feel psychologically safe.
Post-COVID Adaptations and Socio-Emotional Focus: Since the pandemic, there is increased emphasis on psychological safety, encouragement, and relationship-building. Teachers model vulnerability, use playful activities, and focus on restoring confidence and engagement.
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12:11 PM
8/14/2025

Survey:


How many years have you been teaching general music?
6 responses
16.7%
66.7%
16.7%
0–2 years
3–5 years
6–10 years
11–20 years
21+ years

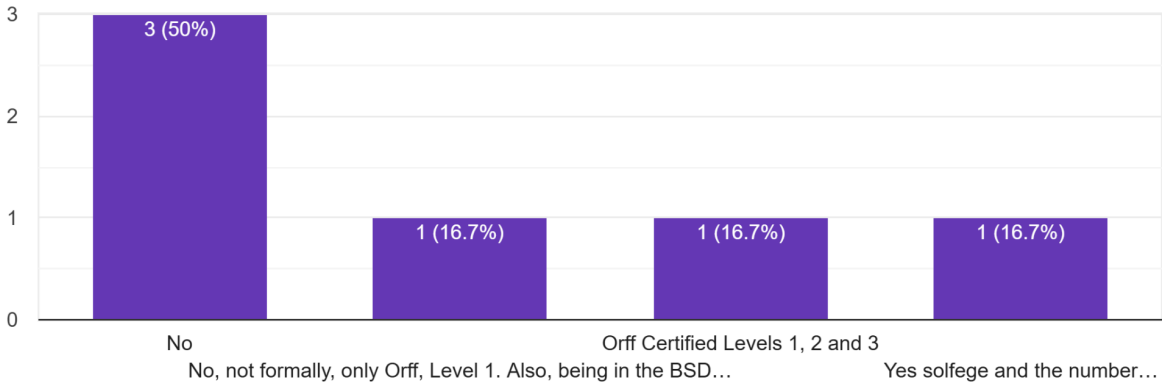
What grade levels do you currently teach? (Select all that apply)

6 responses



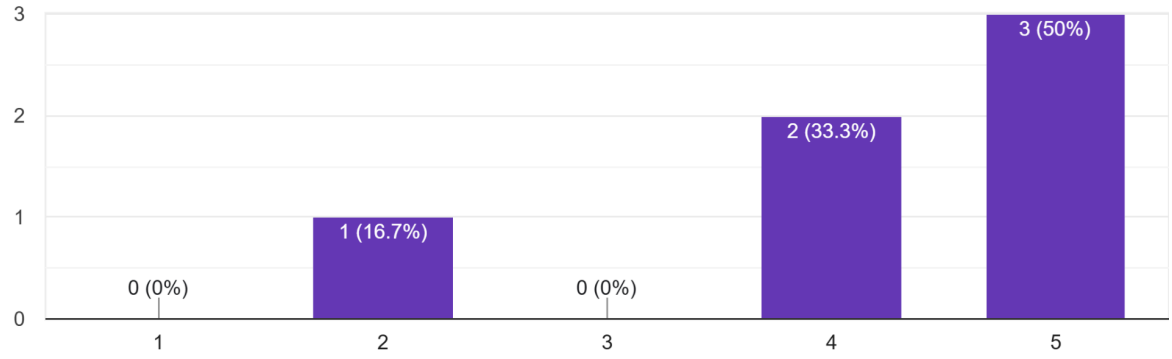
Have you received formal training in Kodály or other pitch-matching pedagogies? If so, please specify.

6 responses



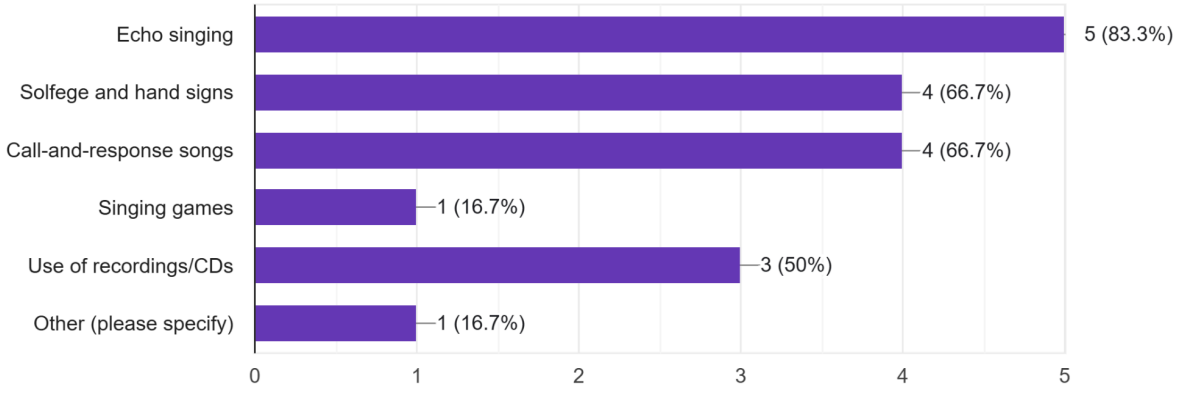
How often do you include pitch-matching activities (e.g., echo singing, solfege exercises) in your music classes?

6 responses



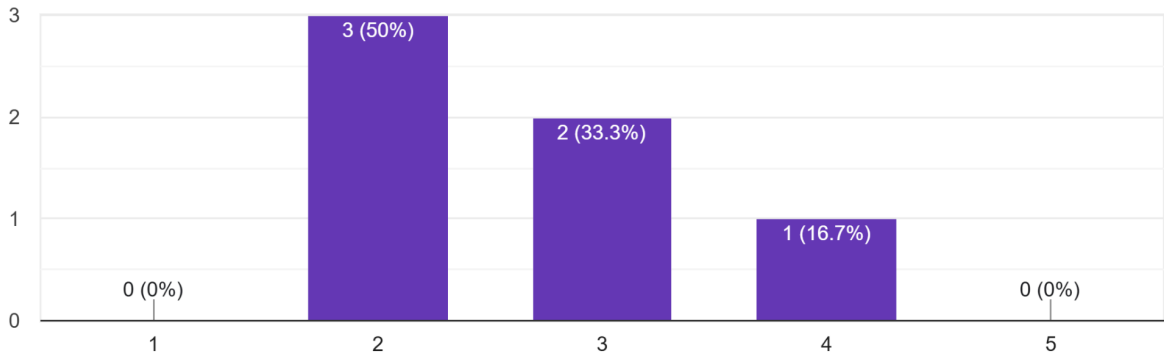
Which pitch-matching strategies do you use most frequently? (Select all that apply)

6 responses



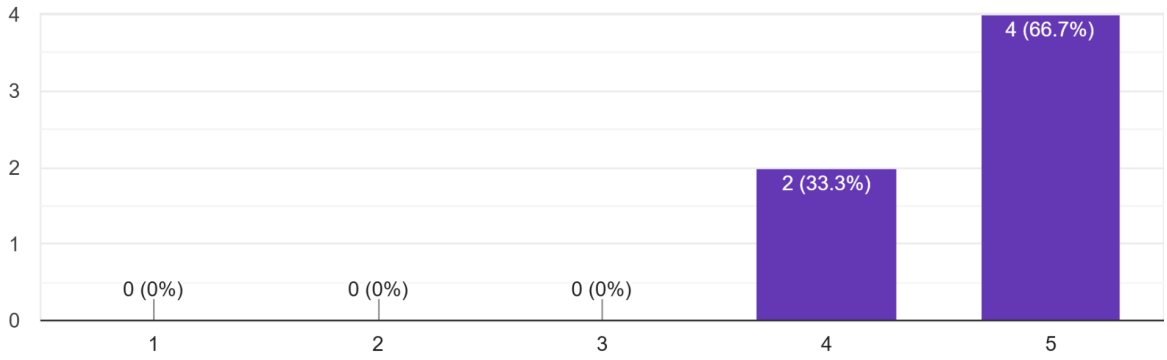
How often do you provide students with solo singing opportunities to assess pitch matching?

6 responses



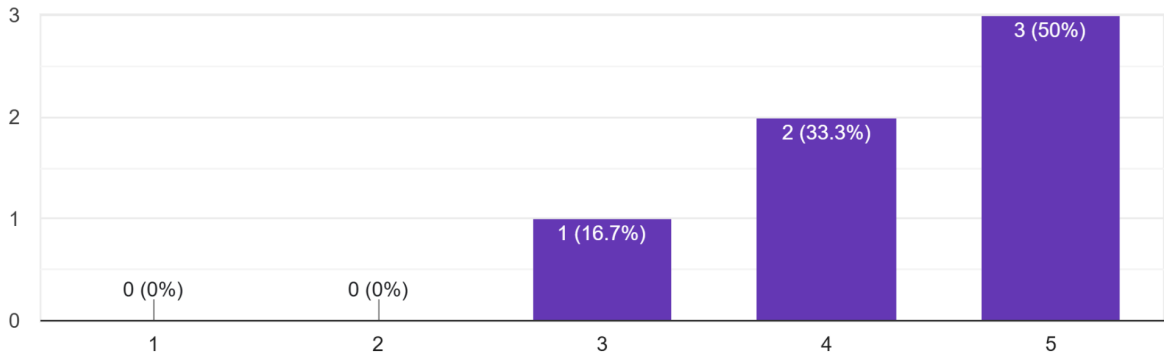
How confident do you feel in your ability to teach pitch matching effectively?

6 responses



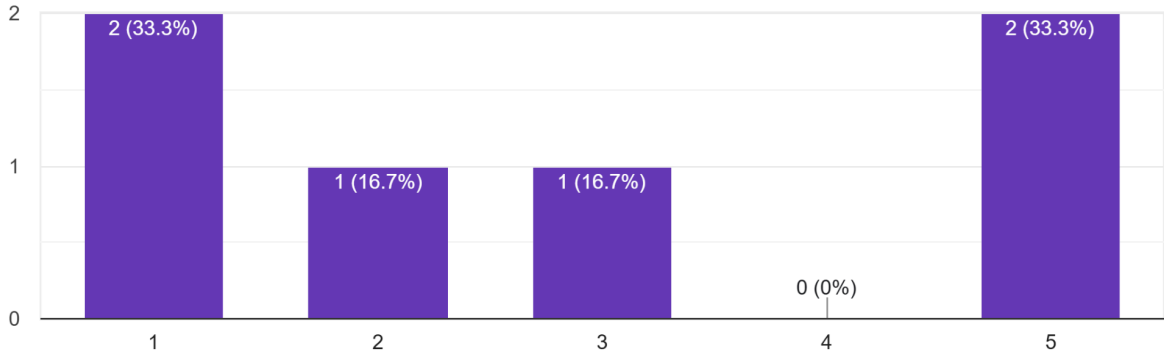
How important do you believe pitch matching is in the overall music curriculum?

6 responses



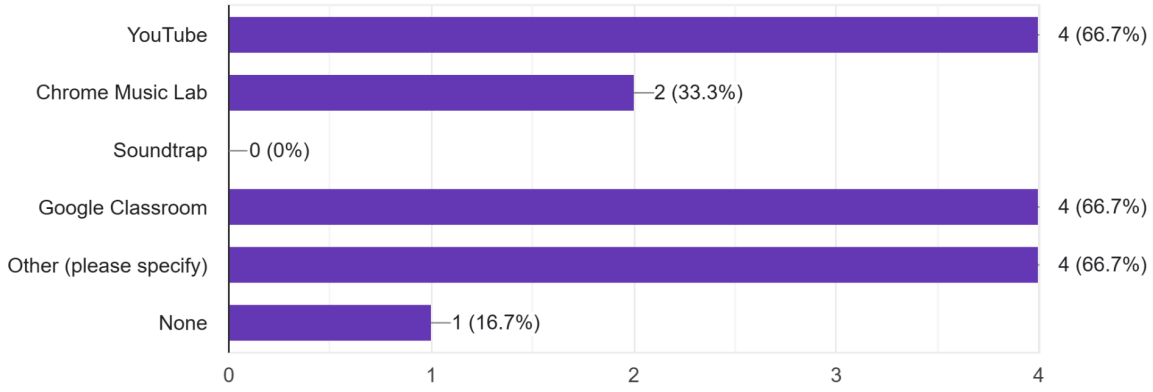
To what extent do you currently use digital tools or online resources (e.g., YouTube, Chrome Music Lab, Soundtrap) to support pitch-matching instruction?

6 responses



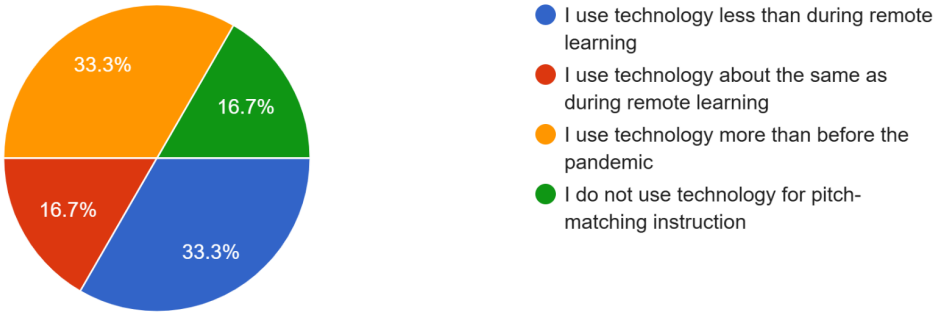
Which of the following digital platforms or applications have you incorporated into your pitch-matching lessons during and since the pandemic? (Select all that apply)

6 responses



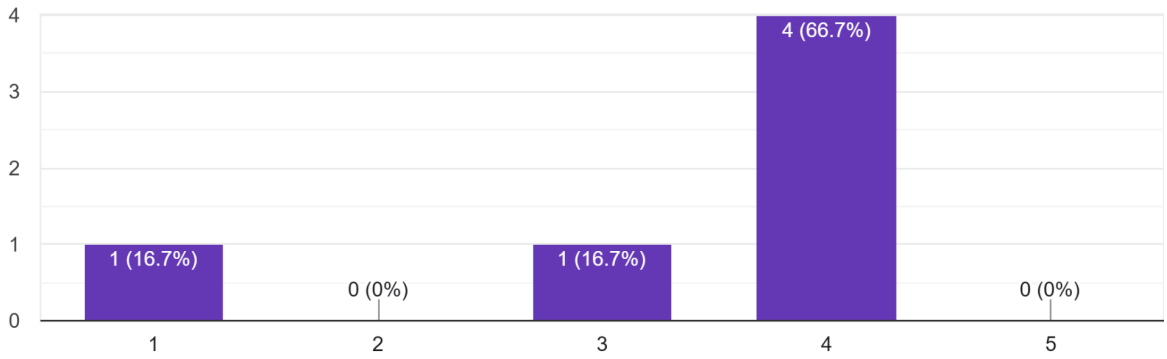
Has your use of technology for pitch-matching instruction changed since returning to in-person teaching?

6 responses



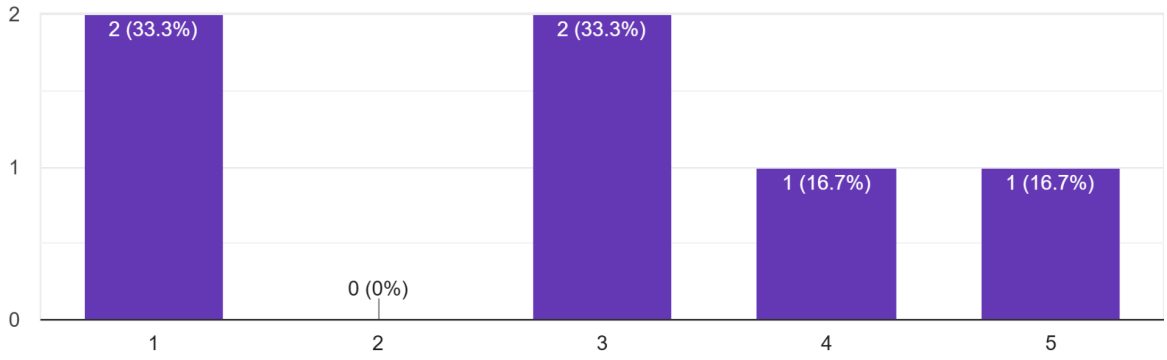
How confident do you feel using technology to facilitate pitch-matching instruction post-pandemic?

6 responses



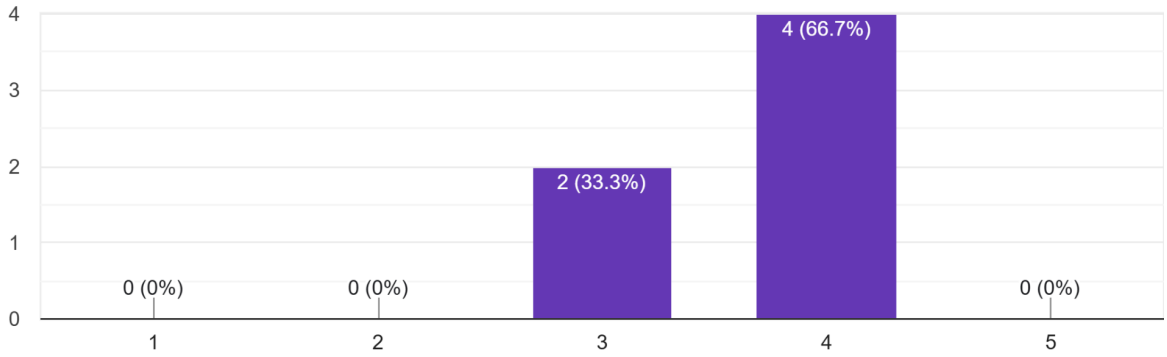
Since the pandemic, how often do you integrate remote or hybrid learning strategies into your pitch-matching curriculum?

6 responses



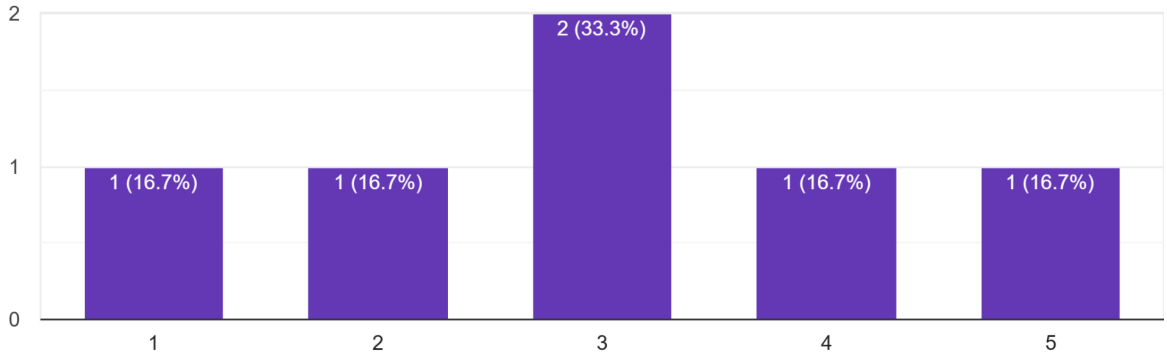
How often do you encounter students who struggle to match pitch due to confidence or anxiety issues?

6 responses



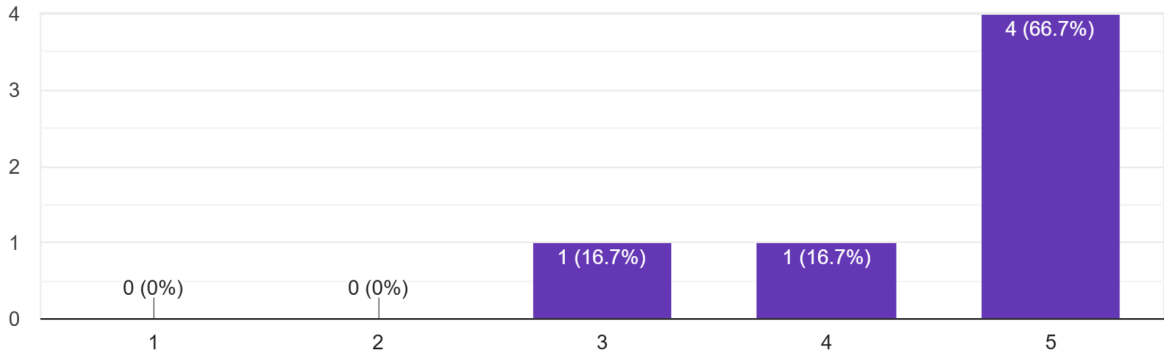
To what extent do large class sizes impact your ability to teach pitch matching effectively?

6 responses



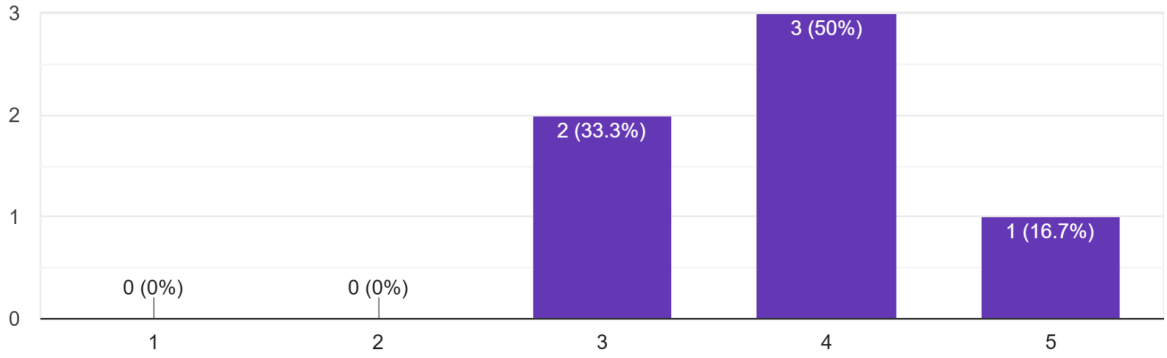
To what extent does limited time for individual attention impact your ability to teach pitch matching effectively?

6 responses

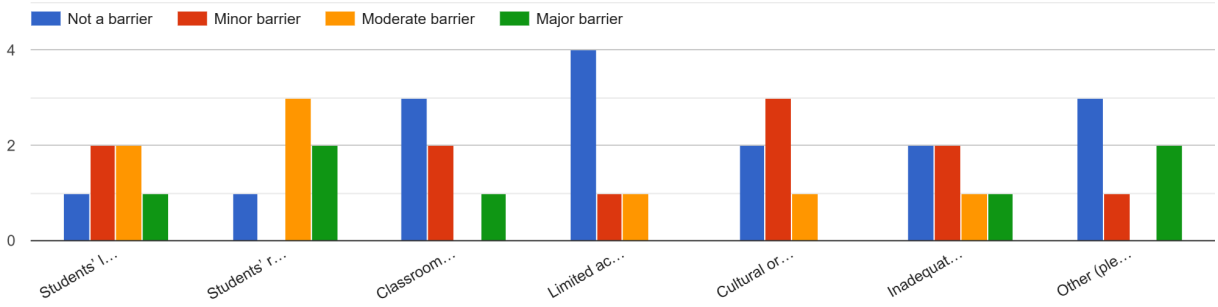


How challenging is it to address pitch matching in group settings compared to one-on-one instruction?

6 responses

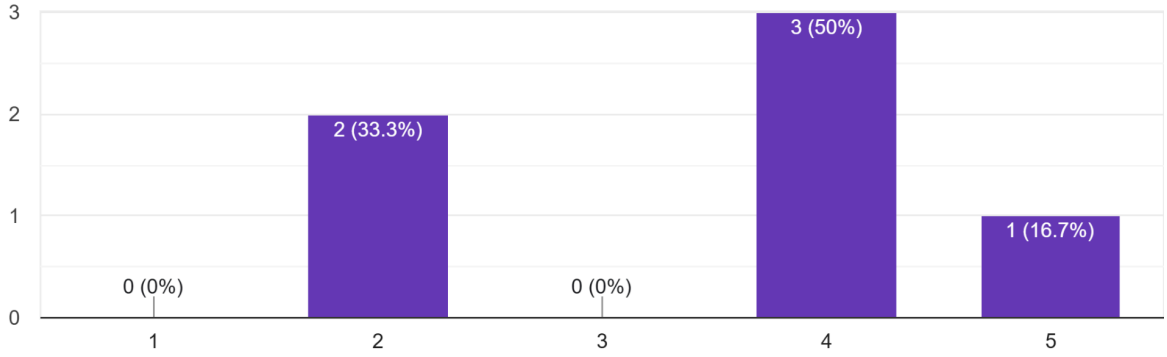


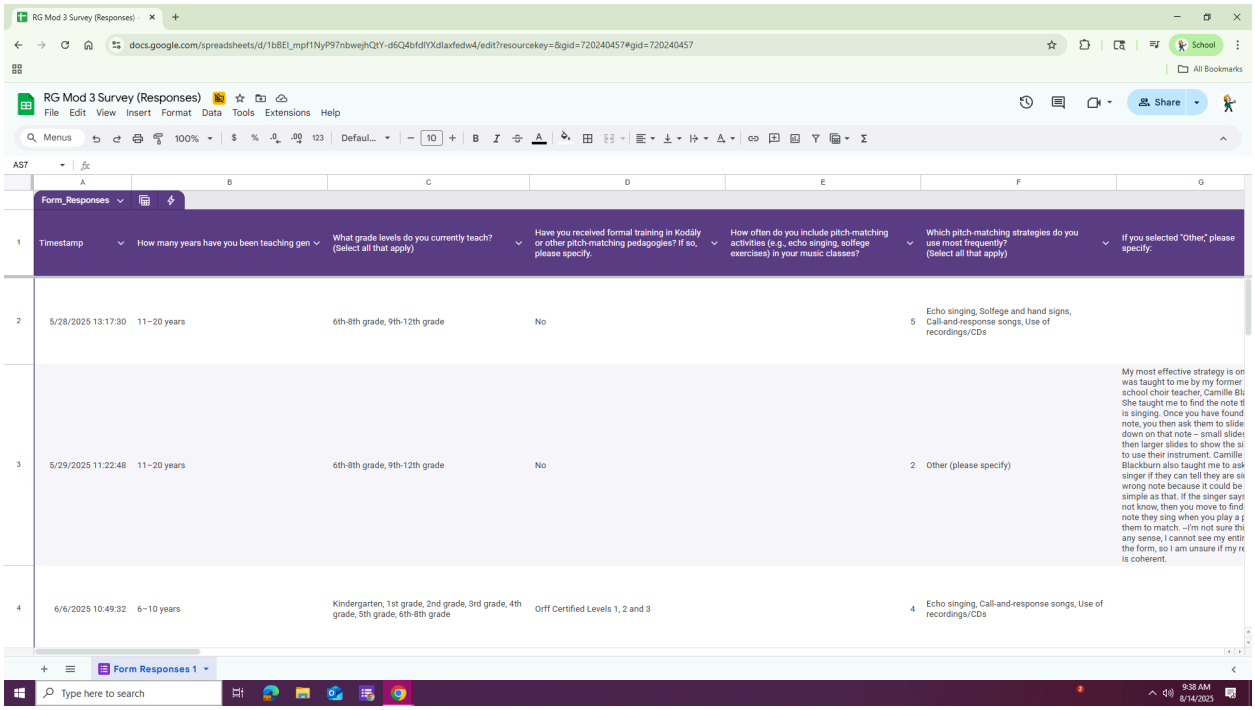
How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier)



How often do you find that students have difficulty matching pitch with instruments (e.g., piano) versus matching pitch with the teacher's voice?

6 responses





RG Mod 3 Survey (Responses)

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RG Mod 3 Survey (Responses)

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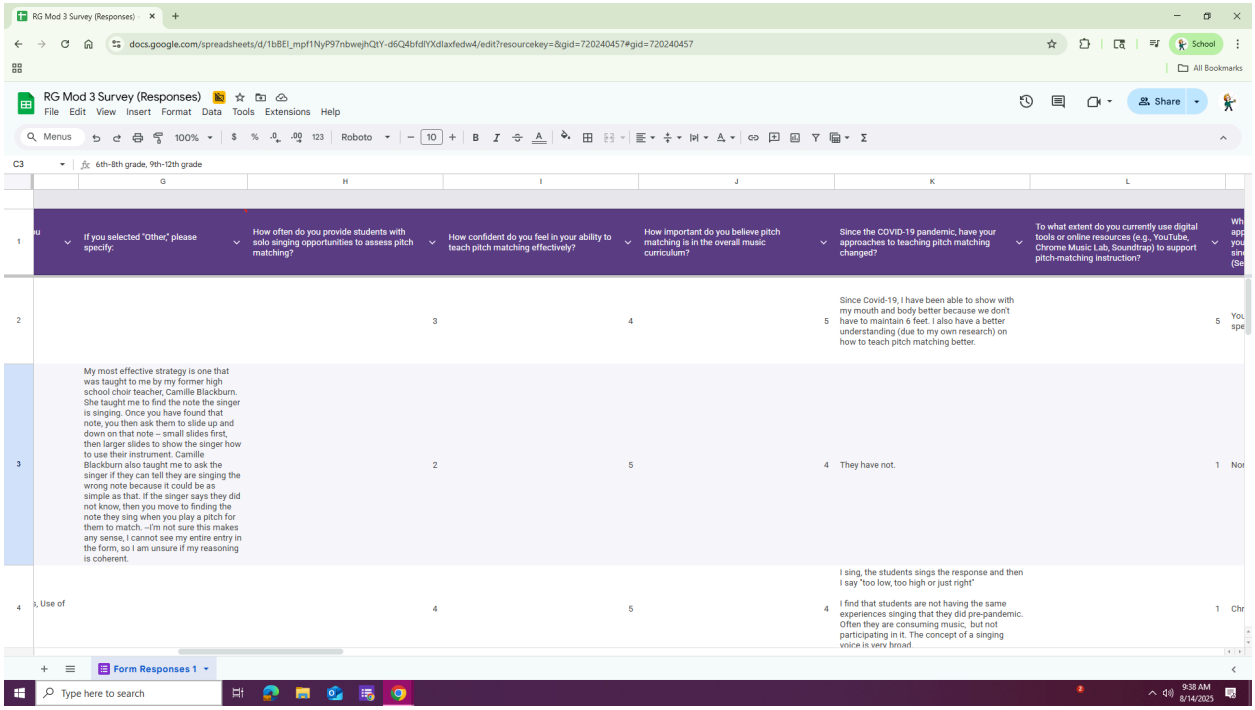
Form_Responses

	A	B	C	D	E	F	G
1	Timestamp	How many years have you been teaching gen	What grade levels do you currently teach? (Select all that apply)	Have you received formal training in Kodály or other pitch-matching pedagogies? If so, please specify.	How often do you include pitch-matching activities (e.g., echo singing, solfege exercises) in your music classes?	Which pitch-matching strategies do you use most frequently? (Select all that apply)	If you selected "Other," please specify:
2	5/28/2025 13:17:30	11–20 years	6th-8th grade, 9th-12th grade	No	5	Echo singing, Solfege and hand signs, Call-and-response songs, Use of recordings/CDs	
3	5/29/2025 11:22:48	11–20 years	6th-8th grade, 9th-12th grade	No	2	Other (please specify)	My most effective strategy is on was taught to me by my former school choir teacher, Camille Bl She taught me to find the note t is singing. Once you have found note, you then ask them to slide down on that note -- small slide then larger slides to show the si to use their instrument. Camille Blackburn also taught me to ask singer if they can tell they are si wrong note because it could be simple as that. If the singer says not know, then you move to find note they sing when you play a p them to match. --I'm not sure thi any sense, I cannot see my entir the form, so I am unsure if my re is coherent.
4	6/6/2025 10:49:32	6–10 years	Kindergarten, 1st grade, 2nd grade, 3rd grade, 4th grade, 5th grade, 6th-8th grade	Orff Certified Levels 1, 2 and 3	4	Echo singing, Call-and-response songs, Use of recordings/CDs	

Form Responses 1

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RG Mod 3 Survey (Responses)

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RG Mod 3 Survey (Responses)

File Edit View Insert Format Data Tools Extensions Help

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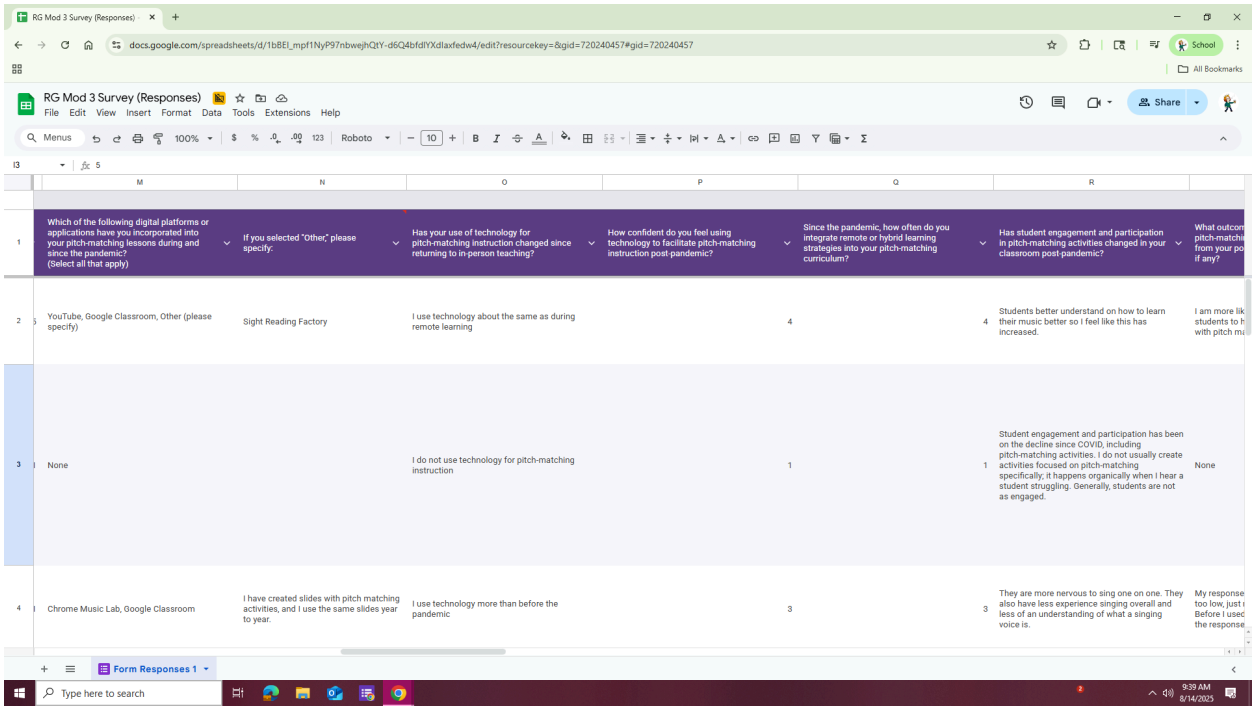
C3 6th-8th grade, 9th-12th grade

	G	H	I	J	K	L
1	If you selected "Other," please specify:	How often do you provide students with solo singing opportunities to assess pitch matching?	How confident do you feel in your ability to teach pitch matching effectively?	How important do you believe pitch matching is in the overall music curriculum?	Since the COVID-19 pandemic, have your approaches to teaching pitch matching changed?	To what extent do you currently use digital tools or online resources (e.g., YouTube, Chrome Music Lab, Soundtrap) to support pitch-matching instruction?
2		3	4	5	Since Covid-19, I have been able to show with my mouth and body better because we don't have to maintain 6 feet. I also have a better understanding (due to my own research) on how to teach pitch matching better.	5
3	My most effective strategy is one that was taught to me by my former high school choir teacher, Camille Blackburn. She taught me to find the note the singer is singing. Once you have found that note, you then ask them to slide up and down on that note – small slides first, then larger slides to show the singer how to use their instrument. Camille Blackburn also taught me to ask the singer if they can tell they are singing the wrong note because it could be as simple as that. If the singer says they did not know, then you move to finding the note they sing when you play a pitch for them to match. --I'm not sure this makes any sense, I cannot see my entire entry in the form, so I am unsure if my reasoning is coherent.	2	5	4	They have not.	1
4	, Use of	4	5	4	I sing, the students sings the response and then I say "too low, too high or just right" I find that students are not having the same experiences singing that they did pre-pandemic. Often they are consuming music, but not participating in it. The concept of a singing voice is very broad.	1

Form Responses 1

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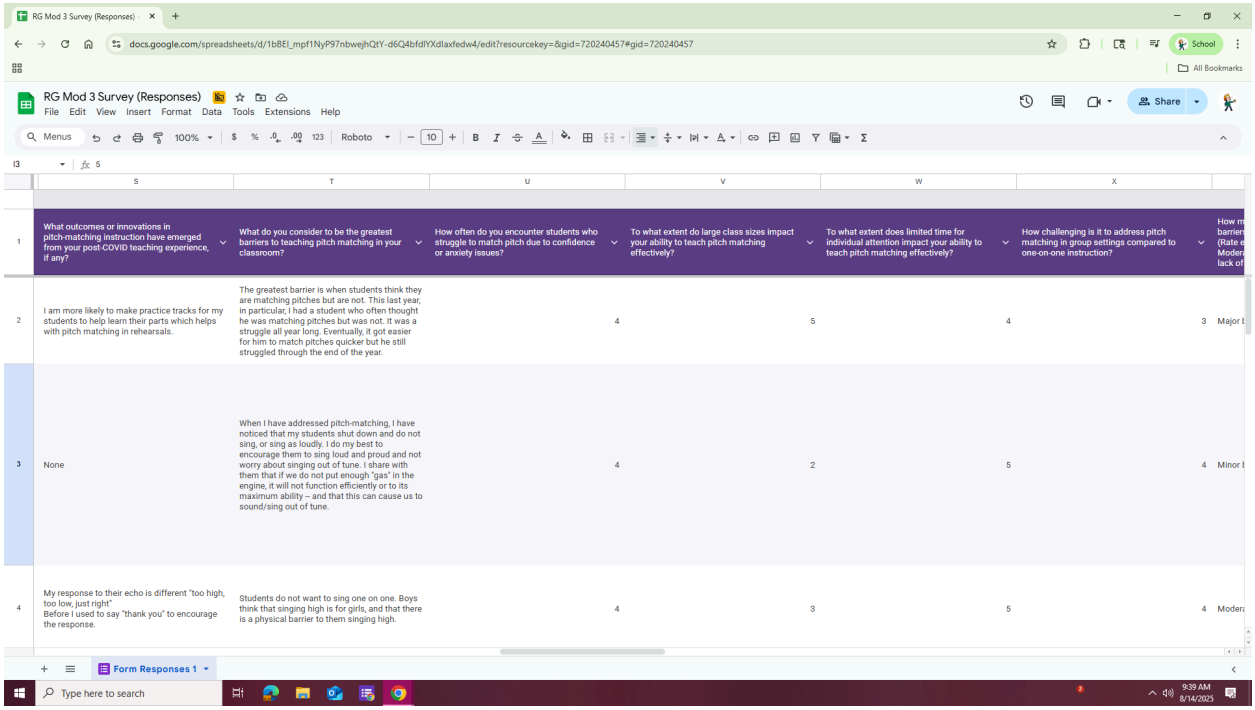


RG Mod 3 Survey (Responses)

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	M	N	O	P	Q	R
1	Which of the following digital platforms or applications have you incorporated into your pitch-matching lessons during and since the pandemic? (Select all that apply)	If you selected "Other," please specify:	Has your use of technology for pitch-matching instruction changed since returning to in-person teaching?	How confident do you feel using technology to facilitate pitch-matching instruction post-pandemic?	Since the pandemic, how often do you integrate remote or hybrid learning strategies into your pitch-matching curriculum?	Has student engagement and participation in pitch-matching activities changed in your classroom post-pandemic?
2	YouTube, Google Classroom, Other (please specify)	Sight Reading Factory	I use technology about the same as during remote learning	4	4	Students better understand on how to learn their music better so I feel like this has increased.
3	None		I do not use technology for pitch-matching instruction	1	1	Student engagement and participation has been on the decline since COVID, including pitch-matching activities. I do not usually create activities focused on pitch-matching specifically, it happens organically when I hear a student struggling. Generally, students are not as engaged.
4	Chrome Music Lab, Google Classroom	I have created slides with pitch matching activities, and I use the same slides year to year.	I use technology more than before the pandemic	3	3	They are more nervous to sing one on one. They also have less experience singing overall and less of an understanding of what a singing voice is.

Form Responses 1

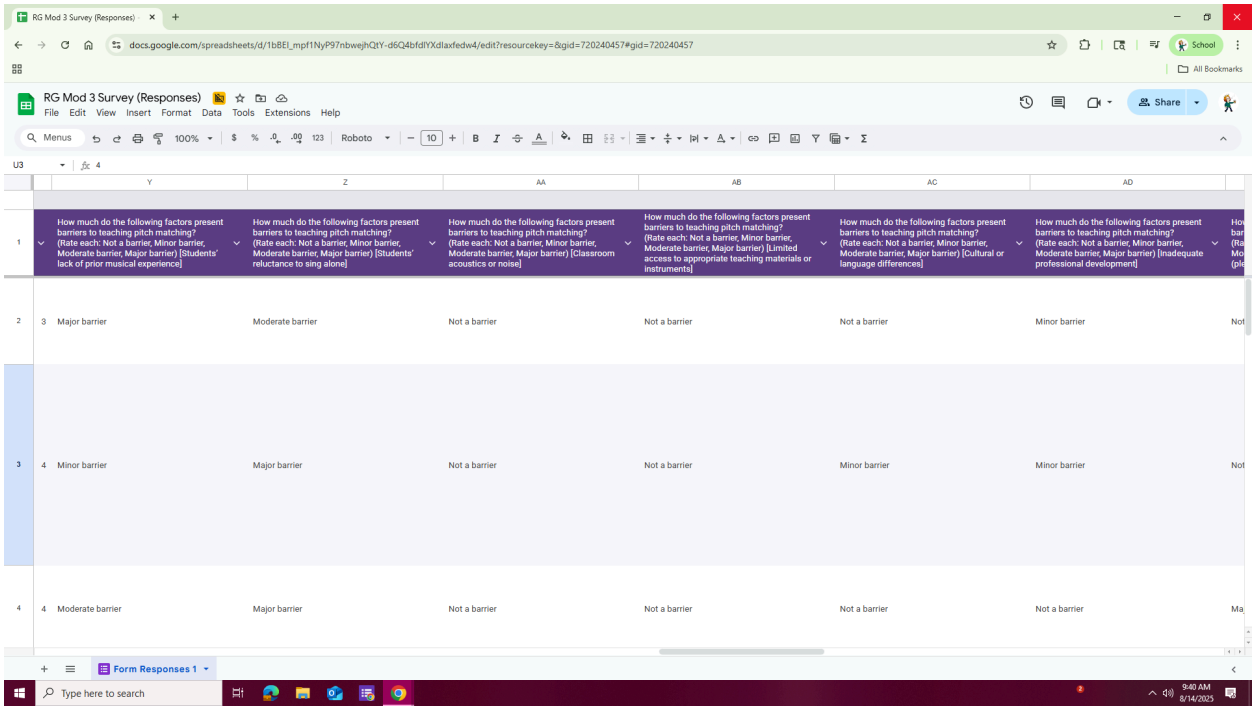


RG Mod 3 Survey (Responses)

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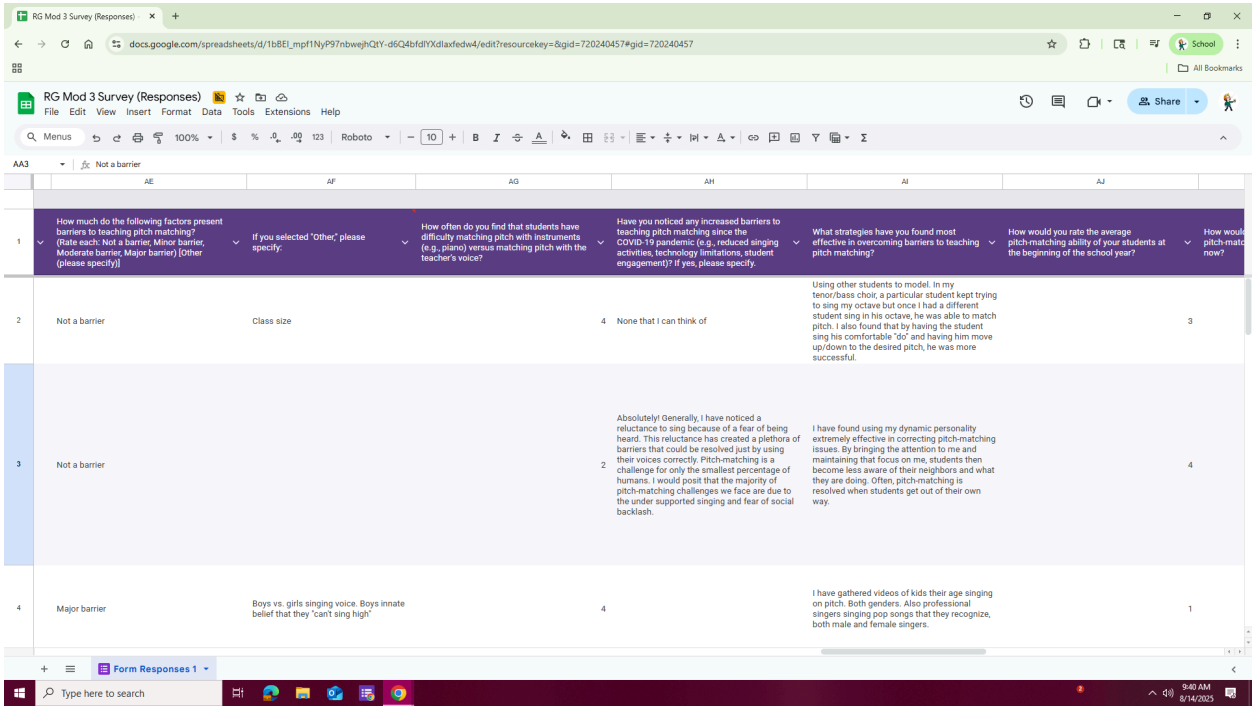
	S	T	U	V	W	X
1	What outcomes or innovations in pitch-matching instruction have emerged from your post-COVID teaching experience, if any?	What do you consider to be the greatest barriers to teaching pitch matching in your classroom?	How often do you encounter students who struggle to match pitch due to confidence or anxiety issues?	To what extent do large class sizes impact your ability to teach pitch matching effectively?	To what extent does limited time for individual attention impact your ability to teach pitch matching effectively?	How challenging is it to address pitch matching in group settings compared to one-on-one instruction?
2	I am more likely to make practice tracks for my students to help learn their parts which helps with pitch matching in rehearsals.	The greatest barrier is when students think they are matching pitches but are not. This last year, in particular, I had a student who often thought he was matching pitches but was not. It was a struggle all year long. Eventually, it got easier for him to match pitches quicker but he still struggled through the end of the year.	4	5	4	3
3	None	When I have addressed pitch-matching, I have noticed that my students shut down and do not sing, or sing as loudly. I do my best to encourage them to sing loud and proud and not worry about singing out of tune. I share with them that if we do not put enough "gas" in the engine, it will not function efficiently or to its maximum ability -- and that this can cause us to sound/sing out of tune.	4	2	5	4
4	My response to their echo is different "too high, too low, just right" Before I used to say "thank you" to encourage the response.	Students do not want to sing one on one. Boys think that singing high is for girls, and that there is a physical barrier to them singing high.	4	3	5	4

Form Responses 1



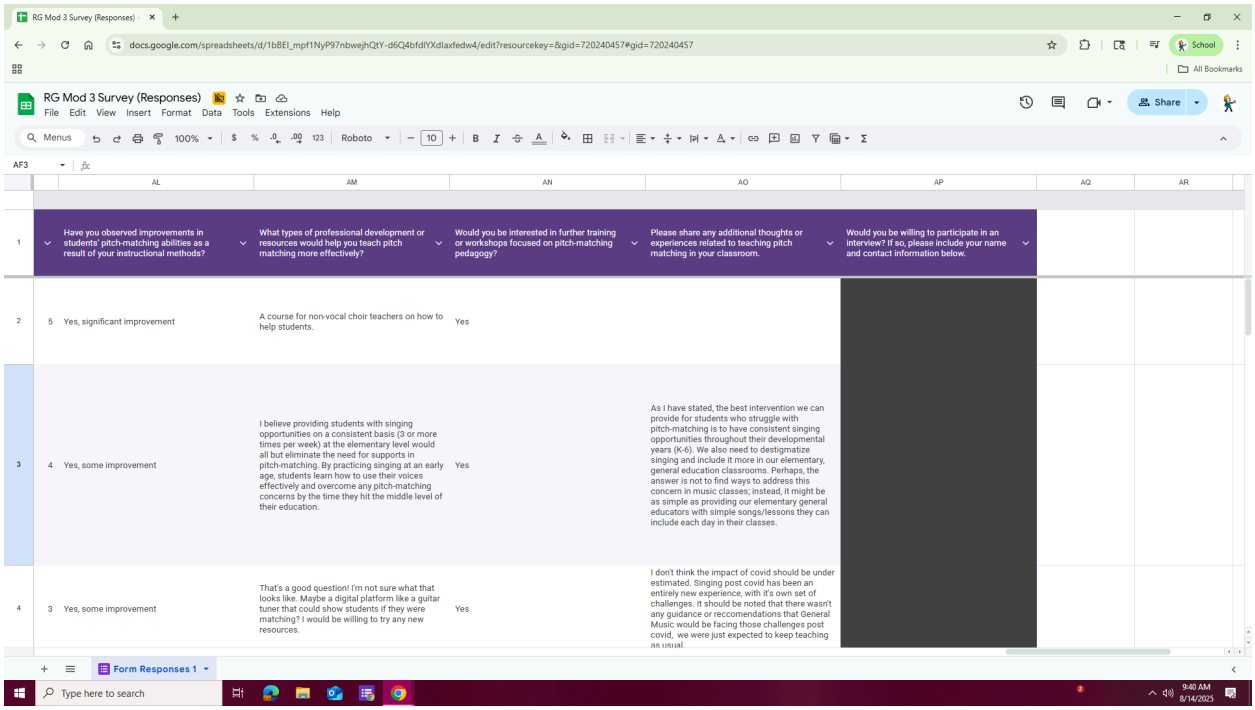
RG Mod 3 Survey (Responses)

		How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Students' lack of prior musical experience]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Students' reluctance to sing alone]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Classroom acoustics or noise]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Limited access to appropriate teaching materials or instruments]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Cultural or language differences]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Inadequate professional development]	How
2	3	Major barrier	Moderate barrier	Not a barrier	Not a barrier	Not a barrier	Minor barrier	Not
3	4	Minor barrier	Major barrier	Not a barrier	Not a barrier	Minor barrier	Minor barrier	Not
4	4	Moderate barrier	Major barrier	Not a barrier	Not a barrier	Not a barrier	Not a barrier	Ma



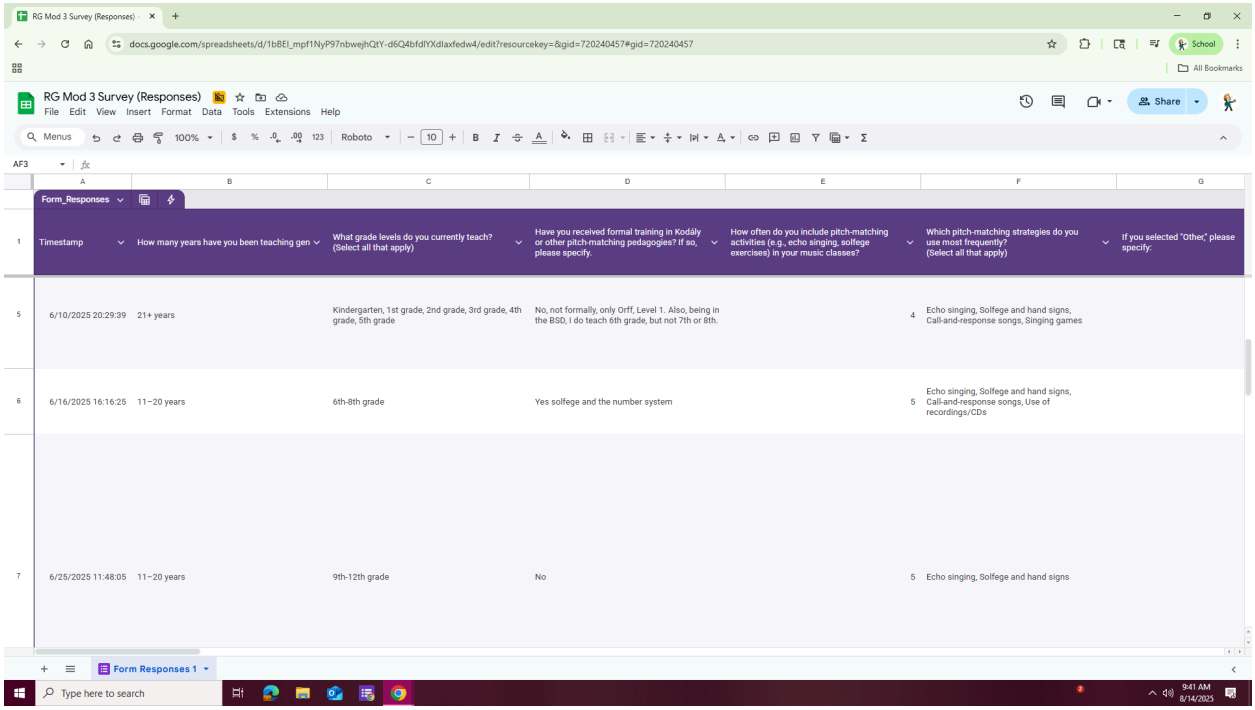
RG Mod 3 Survey (Responses)

	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Other (please specify)]	If you selected "Other," please specify:	How often do you find that students have difficulty matching pitch with instruments (e.g., piano) versus matching pitch with the teacher's voice?	Have you noticed any increased barriers to teaching pitch matching since the COVID-19 pandemic (e.g., reduced singing activities, technology limitations, student engagement)? If yes, please specify.	What strategies have you found most effective in overcoming barriers to teaching pitch matching?	How would you rate the average pitch-matching ability of your students at the beginning of the school year?	How would pitch-matc now?
2	Not a barrier	Class size	4	None that I can think of	Using other students to model. In my tenor/bass choir, a particular student kept trying to sing my octave but once I had a different student sing in his octave, he was able to match pitch. I also found that by having the student sing his comfortable "do" and having him move up/down to the desired pitch, he was more successful.	3	
3	Not a barrier		2	Absolutely! Generally, I have noticed a reluctance to sing because of a fear of being heard. This reluctance has created a plethora of barriers that could be resolved just by using their voices correctly. Pitch-matching is a challenge for only the smallest percentage of humans. I would posit that the majority of pitch-matching challenges we face are due to the under supported singing and fear of social backlash.	I have found using my dynamic personality extremely effective in correcting pitch-matching issues. By bringing the attention to me and maintaining that focus on me, students then become less aware of their neighbors and what they are doing. Often, pitch-matching is resolved when students get out of their own way.	4	
4	Major barrier	Boys vs. girls singing voice. Boys innate belief that they "can't sing high"	4		I have gathered videos of kids their age singing on pitch. Both genders. Also professional singers singing pop songs that they recognize, both male and female singers.	1	



RG Mod 3 Survey (Responses)

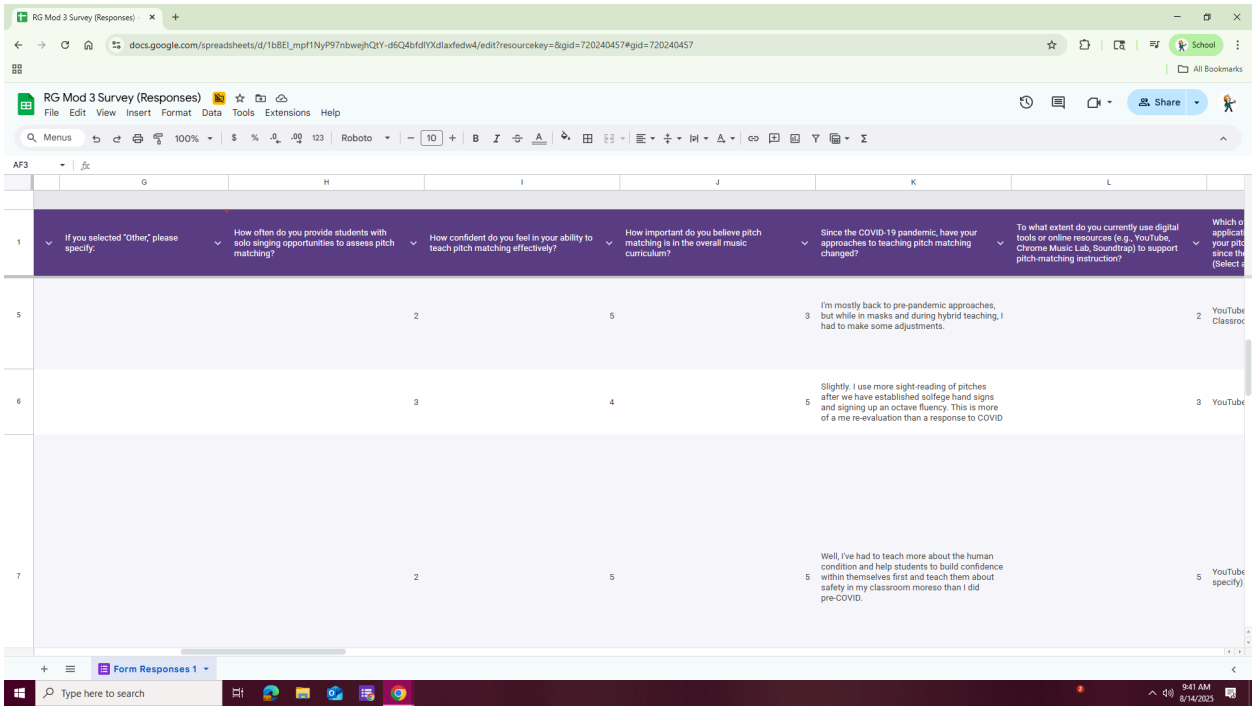
	Have you observed improvements in students' pitch-matching abilities as a result of your instructional methods?	What types of professional development or resources would help you teach pitch matching more effectively?	Would you be interested in further training or workshops focused on pitch-matching pedagogy?	Please share any additional thoughts or experiences related to teaching pitch matching in your classroom.	Would you be willing to participate in an interview? If so, please include your name and contact information below.
2	5 Yes, significant improvement	A course for non-vocal choir teachers on how to help students.	Yes		
3	4 Yes, some improvement	I believe providing students with singing opportunities on a consistent basis (3 or more times per week) at the elementary level would all but eliminate the need for supports in pitch-matching. By practicing singing at an early age, students learn how to use their voices effectively and overcome any pitch-matching concerns by the time they hit the middle level of their education.	Yes	As I have stated, the best intervention we can provide for students who struggle with pitch-matching is to have consistent singing opportunities throughout their developmental years (K-6). We also need to destigmatize singing and include it more in our elementary, general education classrooms. Perhaps, the answer is not to find ways to address this concern in music classes; instead, it might be as simple as providing our elementary general educators with simple songs/lessons they can include each day in their classes.	
4	3 Yes, some improvement	That's a good question! I'm not sure what that looks like. Maybe a digital platform like a guitar tuner that could show students if they were matching? I would be willing to try any new resources.	Yes	I don't think the impact of covid should be under estimated. Singing post covid has been an entirely new experience, with it's own set of challenges. It should be noted that there wasn't any guidance or reccomendations that General Music would be facing those challenges post covid, we were just expected to keep teaching as usual.	



RG Mod 3 Survey (Responses)

Form_Responses

	Timestamp	How many years have you been teaching gen	What grade levels do you currently teach? (Select all that apply)	Have you received formal training in Kodály or other pitch-matching pedagogies? If so, please specify.	How often do you include pitch-matching activities (e.g., echo singing, solfege exercises) in your music classes?	Which pitch-matching strategies do you use most frequently? (Select all that apply)	If you selected "Other," please specify:
5	6/10/2025 20:29:39	21+ years	Kindergarten, 1st grade, 2nd grade, 3rd grade, 4th grade, 5th grade	No, not formally, only Orff, Level 1. Also, being in the BSD, I do teach 6th grade, but not 7th or 8th.	4	Echo singing, Solfege and hand signs, Call-and-response songs, Singing games	
6	6/16/2025 16:16:25	11–20 years	6th-8th grade	Yes solfege and the number system	5	Echo singing, Solfege and hand signs, Call-and-response songs, Use of recordings/CDs	
7	6/25/2025 11:48:05	11–20 years	9th-12th grade	No	5	Echo singing, Solfege and hand signs	

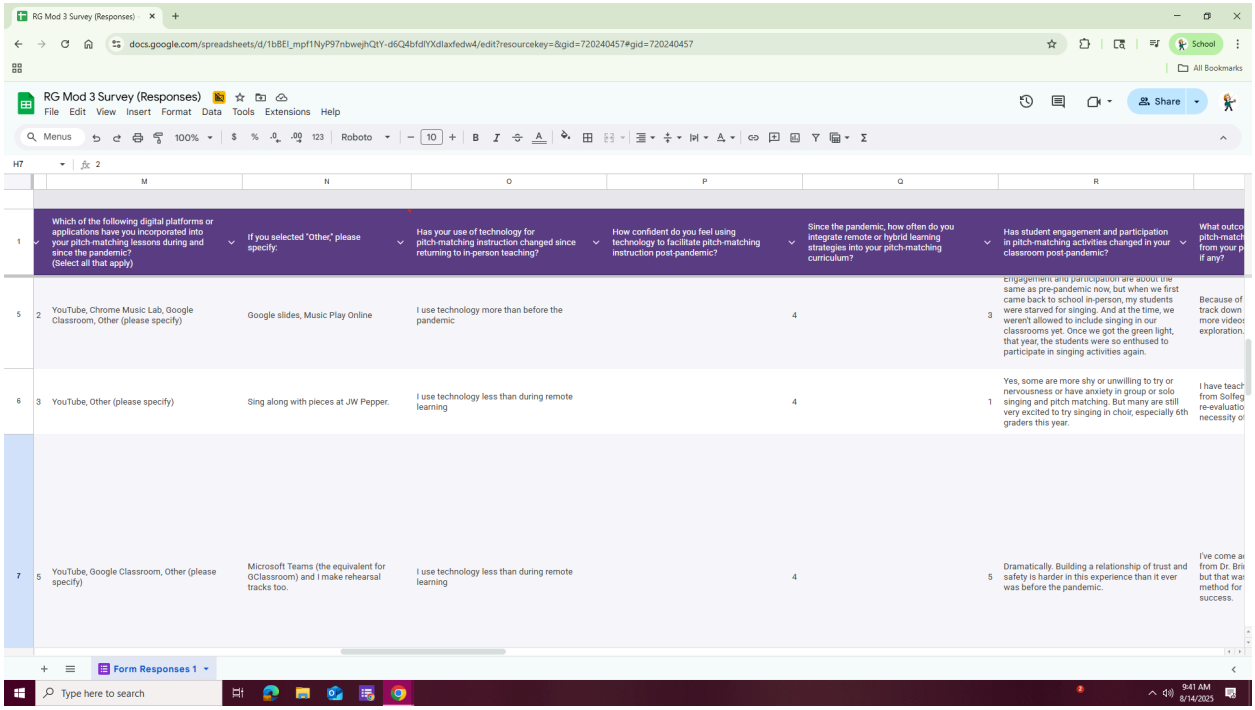


RG Mod 3 Survey (Responses)

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	G	H	I	J	K	L
1	If you selected "Other," please specify:	How often do you provide students with solo singing opportunities to assess pitch matching?	How confident do you feel in your ability to teach pitch matching effectively?	How important do you believe pitch matching is in the overall music curriculum?	Since the COVID-19 pandemic, have your approaches to teaching pitch matching changed?	To what extent do you currently use digital tools or online resources (e.g., YouTube, Chrome Music Lab, Soundtrap) to support pitch-matching instruction?
5			2	5	3 I'm mostly back to pre-pandemic approaches, but while in masks and during hybrid teaching, I had to make some adjustments.	2
6			3	4	5 Slightly. I use more sight-reading of pitches after we have established solfege hand signs and signing up an octave fluency. This is more of a me re-evaluation than a response to COVID	3
7			2	5	5 Well, I've had to teach more about the human condition and help students to build confidence within themselves first and teach them about safety in my classroom moreso than I did pre-COVID.	5

Form Responses 1

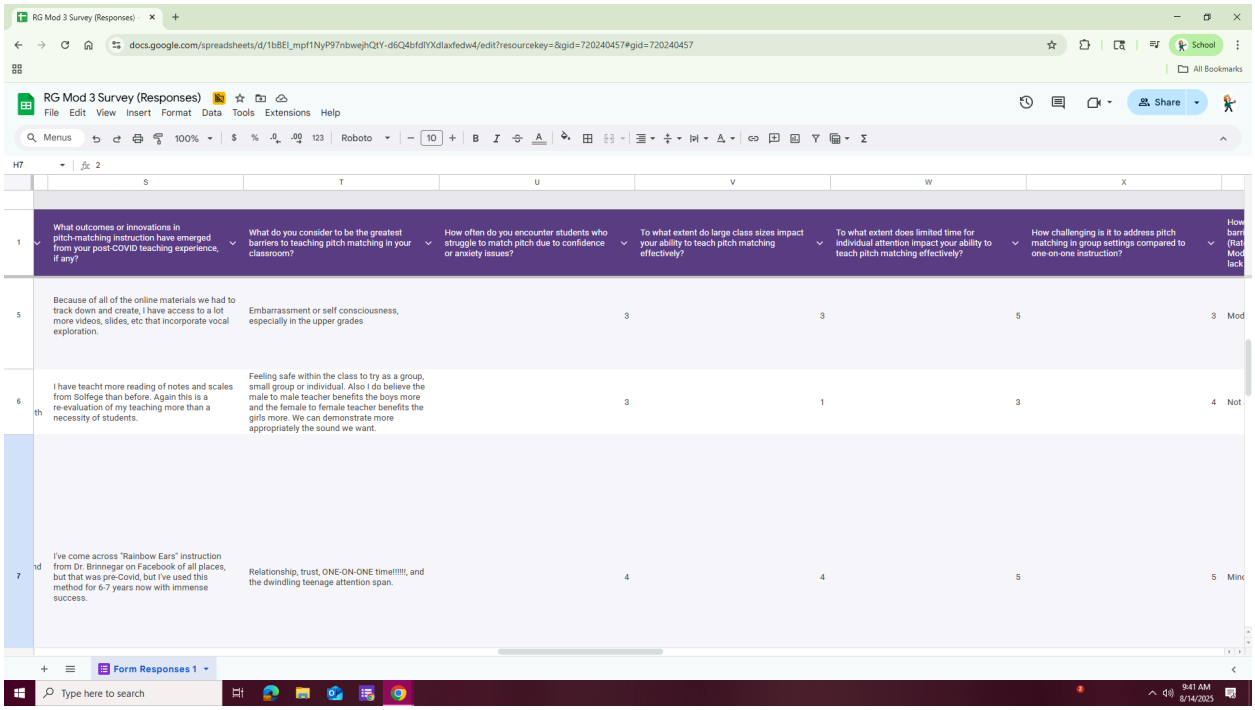


RG Mod 3 Survey (Responses)

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	M	N	O	P	Q	R
1	Which of the following digital platforms or applications have you incorporated into your pitch-matching lessons during and since the pandemic? (Select all that apply)	If you selected "Other," please specify:	Has your use of technology for pitch-matching instruction changed since returning to in-person teaching?	How confident do you feel using technology to facilitate pitch-matching instruction post-pandemic?	Since the pandemic, how often do you integrate remote or hybrid learning strategies into your pitch-matching curriculum?	Has student engagement and participation in pitch-matching activities changed in your classroom post-pandemic?
5	2 YouTube, Chrome Music Lab, Google Classroom, Other (please specify)	Google slides, Music Play Online	I use technology more than before the pandemic	4	3	Engagement and participation are about the same as pre-pandemic now, but when we first came back to school in-person, my students were starved for singing. And at the time, we weren't allowed to include singing in our classrooms yet. Once we got the green light, that year, the students were so enthused to participate in singing activities again.
6	3 YouTube, Other (please specify)	Sing along with pieces at JW Pepper.	I use technology less than during remote learning	4	1	Yes, some are more shy or unwilling to try or nervousness or have anxiety in group or solo singing and pitch matching. But many are still very excited to try singing in choir, especially 6th graders this year.
7	5 YouTube, Google Classroom, Other (please specify)	Microsoft Teams (the equivalent for GClassroom) and I make rehearsal tracks too.	I use technology less than during remote learning	4	5	Dramatically. Building a relationship of trust and safety is harder in this experience than it ever was before the pandemic.

Form Responses 1

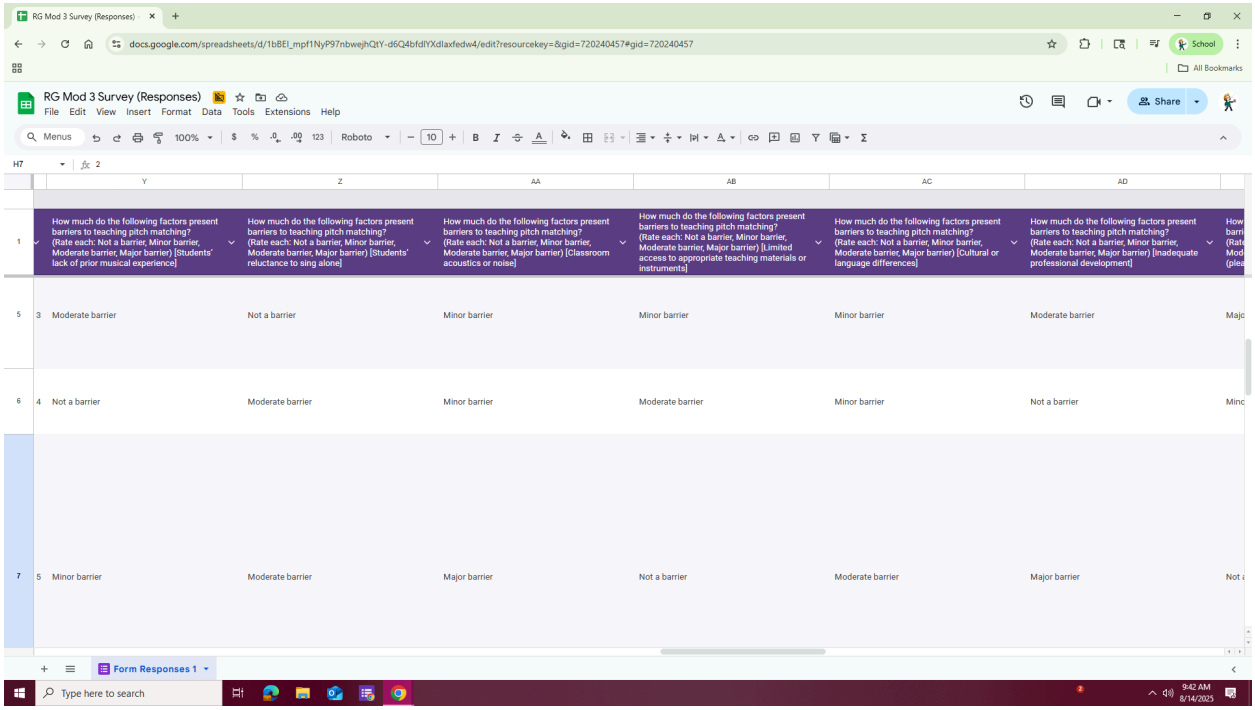


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	S	T	U	V	W	X
1	What outcomes or innovations in pitch-matching instruction have emerged from your post-COVID teaching experience, if any?	What do you consider to be the greatest barriers to teaching pitch matching in your classroom?	How often do you encounter students who struggle to match pitch due to confidence or anxiety issues?	To what extent do large class sizes impact your ability to teach pitch matching effectively?	To what extent does limited time for individual attention impact your ability to teach pitch matching effectively?	How challenging is it to address pitch matching in group settings compared to one-on-one instruction?
5	Because of all of the online materials we had to track down and create, I have access to a lot more videos, slides, etc that incorporate vocal exploration.	Embarrassment or self consciousness, especially in the upper grades	3	3	5	3
6	I have teacht more reading of notes and scales from Solfege than before. Again this is a re-evaluation of my teaching more than a necessity of students.	Feeling safe within the class to try as a group, small group or individual. Also I do believe the male to male teacher benefits the boys more and the female to female teacher benefits the girls more. We can demonstrate more appropriately the sound we want.	3	1	3	4
7	I've come across "Rainbow Ears" instruction from Dr. Brinnegar on Facebook of all places, but that was pre-Covid, but I've used this method for 6-7 years now with immense success.	Relationship, trust, ONE-ON-ONE time!!!!!!, and the dwindling teenage attention span.	4	4	5	5

Form Responses 1

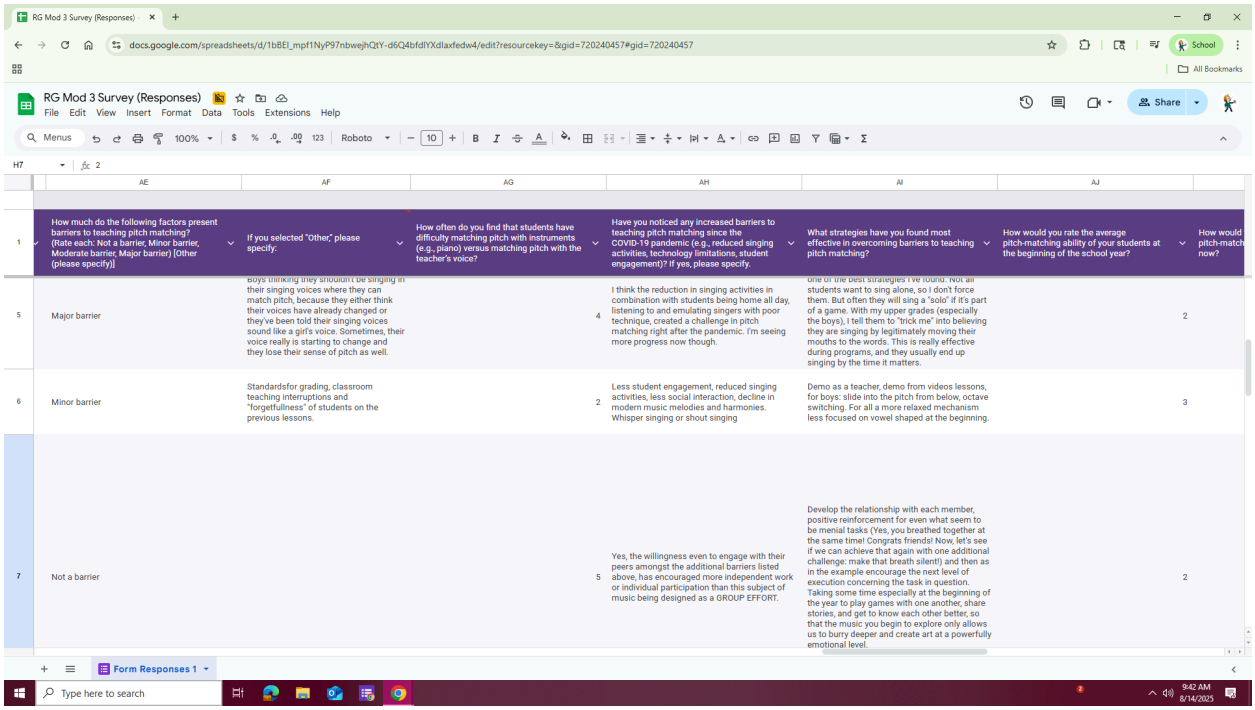


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	Y	Z	AA	AB	AC	AD
1	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Students' lack of prior musical experience]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Students' reluctance to sing alone]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Classroom acoustics or noise]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Limited access to appropriate teaching materials or instruments]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Cultural or language differences]	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Inadequate professional development]
5	3 Moderate barrier	Not a barrier	Minor barrier	Minor barrier	Minor barrier	Moderate barrier
6	4 Not a barrier	Moderate barrier	Minor barrier	Moderate barrier	Minor barrier	Not a barrier
7	5 Minor barrier	Moderate barrier	Major barrier	Not a barrier	Moderate barrier	Major barrier

Form Responses 1



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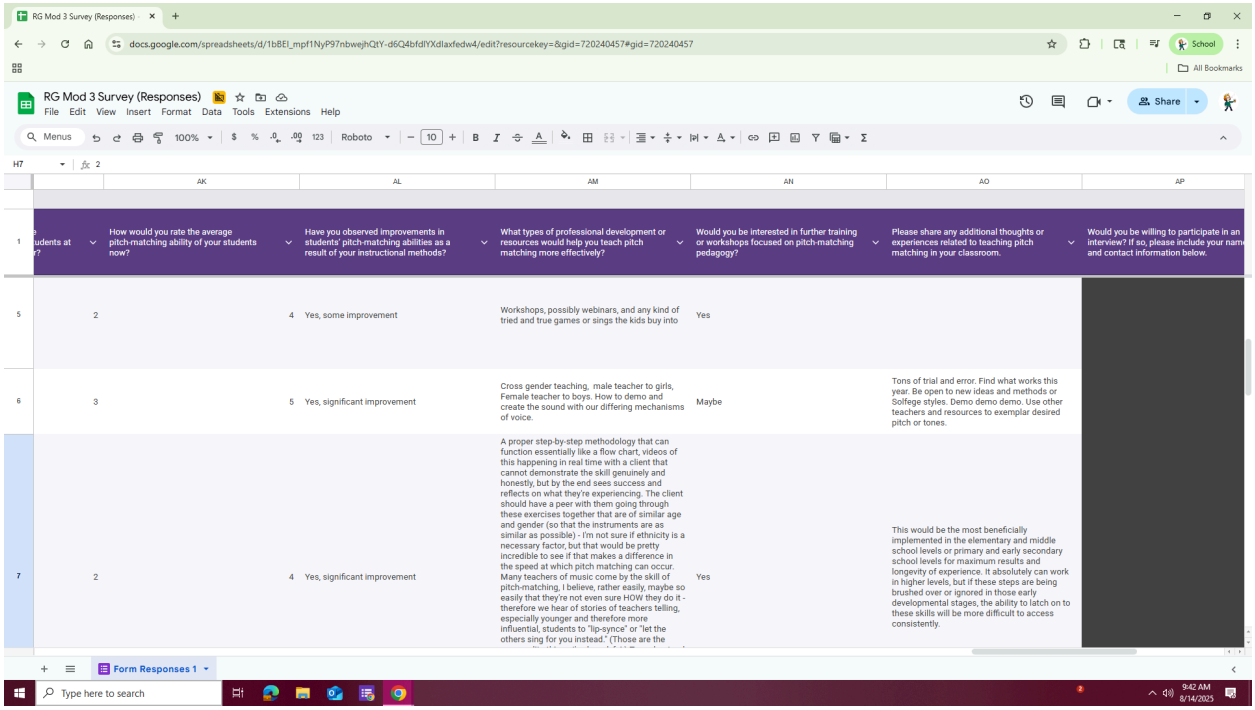
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	AE	AF	AG	AH	AI	AJ
1	How much do the following factors present barriers to teaching pitch matching? (Rate each: Not a barrier, Minor barrier, Moderate barrier, Major barrier) [Other (please specify)]	If you selected "Other," please specify:	How often do you find that students have difficulty matching pitch with instruments (e.g., piano) versus matching pitch with the teacher's voice?	Have you noticed any increased barriers to teaching pitch matching since the COVID-19 pandemic (e.g., reduced singing activities, technology limitations, student engagement)? If yes, please specify.	What strategies have you found most effective in overcoming barriers to teaching pitch matching?	How would you rate the average pitch-matching ability of your students at the beginning of the school year?	How would pitch-match now?
5	Major barrier	Boys thinking they shouldn't be singing in their singing voices where they can match pitch, because they either think their voices have already changed or they've been told their singing voices sound like a girl's voice. Sometimes, their voice really is starting to change and they lose their sense of pitch as well.	4	I think the reduction in singing activities in combination with students being home all day, listening to and emulating singers with poor technique, created a challenge in pitch matching right after the pandemic. I'm seeing more progress now though.	one of the best strategies I've found. Not all students want to sing alone, so I don't force them. But often they will sing a "solo" if it's part of a game. With my upper grades (especially the boys), I tell them to "trick me" into believing they are singing by legitimately moving their mouths to the words. This is really effective during programs, and they usually end up singing by the time it matters.		2
6	Minor barrier	Standardsfor grading, classroom teaching interruptions and "forgetfullness" of students on the previous lessons.	2	Less student engagement, reduced singing activities, less social interaction, decline in modern music melodies and harmonies. Whisper singing or shout singing	Demo as a teacher, demo from videos lessons, for boys: slide into the pitch from below, octave switching. For all a more relaxed mechanism less focused on vowel shaped at the beginning.		3
7	Not a barrier		5	Yes, the willingness even to engage with their peers amongst the additional barriers listed above, has encouraged more independent work or individual participation than this subject of music being designed as a GROUP EFFORT.	Develop the relationship with each member, positive reinforcement for even what seem to be menial tasks (Yes, you breathed together at the same time! Congrats friends! Now, let's see if we can achieve that again with one additional challenge: make that breath silent!) and then as in the example encourage the next level of execution concerning the task in question. Taking some time especially at the beginning of the year to play games with one another, share stories, and get to know each other better, so that the music you begin to explore only allows us to burry deeper and create art at a powerfully emotional level.		2

Form Responses 1

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RG Mod 3 Survey (Responses)

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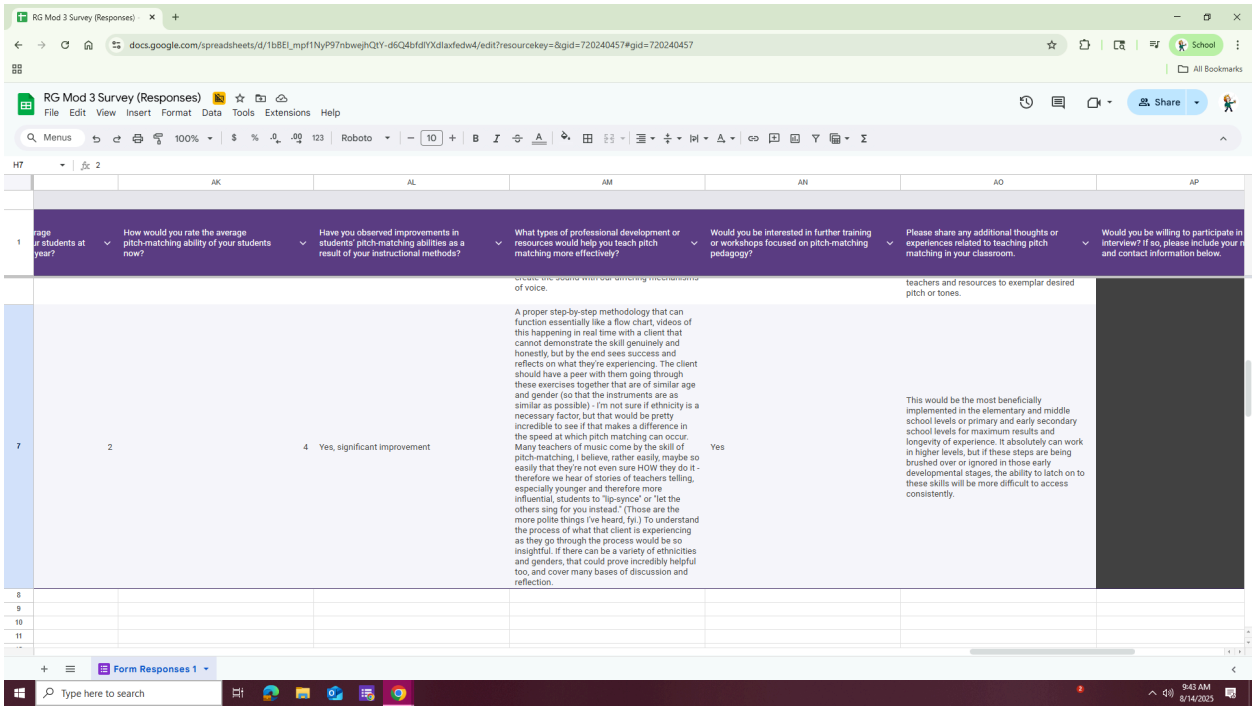
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	AK	AL	AM	AN	AO	AP
1	udents at r?	How would you rate the average pitch-matching ability of your students now?	Have you observed improvements in students' pitch-matching abilities as a result of your instructional methods?	What types of professional development or resources would help you teach pitch matching more effectively?	Would you be interested in further training or workshops focused on pitch-matching pedagogy?	Please share any additional thoughts or experiences related to teaching pitch matching in your classroom.	Would you be willing to participate in an interview? If so, please include your nam and contact information below.
5	2	4 Yes, some improvement	Workshops, possibly webinars, and any kind of tried and true games or sings the kids buy into	Yes			
6	3	5 Yes, significant improvement	Cross gender teaching, male teacher to girls, Female teacher to boys. How to demo and create the sound with our differing mechanisms of voice.	Maybe	Tons of trial and error. Find what works this year. Be open to new ideas and methods or Solfege styles. Demo demo demo. Use other teachers and resources to exemplar desired pitch or tones.		
7	2	4 Yes, significant improvement	A proper step-by-step methodology that can function essentially like a flow chart, videos of this happening in real time with a client that cannot demonstrate the skill genuinely and honestly, but by the end sees success and reflects on what they're experiencing. The client should have a peer with them going through these exercises together that are of similar age and gender (so that the instruments are as similar as possible) - I'm not sure if ethnicity is a necessary factor, but that would be pretty incredible to see if that makes a difference in the speed at which pitch matching can occur. Many teachers of music come by the skill of pitch-matching, I believe, rather easily, maybe so easily that they're not even sure HOW they do it - therefore we hear of stories of teachers telling, especially younger and therefore more influential, students to "lip-syncs" or "let the others sing for you instead." (Those are the	Yes	This would be the most beneficially implemented in the elementary and middle school levels or primary and early secondary school levels for maximum results and longevity of experience. It absolutely can work in higher levels, but if these steps are being brushed over or ignored in those early developmental stages, the ability to latch on to these skills will be more difficult to access consistently.	

Form Responses 1

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	AK	AL	AM	AN	AO	AP
1	...rage ...r students at ...year?	How would you rate the average pitch-matching ability of your students now?	Have you observed improvements in students' pitch-matching abilities as a result of your instructional methods?	What types of professional development or resources would help you teach pitch matching more effectively?	Would you be interested in further training or workshops focused on pitch-matching pedagogy?	Please share any additional thoughts or experiences related to teaching pitch matching in your classroom.	Would you be willing to participate in an interview? If so, please include your n... and contact information below.
				...of voice.		teachers and resources to exemplar desired pitch or tones.	
7	2	4	Yes, significant improvement	A proper step-by-step methodology that can function essentially like a flow chart, videos of this happening in real time with a client that cannot demonstrate the skill genuinely and honestly, but by the end sees success and reflects on what they're experiencing. The client should have a peer with them going through these exercises together that are of similar age and gender (so that the instruments are as similar as possible) - I'm not sure if ethnicity is a necessary factor, but that would be pretty incredible to see if that makes a difference in the speed at which pitch matching can occur. Many teachers of music come by the skill of pitch-matching, I believe, rather easily, maybe so easily that they're not even sure HOW they do it - therefore we hear of stories of teachers telling, especially younger and therefore more influential, students to "lip-synce" or "let the others sing for you instead." (Those are the more polite things I've heard, fyi.) To understand the process of what that client is experiencing as they go through the process would be so insightful. If there can be a variety of ethnicities and genders, that could prove incredibly helpful too, and cover many bases of discussion and reflection.	Yes	This would be the most beneficially implemented in the elementary and middle school levels or primary and early secondary school levels for maximum results and longevity of experience. It absolutely can work in higher levels, but if these steps are being brushed over or ignored in those early developmental stages, the ability to latch on to these skills will be more difficult to access consistently.	
8							
9							
10							
11							

Notes:

Literature:

Thematic Codes:

- P = Pedagogical Strategies & Techniques
- D = Developmental & Individual Differences
- T = Technology in Pitch-Matching Instruction
- S = Psychosocial & Motivational Factors
- C = Pandemic Adaptations & Post-COVID Practice
- M = Research Methods & Theoretical Frameworks

Reference	**Summary Note**	**Codes**

Adams (2016)	Pedagogical approaches for teaching pitch in the primary classroom; emphasizes vocal modeling, games, and differentiated practice.	P
Bandura (1997)	Self-efficacy theory explaining how belief in ability influences persistence/confidence in pitch activities.	S, M
Biasutti et al. (2021)	Teacher resilience and adaptations during COVID-19; digital tools, remote pedagogy, and engagement challenges.	C, T, P
Cardany (2013)	Practical pitch-matching routines: echo singing, solfège, call-and-response; guidance for differentiation and inclusion.	P, D, S
Crawford et al. (2020)	Teachers' perceptions of risk returning to classrooms; impact on music routines and safe practice protocols.	C, S
Daubney et al. (2021)	Pandemic-era policy and practice changes; blended learning, tech adoption, and classroom adaptation.	C, T, P
Demorest et al. (2015)	Longitudinal analysis of children's singing accuracy; daily singing improves skills; developmental trajectories.	D, P
Granot et al. (2013)	Live vocal modeling improves pitch accuracy; best outcomes when model matches students' range/timbre.	P, D

Green (2014)	Informal learning pedagogy; social integration and cultural context in music learning; peer-led modeling.	P, S, C
Hammersley & Atkinson (2007)	Ethnographic methodology; structured observation and qualitative rigor.	M
Harris & Wheeler (2022)	Hybrid/remote learning insights; participation shifts and tech use in music ed.	C, T, S
Hedden (2012)	Review of perceptual vs. production-based sources of pitch errors; calls for tailored teaching.	D, P
Hennessy et al. (2020)	Teacher views on tech integration post-pandemic; enablers and barriers in classroom contexts.	T, C, P
Hinkley (2018)	Review of vocal modeling techniques; supports differentiated, scaffolded instruction.	P, S, D
Kenny (2011)	Psychology of performance anxiety; links anxiety to participation and vocal output.	S, D
McWhirter (2020)	“Zoom fatigue” in virtual learning; impact on student engagement in music.	C, S, T

Moore (2004)	Music training improves pitch discrimination; perceptual and cognitive factors.	D, P, S
Morrison (2001)	Impact of cognitive ability, gender, and training on pitch matching ability.	D, S
Murgia et al. (2020)	COVID-19 effects on voice teachers; uptick in tech adoption for remote instruction.	C, T, P
NATS (2022)	Post-pandemic pedagogical norms; blended teaching and continued resource use.	C, T, P
Pfordresher & Demorest (2021)	Prevalence/correlates of accurate singing; gender, self-perception effects.	D, S
Rutkowski (2015)	Vocal development stages; implications for age-appropriate tech-supported pedagogy.	P, D, T
Ryan & Deci (2000)	Motivation theory (intrinsic/extrinsic) applied to student persistence.	S, M
Silva et al. (2022)	Digital divide and success cases in online music ed; equity issues in tech use.	C, T, S

Welch (2016)	Life-span voice development; strategies for age-appropriate pitch instruction.	D, P
Welch et al. (2020)	Singing as social inclusion; community influence on skill development.	S, P, D
Wilson et al. (2017)	Real-time visual pitch feedback tools; improves pitch accuracy when combined with modeling.	P, T
Wise (2021)	Vocal exploration exercises for elementary students; technology-supported playful learning.	P, T, D

Thematic Coverage Counts

- P Pedagogical: 20
- D Developmental: 14
- T Technology: 12
- S Psychosocial: 12
- C COVID/Post-COVID: 11
- M Methods/Theory: 4

Survey:

1. Demographics & Experience

- Teaching Experience:
    - Majority (4 of 6) have 11–20 years experience.
    - One participant has 6–10 years, one has 21+ years.

- Grade Levels Taught:
    - 66.7% (4) teach 6th–8th grade.
    - 50% teach 9th–12th grade.
    - 33% teach elementary grades K–5.
- Mix of general music and choir contexts — some teach across wide grade spans.

---

2. Training & Pedagogical Background

- Formal Training:
    - Half have no formal Kodály or pitch-matching pedagogy training.
    - Others mention:
        - Orff Certification (Levels 1–3)
        - Solfege & number system
        - Orff Level 1
- Indicates varied pedagogical backgrounds; no consistent training standard.

---

3. Frequency & Methods for Pitch Matching

- Frequency of Pitch-Matching Activities:
    - 50% use them “5” (highest frequency), 33% at “4”, 17% at “2”.
- Common Strategies (most use more than one):
    - Echo singing (83%)
    - Solfege + hand signs (66%)
    - Call-and-response songs (66%)
    - Recordings/CDs (50%)
    - Singing games (17%)
    - Other individual techniques (e.g., customized pitch slides, “too high/too low/just right” feedback).
- Some have unique personal methods borrowed from mentors or modified in practice.

---

4. Solo Singing & Student Confidence

- Solo Opportunities:
    - 50% fairly frequent (“3”), 33% frequent (“4”), 17% infrequent (“2”).
- Confidence in teaching pitch matching:
    - 66% rate themselves at 5 (very confident), 33% at 4.

- Importance in Curriculum: High — majority rate as “5” (essential).

---

5. Technology Use & Impact of COVID-19

- Digital Tools Used:
  - YouTube (67%), Google Classroom (67%), Chrome Music Lab (33%), “Other” (67%), None (17%).
  - “Other” includes:
    - Sight Reading Factory, Music Play Online, JW Pepper sing-alongs, rehearsal tracks, slides.
- Change Since Pandemic:
  - Some use more than before COVID; others less.
  - No one is still using *more* hybrid/remote strategies regularly.
- Confidence Using Technology:
  - Mostly confident — majority at 4–5 level.

---

6. Observed COVID-19 Impacts

- Positive:
  - Access to new resources (slides, videos, recorded materials).
  - Some students eager to sing again once restrictions lifted.
- Negative:
  - Decreased student willingness to sing solo or at all.
  - Decline in overall singing experience and “concept of a singing voice.”
  - Boys in particular resistant to singing high or using head voice.
  - More performance anxiety, less confidence, more self-conscious behavior.
  - Reduced early-grade foundational singing opportunities created gaps.

---

7. Barriers to Teaching Pitch Matching

- Top Barriers (from rating data and open comments):
  - Reluctance to sing alone — often a *major barrier*.
  - Lack of prior musical experience — varies from minor to major.
  - Confidence/anxiety issues — very common; most encounter frequently.
  - Class size & limited individual time — moderate impact for some, major for others.

    - Boys' misconceptions about their vocal range and fear of sounding "like a girl."
    - Cultural/gender mismatch between teacher and student sometimes noted as a factor.
- Lesser Barriers: Classroom acoustics, material access — generally minor.

---

8. Effective Strategies Teachers Report

- Modeling by peers in similar vocal range.
- One-on-one sliding techniques (small to large pitch slides).
- Making pitch matching part of a game to reduce fear.
- Deliberate public "model and demo" by teacher.
- Use of rehearsal tracks and familiar pop music examples.
- Encouraging loud, supported singing to avoid weak pitch production.
- Building relationships & trust before demanding individual singing.
- Early childhood frequent singing to eliminate later issues.

---

9. Differences in Group vs. One-on-One

- Group pitch-matching work seen as less effective for struggling students.
- One-on-one or small group settings preferred for targeted support.
- However, large class teaching often necessitates group approaches.

---

10. Before and After Improvements

- Start of Year Ability: Mixed — most rated 2–3 out of 5.
- Current Ability: Mostly improved to 3–4 out of 5.
- Improvement Observed:
    - 50% report significant improvement.
    - 50% report some improvement.
- Suggests instruction is making a difference despite post-pandemic challenges.

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11. Professional Development Needs & Interest

- Desired PD Topics:

- Step-by-step methodology / flowchart for addressing pitch-matching difficulties.
- Videos showing real-time skill improvement with student peers of similar age/gender.
- Cross-gender vocal demonstration techniques.
- More games & “hook” activities that work universally.
- Digital pitch visualizers (e.g. tuner-like feedback for students).
- Specific training for non-choral teachers.

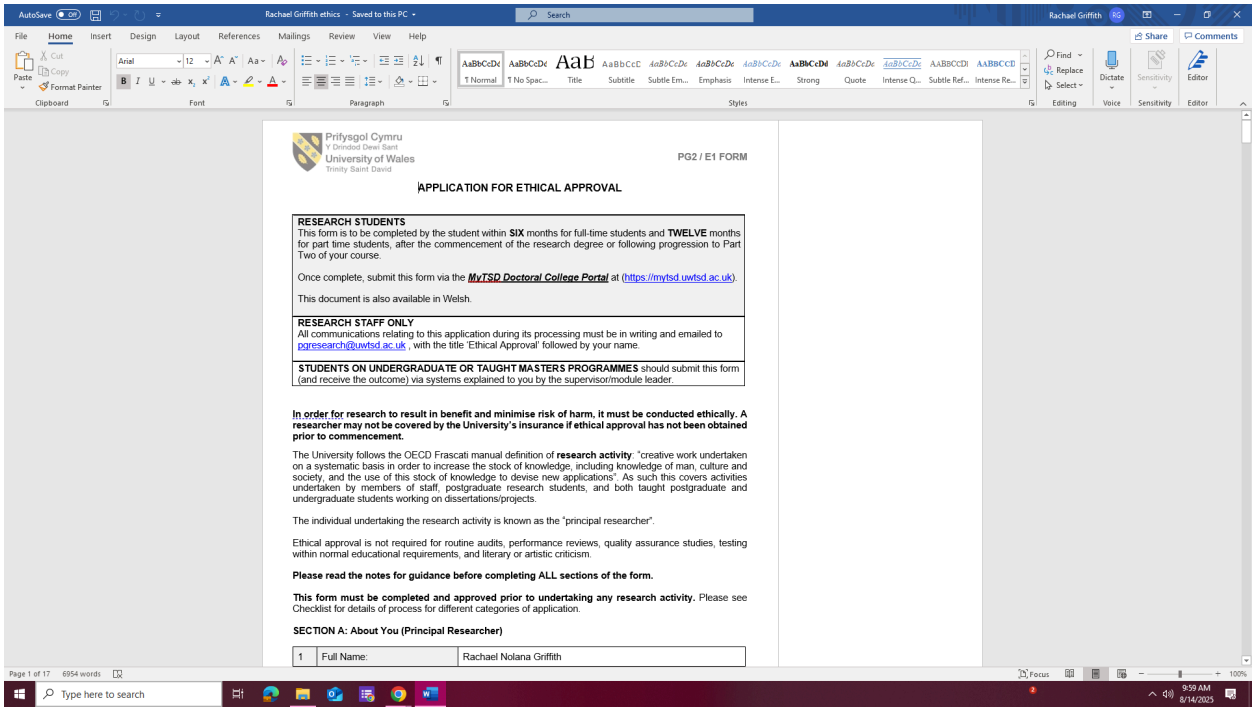
- PD Interest: High — 83% said “Yes,” remainder said “Maybe.”

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12. Philosophical Notes

- Several teachers emphasized:
  - Destigmatizing singing — making it normal across all grades.
  - Starting consistent singing practice in K–6 to prevent problems later.
  - Addressing pitch-matching in broader context of musical confidence and social acceptance.
  - Openness to ongoing experimentation — “find what works this year.”

Appendix 5: Ethics Form and Letter



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APPLICATION FOR ETHICAL APPROVAL

RESEARCH STUDENTS
This form is to be completed by the student within **SIX** months for full-time students and **TWELVE** months for part time students, after the commencement of the research degree or following progression to Part Two of your course.

Once complete, submit this form via the ***MyTSD Doctoral College Portal*** at (https://mytsd.uwtsd.ac.uk).

This document is also available in Welsh.

RESEARCH STAFF ONLY
All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk , with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

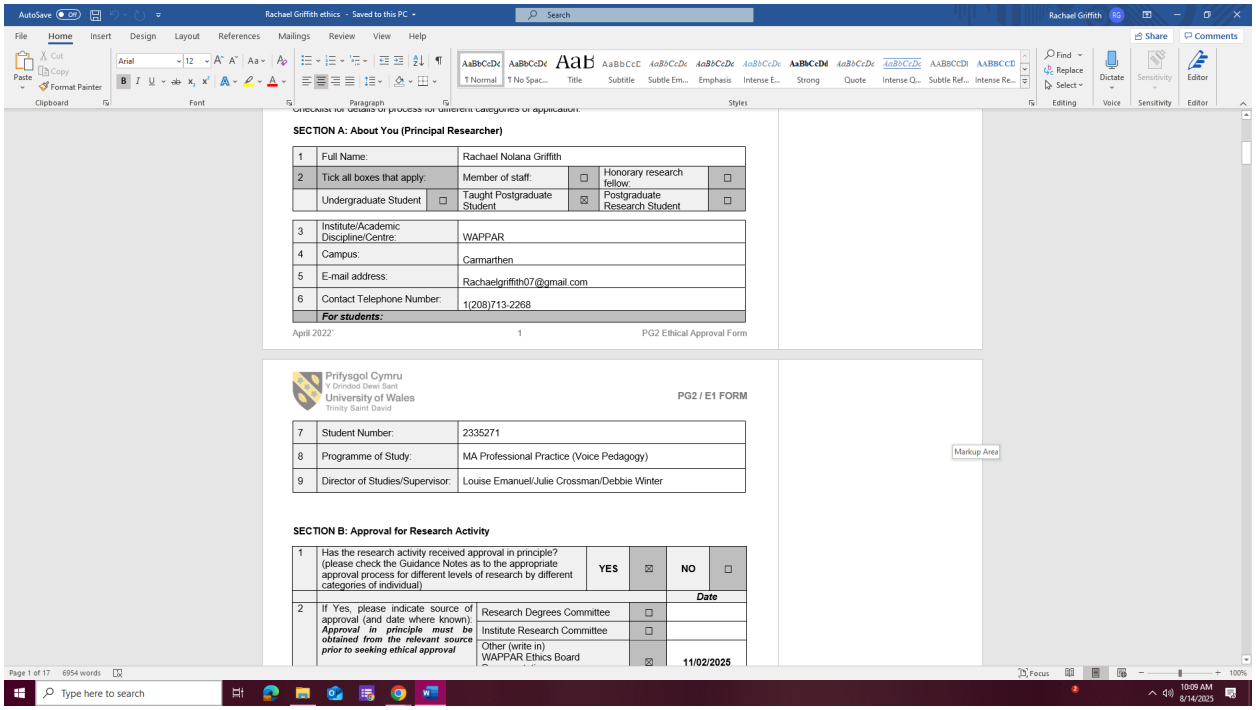
Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

1	Full Name:	Rachael Nolana Griffith



SECTION A: About You (Principal Researcher)

1	Full Name:	Rachael Nolana Griffith			
2	Tick all boxes that apply:	Member of staff:	☐	Honorary research fellow:	☐
	Undergraduate Student ☐	Taught Postgraduate Student	☒	Postgraduate Research Student	☐

3	Institute/Academic Discipline/Centre:	WAPPAR
4	Campus:	Carmarthen
5	E-mail address:	Rachaelgriffith07@gmail.com
6	Contact Telephone Number:	1(208)713-2268
	For students:	

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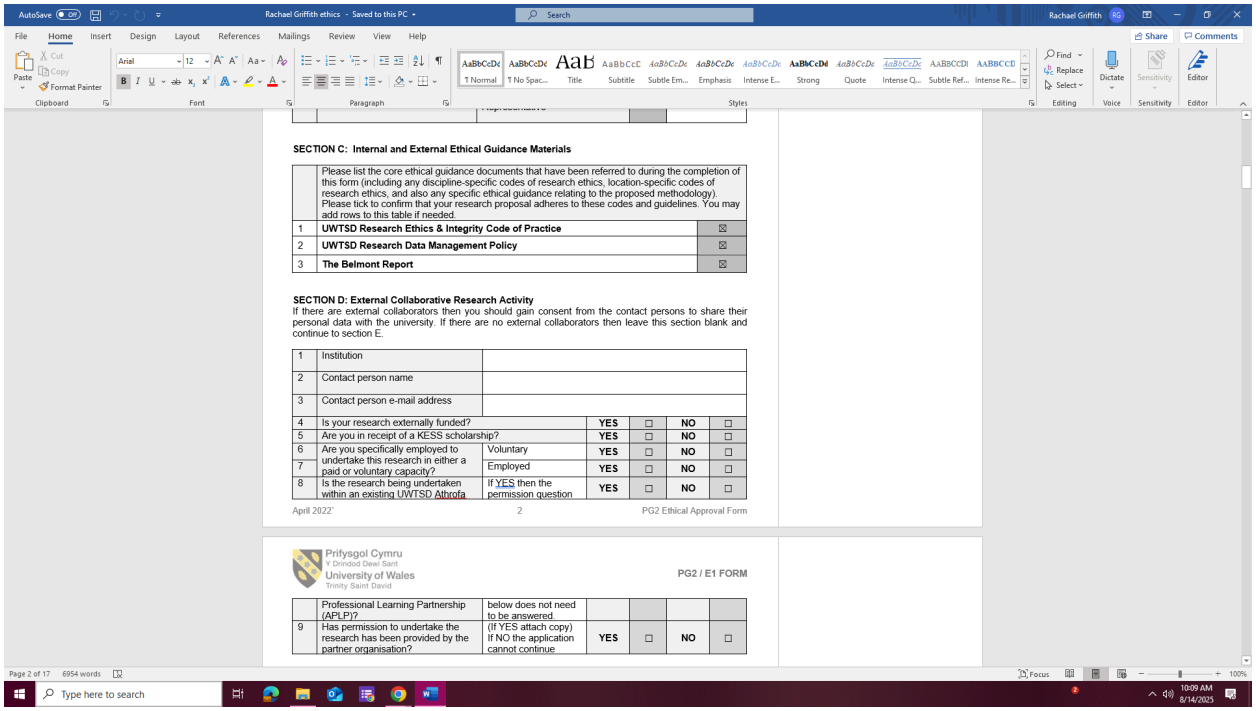
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7	Student Number:	2335271
8	Programme of Study:	MA Professional Practice (Voice Pedagogy)
9	Director of Studies/Supervisor:	Louise Emanuel/Julie Crossman/Debbie Winter

Markup Area

SECTION B: Approval for Research Activity

1	Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)		**YES**	☒	**NO**	☐
						Date
2	If Yes, please indicate source of approval (and date where known). ***Approval in principle must be obtained from the relevant source prior to seeking ethical approval***	Research Degrees Committee	☐			
		Institute Research Committee	☐			
		Other (write in) WAPPAR Ethics Board	☒	**11/02/2025**		



SECTION C: Internal and External Ethical Guidance Materials

	Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.	
1	**UWTSD Research Ethics & Integrity Code of Practice**	☒
2	**UWTSD Research Data Management Policy**	☒
3	**The Belmont Report**	☒

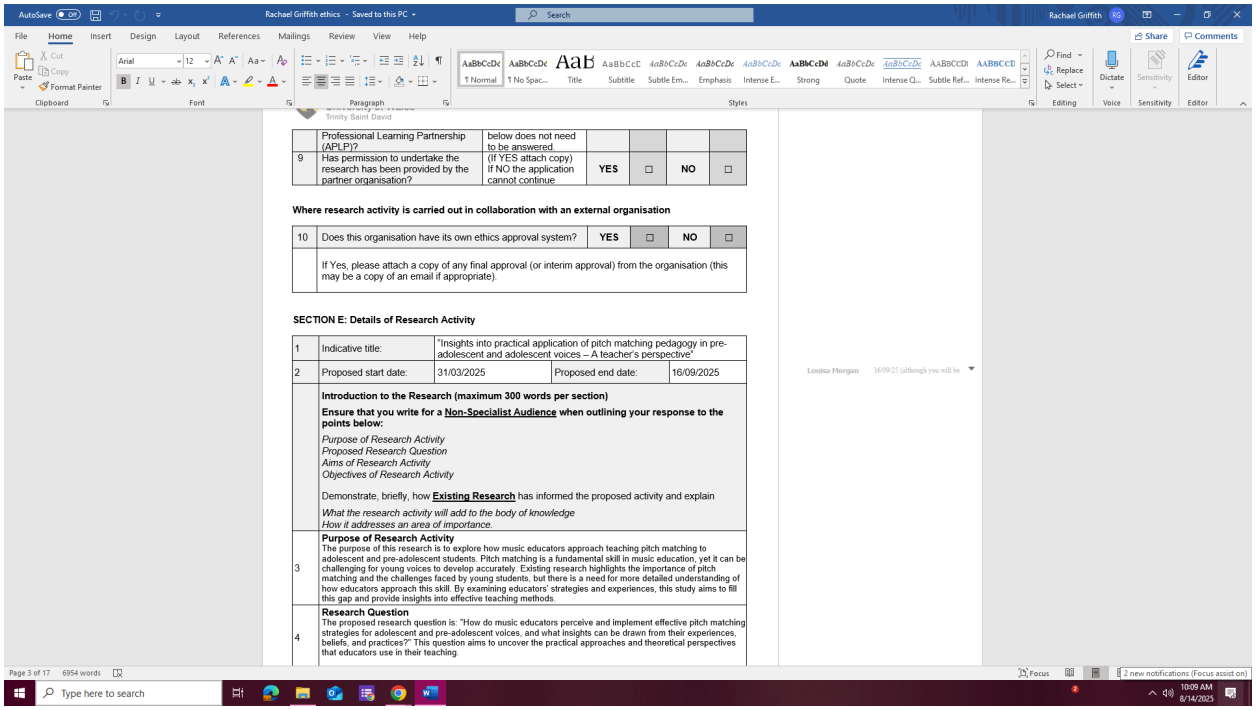
SECTION D: External Collaborative Research Activity
If there are external collaborators then you should gain consent from the contact persons to share their personal data with the university. If there are no external collaborators then leave this section blank and continue to section E.

1	Institution					
2	Contact person name					
3	Contact person e-mail address					
4	Is your research externally funded?		**YES**	☐	**NO**	☐
5	Are you in receipt of a KESS scholarship?		**YES**	☐	**NO**	☐
6	Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary	**YES**	☐	**NO**	☐
7		Employed	**YES**	☐	**NO**	☐
8	Is the research being undertaken within an existing UWTSD Athrofa	If YES then the permission question	**YES**	☐	**NO**	☐

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	Professional Learning Partnership (APLP)?	below does not need to be answered				
9	Has permission to undertake the research has been provided by the partner organisation?	(If YES attach copy) If NO the application cannot continue	**YES**	☐	**NO**	☐



	Professional Learning Partnership (APLP)?	below does not need to be answered				
9	Has permission to undertake the research has been provided by the partner organisation?	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☐

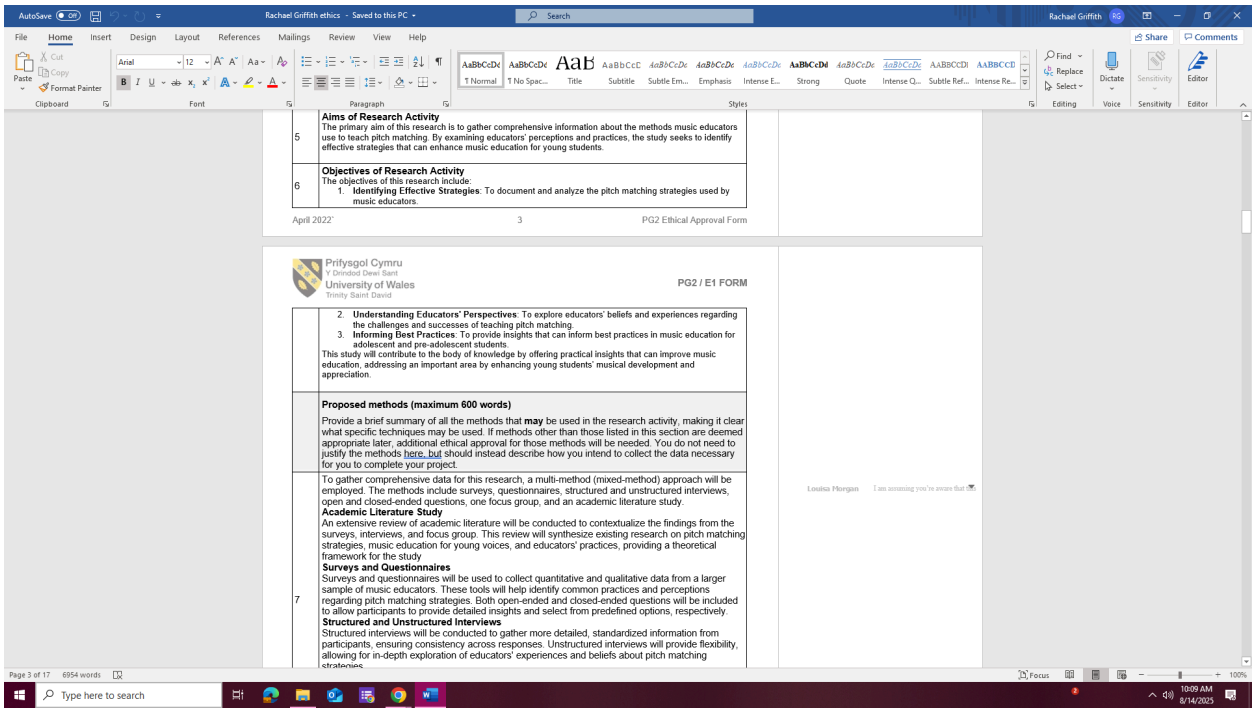
Where research activity is carried out in collaboration with an external organisation

10	Does this organisation have its own ethics approval system?	YES	☐	NO	☐
	If Yes, please attach a copy of any final approval (or interim approval) from the organisation (this may be a copy of an email if appropriate).				

SECTION E: Details of Research Activity

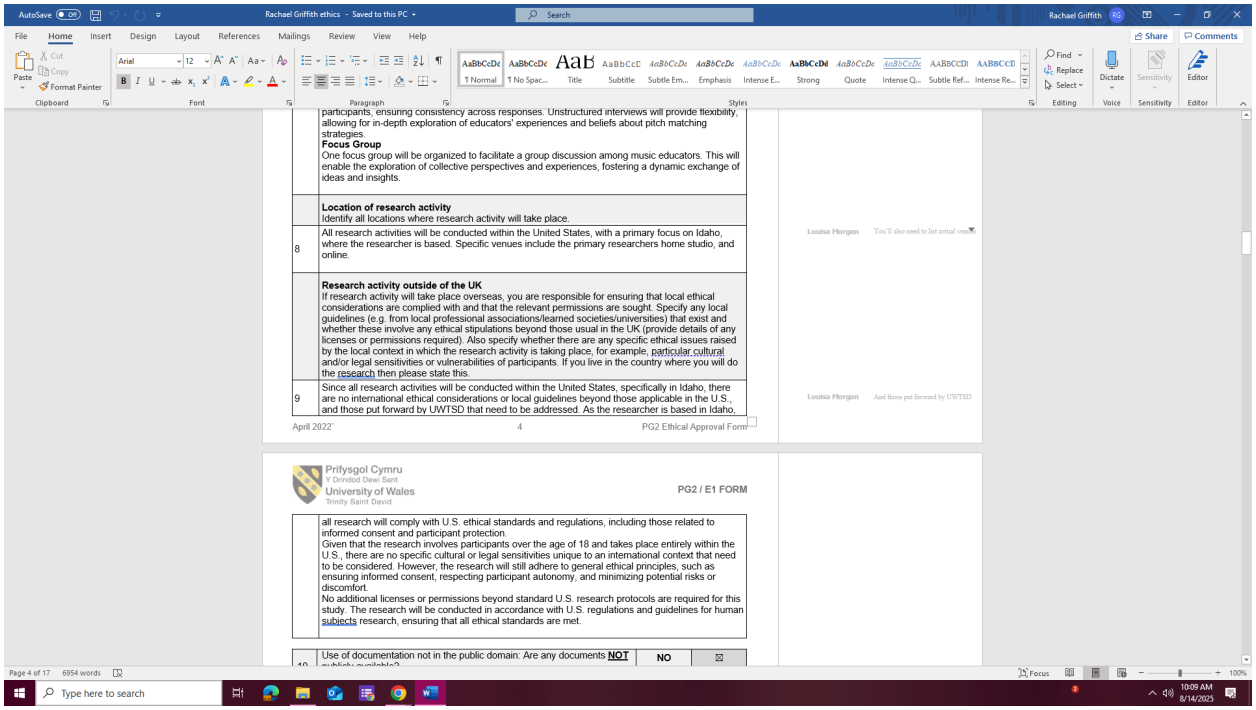
1	Indicative title:	"Insights into practical application of pitch matching pedagogy in pre-adolescent and adolescent voices – A teacher's perspective"	
2	Proposed start date:	31/03/2025	Proposed end date: 16/09/2025

	Introduction to the Research (maximum 300 words per section) **Ensure that you write for a Non-Specialist Audience when outlining your response to the points below:** *Purpose of Research Activity* *Proposed Research Question* *Aims of Research Activity* *Objectives of Research Activity* Demonstrate, briefly, how Existing Research has informed the proposed activity and explain *What the research activity will add to the body of knowledge* *How it addresses an area of importance.*
3	**Purpose of Research Activity** The purpose of this research is to explore how music educators approach teaching pitch matching to adolescent and pre-adolescent students. Pitch matching is a fundamental skill in music education, yet it can be challenging for young voices to develop accurately. Existing research highlights the importance of pitch matching and the challenges faced by young students, but there is a need for more detailed understanding of how educators approach this skill. By examining educators' strategies and experiences, this study aims to fill this gap and provide insights into effective teaching methods.
4	**Research Question** The proposed research question is: "How do music educators perceive and implement effective pitch matching strategies for adolescent and pre-adolescent voices, and what insights can be drawn from their experiences, beliefs, and practices?" This question aims to uncover the practical approaches and theoretical perspectives that educators use in their teaching.



5	**Aims of Research Activity** The primary aim of this research is to gather comprehensive information about the methods music educators use to teach pitch matching. By examining educators' perceptions and practices, the study seeks to identify effective strategies that can enhance music education for young students.
6	**Objectives of Research Activity** The objectives of this research include: 1. **Identifying Effective Strategies**: To document and analyze the pitch matching strategies used by music educators.

	2. **Understanding Educators' Perspectives**: To explore educators' beliefs and experiences regarding the challenges and successes of teaching pitch matching. 3. **Informing Best Practices**: To provide insights that can inform best practices in music education for adolescent and pre-adolescent students. This study will contribute to the body of knowledge by offering practical insights that can improve music education, addressing an important area by enhancing young students' musical development and appreciation.
	Proposed methods (maximum 600 words) Provide a brief summary of all the methods that **may** be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	To gather comprehensive data for this research, a multi-method (mixed-method) approach will be employed. The methods include surveys, questionnaires, structured and unstructured interviews, open and closed-ended questions, one focus group, and an academic literature study. **Academic Literature Study** An extensive review of academic literature will be conducted to contextualize the findings from the surveys, interviews, and focus group. This review will synthesize existing research on pitch matching strategies, music education for young voices, and educators' practices, providing a theoretical framework for the study **Surveys and Questionnaires** Surveys and questionnaires will be used to collect quantitative and qualitative data from a larger sample of music educators. These tools will help identify common practices and perceptions regarding pitch matching strategies. Both open-ended and closed-ended questions will be included to allow participants to provide detailed insights and select from predefined options, respectively. **Structured and Unstructured Interviews** Structured interviews will be conducted to gather more detailed, standardized information from participants, ensuring consistency across responses. Unstructured interviews will provide flexibility, allowing for in-depth exploration of educators' experiences and beliefs about pitch matching strategies.



	participants, ensuring consistency across responses. Unstructured interviews will provide flexibility, allowing for in-depth exploration of educators' experiences and beliefs about pitch matching strategies. **Focus Group** One focus group will be organized to facilitate a group discussion among music educators. This will enable the exploration of collective perspectives and experiences, fostering a dynamic exchange of ideas and insights.
	Location of research activity Identify all locations where research activity will take place.
8	All research activities will be conducted within the United States, with a primary focus on Idaho, where the researcher is based. Specific venues include the primary researchers home studio, and online.
	Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants. If you live in the country where you will do the research then please state this.
9	Since all research activities will be conducted within the United States, specifically in Idaho, there are no international ethical considerations or local guidelines beyond those applicable in the U.S., and those put forward by UWTSD that need to be addressed. As the researcher is based in Idaho,

Louisa Morgan — You'll also need to list actual venu

Louisa Morgan — And those put forward by UWTSD

	all research will comply with U.S. ethical standards and regulations, including those related to informed consent and participant protection. Given that the research involves participants over the age of 18 and takes place entirely within the U.S., there are no specific cultural or legal sensitivities unique to an international context that need to be considered. However, the research will still adhere to general ethical principles, such as ensuring informed consent, respecting participant autonomy, and minimizing potential risks or discomfort. No additional licenses or permissions beyond standard U.S. research protocols are required for this study. The research will be conducted in accordance with U.S. regulations and guidelines for human subjects research, ensuring that all ethical standards are met.

10	Use of documentation not in the public domain: Are any documents **NOT** publicly available?	**NO**	☒
		YES	☐
11	If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with the current data protection law of the country in question and that of England and Wales. *(this box should expand as you type)*		

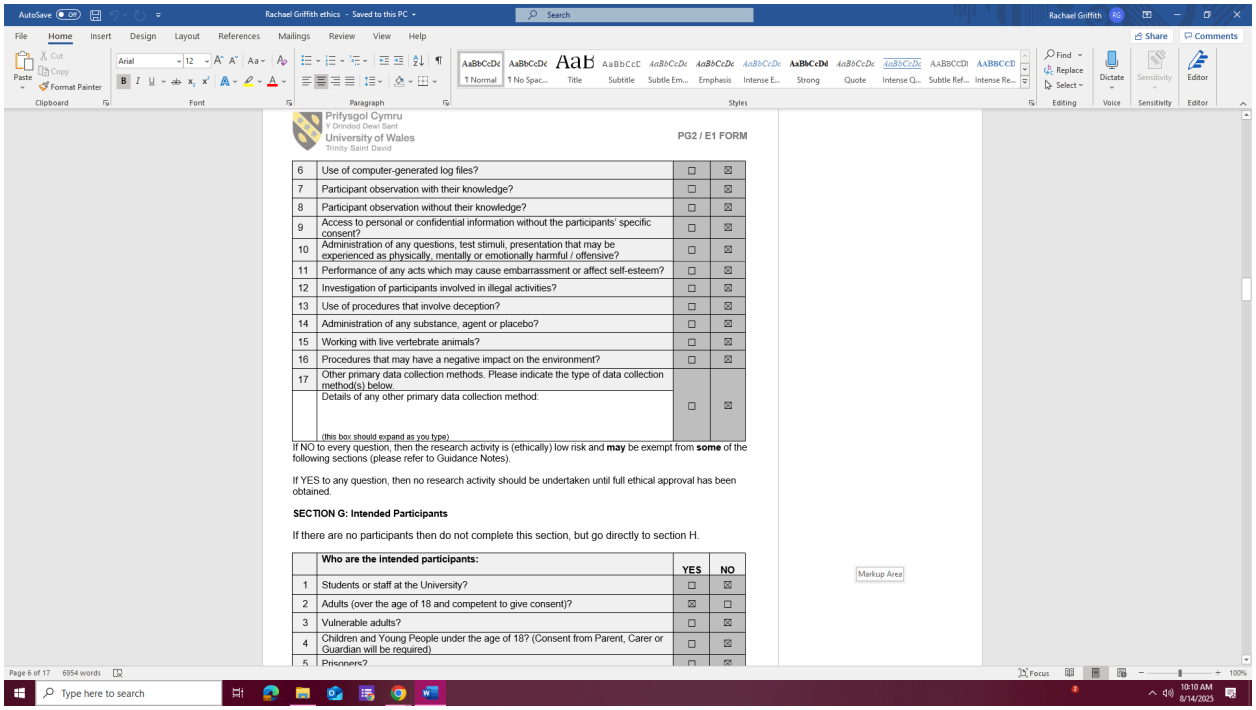
Louisa Morgan — I've just checked all the 'no' boxe

	Does your research relate to one or more of the seven aims of the Well-being of Future Generations (Wales) Act 2015?	**YES**	**NO**
12	A prosperous Wales	☐	☒
13	A resilient Wales	☐	☒
14	A healthier Wales	☐	☒
15	A more equal Wales	☐	☒
16	A Wales of cohesive communities	☐	☒
17	A Wales of vibrant culture and thriving Welsh language	☐	☒
18	A globally responsible Wales	☐	☒
19	If YES to any of the above, please give details: (this box should expand as you type)		

SECTION F: Scope of Research Activity

	Will the research activity include:	**YES**	**NO**
1	Use of a questionnaire or similar research instrument?	☒	☐
2	Use of interviews?	☒	☐
3	Use of focus groups?	☒	☐
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☒	☐

Louisa Morgan — Will you not be recording your



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6	Use of computer-generated log files?	☐	☒
7	Participant observation with their knowledge?	☐	☒
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
11	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12	Investigation of participants involved in illegal activities?	☐	☒
13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.		
	Details of any other primary data collection method: (this box should expand as you type)	☐	☒

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

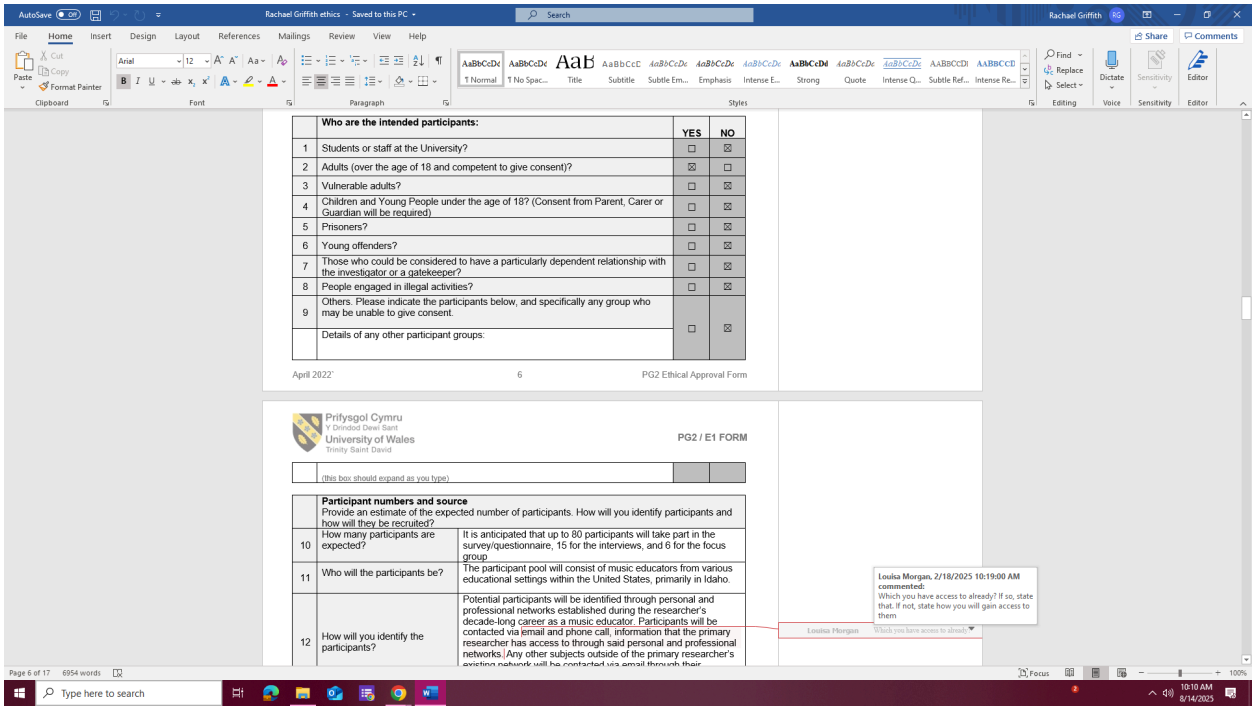
If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

If there are no participants then do not complete this section, but go directly to section H.

	Who are the intended participants:	**YES**	**NO**
1	Students or staff at the University?	☐	☒
2	Adults (over the age of 18 and competent to give consent)?	☒	☐
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
5	Prisoners?	☐	☒

Markup Area



	Who are the intended participants:	YES	NO
1	Students or staff at the University?	☐	☒
2	Adults (over the age of 18 and competent to give consent)?	☒	☐
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.	☐	☒
	Details of any other participant groups:		

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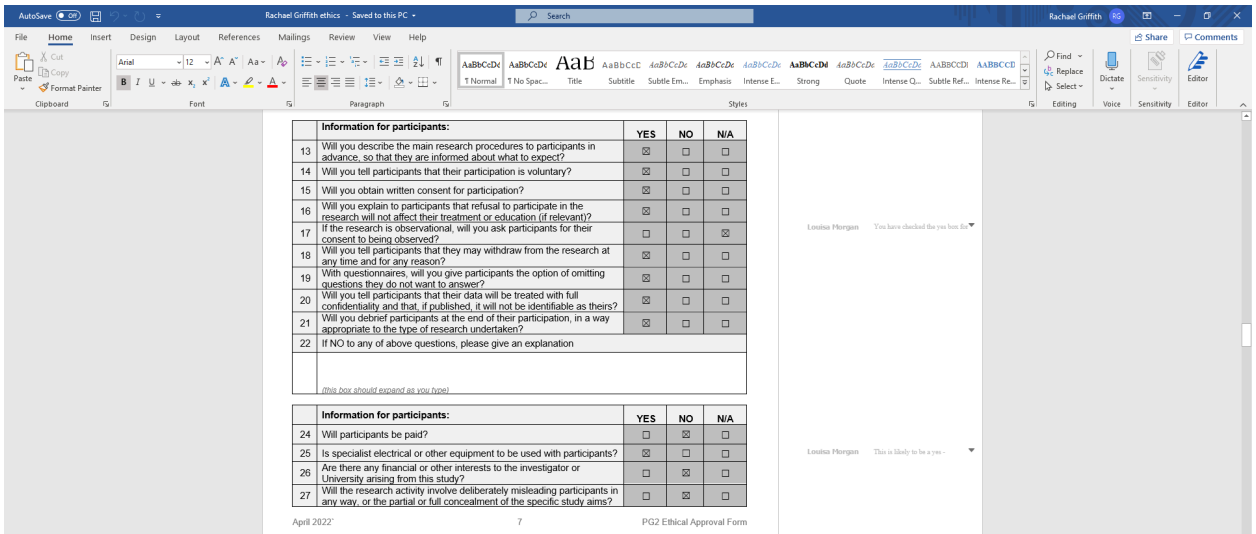
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	(this box should expand as you type)		

	Participant numbers and source Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
10	How many participants are expected?	It is anticipated that up to 80 participants will take part in the survey/questionnaire, 15 for the interviews, and 6 for the focus group
11	Who will the participants be?	The participant pool will consist of music educators from various educational settings within the United States, primarily in Idaho.
12	How will you identify the participants?	Potential participants will be identified through personal and professional networks established during the researcher's decade-long career as a music educator. Participants will be contacted via email and phone call, information that the primary researcher has access to through said personal and professional networks. Any other subjects outside of the primary researcher's existing network will be contacted via email through their

Louisa Morgan, 2/18/2025 10:19:00 AM commented:
Which you have access to already? If so, state that. If not, state how you will gain access to them

Louisa Morgan Which you have access to already



	Information for participants:	YES	NO	N/A
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
14	Will you tell participants that their participation is voluntary?	☒	☐	☐
15	Will you obtain written consent for participation?	☒	☐	☐
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☒	☐	☐
17	If the research is observational, will you ask participants for their consent to being observed?	☐	☐	☒
18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☒	☐	☐
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
22	If NO to any of above questions, please give an explanation			
	(this box should expand as you type)			

Louisa Morgan You have checked that you box for

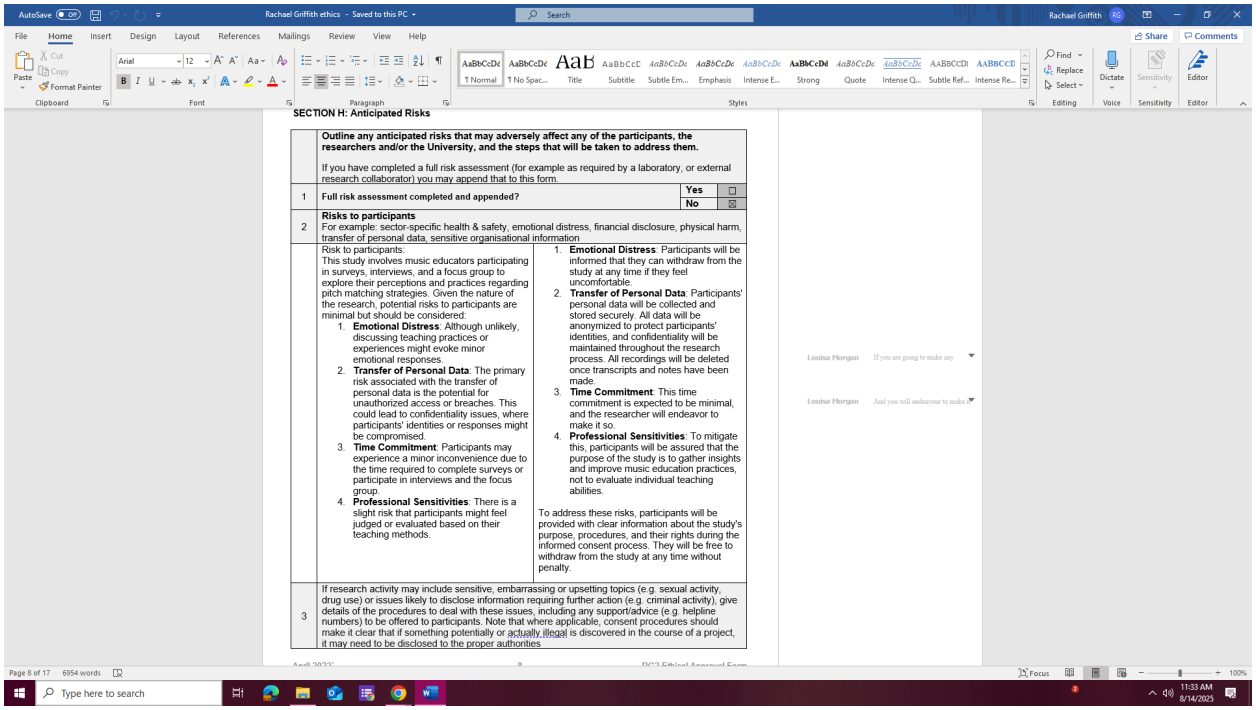
	Information for participants:	YES	NO	N/A
24	Will participants be paid?	☐	☒	☐
25	Is specialist electrical or other equipment to be used with participants?	☒	☐	☐
26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐

Louisa Morgan This is likely to be a yes -

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28	If YES to any question, please provide full details
	Laptops, cell phones, and desktop computers will all be utilized. A voice recorder with a removable SD card will also be used.



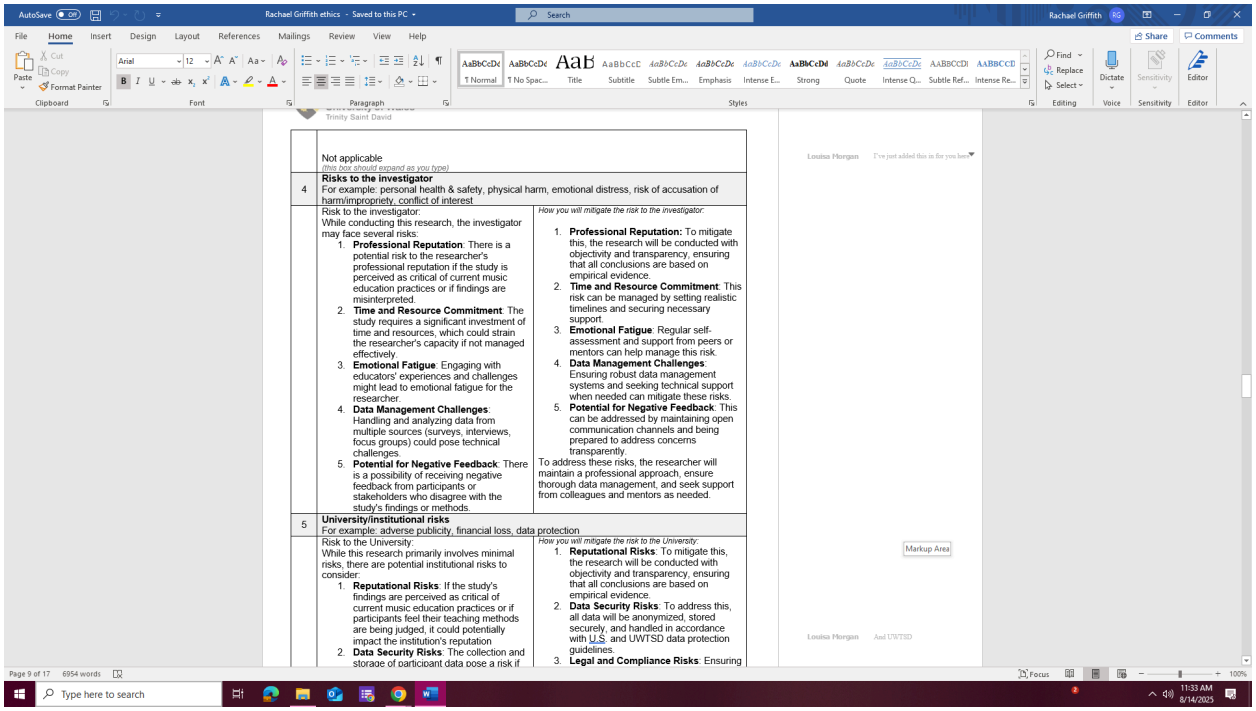
SECTION H: Anticipated Risks

	Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.	
1	**Full risk assessment completed and appended?**	**Yes** ☐ **No** ☒
2	**Risks to participants** For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information	
	Risk to participants: This study involves music educators participating in surveys, interviews, and a focus group to explore their perceptions and practices regarding pitch matching strategies. Given the nature of the research, potential risks to participants are minimal but should be considered: 1. **Emotional Distress**: Although unlikely, discussing teaching practices or experiences might evoke minor emotional responses. 2. **Transfer of Personal Data**: The primary risk associated with the transfer of personal data is the potential for unauthorized access or breaches. This could lead to confidentiality issues, where participants' identities or responses might be compromised. 3. **Time Commitment**: Participants may experience a minor inconvenience due to the time required to complete surveys or participate in interviews and the focus group. 4. **Professional Sensitivities**: There is a slight risk that participants might feel judged or evaluated based on their teaching methods.	1. **Emotional Distress**: Participants will be informed that they can withdraw from the study at any time if they feel uncomfortable. 2. **Transfer of Personal Data**: Participants' personal data will be collected and stored securely. All data will be anonymized to protect participants' identities, and confidentiality will be maintained throughout the research process. All recordings will be deleted once transcripts and notes have been made. 3. **Time Commitment**: This time commitment is expected to be minimal, and the researcher will endeavor to make it so. 4. **Professional Sensitivities**: To mitigate this, participants will be assured that the purpose of the study is to gather insights and improve music education practices, not to evaluate individual teaching abilities. To address these risks, participants will be provided with clear information about the study's purpose, procedures, and their rights during the informed consent process. They will be free to withdraw from the study at any time without penalty.
3	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities	

Louisa Morgan If you are going to make any

Louisa Morgan And you will endeavour to make it

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Not applicable
(this box should expand as you type)

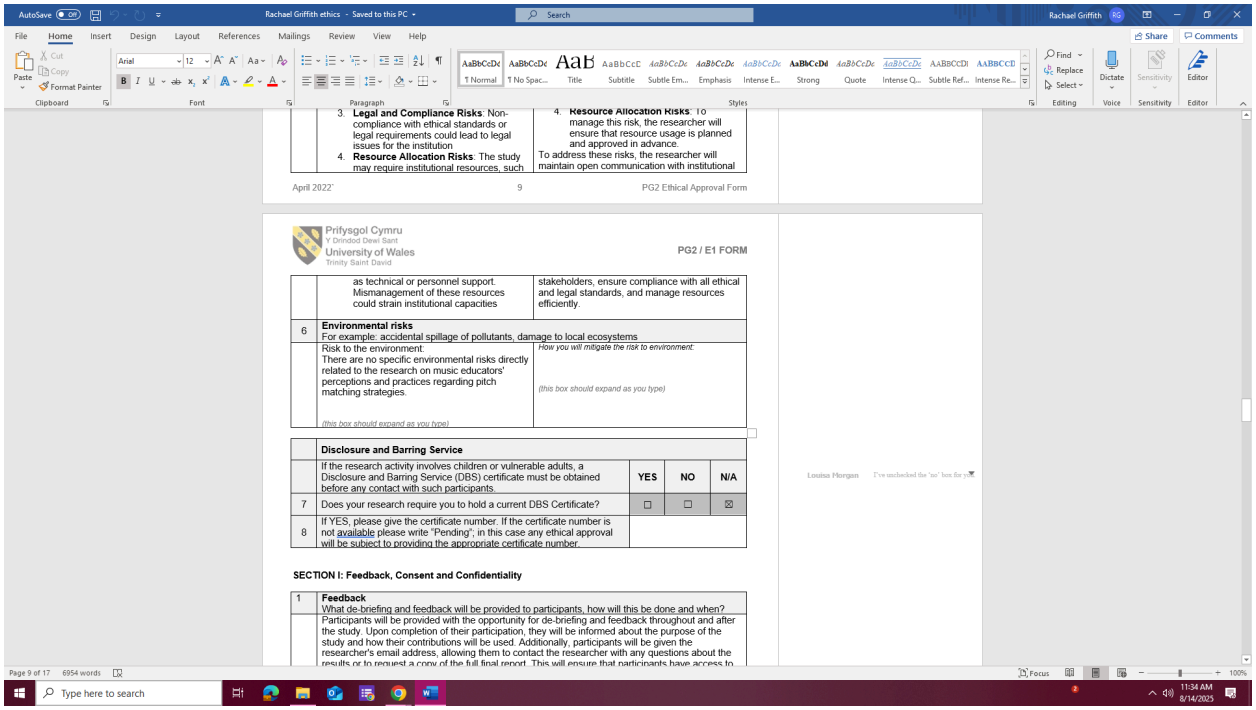
4	**Risks to the investigator** For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest	
	Risk to the investigator: While conducting this research, the investigator may face several risks: 1. **Professional Reputation**: There is a potential risk to the researcher's professional reputation if the study is perceived as critical of current music education practices or if findings are misinterpreted. 2. **Time and Resource Commitment**: The study requires a significant investment of time and resources, which could strain the researcher's capacity if not managed effectively. 3. **Emotional Fatigue**: Engaging with educators' experiences and challenges might lead to emotional fatigue for the researcher. 4. **Data Management Challenges**: Handling and analyzing data from multiple sources (surveys, interviews, focus groups) could pose technical challenges. 5. **Potential for Negative Feedback**: There is a possibility of receiving negative feedback from participants or stakeholders who disagree with the study's findings or methods.	*How you will mitigate the risk to the investigator:* 1. **Professional Reputation:** To mitigate this, the research will be conducted with objectivity and transparency, ensuring that all conclusions are based on empirical evidence. 2. **Time and Resource Commitment**: This risk can be managed by setting realistic timelines and securing necessary support. 3. **Emotional Fatigue**: Regular self-assessment and support from peers or mentors can help manage this risk. 4. **Data Management Challenges**: Ensuring robust data management systems and seeking technical support when needed can mitigate these risks. 5. **Potential for Negative Feedback**: This can be addressed by maintaining open communication channels and being prepared to address concerns transparently. To address these risks, the researcher will maintain a professional approach, ensure thorough data management, and seek support from colleagues and mentors as needed.
5	**University/institutional risks** For example: adverse publicity, financial loss, data protection	
	Risk to the University: While this research primarily involves minimal risks, there are potential institutional risks to consider: 1. **Reputational Risks**: If the study's findings are perceived as critical of current music education practices or if participants feel their teaching methods are being judged, it could potentially impact the institution's reputation. 2. **Data Security Risks**: The collection and storage of participant data pose a risk if	*How you will mitigate the risk to the University:* 1. **Reputational Risks**: To mitigate this, the research will be conducted with objectivity and transparency, ensuring that all conclusions are based on empirical evidence. 2. **Data Security Risks**: To address this, all data will be anonymized, stored securely, and handled in accordance with U.S. and UWTSD data protection guidelines. 3. **Legal and Compliance Risks**: Ensuring

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Markup Area

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	3. **Legal and Compliance Risks**: Non-compliance with ethical standards or legal requirements could lead to legal issues for the institution. 4. **Resource Allocation Risks**: The study may require institutional resources, such	4. **Resource Allocation Risks**: To manage this risk, the researcher will ensure that resource usage is planned and approved in advance. To address these risks, the researcher will maintain open communication with institutional

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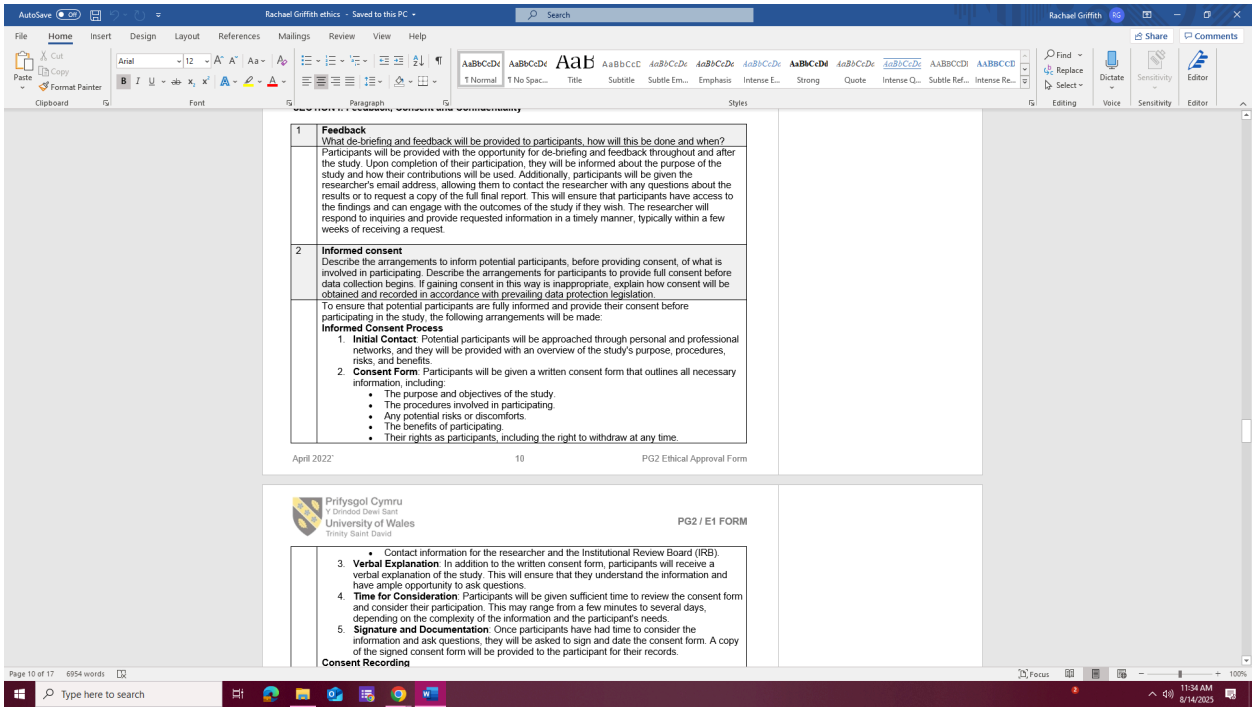
	as technical or personnel support. Mismanagement of these resources could strain institutional capacities	stakeholders, ensure compliance with all ethical and legal standards, and manage resources efficiently.
6	**Environmental risks** For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment: There are no specific environmental risks directly related to the research on music educators' perceptions and practices regarding pitch matching strategies. *(this box should expand as you type)*	*How you will mitigate the risk to environment:* *(this box should expand as you type)*

	Disclosure and Barring Service			
	If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	**YES**	**NO**	**N/A**
7	Does your research require you to hold a current DBS Certificate?	☐	☐	☒
8	If YES, please give the certificate number. If the certificate number is not available please write "Pending"; in this case any ethical approval will be subject to providing the appropriate certificate number.			

Louisa Morgan I've unchecked the 'no' box for you

SECTION I: Feedback, Consent and Confidentiality

1	**Feedback** What de-briefing and feedback will be provided to participants, how will this be done and when?
	Participants will be provided with the opportunity for de-briefing and feedback throughout and after the study. Upon completion of their participation, they will be informed about the purpose of the study and how their contributions will be used. Additionally, participants will be given the researcher's email address, allowing them to contact the researcher with any questions about the results or to request a copy of the full final report. This will ensure that participants have access to

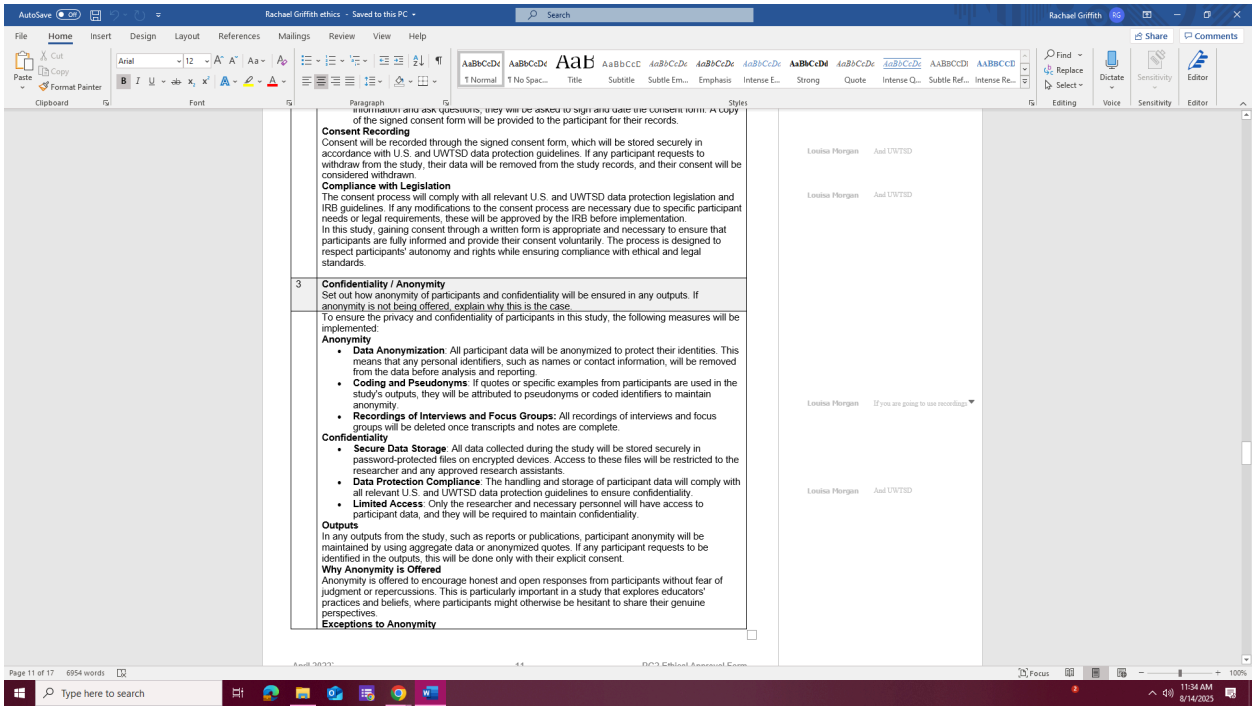


1	**Feedback** What de-briefing and feedback will be provided to participants, how will this be done and when?
	Participants will be provided with the opportunity for de-briefing and feedback throughout and after the study. Upon completion of their participation, they will be informed about the purpose of the study and how their contributions will be used. Additionally, participants will be given the researcher's email address, allowing them to contact the researcher with any questions about the results or to request a copy of the full final report. This will ensure that participants have access to the findings and can engage with the outcomes of the study if they wish. The researcher will respond to inquiries and provide requested information in a timely manner, typically within a few weeks of receiving a request.
2	**Informed consent** Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	To ensure that potential participants are fully informed and provide their consent before participating in the study, the following arrangements will be made: **Informed Consent Process** 1. **Initial Contact**: Potential participants will be approached through personal and professional networks, and they will be provided with an overview of the study's purpose, procedures, risks, and benefits. 2. **Consent Form**: Participants will be given a written consent form that outlines all necessary information, including: • The purpose and objectives of the study. • The procedures involved in participating. • Any potential risks or discomforts. • The benefits of participating. • Their rights as participants, including the right to withdraw at any time.

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• Contact information for the researcher and the Institutional Review Board (IRB). 3. **Verbal Explanation**: In addition to the written consent form, participants will receive a verbal explanation of the study. This will ensure that they understand the information and have ample opportunity to ask questions. 4. **Time for Consideration**: Participants will be given sufficient time to review the consent form and consider their participation. This may range from a few minutes to several days, depending on the complexity of the information and the participant's needs. 5. **Signature and Documentation**: Once participants have had time to consider the information and ask questions, they will be asked to sign and date the consent form. A copy of the signed consent form will be provided to the participant for their records. **Consent Recording**



of the signed consent form will be provided to the participant for their records.

Consent Recording
Consent will be recorded through the signed consent form, which will be stored securely in accordance with U.S. and UWTSD data protection guidelines. If any participant requests to withdraw from the study, their data will be removed from the study records, and their consent will be considered withdrawn.

Compliance with Legislation
The consent process will comply with all relevant U.S. and UWTSD data protection legislation and IRB guidelines. If any modifications to the consent process are necessary due to specific participant needs or legal requirements, these will be approved by the IRB before implementation.
In this study, gaining consent through a written form is appropriate and necessary to ensure that participants are fully informed and provide their consent voluntarily. The process is designed to respect participants' autonomy and rights while ensuring compliance with ethical and legal standards.

3	**Confidentiality / Anonymity** Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.

To ensure the privacy and confidentiality of participants in this study, the following measures will be implemented:

Anonymity

- **Data Anonymization**: All participant data will be anonymized to protect their identities. This means that any personal identifiers, such as names or contact information, will be removed from the data before analysis and reporting.
- **Coding and Pseudonyms**: If quotes or specific examples from participants are used in the study's outputs, they will be attributed to pseudonyms or coded identifiers to maintain anonymity.
- **Recordings of Interviews and Focus Groups:** All recordings of interviews and focus groups will be deleted once transcripts and notes are complete.

Confidentiality

- **Secure Data Storage**: All data collected during the study will be stored securely in password-protected files on encrypted devices. Access to these files will be restricted to the researcher and any approved research assistants.
- **Data Protection Compliance**: The handling and storage of participant data will comply with all relevant U.S. and UWTSD data protection guidelines to ensure confidentiality.
- **Limited Access**: Only the researcher and necessary personnel will have access to participant data, and they will be required to maintain confidentiality.

Outputs
In any outputs from the study, such as reports or publications, participant anonymity will be maintained by using aggregate data or anonymized quotes. If any participant requests to be identified in the outputs, this will be done only with their explicit consent.

Why Anonymity is Offered
Anonymity is offered to encourage honest and open responses from participants without fear of judgment or repercussions. This is particularly important in a study that explores educators' practices and beliefs, where participants might otherwise be hesitant to share their genuine perspectives.

Exceptions to Anonymity

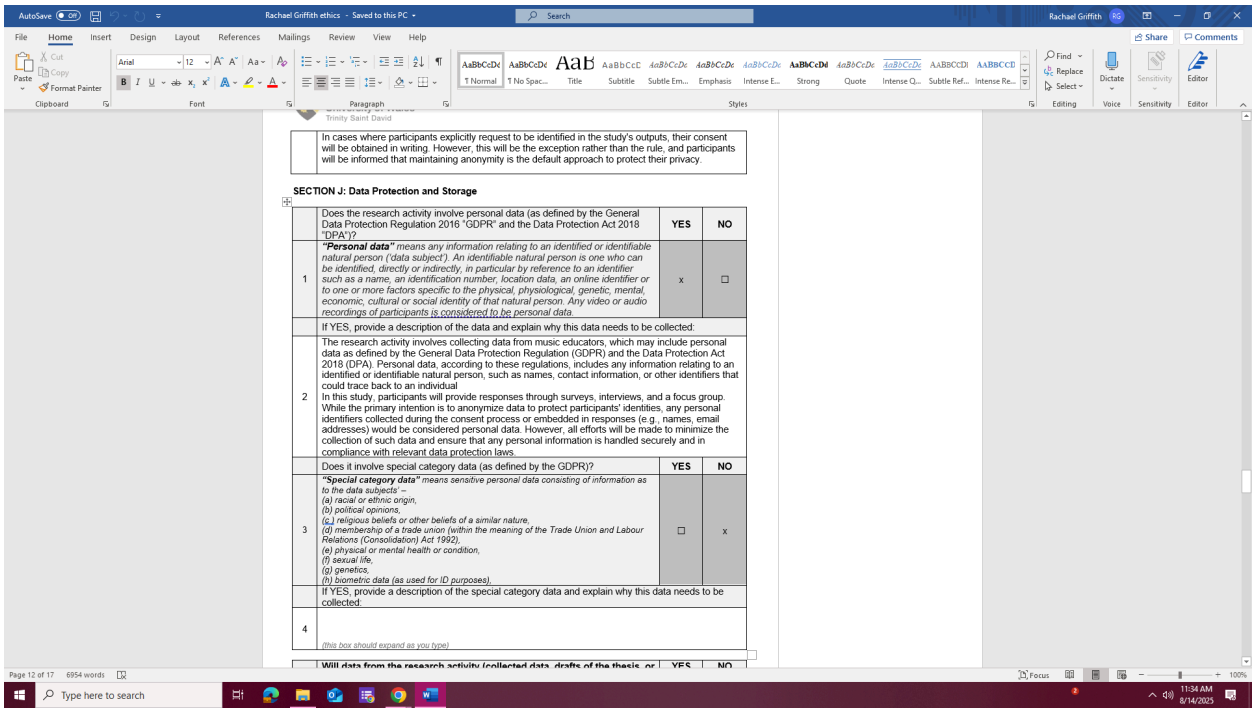
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Louisa Morgan If you are going to use recordings

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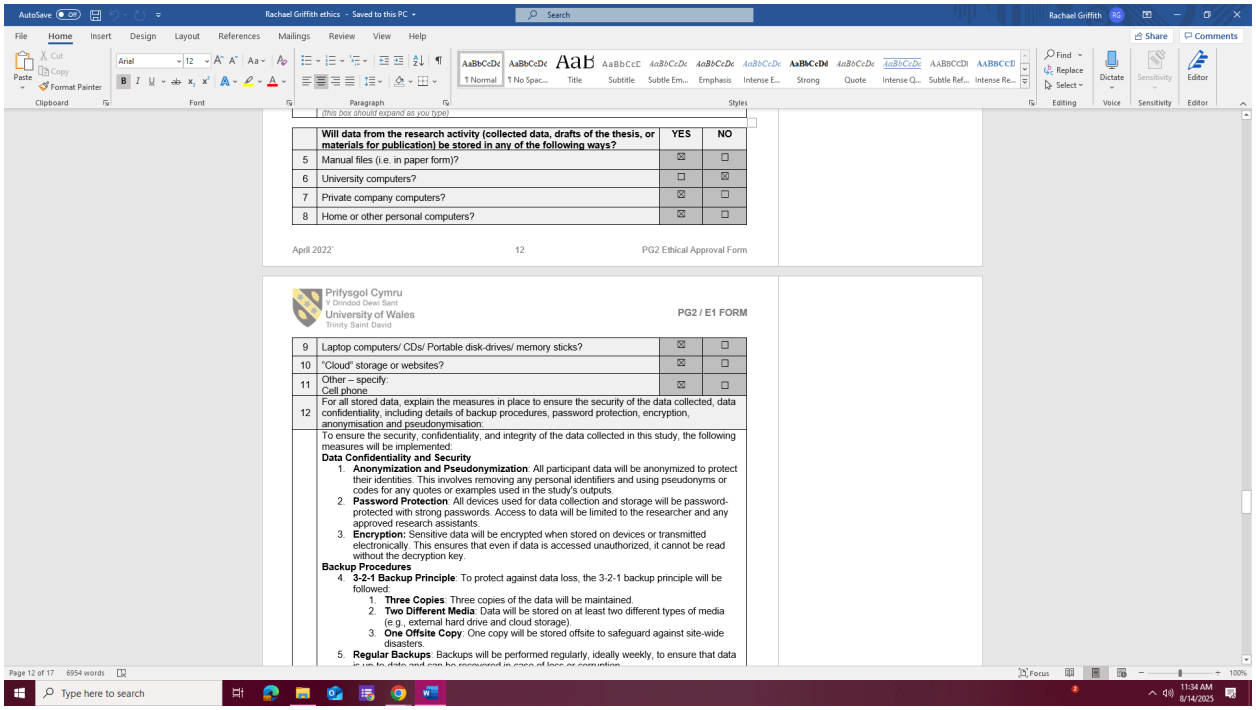


In cases where participants explicitly request to be identified in the study's outputs, their consent will be obtained in writing. However, this will be the exception rather than the rule, and participants will be informed that maintaining anonymity is the default approach to protect their privacy.

SECTION J: Data Protection and Storage

		YES	NO
	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?		
1	***"Personal data"*** *means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.*	x	☐
	If YES, provide a description of the data and explain why this data needs to be collected:		
2	The research activity involves collecting data from music educators, which may include personal data as defined by the General Data Protection Regulation (GDPR) and the Data Protection Act 2018 (DPA). Personal data, according to these regulations, includes any information relating to an identified or identifiable natural person, such as names, contact information, or other identifiers that could trace back to an individual In this study, participants will provide responses through surveys, interviews, and a focus group. While the primary intention is to anonymize data to protect participants' identities, any personal identifiers collected during the consent process or embedded in responses (e.g., names, email addresses) would be considered personal data. However, all efforts will be made to minimize the collection of such data and ensure that any personal information is handled securely and in compliance with relevant data protection laws.		
	Does it involve special category data (as defined by the GDPR)?	YES	NO
3	***"Special category data"*** *means sensitive personal data consisting of information as to the data subjects' –* *(a) racial or ethnic origin,* *(b) political opinions,* *(c) religious beliefs or other beliefs of a similar nature,* *(d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992),* *(e) physical or mental health or condition,* *(f) sexual life,* *(g) genetics,* *(h) biometric data (as used for ID purposes).*	☐	x
	If YES, provide a description of the special category data and explain why this data needs to be collected:		
4	*(this box should expand as you type)*		

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(this box should expand as you type)

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☒	☐
6	University computers?	☐	☒
7	Private company computers?	☒	☐
8	Home or other personal computers?	☒	☐

9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☒	☐
10	"Cloud" storage or websites?	☒	☐
11	Other – specify: Cell phone	☒	☐
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:		

To ensure the security, confidentiality, and integrity of the data collected in this study, the following measures will be implemented:

Data Confidentiality and Security

1. **Anonymization and Pseudonymization**: All participant data will be anonymized to protect their identities. This involves removing any personal identifiers and using pseudonyms or codes for any quotes or examples used in the study's outputs.
2. **Password Protection**: All devices used for data collection and storage will be password-protected with strong passwords. Access to data will be limited to the researcher and any approved research assistants.
3. **Encryption:** Sensitive data will be encrypted when stored on devices or transmitted electronically. This ensures that even if data is accessed unauthorized, it cannot be read without the decryption key.

Backup Procedures

4. **3-2-1 Backup Principle**: To protect against data loss, the 3-2-1 backup principle will be followed:
    1. **Three Copies**: Three copies of the data will be maintained.
    2. **Two Different Media**: Data will be stored on at least two different types of media (e.g., external hard drive and cloud storage).
    3. **One Offsite Copy**: One copy will be stored offsite to safeguard against site-wide disasters.
5. **Regular Backups**: Backups will be performed regularly, ideally weekly, to ensure that data is up-to-date and can be recovered in case of loss or corruption.
6. **Secure Storage**: All backups will be stored securely.

Data Management

7. **Access Control**: Access to data will be restricted to necessary personnel only, ensuring that only authorized individuals can view or modify the data.
8. **Data Destruction**: Once the study is completed and data is no longer needed, all physical copies will be securely destroyed, and digital copies will be permanently deleted.
9. **Compliance with Regulations**: The data management plan will comply with relevant U.S. and UWTSD data protection guidelines and any applicable institutional policies.

By implementing these measures, the study ensures that participant data is handled securely, confidentially, and in compliance with ethical standards.

	Data Protection		
	Will the research activity involve any of the following activities:	YES	NO
13	Electronic transfer of data in any form?	☒	☐
14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☐	☒
16	Export of data outside the UK or importing of data from outside the UK?	☒	☐
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☒	☐
18	Publication of data that might allow identification of individuals?	☐	☒
19	Use of data management system?	☐	☒

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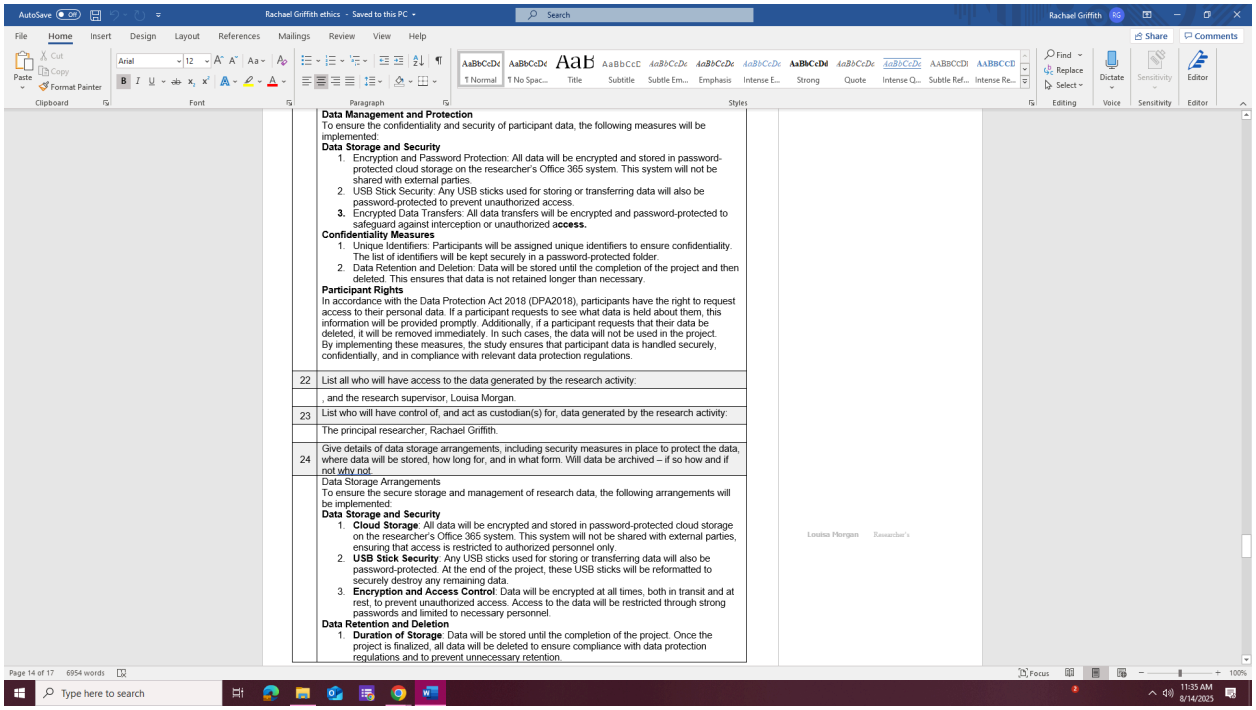
20	Data archiving?	☒	☐
21	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and any international equivalents, where appropriate):		

Data Management and Protection

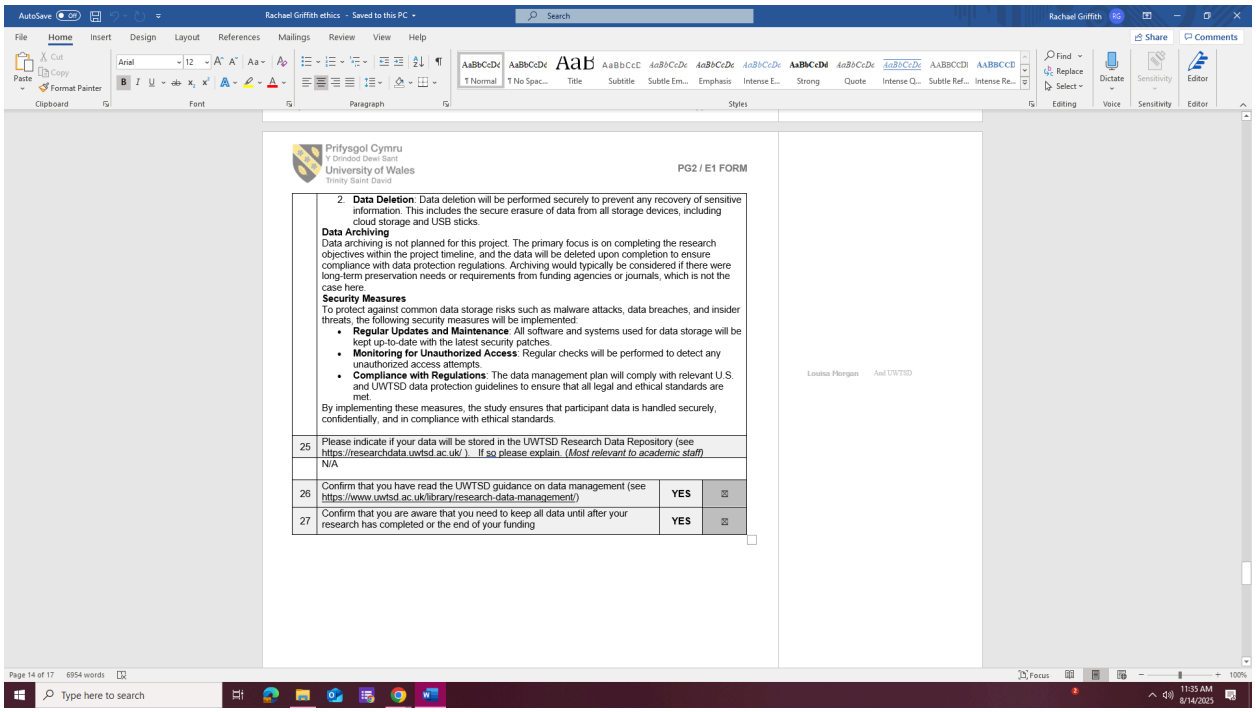
To ensure the confidentiality and security of participant data, the following measures will be implemented:

Data Storage and Security

1. Encryption and Password Protection: All data will be encrypted and stored in password-



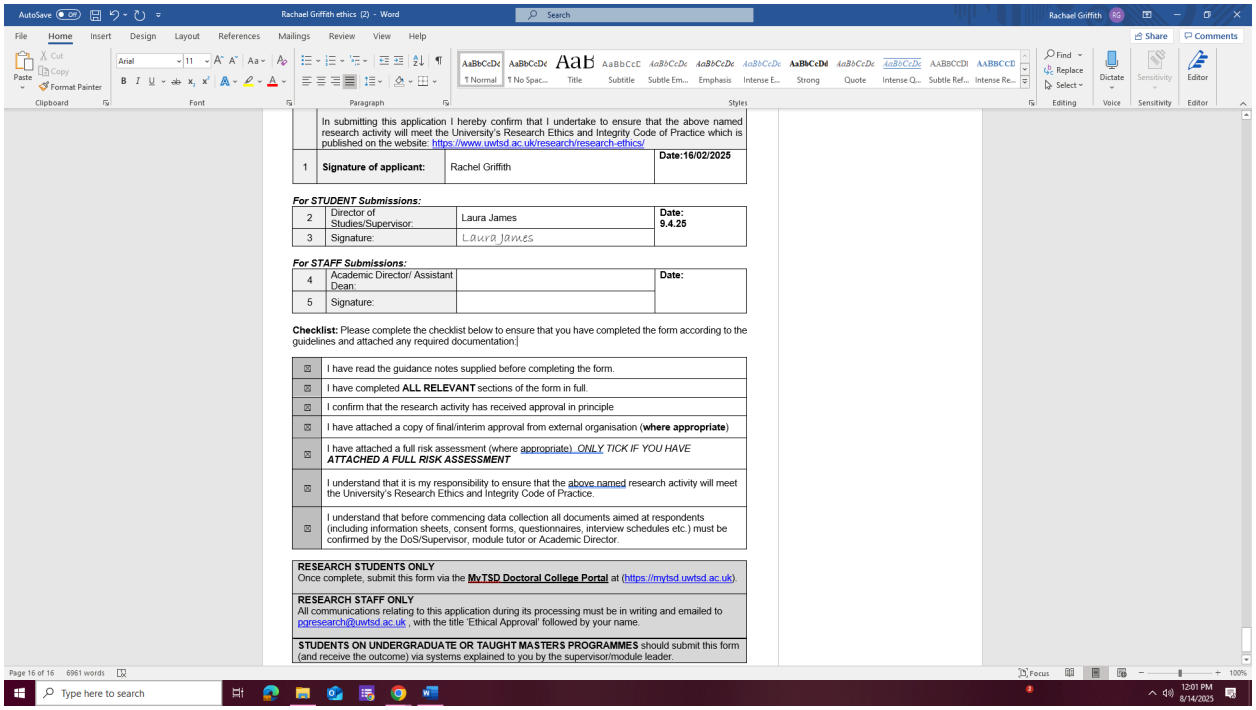
	Data Management and Protection To ensure the confidentiality and security of participant data, the following measures will be implemented: **Data Storage and Security** 1. Encryption and Password Protection: All data will be encrypted and stored in password-protected cloud storage on the researcher's Office 365 system. This system will not be shared with external parties. 2. USB Stick Security: Any USB sticks used for storing or transferring data will also be password-protected to prevent unauthorized access. 3. Encrypted Data Transfers: All data transfers will be encrypted and password-protected to safeguard against interception or unauthorized **access.** **Confidentiality Measures** 1. Unique Identifiers: Participants will be assigned unique identifiers to ensure confidentiality. The list of identifiers will be kept securely in a password-protected folder. 2. Data Retention and Deletion: Data will be stored until the completion of the project and then deleted. This ensures that data is not retained longer than necessary. **Participant Rights** In accordance with the Data Protection Act 2018 (DPA2018), participants have the right to request access to their personal data. If a participant requests to see what data is held about them, this information will be provided promptly. Additionally, if a participant requests that their data be deleted, it will be removed immediately. In such cases, the data will not be used in the project. By implementing these measures, the study ensures that participant data is handled securely, confidentially, and in compliance with relevant data protection regulations.
22	List all who will have access to the data generated by the research activity:
	, and the research supervisor, Louisa Morgan.
23	List who will have control of, and act as custodian(s) for, data generated by the research activity:
	The principal researcher, Rachael Griffith.
24	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.
	Data Storage Arrangements To ensure the secure storage and management of research data, the following arrangements will be implemented: **Data Storage and Security** 1. **Cloud Storage**: All data will be encrypted and stored in password-protected cloud storage on the researcher's Office 365 system. This system will not be shared with external parties, ensuring that access is restricted to authorized personnel only. 2. **USB Stick Security**: Any USB sticks used for storing or transferring data will also be password-protected. At the end of the project, these USB sticks will be reformatted to securely destroy any remaining data. 3. **Encryption and Access Control**: Data will be encrypted at all times, both in transit and at rest, to prevent unauthorized access. Access to the data will be restricted through strong passwords and limited to necessary personnel. **Data Retention and Deletion** 1. **Duration of Storage**: Data will be stored until the completion of the project. Once the project is finalized, all data will be deleted to ensure compliance with data protection regulations and to prevent unnecessary retention.



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	2. **Data Deletion**: Data deletion will be performed securely to prevent any recovery of sensitive information. This includes the secure erasure of data from all storage devices, including cloud storage and USB sticks. **Data Archiving** Data archiving is not planned for this project. The primary focus is on completing the research objectives within the project timeline, and the data will be deleted upon completion to ensure compliance with data protection regulations. Archiving would typically be considered if there were long-term preservation needs or requirements from funding agencies or journals, which is not the case here. **Security Measures** To protect against common data storage risks such as malware attacks, data breaches, and insider threats, the following security measures will be implemented: • **Regular Updates and Maintenance**: All software and systems used for data storage will be kept up-to-date with the latest security patches. • **Monitoring for Unauthorized Access**: Regular checks will be performed to detect any unauthorized access attempts. • **Compliance with Regulations**: The data management plan will comply with relevant U.S. and UWTSD data protection guidelines to ensure that all legal and ethical standards are met. By implementing these measures, the study ensures that participant data is handled securely, confidentially, and in compliance with ethical standards.		
25	Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so please explain. (*Most relevant to academic staff*)		
	N/A		
26	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	**YES**	☒
27	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	**YES**	☒



	In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/		
1	**Signature of applicant:**	Rachel Griffith	**Date:16/02/2025**

For STUDENT Submissions:

2	Director of Studies/Supervisor:	Laura James	**Date: 9.4.25**
3	Signature:	Laura James	

For STAFF Submissions:

4	Academic Director/ Assistant Dean:		**Date:**
5	Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation.

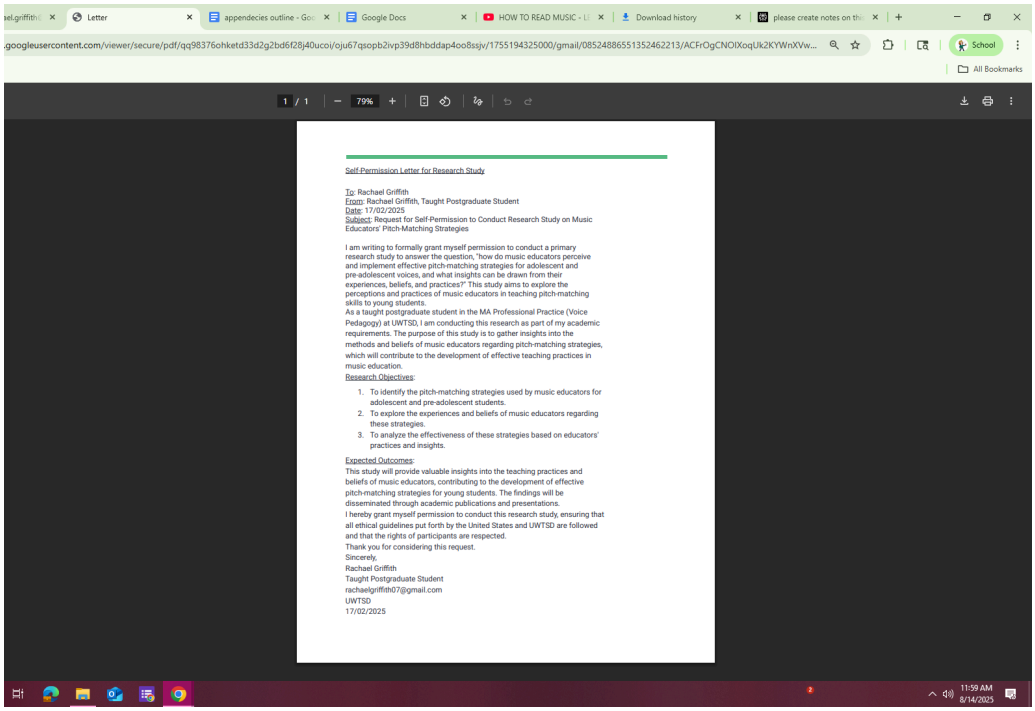
☒	I have read the guidance notes supplied before completing the form.
☒	I have completed **ALL RELEVANT** sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☒	I have attached a copy of final/interim approval from external organisation (**where appropriate**)
☒	I have attached a full risk assessment (where appropriate) *ONLY TICK IF YOU HAVE* ***ATTACHED A FULL RISK ASSESSMENT***
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.

RESEARCH STUDENTS ONLY
Once complete, submit this form via the **MyTSD Doctoral College Portal** at (https://mytsd.uwtsd.ac.uk).

RESEARCH STAFF ONLY
All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk , with the title 'Ethical Approval' followed by your name.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

Ethics Letter:



Self-Permission Letter for Research Study

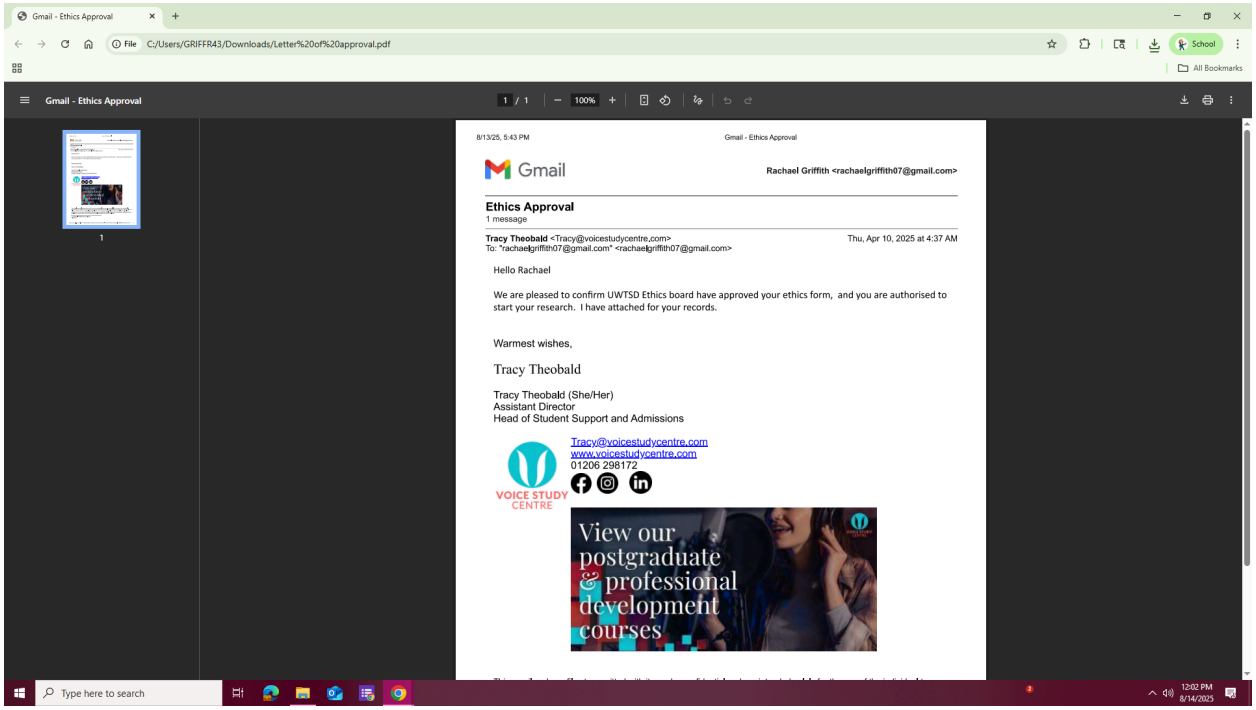
To: Rachael Griffith
From: Rachael Griffith, Taught Postgraduate Student
Date: 17/02/2025
Subject: Request for Self-Permission to Conduct Research Study on Music Educators' Pitch-Matching Strategies

I am writing to formally grant myself permission to conduct a primary research study to answer the question, "how do music educators perceive and implement effective pitch-matching strategies for adolescent and pre-adolescent voices, and what insights can be drawn from their experiences, beliefs, and practices?" This study aims to explore the perceptions and practices of music educators in teaching pitch-matching skills to young students.
As a taught postgraduate student in the MA Professional Practice (Voice Pedagogy) at UWTSD, I am conducting this research as part of my academic requirements. The purpose of this study is to gather insights into the methods and beliefs of music educators regarding pitch-matching strategies, which will contribute to the development of effective teaching practices in music education.
Research Objectives:

1. To identify the pitch-matching strategies used by music educators for adolescent and pre-adolescent students.
2. To explore the experiences and beliefs of music educators regarding these strategies.
3. To analyze the effectiveness of these strategies based on educators' practices and insights.

Expected Outcomes:
This study will provide valuable insights into the teaching practices and beliefs of music educators, contributing to the development of effective pitch-matching strategies for young students. The findings will be disseminated through academic publications and presentations.
I hereby grant myself permission to conduct this research study, ensuring that all ethical guidelines put forth by the United States and UWTSD are followed and that the rights of participants are respected.
Thank you for considering this request.
Sincerely,
Rachael Griffith
Taught Postgraduate Student
rachaelgriffith07@gmail.com
UWTSD
17/02/2025

Letter of Approval:



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Gmail

Rachael Griffith <rachaelgriffith07@gmail.com>

Ethics Approval
1 message

Tracy Theobald <Tracy@voicestudycentre.com> Thu, Apr 10, 2025 at 4:37 AM
To: "rachaelgriffith07@gmail.com" <rachaelgriffith07@gmail.com>

Hello Rachael

We are pleased to confirm UWTSD Ethics board have approved your ethics form, and you are authorised to start your research. I have attached for your records.

Warmest wishes,

Tracy Theobald

Tracy Theobald (She/Her)
Assistant Director
Head of Student Support and Admissions

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