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V. D.M.A. Research Project. PEDAGOGUES' PERCEIVED BARRIERS AND FACILITATORS TO RESOLUTION OF VOCAL HEALTH PROBLEMS IN COLLEGIATE SINGERS. Due to extensive curricular and extracurricular vocal demands, collegiate student singers are at high risk for phonotraumatic injury. Collegiate voice pedagogues have frequent one-on-one interaction with young aspiring performers, may be first to detect a voice problem, and may participate in an injured student's recovery. Pedagogues may encounter common barriers and facilitators to the resolution of student vocal health problems. This qualitative research study aimed to identify these common barriers and facilitators through content analysis of 15 semi-structured, in-depth interviews with collegiate voice pedagogues. Interpretations, conclusions, and recommendations are offered by the author in light of the study findings.

PEDAGOGUES' PERCEIVED BARRIERS AND FACILITATORS TO RESOLUTION OF VOCAL HEALTH PROBLEMS IN COLLEGIATE SINGERS

by

Emily Wolber Scheuring

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Approved by

Robert A. Wells
Committee Chair

For my grandmother, Patricia Flynn (1928-2018).
Thank you for making sure I practiced.

APPROVAL PAGE

This dissertation, written by Emily Wolber Scheuring, has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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CHAPTER I

INTRODUCTION

This study seeks to appreciate the experiences of collegiate voice pedagogues in the setting of an injured student. The purpose of this study is to explore with a sample of pedagogues their perceptions of common barriers and facilitators to a student's recovery from a vocal health problem. It was anticipated that the information gleaned would generate new insights into the practice of collegiate voice pedagogy, particularly as the profession regards the optimization of student vocal health. This study employed qualitative description methodology to examine the topic of interest. The research utilized naturalistic inquiry within a pragmatic research paradigm to collect qualitative data through in-depth, semi-structured interviews. Subjects included 15 voice pedagogues working in the collegiate setting.

This chapter begins with an overview of the background and context that provide the theoretical framework of the study. Following the context is the statement of the problem, the statement of purpose, and relevant research questions. This chapter also includes an overview of the research approach and a summary of the researcher's background and assumptions. A discussion of suggested research rationale and definitions of key terminology will conclude the chapter.

Background and Context

The extensive vocal demands inherent to a collegiate voice curriculum, often appearing in combination with high extracurricular demands, place students at increased risk of voice injury. Training programs designed to prepare young musicians for a career in performance place enormous demands on the developing vocal mechanism. In addition to lessons and daily practice, students also participate in institutional choral ensembles and opera or musical theatre productions. Many students also elect to participate in student-run ensembles, including musical theatre productions and the ubiquitous a cappella singing group. In order to make money, many students lend their vocal talents to a local church choir, which may add at least three additional hours of singing per week. They may work an additional part-time job in the service industry, placing great demand on their speaking voice, often in a noisy environment.

Singers, by their very nature, are often seen as gregarious, talkative beings. Many thrive in the social nature of the college experience, using their speaking voices extensively in social contexts outside of their curriculum demands. They enjoy singing recreationally, sometimes experimenting in styles vastly different from that which they are cultivating in their lessons. Many students arriving to the voice clinic with complaints of hoarseness, decreased, range, vocal fatigue, etc., explain that they are singing, on average, upwards of four hours per day. All phonation entails a rate and an intensity of vocal fold collision. Knowing that the vocal folds can healthily sustain only a finite number of these collisions from day to day, it is no wonder, given this description of a

student's typical voice use, that this is a population with a uniquely high predisposition to phonotraumatic injury.

Due to their extensive curricular and extracurricular vocal demands, collegiate singers are at high risk for developing a phonotraumatic injury. A 2015 survey of 108 collegiate classical singers revealed a moderate average vocal handicap score on the Singing Voice Handicap Index-10, a validated questionnaire designed to assess a singer's perceived vocal handicap (Achey, He, and Akst, 2015, 193-194). This, alongside similar alarming findings regarding the high prevalence of voice problems in collegiate singers, corroborates the need for greater access to both voice screenings and collaborative voice care, as moderate vocal handicap scores can potentially suggest the presence of a voice disorder.

As the professional with primary exposure to a student's wellness, pedagogues are often first to detect a vocal health problem. According to Leborgne and Rosenberg, "The singing teacher . . . is acquainted with the singer's voice, voice history, and vocal habits, and can identify subtle changes in the voice." The pedagogue is considered to be on the "front line" for detecting a problem and is often in the best position to refer when appropriate (Leborgne and Rosenberg 2014,186). The collegiate pedagogue, who typically works with a student on a one-on-one basis at least once per week—likely more than any other music faculty member—plays a critical role in developing a student's understanding of vocal health and injury prevention. This role expands when a student becomes injured, as the pedagogue then becomes a member of the recovery team. A

student's voice teacher is therefore an essential member of the collaborative voice care team.

In addition to the pedagogue's extensive responsibilities in teaching collegiate voice—a profession requiring extensive training and experience in technical voice production, repertoire, acting, language and diction, and music theory and literature—the teacher may also be called upon to serve as a liaison for the rehabilitation of an injured student. In this case, teachers may assume the responsibility of collaborating with the student's vocal health team to reconcile clinical rehabilitation recommendations with the student's existing curriculum. Many teachers continue to work with students in varying stages of voice injury recovery. To foster optimal vocal health outcomes for their students, pedagogues must understand how to detect and manage voice injuries in the studio setting. This is no simple endeavor, even for those who have undergone extensive training in vocal health matters; understanding when to refer, how to refer, and how to proceed in the incidence of vocal injury are complicated, multifactorial processes.

Pedagogues may encounter common barriers and facilitators to effective resolution of a student's phonotraumatic voice injury. Because they typically have more exposure to the injured student singer than other members of the voice care team, they are likely to possess deep insights into idiosyncratic, population-specific factors that appear to inhibit or promote a student's recovery. A number of research studies in the form of paper or electronic surveys have attempted to quantify the vocal health knowledge of singers and teachers. While there exists a growing body of literature that seeks to define the roles and relative boundaries of both vocal health providers (i.e., the clinical singing

voice specialist and/or speech-language pathologist) and voice pedagogues, there remains a gap in qualitative research that identifies and describes common experiences of the collegiate vocal pedagogue in the setting of a student with vocal injury. To date, there also exist no qualitative studies examining pedagogues' interpretations of their role through the resolution of a student's voice injury.

Purpose

The purpose of this study is to explore with a sample of collegiate voice pedagogues their experiences in navigating student vocal health problems. A qualitative description research framework has the potential to develop rich insights into these experiences. The researcher aims to identify pedagogues' perceived barriers and facilitators to student phonotraumatic injury recovery. This document will serve as a guide for those seeking to deepen their understanding of fostering, maintaining, and recovering vocal health in their own students and patients.

Research Questions

- What are pedagogues' perceived barriers to effective resolution of phonotraumatic injury in collegiate singers?
- What are pedagogues' perceived facilitators to effective resolution of phonotraumatic injury in collegiate singers?

Research Objectives

- Understand pedagogues' common practices and experiences in navigating a student's vocal health.
- Identify barriers to effective resolution of phonotraumatic injury in collegiate singers, as perceived by pedagogues.
- Identify facilitators to effective resolution of phonotraumatic injury in collegiate singers, as perceived by pedagogues.
- Drawing from subjects' insights and the author's own experiences, discuss creative solutions and future research activity that would seek to mitigate barriers to resolution of phonotraumatic injury in collegiate singers.
- Identify areas of future research and resources that would inform a pedagogue's decisions regarding a student's vocal health problem.
- Identify and address potential disparities between recommendations documented in current vocal health research and pedagogues' common practices.

Research Approach

This qualitative description study functions under a pragmatic research paradigm to collect qualitative data through in-depth, semi-structured interviews. Subjects included 15 voice pedagogues working in the collegiate setting. The interview data was coded using inductive analysis and organized into emergent themes and corresponding

subordinate themes. Themes were organized under primary categories that were pre-determined by the research questions.

This document will be presented in six chapters. Chapter II will describe the methodology of the study, including participant recruitment, data collection, and data analysis. Chapter III (Barriers) and Chapter IV (Facilitators) provide a detailed description of the results of study. Chapter V presents the researcher's interpretation and discussion of the study results. Creative and interdisciplinary solutions to pedagogues' perceived barriers and facilitators to voice recovery, gleaned from subjects' interview responses and the author's clinical experience, will be examined. Chapter VI provides conclusive statements in addition to suggestions for future research and recommendations for vocal health and pedagogy practitioners.

Researcher Background and Assumptions

The author and principal investigator is pursuing a doctor of musical arts degree in vocal performance and pedagogy. Since 2010, she has presented annually at the national level on topics pertaining to health of the singing voice. She has served as speech-language pathologist for the Duke Voice Care Center since 2010, where she specializes in the assessment and treatment of voice disorders. She has also served as lecturer of voice at The University of North Carolina at Chapel Hill since 2016. She is an active classical mezzo-soprano in Raleigh-Durham, NC, and in the surrounding region. As a voice therapist, teacher, and performer, she has encountered vocal health challenges

unique to each of these roles. Her recent research aims to enhance the value of collaborative relationships between teacher-singer, singer-therapist, and therapist-teacher.

The author assumes most, if not all, collegiate voice pedagogues have encountered varying degrees of vocal health problems among their students. Based on this, she also assumes that voice pedagogues would experience commonalities in their management of students' vocal health, particularly when there is a potential injury to discern; that these common experiences would present questions, frustrations, and concerns; and that pedagogues employ creative solutions to complex vocal health decisions common to their daily practice.

Rationale and Significance

The author hopes that the findings and discussion resulting from this study will inform and enhance the practice of clinical vocal health specialists and pedagogues alike. Understanding perceived barriers and facilitators to a student's voice recovery may encourage discourse among and between vocal pedagogy and vocal health professionals that is driven toward expanding the facilitators and strategically minimizing the barriers. Research, outreach, and education can therefore be tailored appropriately.

Practitioners in clinical vocal health, many of whom are speech-language pathologists, may use the findings to enhance the quality of communications and collaborations with local pedagogues. Pedagogues may use the findings and resulting discussion to further their understanding of voice disorders, particularly when a disorder occurs in one of their own students. In directing findings toward both of these audiences,

the author hopes that the resulting discussions and research may serve the highest objective: to decrease the incidence of voice injury and optimize injury outcomes in the particularly vulnerable collegiate singer population.

Definitions of Key Terminology

Dysphonia—A compromised state of voice function precipitated by functional and organic/pathological factors

Phonotrauma—Injury to the vocal folds that is precipitated by voice misuse and overuse

Semi-occluded vocal tract sound (SOVT)—A collection of voice production modalities that engage a partial occlusion of breath flow near the anterior aspect of the vocal tract (e.g., lip trill, raspberry, tongue trill, straw phonation, humming, and sustained /z/)

Stroboscopy—A laryngeal visualization procedure that uses a strobe light to juxtapose successive phases of vocal fold vibration, effectively constructing a "slow motion" video representation of vocal fold vibration

CHAPTER II

METHODOLOGY

To date, research on the practices and understandings of pedagogues has been primarily quantitative or mixed (qualitative-quantitative) in methodology. Rather than trying to understand what teachers know and do not know about vocal health, qualitative inquiry may help us understand the teacher's unique experience in working with an injured student. The study therefore aims to "give voice" to participating pedagogues, potentially delivering information of a unique character to the existing body of research. Understanding how teachers conceptualize the detection and management of student voice injury calls for a qualitative design using inductive analysis (rather than the testing of a theory)—the end goal of the study being to improve the quality of the practice of vocal pedagogy.

Subjects

Subjects were 11 female and four male pedagogues teaching applied voice at a college or university in North Carolina. All subjects were employed by an institution located within a 2-hour drive of one of four specialized voice care teams in North Carolina. Years of collegiate voice teaching experience ranged from 4 to 36 and are described here forth in ranges of 0-10 (3 subjects), 11-20 (4 subjects), 21-30 (3 subjects), and 30+ (5 subjects). 14 of 15 subjects had completed at least one graduate-level vocal

pedagogy course. Ten subjects had completed the terminal Doctor of Musical Arts (DMA) degree, while five subjects had completed the Master of Music degree. Of note, three of the five subjects categorized as having completed the MM degree were in progress toward completion of the DMA. Twelve subjects identified classical and three subjects identified musical theatre as their most commonly taught style of singing.

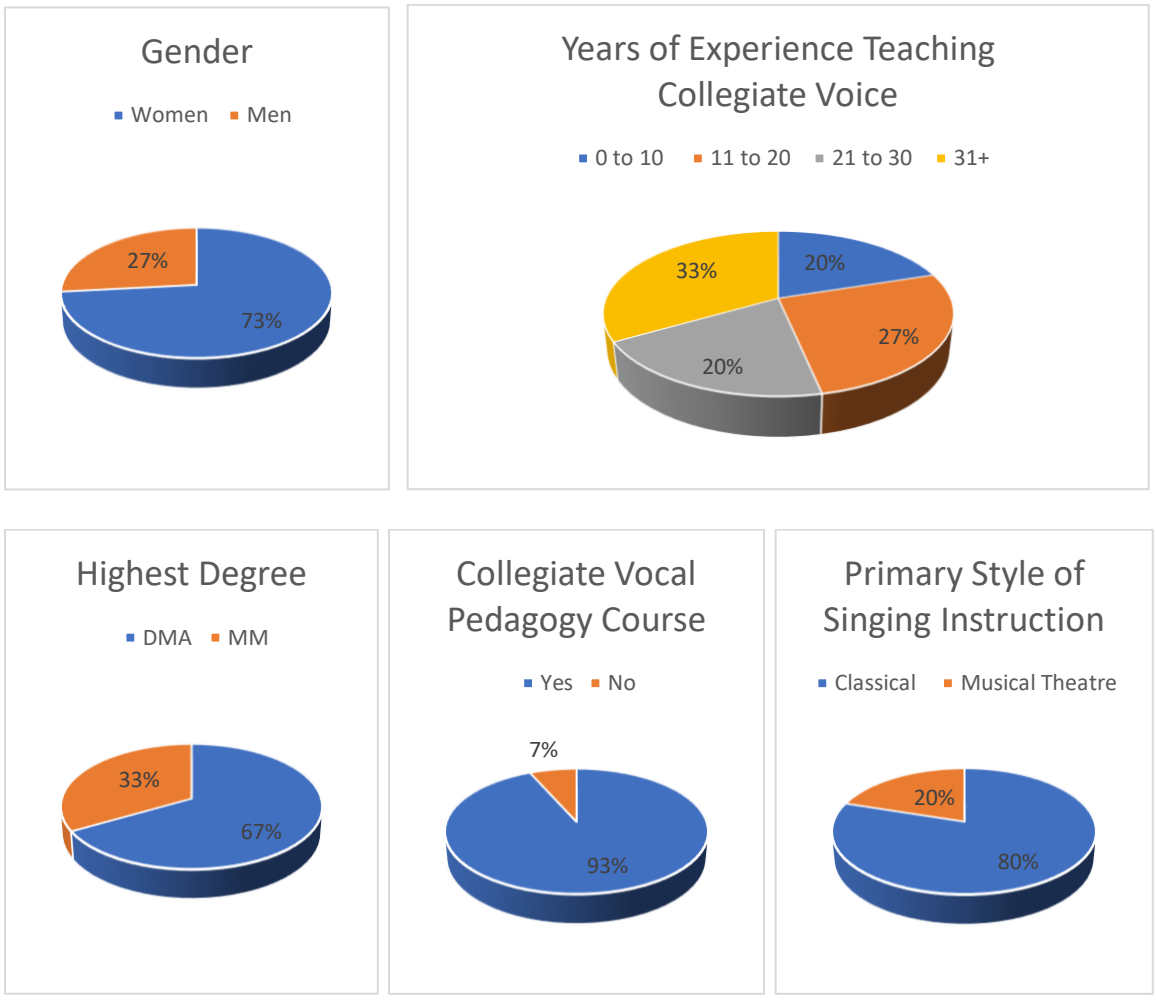

Figure 1. Participant Demographics.

Sources of Data

Subjects participated in an interview consisting of a verbal demographic questionnaire and seven questions designed to elicit responses that would inform the investigator's research questions. A semi-structured interview protocol was developed to gain insight into subjects' experiences in navigating student vocal injury. Protocol prompts were reshaped within interviews and throughout the data collection process as pertinent to participants' responses and the emergence of common themes.

Procedures

Purposeful and criterion-based sampling, a method common to qualitative human subjects research, was used in this study to identify and select voice pedagogues practicing at a North Carolina college or university who were willing to share their experiences in navigating student voice injuries. Eligible subjects were purposefully selected through an internet search for collegiate music departments in North Carolina. Subjects were recruited through the email address listed publicly on their university website. See Appendix A for an example of the recruitment message and informed consent, which accompanied the initial recruitment message.

Subjects were invited to participate in a semi-structured interview that aimed to explore pedagogues' experiences with injured students. Upon verbal consent to participate, the subject and PI planned an interview time and location that were mutually agreeable. Interviews took place in person or over the phone at the preference of the subject. The PI conducted a semi-structured interview, working from a pre-determined

set of questions and asking further questions to clarify and expand responses as appropriate. See Appendix B for a sample document of the interview questions. Interviews were partially transcribed and supplemented with the researcher's field notes. All interviews were audio-recorded for later review and additional data collection. Each interview lasted approximately one hour. There was no follow-up with subjects after the initial recruitment and interview.

This study was conducted in compliance with the IRB at The University of North Carolina at Greensboro. Subjects consented verbally to participation after reading an informed consent form. Participation was voluntary and without compensation. Interview transcripts, field notes, and demographic data were de-identified to protect subject anonymity. Data was uploaded to Dedoose, an encrypted qualitative data analysis software. Excerpted field notes and quotations from interview transcripts were then coded and analyzed to extrapolate common themes that informed the proposed research questions. Data was stored using an encrypted cloud-based storage service in compliance with the UNC-Greensboro Office of Research Integrity.

Data Analysis

Partially transcribed interviews and field notes were reviewed and explored to identify the "big ideas" pertaining to each of the two research questions. Following the initial review, data was re-read and excerpted. Excerpts were then tagged with codes and organized into initial categories. In circling back through the data a third time, the coding scheme was revised and codes were added, eliminated, parented, and merged in

accordance with the developing framework. In this method, the raw data were analyzed to reveal themes without the prior development of thematic categories. The primary technique for theme recognition was repetition; as a concept recurred across subjects it was entertained as a potential theme. The use of inductive analysis, rather than deductive analysis, was chosen in order to minimize researcher bias and allow the data to represent itself.

CHAPTER III

SUMMARY OF FINDINGS: BARRIERS

Overview of Findings

A total of 479 quotations and paraphrased statements were extracted from the interview transcripts. Each excerpt was assigned a code based on its content, with 134 preliminary codes emerging from the data. The preliminary codes were clustered under two primary data categories as predetermined by the research questions. Under each primary category, the codes were arranged into clusters representing emergent themes and their corresponding subordinate themes. The author identified emergent themes for this study based on code frequency. In this section, themes and corresponding subordinate themes are sorted by prominence in descending order. Therefore, the strongest themes under each primary category will be discussed first. For purposes of validity, the author designated an "emerging theme" as one that surfaced from at least 7 out of 15 (46.7%) subject interviews. Descriptive statistics are applied to findings below in order to quantify the prevalence of each theme.

Coded interview excerpts were clustered into two primary categories determined by the initial research questions: (a) Barriers to effective resolution of phonotraumatic injury in collegiate singers, and (b) Facilitators to effective resolution of phonotraumatic injury in collegiate singers. Data under each primary category were continually organized into smaller subordinate themes. The first data category, *barriers,* addresses the first

research question: What are pedagogues' perceived barriers to effective resolution of phonotraumatic injury in collegiate singers? The following themes emerged: student vocal pacing and hygiene; student insight and response; external performance pressures; the pedagogue's ability to discern a voice problem; sociocultural influences; and access to care. Themes and subthemes are described below and supported by direct quotations from participants' interview responses. In an effort to preserve integrity of participants' oral responses, quotations were transcribed to reflect the conversational, semi-structured nature of the interview.

Table 1

Pedagogues' Perceived Barriers to Student Injury Resolution

Barriers
Student Vocal Pacing and Hygiene
Student Insight and Response
External Performance Pressures
Pedagogue's Ability to Discern a Voice Problem
Sociocultural Influences
Access to Care

Barrier #1: Student Insight into Vocal Pacing and Hygiene

All 15 subjects perceived the presence of multiple barriers to effective resolution of student phonotraumatic injury. The most prevalent barrier to emerge from the data regarded students' limited understanding of vocal health and inadequate commitment to

vocal pacing and hygiene recommendations. Speaking voice misuse and overuse, singing voice misuse, and unhealthy lifestyle habits emerged as subordinate themes.

Misuse and Overuse of Speaking Voice

All subjects reported experiencing concerns and frustrations with their injured student's voice misuse and overuse. This factor was overwhelmingly perceived to be a primary barrier to a student's injury resolution. The majority of pedagogues discussed concerns regarding overuse of the speaking voice, particularly in social contexts, such as parties and bars:

> [Students aren't] putting together speaking with total voice use…making that part of their vocal money. They think it's their singing, but I tell them, "You have not stopped talking for the past 36 hours. All of your voice use counts."
>
> I think students get in trouble and it has nothing to do with their singing . . . I ask them, "Do you realize you're speaking this way?"

Several subjects cited that jobs with significant speaking voice demands are a concerning contributor to a student's voice misuse and overuse:

> I had a student who went through [voice] rehab and had a lot of success. Then she got a job at Chipotle over the summer and she was a mess when she came back.
>
> A student may need to work. Not all students come from privileged families.

A student's unwillingness to change their speaking voice technique due to fear of losing a social identify was particularly concerning to some participants. Following are illustrative quotes:

> Talking is a big problem. [For] a lot of them, [it's] the identity that they have when they are away from the studio. I think they see their voices differently. That's associated with their identity there. There's this disconnect between these two worlds. I know that speaking is not the same as singing, but there is also a way to support it.
>
> Getting to change the way you're singing changes the way you're speaking. Your sense of identity is way more important than the health of the voice.
>
> When the student is navigating a vocal problem that is directly related to how they speak . . . getting them to change that is just massive. They feel like you're attacking their personality sometimes. That is the most difficult thing to deal with . . . you have to get through to them in a way that doesn't feel personal.
>
> How do you navigate this pattern, this problem, when the student perceives it as being part of themselves? The emotional side effects of it . . .

Relative to this theme were several concerns about poor speaking voice technique, particularly the use of glottal fry:

> I really think vocal fry is a factor of coolness.
>
> Another problem is vocal fry. It's a really serious issue with the younger students. Putting their pharyngeal space in a more open position for speech is really tough. It's a tough problem with multiple factors. There are social factors. It is changing, but I address it immediately.

Misuse and Overuse of Singing Voice

A majority of subjects discussed misuse and overuse of the singing voice as a significant barrier to student injury recovery. One subject expressed particular concern for young singers combining emerging technique with unhealthy practice habits:

> Many young singers don't know their voice well enough. If they're working on something in the practice room and it doesn't feel right so they just keep doing it . . . Just being aware of your instrument and if something doesn't feel right, to stop doing it. They're pushing beyond their limits.

The sheer increase in the amount of singing when entering a college music problem was also discussed:

> Some students come in as freshman where they're singing more than they ever have before. We have to make sure they're taking care of themselves, not just during the one hour a week we're with them.
>
> Coming into college they have a whole lot more vocal freedom and they're taking care of themselves for the first time…all by themselves. They're learning where to spend their vocal money because they're using their voice constantly.

Some subjects discussed students' limited awareness of vocal pacing, particularly in ensembles and productions:

> My [student] got a big lead in the fall play, which was a play with 70s music, and she would sing that stuff full out every night. She would start to lose her voice and just keep going anyway. Not surprisingly, it got worse and worse and worse. Not surprisingly, she didn't get to sing in the show.
>
> . . . It is a lot of singing, and whether [the student] knows when to stop or when to take it easy in a rehearsal . . . [it] is still developing.

Half of participants expressed concern for students' time spent singing in styles other than the primary style of their curriculum. In all cases, subjects were referring to the practice of contemporary singing outside of their curricular voice study, with the primary concern that students were singing contemporary music with minimal technical training background relevant to the style:

> It's frustrating to see them making poor decisions. It's frustrating to see them sing a pop or musical theatre song with technique not conducive to their vocal health.

Some subjects discussed their concern for students choosing inappropriate vocal models:

> [Students don't] understand how certain approaches in a style can have the potential for damage—imitating someone else, for example. Idina Menzel . . .
>
> [Students] desire to imitate their favorite contemporary singers that they hear on Spotify.
>
> . . . Adele . . .

Two subjects discussed concerns that cappella groups appear to be a common contributor to a voice student's misuse and overuse:

> [My] student was getting ready for her senior recital and also singing in an a cappella group. Her recording engineer in one session was pushing her and gave her a vocal injury. She canceled her recital—it was that bad.
>
> I have so many students that are so involved in a cappella that they rehearse for two hours straight and they wouldn't give it up for anything. It takes precedence even over their classes.

One subject was concerned that his injured student had been trying to keep up with his peers of unusually high vocal resilience:

> [My student] would see students go out and party and drink all weekend . . . [then] . . . come in on Monday and sound fine.

Unhealthy Lifestyle Habits

More than half of participants discussed the perceived impact of various unhealthy lifestyle habits on a student's voice injury recovery. As the college years are a time of adjustment for most, if not all, students must learn how to independently make healthy lifestyle choices to foster good vocal hygiene. Following are illustrative quotes:

> Students are busier than ever. They just are not resting. Not getting enough sleep. Not taking care of themselves . . .
>
> They're babies and they don't put things together yet. [They are learning] how to handle themselves when working with general use and everyday ailments. Common cold, minor allergies. Anything that leads to irritation. What it means to take care of that.
>
> Also, their adjustment as a college student—not letting other stressors affect the voice. Not eating right, not hydrating, not getting enough sleep. If they're having a problem with a roommate it adds stress and tension to the voice that can add to injury.

Barrier #2: Limited Student Insight and Response

Eleven subjects discussed students' limited insight into a voice problem as a recurring barrier to recovery. Several had experienced a lack of agreement between student and teacher regarding vocal health goals and ideals. Sometimes students did not appear to value their vocal health:

> In a few cases . . . they don't want the kind of healthy voice that I want them to have.
>
> I think my continued request for [my student] to get scoped and my concern about her vocal health was one of many things that was a hindrance to our working relationship. I found out recently that she requested to switch studios this year.
>
> Sometimes you feel like you put a little more value into it than the student does…as far as the desire to get in and do the therapy . . . to call and make an appointment.

Two subjects were concerned that many young students think they are invincible, and this phenomenon can often be appreciated in their vocal pacing and hygiene habits:

> I have had students who have been "anti" about the whole process [of vocal health], about being that careful. Because they think it will clear up by itself. They can do anything . . . [They think,] "It's not going to happen to me."
>
> Sometimes [they] just don't get it. They take their health for granted, their life for granted. I told [one student] she was wrecking her voice. I felt like that was the only way to break through to her.
>
> I had two who left my studio because I was concerned and they didn't agree. I think there was a rumor going around the a cappella groups that I was overly cautious. They think they're fairly immortal and won't be injured.

One subject expressed concern that approaching singing as an athletic endeavor encourages singers to push their voices beyond comfortable limits:

> I don't think they understand how critical vocal health is. It's not like it's a sport where you're pushing for more strength all the time. Some students have a stronger sound than others. It's not a one-size-fits-all.

Other participants had commonly encountered students who lacked understanding of technical goals and rationale for technical tasks. Following is an illustrative quote:

> The only thing that ever frustrated me was when I would give a student things to do and they just wouldn't do them.

One indicated that a student's poor understanding of the voice problem fueled a lack of motivation to act:

> It's convincing them not to wait [to address the problem].
>
> I have had a lot of students [who] . . . said that they had a cold when they auditioned, and they all turned out to have vocal injuries. Now when someone says they have a cold in auditions, I write them down as having a vocal injury.

A student's limited understanding of the diagnosis and treatment plan also emerged as a common hindrance to recovery, as described by this subject:

> I get them to tell me in their own words what the doctor told them, what they learned. It's sometimes like a Chinese fire drill. Some of it's straight, some it's mixed up. They'll use the vocabulary but they don't know what they're meaning.

Similarly, some subjects became concerned when a student not only misunderstood the problem, but was completely unaware of it:

> A lot of times, if this has been going on, they don't know. They don't know that this is not the way they have to feel.

One subject was surprised when her student asked her for medical advice, suggesting that the student was unaware of the pedagogue's role in relation to a health care provider:

> Students ask me about their meds, ask me to feel their throats, ask me to look in their throats. [I say,] "I'm not your doctor!"

Barrier #3: Pedagogue's Difficulty Discerning a Voice Problem

Eight subjects discussed the discernment of a voice problem as a barrier to resolution. Potential vocal health problems often appeared tangled in technical inefficiencies manifesting in registration imbalance or breathy phonation:

> For the young females, it is hard to hear whether there is vocal damage or if they just haven't strengthened their head voice.

Along similar lines, there was occasional difficulty discerning lack of practice from a vocal health problem:

> [It is difficult] knowing whether the kids just didn't practice. [They say,] "Oh, I'm not feeling well." And you find out they're just not prepared. Is it really something [related to vocal health], or did they just not do the work for the week?

One pedagogue described a rather lengthy process of weighing a student's perceived lack of practice against the possibility of a vocal health problem:

> I had one mezzo who was an incessant talker and also had not used her head voice. So she came in with nodes. It took me a semester to figure out if this was a vocal issue . . . or if she just wasn't practicing. When I got her to a voice doctor she had a polyp. She ended up having surgery and therapy . . .

The presence of an upper respiratory infection or allergic airway irritation also made it difficult for subjects to know whether there was a problem with the vocal folds:

> . . . being able to know if there is something wrong, [or] if they're just sick with a cold. Are they misusing their voice?
>
> Even now it's hard to tell the difference between someone who is sick and someone who has an injury. Many freshmen come in sick . . . they say it's the new environment. Is this a cold, or is this something else?

One subject described difficulty discerning the difference between vocal fatigue and bodily fatigue:

> Is it just vocal fatigue or is it general fatigue from being busy college students?

This difficulty in discerning the presence of a vocal health problem contributed to feelings of uncertainty and helplessness in some subjects:

> I've had training, [I have] been able to observe, and of course [I] have learned about vocal health. But . . . the biggest challenge is, "Am I going to miss

> something if there is something wrong? Will it go undetected? Will I know [if there is a problem], and will I be able to get my student the best help that's possible?"
>
> How do I help these students when they're in this duress that I can't correct? [That] they can't correct?

Barrier #4: External Performance Pressures

Ten participants discussed the perceived role of external performance demands as a barrier to student injury recovery. The emerging subordinate themes were professional performance and industry pressures (particularly pertaining to musical theatre students), stigma surrounding voice injury in the performance industry, and collegiate ensemble and production demands.

Production Demands

More than half of participants discussed their concerns regarding the extensive vocal demands inherent to opera and musical theatre productions. Long rehearsals are added to weekly lessons, daily practice, and choral ensembles, among other curricular and extracurricular demands:

> Most of my students are majoring in voice. When it's production week it can be demanding for them…being in choir and doing a show and voice lessons.
>
> They have to sing for this performance class, they have to sing for this agent. Sometimes it's every day for a week. That's so much prep time, then the audition itself, too.
>
> [They are] overworked. They're spread really thin. They don't know how to manage that. They're still young.

Though one subject felt that the problem of stigma surrounding voice injury in the performance industry has lessened in recent years, another felt that stigma remained a significant barrier to his students' vocal pacing and treatment-seeking behaviors:

> If they're in a show, that's always difficult. They don't want anyone to know, and to back out of a role to them is the most horrible thing to happen. They think, "Everything must go on. You should never take a look inside because that's scary."

In addition to the perceived taboo of revealing a voice injury, several participants were concerned that students felt they were not permitted to mark or abstain from singing during long production rehearsals:

> For musical theatre, there can be a lack of understanding of a student's need to rest. This is not as much of a problem on the choral side. In musical theatre, there is a need to run things. There is a culture of "I can't mark; they don't want me to mark." This student wrote me a long text about how he was not feeling well, his falsetto wasn't great, and he was told not to mark. I told him, "Look, you only get one voice. You know your voice. Listen to it. If you feel like it's fatiguing, stop."
>
> When I was injured, I needed someone to say, "Shut your mouth." And I say that to my students, too. [I say,] "Your assignment is not to sing. Not at choir, not at rehearsal. You mark, you don't sing." This is tough at [my university] because they don't like their kids to mark. [The students'] schedule is so hectic that it doesn't foster vocal health. The schedule itself—they just don't have a lot of time to practice, especially to practice effectively and with a fresh body.
>
> The environment of feeling like you have to sing [is a problem]. The student is not feeling powerful enough in the industry itself, because they're not powerful. They're not famous. They don't feel comfortable saying, "I'm not singing today."

One subject shared that her students were often cast in roles that were inappropriate to their voice type and level of technical proficiency:

> I'm not always convinced that the [production] rep is being chosen for the students that we have. Are [they] really picking this because [they] have someone that can sing these parts? For an opera it may be something you can sell seats with or not have to pay royalties on, but that doesn't support students that are in the production.

Several more expressed concern that pressures for students to quickly prepare for the performance industry were infiltrating collegiate production culture, which should instead strive to be a nurturing environment:

> In musical theatre [training] there's a constant mixed message . . . that you're here for a while, your goal is to develop . . . and yet at the same time [you are] asked to audition for every show, every semester, and go to every audition. On one hand they're given room to grow, but they are also being pushed toward making a finished product.

One subject observed that his students began to internalize these pressures, leading them to avoid making vocal pacing decisions that might support recovery from injury:

> These are all performers and they want to perform. And to step back from that is hard on them emotionally, psychologically, and career-wise. There's no anticipation that they go on to a master's program or young artist program. They go to work. They will not leave a rehearsal to go to the doctor.

Ensemble Demands

The vocal demands of choral ensembles were discussed by several participants as a perceived barrier to student injury recovery. One subject was particularly concerned that his students were singing in ensemble rehearsals five days a week. Several were concerned that choral conductors were scheduling long rehearsals on top of students'

other curricular demands. The vocal fatigue accumulation from these rehearsals would then affect students' ability to participate fully in their weekly lessons:

> I am fighting a choral director who believes in 5-hour rehearsals with only 20 students in the choir. They get very worn out from choir. It comes into their lessons because they're exhausted. So these students get in rehearsals and *push, push, push*. Then they add instruments and they *push, push, push.* I talk with them about how to save their voices in rehearsal [by] marking. I've been accused of interfering in their rehearsals. It's extremely challenging.

Another was concerned that students were singing in not just one ensemble, but several:

> Just the demands within a university environment. How many patients have you seen who sing in more than one choir? They're in lessons and voice class and student teaching. They're in church choir, which is a job.

Barrier #5: Sociocultural Influences

Seven participants felt that sociocultural influences were acting as a barrier to student phonotraumatic injury recovery. The culture of overachievement and the rise of a new aesthetic ideal in singing emerged as relevant subordinate themes.

Overachievement

While the culture of overachievement is certainly not a new phenomenon, several participants expressed concern that their injured students were committed to an unhealthy number of curricular and extracurricular obligations, and that this over-commitment functioned as a barrier to recovery:

> Students are stuck in [the idea] "this is what I want to do and it must be perfect." More isn't better.

Chronic overextension of a student's time and energy was perceived to be a top contributor to many injured students' seemingly chronic (generalized and vocal) fatigue:

> A lot of kids at [my university] have the tendency to be overachievers. They feel they have to constantly be busy and accomplishing something. This is making them unhealthy in numerous ways. Not just vocally. Fatigue. We teach them that it's okay to have downtime. This is a good thing to do.

Two subjects expressed concern that this phenomenon takes a great toll on students' mental health and wellbeing:

> The frustrating thing for me is that the students are never fresh. I think it's not just a function of MT majors, it's across all majors. They're overcommitted, they're anxious, they're trying to get the most out of it, the most for their money. They're overpacking their schedules and coming into voice lessons exhausted, vocally and physically.
>
> I've dealt with more students in the recent 5-10 years who struggle with anxiety and depression. I see more of that. This is where meditating and slowing down . . . it can help. In general, we see more suicide at [my university]. Not singers, but in general. Counseling services say they are swamped. I start to think [that] this is a new phenomenon in people thinking they have to be constantly doing things, accomplishing things. Like they have to fill a void with activity. And singing is such a great activity because you really can't sing well unless you get your mind focused and get into a flow. Just the act of giving over to that concentration . . . and learning how to get there every day by doing your exercises. Doing it is so therapeutic. Regardless of whether you go to the Met. Just doing it is a very good thing.

The New Vocal Ideal

Several subjects voiced their concerns about the potential for sociocultural factors to act as a barrier to a student's recovery. Many noted anecdotally that more students seem to be arriving to collegiate programs with signs of voice injury, suggesting that voice problems may be developing in adolescence, particularly during the high school

years. Several discussed that this problem may be fueled by the rise of popular singing in TV shows and competitions, as well as the perceived rise in popularity of musical theatre. Following is an illustrative quote:

> I think in general there are more vocal injuries because of all the shows like The Voice, and all the choirs, and all the competitions. We feel like the whole freshman class may have some sort of vocal damage. More kids have been singing since [they were] three years old. Things have changed. In the past two years, it has increased exponentially, but has been rising the past 5-8 years. It's the rise of social media, and Broadway has become so popular. Students are singing a lot and copying what they hear on recordings. There's a definite change. We are hearing lots of damage in the auditions themselves. I don't know what it is . . . there are actually a lot more people studying voice as kids and teenagers.

One subject made note of a particular effect that appeared to be catalyzed by popular singing TV shows and competitions:

> The pride in not having had any instruction. That's this American Idol thing. Not reading music—that one really gets me. They show up and they don't read music and they want to be a music major. The fact that they've thought this through before they show up and audition . . . why don't they take the time to learn to read music?

Another participant noted that, as popular music is increasingly present in the media, students appear less interested in learning classical singing and legit (i.e., Golden Age) musical theatre styles, instead preferring to focus on contemporary and belted repertoire—considered by many pedagogues to be vocally "expensive" modalities:

> Today, to sing Rodgers and Hammerstein is like singing Gluck. The students aren't interested in the classic music theatre. And they are singing contemporary music theatre in a contemporary style, which has a grungy quality.

One subject passionately discussed her concern for the vocal health and behaviors of famous pop singers, and the potential effect this might have on young, untrained singers:

> I have a daughter who likes pop music so I hear her playing the music these students are listening to. The bulk of these singers seem to have damage.

This phenomenon is especially concerning to the subject in that it seems to project a new vocal ideal, particularly for girls and women:

> What's an example of a female voice that other people acknowledge as attractive? It's intriguing to watch the movie female voice, the TV female voice, the pop-singing female voice. Think of what a teenager views as what a beautiful female voice sounds like. It reminds me of emaciated women being shown to young girls. [They think,] "That's what my vocal ideal is." How did we wind up here?

Barrier #6: Access to Care

The final emergent barrier to phonotraumatic injury resolution was limited access to care. Seven subjects had worked with students who were unable to seek specialized voice care due to various limitations. Several were concerned that students' families did not have adequate insurance coverage or were unable to afford care altogether, especially specialized voice care:

> One of the biggest issues is just money. I can't call the center and say, "Hey, my student is poor."
>
> If insurance doesn't cover a specialist appointment, it's hard.
>
> I feel frustrated when money or access to care is an issue.
>
> A lot of times these students don't want [specialized voice care], they want to go to their ENT back home where mom and dad are . . . where they have insurance.

When students have limited or no access to care, pedagogues may feel as if they are forced into a rehabilitative role without knowledge of the full extent of the vocal health problem, and without knowing how to proceed:

> [My student] didn't have a lot of money or family support. I became more of a parental figure for her. I felt frustrated because I knew I shouldn't be doing something I don't truly understand. There are quack teachers out there who are doing harm.
>
> I've had students whose insurance won't pay for going to the voice care center. Occasionally we have to wait for them to schedule with the doctor in their home network. We're just very careful and smart. Maybe if I was really worried I would want them to stay on SOVTs for like a month.

Another expressed concern that putting pressure on students' families to seek expensive medical care did not always feel fair:

> With college-age students I've met some immediate resistance based on their parents' financial situation and what the possible costs of these procedures would be. And so that means that nothing ever actually happens. Because I'm not in a position where I could say, "I'm not going to teach you anymore unless you do this."

One subject's response to this problem was that there is a need for more affordable specialized voice care options:

> I wish there was a less expensive option [than the full evaluation]. Just getting the scope. If there could be some sort of in-between for getting a scope . . . just to get a look.

Two subjects discussed difficulty in finding appointments with specialty voice care centers, leading them to refer students to local, general ENTs for more expedited diagnosis and treatment:

> One of my biggest challenges has been getting students to be evaluated, because [voice care providers] are busy and students are busy. Of course, [the specialist] is my go-to. [But] I'm not averse to sending people to [the general] ENT. Over the years I've collected certain names. [They] do not have stroboscopy but can look at the cords and see some swelling, allergies, whatever. [They] can see something in the interim.
>
> Once in a while I send students to [the local] ENT because they can get in and it's close. I have had good experiences there usually. So as long as they can get in there with a scope, that's okay. Though I only truly trust [specialized voice care providers].

And one noted that when her students can't get a timely appointment, they tend to forgo scheduling an appointment altogether:

> [Sometimes] they just don't make an appointment if they can't get care soon enough, or if scheduling is too difficult.

CHAPTER IV

SUMMARY OF FINDINGS: FACILITATORS

The second data category, *facilitators*, informs the second research question: What are pedagogues' perceived facilitators to effective resolution of phonotraumatic injury in collegiate singers? The following themes emerged: seeking outside assistance; making curricular adjustments; consistent follow-up; nurturing the student's recovery; and developing student insight.

Table 2

Pedagogues' Perceived Facilitators to Student Injury Resolution

Facilitators
Seeking Outside Assistance
Making Curricular Adjustments
Consistent Follow-Up
Nurturing the Student's Recovery
Developing Student Insight

Facilitator #1: Seeking Outside Assistance

All subjects discussed that a primary facilitator for resolution of a student's injury was to seek the advice of other professionals from initial detection of a problem through recovery and resolution. Beginning with the most prevalent, supporting aspects of this

theme emerged as follows: referring for medical evaluation, and consulting academic colleagues—particularly those with more experience in working with injured singers.

Referring for Medical Evaluation

Out of 15 subjects, 14 discussed the importance of referring a student to a health care provider or team when a vocal health problem is suspected. Subjects discussed criteria for referring, including persisting hoarseness, visible strain, a persistent and questionable upper respiratory infection, and lack of reasonable technical progress. Several subjects had referred students whose voices did not improve with technical progress and offloading of excessive muscle tension. Following is an illustrative quote:

> Usually if the student is not producing the right kinds of sounds that I think they should be producing, for several weeks in a row, then I send them. Unless they come in and I hear right away that it's taking way too much effort. I make sure I hear repertoire, because sometimes that sounds different from exercises. I usually give them the benefit of the doubt. If I'm 50/50 I send them, because I don't want to chance it. And they don't want to either.

Another subject emphasized the importance of continuing to seek appropriate care for a student in the instance of limited access to care:

> I hook them up with the best referrals that I can. And if they were to have a financial issue it would be my responsibility to continue to help them seek out the correct person to see. I think that is something to be done from the voice professional side.

In this particular case, the subject indicated that her first preference was to refer students to a speech-language pathologist in a voice care center. Several other subjects discussed

the importance of referring students to specialist voice care teams, though they would consider referring to a general ENT as a secondary resort. One subject described the benefit of accompanying students to their voice evaluation:

> I've gone with students before to the ENT. One of the scariest things for them [to hear] is, "Ya know, let's go get you checked out." With some of them I've gone with them . . . because they're terrified. Often they don't know what they're hearing from the doctor and don't understand the diagnosis and treatment.

Some subjects expressed confidence and conviction in their decisions to refer a student for clinical voice care:

> Always better to be safe than sorry.
>
> When in doubt, refer out.
>
> It's never good to wait. If you think there's a problem, the student probably also thinks there's a problem.
>
> I am that first level of intervention. That's how I think of myself.

Another subject had perceived a sense of relief in her students when communicating her concerns and recommending specialized voice care:

> I say, "There's a voice center here. They can be on your team and recognize if there is really anything wrong." They are very happy when I bring that up. They are relieved. I usually email the voice center in the lesson. I read it aloud to them. And I copy them.

Some subjects discussed the importance of following up on a student's diagnosis and treatment plan (if the student has indeed undergone evaluation). Communicating with a

voice care team was a commonly cited example of follow-up, as some subjects illustrated:

> I think it is my job to work with the [voice care team] as appropriate and continue that work. To make sure that what we're doing works with everything else going on.
>
> It is great to have the information from the [voice care team]. A list of exercises and strategies . . . answers to my questions and the student's questions.

Another subject discussed how following up with the voice care team can enhance the pedagogue's understanding of their role in the rehabilitative process:

> [There should be] clarity and understanding on the teacher's part of what's actually going on. What is the plan? How is that going to be affecting the instrument itself, and what does that look like over time?

For this teacher, developing a thorough understanding of a student's voice problem through communication with the voice care team shaped her future pedagogical and vocal health-related decisions.

Two subjects described feeling a sense of relief and security when they actively engage with members of their student's voice care team:

> I find it very helpful when I can talk to [the voice care team] after [they have] seen what's really up. That specific info is very helpful because it gives me assurance that I'm not going to hurt things by proceeding. I feel like I now have permission or a backing or something.
>
> I don't see these cords; I only have my ears. I have my eyes to see tension in the body. To know that they are in [the voice care team's] hands and [have been sent] back to me, which tells me, yes, they're ready for some level of engagement with the teacher and not just voice therapy. That to me is tremendously comforting.

The teacher's insistence on obtaining specific information, such as a specific diagnosis, pictures or videos from the exam, specific exercises, and a detailed rehabilitation plan, was considered to be a facilitator for a student's voice injury resolution:

> I want to know what the actual diagnosis is.
>
> I would ask [the voice care team] to be specific with me . . . as much as [they] possibly can. Tell me if there is pre-nodular swelling or actual nodules, one cord or both cords, [and] how bad it is. How long will the downtime be? Can I do this? Can I do that? Do I avoid this? Tell me what I need to know. I feel like I'm carrying forth on the info that [they've] gathered and filtered through their expertise. If you tell me this student needs to take an incomplete or a WP, I'm right there.
>
> If they have pictures I want to see [them] because I'm a great big nerd.

Consulting Colleagues

Nearly half of participants discussed the value of informing academic colleagues when a student becomes injured. Doing so may facilitate a student's recovery, as other faculty who may be working with the student will have greater awareness of a student's temporary limitations on amount and intensity of voice use:

> If someone is having serious problems, I would go to the voice faculty and explain the situation. I'll say, "We're going to be working on things that will support what they're doing in voice therapy." Maybe singing a couple songs, then finding a way for them to have a different kind of assignment.
>
> All the voice faculty are on board with it. We just drop the rep and we go to the voice therapy. No belting, no extremely high singing, singing for shorter periods. It just all becomes about voice therapy.
>
> When [the student] comes back from the evaluation, one of the things to do is to alert my supervisor, the head of the voice division, and say we have a medical problem with this student; I need to back off on the repertoire. My boss says,

> "That's fine, you're in control. If the student needs to take an incomplete, that's fine. Let's keep them in the studio as long as the therapist says it's okay."

One participant had discussed a student's voice recovery plan with the student's pianist and coach:

> I try to involve the coach and accompanist so they know what's going on and can keep an eye on the student outside lessons.

In cases where a pedagogue feels uncertain about what they are hearing in a student's voice, it may be helpful to seek a colleague's opinion:

> I had one student [who] ended up with a paresis from a virus. [When I] heard it in a lesson, I said, "That's weird." He [later] sang in a studio class [and] my colleague said, "Did you hear so-and-so? That's scary!" That was an instance when my colleague detected a voice injury and I didn't hear it as well. I just heard lots of breath. Red flags went up, and when she confirmed it, I knew he just had to go [to the doctor]. You don't know what to listen for when you're first starting.
>
> I think [it would help] to record the student and send it to some people and say, "What do you think?"

Seeking a mentor among one's colleagues may also inform younger teachers' decisions in managing a student's vocal health problem:

> I found that my sessions with [my mentor] . . . talking one on one . . . have been very valuable. He is such a good pedagogue.

Indeed, a mentorship with a more experienced colleague may be particularly valuable; nearly half of participants described that their confidence in making vocal health-related decisions in the studio increased with experience:

> The more I teach, the more I can really hear the nuances of what's going on with a student's voice in conjunction with everything.
>
> I'm getting to a place where I can tell the difference between hoarseness, raspy-ness, [or] air that is technical in nature . . . and when there's air and raspy-ness because there's something going on with the folds.
>
> You need to possess a battery. An instinct sometimes helps if you don't have an exercise to call on. I think you need a variety of things to help anybody.

And, with increased experience comes the wisdom that referring a student for voice care does not indicate that the teacher is at fault for the problem:

> [I am] getting over the fear that this…reflect[s] badly on me. It is inevitable. It's not because we're all bad teachers. It's because we're persistent and we take care of it.
>
> When I was younger, I might have felt a little scared to refer because it could reflect poorly on my teaching. But now that's not the case.

Facilitator #2: Making Curricular Adjustments

All 15 subjects described the role of adjustments to an injured student's curriculum as facilitating to injury resolution. Subordinate themes emerged as follows: restructuring the lesson; adjusting repertoire; modifying, postponing, or canceling a recital or end-of-semester jury; and substituting vocally demanding tasks with reading and writing assignments.

Restructuring the Lesson

The vast majority of subjects discussed the importance of restructuring lesson time in facilitating a student's voice injury recovery. Increasing focus on technique

emerged as the most prominent strategy in restructuring this weekly one-on-one between student and teacher. Some subjects found the use of semi-occluded vocal tract sounds (SOVTs) to be particularly helpful in optimizing vocal technique during injury:

> For mine who need rehab work, I use a raspberry to get them to a point where they're not assessing their sound, but put them in a place where they're letting go . . . [so they] become more aware of that part of their body. Then [we] transition into the straw.
>
> If they have to sing it on a raspberry in order to be on a healthy track then that's what they're going to do, and they won't sing it on the words.
>
> A helpful tip I picked up was to turn the rep into SOVT exercises so they could still learn pitches, rhythms, etc., [so] they are still learning [repertoire] without exacerbating things. [We] focus more on SOVTs while they are injured than when they are feeling well.
>
> The semi-occlusion is really helpful. I had a student who couldn't get into a head voice. We worked a lot of occlusions and onset—muscularity. She was able to put on a recital. It felt like a place of real accomplishment for both of us.

Several subjects discussed the use of Vaccai vocalises to increase technical focus in lessons, and in some cases to replace a semester's assigned repertoire:

> I also use Vaccai exercises. You can do one of these with SOVTs before you even teach the Italian on it. [Students] pay attention to how they do them because they're "mini songs."
>
> I have swapped out rep for a Vaccai exercise.
>
> Sometimes I substituted lessons from Vaccai and they counted as repertoire study for the semester. They are shorter pieces and obviously have a pedagogical purpose. Some are shorter if you need that.

One subject discussed the importance of optimizing register balance in facilitating a student's recovery:

> Usually kids coming in with injuries are very imbalanced. We work on breath movement and strengthening head so we can get that mix to start working. It's safer. Sometimes I use percentages for CT/TA balance. We work on lightening the middle, the bottom, and strengthening the top. It depends on their style and what kind of singer they are.

This subject also discussed her valuable experiences in addressing healthy speaking voice production using Resonant Voice Technique (RVT):

> I do a lot of RVT stuff. I had some training with [a prominent speech-language pathologist] about that. We do lots of humming and I encourage [the student] to use their speaking voice better in the meantime.

Another subject discussed the importance of addressing resonance during injury recovery:

> We would work on awareness of how resonance was affected by these [vocal health] problems, developing an ear for it.

Focusing on technique was perceived to be a prominent facilitator for student injury recovery. Two subjects discussed the recovery period as the most critical time to discuss a student's awareness of technique and the feedback methods they rely on most. The recovery period was also a time during which heightened awareness of technical imbalance occurred more naturally. Following are illustrative quotes:

> A lot of times I'm constantly trying to come up with new ways to phrase it for students who aren't there yet, but I say, "This exercise is not about the sound that's coming out of your mouth right now, it's about the sound you'll be able to make in three months. It's about the way it feels." For some [students], that helps.
>
> One interesting phenomenon: I do find that the recovery process . . . sometimes is really beneficial because they are more careful, more methodical with trying to

> put their technique back together. In the end you're really improving because you're taking the time to put it back together. It's like a reset.

Several participants discussed spending more time in lessons outlining individual practice methods for the injured student. This emerged as a common example of restructuring lesson time to facilitate the student's recovery. Participants discussed the value of teaching specific aspects of daily practice and suggesting non-vocal practice methods. Following are illustrative quotes:

> [The student] might [do] silent practice. Character study.
>
> [The teacher should] be very methodical in terms of a student's practice regimen. Be diligent about teaching how to practice, how often, how to fit it in. Suggest non-vocal practice methods, [like] studying diction. Help the student understand that they have to do this before we can work on those other things.

Several discussed the importance of having the student demonstrate their practice routine:

> I ask them to show me how they practice. I don't ask every lesson. I ask if I notice something that is questionable. By lesson 3 if it's not all different, then I give a request for a demonstration.
>
> I teach them how to practice. I send with them sheets that teach them how, then I have them practice in front of me to make sure they're doing it right.

Several participants discussed allocating more time in lessons to relaxation, movement and alignment strategies. This emerged as a common example of restructuring lesson time to facilitate injury recovery. Following are illustrative quotes:

> We learn rep at leisure because I'm trying to figure out how to best serve the student and his or her instrument and hopefully helping the whole process. We do

> lots of . . . physical movement. Usually kids coming in with injuries are very imbalanced.
>
> I have found that alexander technique . . . informs my ability to understand what's going on in the student.

A slightly less common example of restructuring lesson time was spending more time teaching voice mechanism anatomy and physiology. This was achieved using a variety of resources, including textbooks, anatomical images, models, coloring books, and videos:

> Get them to understand their anatomy. [Use] cool coloring book images and have them watch YouTube videos so they have good body mapping in their brain. When they get the soft palate, they know what that is and how it's morphing. Technology now is great.
>
> My job is to teach them as much about how their voice works and how to navigate that as I can. And teaching them to navigate any problems. Teach them to be clear on what's going on in there, and how we're going to deal with it.
>
> Not all students want to know physiology, some info is essential though for their progress and their willingness to buy into what you're having them do.

Three participants had spent time reviewing the student's voice therapy exercises in lessons:

> A student went through therapy last year for eight to nine months. We are still constantly aware of keeping up with therapy exercises.
>
> When they start therapy, I like to know what they're doing . . . we work on warm-ups and cool-downs and I like to know what their therapy exercises are.
>
> Every single week they do their exercises in the lesson time.

One participant reconstructed lesson time with an injured student by discussing readings that were assigned in the previous week's lesson:

> Sometimes the lesson will be a conversation. I'll assign chapters and we discuss them at the next lesson and reflect on them. [We] try the exercises.

Another decided to focus on foreign languages and diction to offload voice use during the lesson:

> We work more on languages so we can be productive and not cancel all the time.

Adjusting Repertoire

The vast majority of subjects had adjusted a student's repertoire requirements to facilitate injury recovery. In most cases, adjusting repertoire involved simplifying existing repertoire and swapping for pieces demanding lower tessitura and decreased dynamic range. Several participants had swapped a student's aria for a similar art song. For some, increased focus was placed on technical production. For others, swapping for less demanding repertoire provided an opportunity to focus on interpretation and communicative delivery. Following are a few examples:

> Say it's an aria [that we need to swap]—I'll look for an art song that will prepare them for the aria. Something with melismas or this tessitura . . .
>
> If they're pushing up there or straining to do that, then yes . . . let's change the key or maybe look at another song.
>
> It's possible I give them a basic folk song that is less than an octave in range, perfect tessitura and all that.
>
> At the very least, I switch for something less impactful on range.
>
> I will . . . see if I can dumb down some repertoire for them. What I mean by that is dumbing down dynamics, not too loud or soft. I will dumb down the range, if they can do a fifth, then I'll find songs within a fifth. We'll focus on really good technique.

> I decreased range, no opera arias, something fairly easy . . . musically challenging but not technically challenging. More of a line, more of the mp-to-mf . . . More "let's tell the story" than beauty of tone.

Another method of swapping repertoire involved temporarily transitioning to an entirely different singing style to target technical problems thought to precipitate the student's injury:

> We do a lot of classical rep [with musical theatre singers] to bring the top down and strengthen the head register.
>
> [I moved my MT student] to rep that demands a different style of singing [Golden Age].

Some participants decreased the number of pieces required for the semester. As one participant remarked,

> [I] find ways to challenge them aside from piling on more literature.
> Maybe [they will sing only] a couple songs, then [I] find a way for them to have a different kind of assignment.

A couple participants eliminated repertoire altogether until the student had recovered:

> We just drop the rep and we go to the voice therapy. It just all becomes about voice therapy.
>
> [My student] didn't sing repertoire at all for almost two months—just vocalizing, learning to breathe and not grab. Making sure it wasn't all glottal and pressurized. Bringing awareness to the things he didn't even realize he was doing.

Two participants had invited an injured student to bring outside repertoire to lessons. Though this repertoire was not part of the student's curriculum, stylistic aspects of

technical production were addressed to encourage efficient singing outside of studio voice demands:

> I'm trying to be as open as possible with my students as to the rep that they are particularly interested in. I had a male student who was really interested in rock [singing]. We got there and he was motivated to do that. If they're already hurt, trying to train the style is tricky. Patience.
>
> I try to make my studio an open and welcoming place. It's a stylistically welcoming environment. Students are welcome to bring their other music in. If you know a student is going to sing a certain way outside of the studio you might as well ask them to bring that into the studio. I need to stay in the picture somehow . . . the best I can . . . if I'm the only one advocating for them. [I ask,] "How can we make this healthier and more sustainable?"

Modifying/Postponing/Canceling Juries

Half of subjects discussed decisions to address a student's voice jury in order to reduce vocal load and facilitate recovery. Several discussed modifications to the jury requirement:

> If a student is very injured I have to make a big decision about juries. I may have the student learn the normal amount of songs but only list two of them. It's always been something where I picked rep knowing that there was something going on, or at least suspecting it.
>
> We may have had to defer the jury. More often . . . at their jury they would sing [Vaccai] on the words . . . instead of [a song from] 26 Italian Songs and Arias.

Others have had students skip juries or postpone them altogether:

> We postpone juries. If there's an acute illness that they can recover from by next semester, then we postpone it. If they have a longstanding severe injury, then I usually send [my supervising colleague] a note and I say, "So and so has this injury, I'm going to have them write a paper in place of the jury."

> They still have to attend concerts and write reports. If they really shouldn't be singing I don't have them sing anymore. I have them skip their jury. They don't make it up later. If they comply with the vocal [health] protocol they've been given, and they understand their condition and what led to it, then that's more than a semester's learning.

Reading/Writing Assignment

Several participants had substituted a reading or writing assignment in place of a jury or other performance requirement. Doing so allowed the student to offload vocal demands while maintaining an appropriate work load for the course:

> My students write a paper in which they describe what they learned that applies to everybody, and what they learned that applies just to them.

> We've had students write a paper about their issue and what they actually did to get better.

> When I have a student who has a chronic voice challenge, I will make them purchase the voice book by Kate DeVore (DeVore and Cookman 2009). I find that that book is very accessible. It's straightforward enough that they actually read it. We'll go through it together.

Facilitator #3: Consistent Follow-up

The overwhelming majority of participants discussed consistent follow-up with an injured student as a critical facilitator for injury recovery. Emergent subordinate themes included monitoring for progress, reviewing the recovery plan with the student, and discussing vocal pacing and hygiene.

Monitoring for Progress

The vast majority of subjects cited the importance of monitoring a student for signs of a voice problem, particularly after the initial onset of changes. Diligent monitoring appeared as a facilitator to injury recovery. Monitoring for changes to speaking and singing were both discussed. Some teachers used specific exercises to assess changes to registration and vocal quality as signs of a problem:

> I do some diagnostics and I'm listening for certain things. Are they sniffling? Throat-clearing? Is their speaking voice horrible? Straining when they talk? I have my antenna out. Sometimes I can feel what I am hearing in my own body.

Others discussed taking weekly notes to document a student's voice changes and reported vocal pacing and hygiene. For those with large studios, this was in important step in following up on their initial concerns:

> I have a binder that has a section for each student. Every lesson I take notes. If they have a cold, etc. I go through what I hear, what happens . . . when we clean up technique is there more clarity? Is there less? If technique is better, does delayed onset appear because they offloaded that? I do this for my memory but also do it so I can open it up and say, "For the last four weeks you've said you have a cold. You may need to talk to a doctor to talk about what else may be going on. What you feel in your throat may not be mucus."

Monitoring for effort and vocal fatigue was another commonly cited practice:

> What does their speaking voice sound like? How hard are they working to navigate their range?

Several subjects discussed a procedural approach to offloading excessive effort and strain before making final assessments to changes in vocal quality. Following are illustrative quotes:

> The first thing I do is vocalize them. I'm going to use vowels, different vocalises, humming or whatever. And I'm going to hyper-micromanage their voice to see how much of it is body exhaustion, how much of it might be that they're sick . . . or is there something going on with the folds?
>
> I have them come right beside me and go through a series of exercises and listen very closely. I listen for things that might be symptoms of a vocal problem. If I'm suspecting there is a problem going on, typically I start vocalizing them and start checking to hear the typical things . . . passaggio, register shifts, raspy-ness, change in quality . . . overall fatigue. Then I start asking if they hear it. When did they notice this? What do they think is going on?

Discussing Vocal Pacing and Hygiene

Many participants discussed the importance of teaching vocal hygiene and pacing in developing a student's insight into their voice problem. Rather than focusing on simple directives, some pedagogues delved into the actual meanings and relevance of these critical aspects of vocal wellness:

> When they need to go on vocal rest, we talk about what that means.
>
> We start talking about vocal health and how injuries have three components: illness, speaking, and overuse. We talk about proper intake of fluids, sleep. If there's throat clearing we'll work on that.
>
> I'll tell them, "You need to stop; let's back off. What can you do to make things easier for you? How can you practice efficiently and become a better musician without spending a whole lot?"

Several subjects emphasized the importance of sleep for vocal health and injury recovery:

> I say shut up, drink water, don't whisper, and get sleep. Sleep is the number one thing.
>
> I do ask them if they are getting enough sleep.
>
> Sleep and hydration are the first lines of defense.

One subject incorporated students' reported sleep habits into their weekly lesson grades:

> I require students to get six hours of sleep the night before their lessons. And [I require] that they eat breakfast. This is worth ten points per lesson. It makes a difference and they thank me for it.

Another discussed her management of student vocal fatigue, a common occurrence in her studio:

> The main thing I deal with on a regular basis is helping them manage their vocal fatigue. They come to me suspecting they're over-singing and I have to teach them to be aware of how much they're using their instrument, how they're using it, and making sure they're giving enough time to let tissues recuperate. It's not just the singing. [I recommend] silent practice. Character study.

Facilitator #4: Nurturing the Student's Recovery

Eleven participants discussed the importance of tending to multiple dimensions of advocacy to guide a student through their voice injury recovery. Six subordinate themes emerged: emotional support; encouragement; fostering independence and self-efficacy; empowerment; patience; and building trust and rapport. For these pedagogues, guiding a student through recovery involved much more than making the referral and following up on the treatment plan.

Empathy and Acceptance

Some participants discussed offering empathy to a student as an important facilitator for injury recovery. As the pedagogue is usually the member of the voice care team with the most contact and rapport with the student, they are in a unique position to offer support for a student grieving their injury:

> I play a role in what goes on in their head.

Pedagogues may need to respond to the student's primary grief from the injury, as well external complicating influences:

> Help the student through the depression that goes with a vocal injury.
>
> You may also be a life coach. Whatever they're doing in life may be exacerbating the situation.

One pedagogue was able to empathize with his injured student due to his personal experience with voice injury:

> All of us as singers . . . to accept the fact that that you have a vocal injury is always extremely difficult and damaging. And very hard to get past that initial shock. It's not like you have a sore toe.

Another explained that while she empathizes and provides support for an injured student, the level of attention is not altogether different from what she would give an uninjured student:

> What I do emotionally for them is the same thing I do emotionally for when their technique isn't working.

One participant described the importance of communicating support for not just the student, but the rest of the voice care team. Demonstrating the "team player" mentality acted as a facilitator for the student's recovery:

> [Give] the student as much clear, accurate information to understand the problem and to understand that you are super supportive of their care team. That you're all working together.

Helping the student understand that they are not personally at fault for their injury was another example of communicating support and acceptance:

> Make sure they don't feel like it's their fault. College is hard anyway, and if you add any sort of injury you add a lot of stress. As a vocalist you are an athlete. Just like an athlete, when you're at an elite level you can be more prone to injury. It doesn't mean you're a bad singer. A pitcher might strain their arm…it doesn't mean they're terrible. I know myself; if I have a cold for a week and I can't sing, it can be hard because that's what you do.

Encouragement

Some participants discussed the importance of encouragement in nurturing an injured student's voice recovery. For one pedagogue, encouragement was also an important part of the detection and referral phases of addressing the student's vocal health problem:

> The teacher ensures the student through the entire process.

Maintaining positivity in interactions with the recovering student was one example of providing encouragement:

> Make sure they feel comfortable and maintain an atmosphere of openness, an air of positivity, and encouragement so that they want to continue seeking treatment.

For students who become discouraged by a slow, limiting recovery, one pedagogue found it helpful to reframe the recovery period as a time well-suited for technical growth:

> I think of it as being patient. If they try to push it, it prolongs the problem but also [becomes] a psychological thing. They're convinced that it's never ever going to come back again. I try to be flexible with students like that and really shepherd them through the process, [giving] them encouragement that they're doing the best thing in the long run to address the problem. The opportunity to reset and re-think how to put the voice back together to where they want it to be. That's a crucial part to recovery. I tell them, "This is not the end of your life as a singer, it's actually an opportunity to rethink your technique and how you can make it better."

Fostering Responsibility, Independence, and Self-efficacy

Leading a student to independence and encouraging self-efficacy were cited by some as examples of nurturing recovery:

> Part of my teaching philosophy is to create independence. And I want to create independence for their vocal health [so that they] start to make decisions independently, not always come to me. Self-efficacy.
>
> I . . . view my ultimate job as teaching them not to need me.

When a student develops a mature level of independence, they may also develop a greater sense of personal responsibility, another commonly cited facilitator for a student's injury recovery:

> You want them to discover the importance of their health on their own.

> You [the student] learn to make sacrifices and these [sacrifices] line up with your priorities. You make the choices that you need to make, but you have to accept the consequences.
>
> Ownership of the process.

Developing Trust and Rapport

Establishing a rapport with a student breeds trust, a virtue that several participants considered facilitating for the student's recovery. Though all students strive to develop a trusting relationship with their teacher, trust may become more important in the event of an injury. Two subjects discussed keeping the communication door open as an essential cultivator of trust and rapport. Though professional boundaries should always be appreciated, offering the student an opportunity to confide may pay dividends in the recovery process:

> By offering the opportunity to give feedback, they open up to me about their struggles.
>
> Sometimes you can't be involved as they want you to be, but you have to keep the door open.
>
> Allow for long-term conversations.

Facilitator #5: Developing Student Insight

Thirteen subjects in this study discussed the importance of developing a student's insight into the voice problem. Subordinate themes also emerged: demonstrating one's personal commitment to vocal health; explaining rationale for techniques and exercises; discussing the injury etiology; and making analogies.

Demonstrating Personal Commitment to Vocal Health

Some participants had shared their personal vocal health journeys and experiences with vocal injury to increase the student's insight into their own voice problem. Pedagogues are in a unique position to develop a student's insight into the voice problem, as they, too, have likely endured a voice injury:

> A lot of good teachers have faced challenges on their own. As you deal with it, you learn.
>
> All of the stuff we've gone through . . . we don't want them to go through that.

Understanding that no singer—not even their voice teacher—is immune to voice injury may motivate the student to make recovery and ongoing voice wellness a daily part of their life:

> It's easy for them to see their teacher on a different level . . . someone who has done the work and who doesn't have vocal issues anymore. No, no, no, no. As long as I am a professional voice user I have to be aware of my vocal health.

This participant strived to provide a daily example of healthy vocal pacing and hygiene decisions:

> Something that's helped me that I didn't intend is that my students watch me navigate my own vocal health. My load at [my university] is pretty heavy, as many as 20 lessons per week, conducting ensembles for 3 hours, and then running the voice science and pedagogy program. And I'm also singing. And so navigating that kind of thing, having my students watch me navigate it, I'll intentionally put 30 minute breaks in places. Because I've learned that I can't maintain my vocal health if I don't have a hot second. I've had to be really protective of some of my breaks during the day. They have had to learn that it's a vocal health choice. Having them watch me get ill and have to work while I have a cold. Or work through allergies.

Another participant shared a personal anecdote she had used to encourage injured students to make smart vocal pacing choices:

> I'm always telling them what an ENT told me once—"If you push for a high note while you have a URI, you're asking for a polyp."

Explaining Rationale for Recommendations

Helping the student to fully understand rationale behind voice rehabilitation strategies and exercises emerged as a subordinate theme for developing a student's insight into their voice problem. Several participants described the importance of students understanding *why* vocal hygiene, pacing, and rehabilitative exercises foster recovery. When a student understood rationale, they appeared more likely to stick to the treatment plan, which may have facilitated a more favorable recovery:

> I make sure that all the students . . . understand the importance of what they're doing and see where that takes us.
>
> Make sure they're not blindly following a bunch of directives…but don't know what the end goal is.

While re-working technical aspects of singing during injury recovery, giving rationale for both evaluative and skill-building tasks emerged as important. Some participants even shared their ongoing evaluative thought processes with their students in order to develop the student's insight into the problem and recovery plan:

> I'm really honest and clear about what I'm looking for and why. I explain to them, "What I'm trying to do here and piece out . . . how much of it is technique and how much of it is vocal health?" We talk about why I'm taking everything apart.

> [I say,] "This is why we have to be careful about the following things while working back into your singing. Now that we know what's going on, that's probably going to change something about how it's working."

Discussing Injury Etiology

A couple participants shared the importance of discussing with the student factors that may have precipitated the voice injury. Doing so may facilitate recovery and also help the student mitigate future injuries:

> Help the student understand what happened.
>
> I think something really valuable is for them to know how they came to be injured. From my perspective I think it's helpful to reinforce to them that you learn from what led to this injury.

Making Analogies

Two participants discussed their frequent use of analogies to help students develop insight into the voice injury:

> I use the analogy of running a 5K . . . you wake up to race and your knee is bright red and swollen. What do you do? Well this is what your voice is like. What is your body trying to tell you? Let's pay attention to that.
>
> If you had a race horse, and it was injured, would you just beat it and make it keep running?

Making Recordings

One participant discussed the value of recording students' voices during an injury to increase their insight into the problem and their progress. While many teachers use this

strategy with non-injured students, in the case of an injured student it may serve a deeper purpose in the student's recovery:

> I have them record their voices to improve their concept of what their voice is.

CHAPTER V

INTERPRETATION OF FINDINGS

Analysis and Synthesis of Findings

The purpose of this qualitative description study was to explore with a group of collegiate voice pedagogues their perceptions of barriers and facilitators to resolution of student phonotraumatic injury. It was anticipated that understanding the perceptions of pedagogues would illuminate opportunities for optimizing the process of navigating phonotraumatic injury in student singers.

This research utilized naturalistic inquiry within a pragmatic research paradigm to collect qualitative data by conducting in-depth, semi-structured interviews. Subjects included 15 voice pedagogues working in the collegiate setting. The interview data was coded using inductive analysis and organized using a constant comparison approach first into categories pertaining to the research questions, then by emergent themes and corresponding subordinate themes. The study was grounded in the following research questions:

1. What are pedagogues' perceived barriers to efficient resolution of phonotraumatic injury in collegiate singers?
2. What are pedagogues' perceived facilitators to efficient resolution of phonotraumatic injury in collegiate singers?

Chapters III and IV summarized the findings of this qualitative description study by organizing interview data into categories, themes, and sub-themes to construct a comprehensible narrative. The intent of this chapter is to discuss the researcher's interpretation of these findings in order to deepen the understanding of pedagogues' perceived barriers and facilitators to efficient resolution of phonotraumatic injury in collegiate singers. While the findings chapters provided a detailed account of pedagogues' perceptions replete with quoted excerpts, this chapter attempts to shape the findings into a richer level of realization. Interpretation of the findings is intended to help both the researcher and the target audience—collegiate voice pedagogues and clinical vocal health providers—"see the forest for the trees." The chapter closes with a review of the investigator's assumptions identified in Chapter II, "Methodology," with consideration of the possible influence of researcher bias in the analysis of the research findings.

Interpretative Category Development

Interpretative Categories discussed below align with the study's research questions. The same categories also grounded the coding of interview data and the presentation of research findings in Chapter III. In the following discussion, the investigator seeks to identify connecting patterns and themes within and among the interpretative categories. Additionally, these interpretations will be compared and contrasted with pertinent literature and publications found in the existing body of health care research.

Concern for Student-Mediated Factors

Participants were concerned about choices students make outside of lessons that negatively impact their vocal health. They were also concerned that students lack insight into the importance of vocal pacing and hygiene, even after learning about vocal health. Many commented that students appear to overuse and misuse their voice outside of the studio despite the pedagogues' attempt to provide vocal pacing and hygiene education. The phrase, "They just don't get it," referring to student singers, occurred in several participant interviews. Here, pedagogues were referring to students' perceived lack of insight into the fragility and finite limitations of the human voice. Several speculated that this attitude reflected a broader sense of invincibility commonly experienced by late-stage adolescents and young adults. Perhaps only a certain amount of insight can be expected from voice students of this age, as insight tends to develop with life and professional experience. As indicated by one participant and in the experience of the author, students may benefit from witnessing their teacher making daily decisions for their own vocal health. Discussing one's personal vocal health journey may encourage the student to take charge of their own.

Several described frustrations that their concerns for their injured student's vocal health were not reciprocated, occasionally leading to strained teacher-student relationships. One participant shared that she had a developed a negative reputation within the a cappella scene at her university for being "overly careful" and referring many students for voice care. Another remarked, "They just don't want what I want," suggesting that students sometimes indicate understanding of the theoretical importance

of maintaining and restoring vocal health, yet appear to lack the motivation required for recovery. Often this lack of motivation may appear tangled in a student's desire to maintain a desirable social life during college. For students who place a higher priority on socializing than on vocal health, the recovery process may be rocky.

The findings of this study suggest that pedagogues perceive students to be lacking in proper knowledge of the importance of vocal pacing and hygiene, yet all participants shared that they value vocal health and aim to nurture an awareness of vocal health in their students. If pedagogues are discussing the importance of vocal health in their one-on-one lessons, why are students often perceived as deficient in their understanding of vocal health concepts such as vocal hygiene and pacing? It is possible that students may not be getting enough exposure to vocal health education in their K-12 years, particularly during high school. Collegiate pedagogues may feel as if they need to "compensate" for a student's underdeveloped vocal health insight. The student may be learning about vocal health for the first time from their collegiate pedagogue. It is possible that, while vocal health is addressed in the studio, it may not be reinforced often enough to significantly increase a student's awareness of the positive (or negative) effects of vocal pacing and hygiene. Given the findings discussed above, earlier and more persistent education in vocal pacing and hygiene, with a particular focus on voice overuse and misuse, may mitigate or prevent cases of student phonotraumatic injury.

Finally, with regard to pedagogues' perceived concern for student voice behaviors, there was frequent trepidation about speaking voice technique in young students. Should pedagogues address speaking voice efficiency in lessons? Should they

undergo speaking voice efficiency training in pedagogy courses? These may be areas of future exploration. Certainly, helping a student to develop more balanced phonation for speaking has the potential to decrease the risk of phonotraumatic injury. As phonatory efficiency improves, impact forces between the vocal folds decrease, yielding greater vocal fold resilience. Balanced speaking voice technique is also less likely to be counterproductive to efforts to optimize singing voice ease and efficiency.

Concern for External Factors Perceived to Be Outside Pedagogues' Control

Study data suggest pedagogues' concern for the high vocal demands placed on collegiate singers in choral ensembles and opera or musical theatre production. Apprehensions regarding long and frequent rehearsals were shared. Several expressed concern that rehearsal schedules were excessive relevant to the demands of the repertoire, possibly leading concerts and productions to become "over-rehearsed" and placing unnecessary demands on voices that are already obligated to their maximum. Efforts to optimize the channel of communication between pedagogue, choral conductor, and stage director have long been discussed institutionally and in the literature. Improving pedagogue-stage director and pedagogue-choral conductor communication pathways may help an injured student adhere to their recovery vocal pacing plan. The findings also suggest the value of increased vocal health outreach and education in choral, opera, and musical theatre settings.

The research data indicate an increasingly serious concern about the perceived increase in vocal health problems believed to be present in incoming freshman classes.

This finding may suggest the need for studies to assess the prevalence of vocal health problems in high school seniors and college freshmen. If increased prevalence of injury in incoming freshmen is truly a trend, how might voice pedagogues and vocal health professionals address this problem? Might sociocultural influences described in Chapter 3, particularly the new "vocal ideal," contribute to this phenomenon? It is possible that comprehensive vocal health training for high school and community music educators, with particular attention to vocal pacing, might encourage earlier awareness of vocal health. In addition, enhanced collaboration between high school choral educators and community singing teachers might empower young singers to make decisions that help them preserve their vocal health.

Access to care emerged as a common concern of participants and was described as a barrier to resolution of a student's voice problem. Many students lack proper insurance to see any type of medical provider, let alone a specialized voice care team. Some students lack reasonable access to specialized services and visit a general ENT instead. Of even greater concern were several reports of students visiting urgent care or primary care providers to address voice concerns. As many general ENTs and virtually all primary care and urgent care providers lack in-depth training and equipment that are critical for assessment and treatment of the performing voice, this scenario presents a risk for misdiagnosis and proliferation of a student's voice problem. Students whose insurance does not cover local specialized voice care should inquire whether their care will be covered closer to their hometown. Students from low-income families and

students without insurance should investigate Charity Care, Project Access, and other access initiatives, as these organizations may be able to offer financial assistance.

Deciding Whether to Refer a Student for Voice Care

The research data indicated moderate concern for the decision-making process when presented with a student's vocal health problem. Hesitation regarding if and when to refer emerged as the most difficult decision participants faced. Pedagogues may have trouble discerning a protracted vocal health problem from an upper respiratory infection or bodily fatigue. Several subjects indicated that being unable to decipher whether there was a problem with a student's vocal folds led them to postpone a referral for weeks, sometimes months. For vocal health providers this scenario may cause concern, as periods of speculation or "watchful waiting" may actually become periods of voice problem progression. Though some subjects describe instances during which they found it challenging to make the decision to refer, others indicated confidence in referring any suspect cases, using such common phrases as, "When in doubt, refer out." One pedagogue described apprehension to refer in the first few years of his pedagogical career, for fear of an injured student reflecting poorly upon his teaching. This participant later indicated that, after a few years of experience, his apprehension dissipated.

Difficulty discerning voice problems may yield delayed referrals to specialized voice care. It can also lead students to self-diagnose and self-treat in ways that are not congruent with their true diagnosis. A common example of this regards gastroesophageal reflux disease (GERD) and seasonal allergies. Some students experiencing hoarseness

may self-treat with GERD or allergy medication, only to find out later that they have neither GERD nor allergies; rather, they have a phonotraumatic voice injury caused by voice misuse and overuse. During the weeks in which they were experimenting with GERD or allergy medications, they continued to misuse and overuse their voice, assuring themselves that their vocal habits had remained consistent and manageable. As the problem worsened, the student eventually sought a diagnosis with a voice care team: vocal fold nodules. To insinuate that this student's nodules would have been prevented by an earlier referral would be an overgeneralization, but in this case, as in many medical disciplines, early referral has the potential to mitigate grief, frustration, and the overall duration and severity of an injury.

Pedagogues would likely benefit from more standardized protocols in responding to a student's vocal health problem. How might we improve discernment of vocal health problems in the studio without visualization methods? A possible solution may be to administer the Singing Voice Handicap Index-10 to the student. A score higher than 11 would indicate the potential presence of a functional or organic dysphonia. A student scoring higher than 11 may be a good candidate for voice center referral. Pedagogues could administer the SVHI-10 to all students at the beginning of each semester, or at any time when the voice is perceptually normal, in order to obtain a baseline measure. Repeating the questionnaire in the setting of a voice concern may inform the pedagogue's decision to refer a student for voice care. (Refer to Appendix E for the SVHI-10 questionnaire.)

Pedagogues may be able to assess a student's vocal fold swelling using phonation threshold tests. For example, if a student presents with hoarseness or other voice complaints, the teacher might direct them to phonate gently on an ascending staccato 5-3-1 /hu/, documenting the highest note at which the student can phonate clearly and without a delay in phonatory onset. If this assessment is done regularly in the absence of hoarseness or voice complaints, the teacher and student should develop a fair estimation of the student's normal phonation threshold. A loss of more than 2-3 semitones should be cause for concern, particularly in the event that a loss of range persists for longer than two weeks and is accompanied by hoarseness, vocal fatigue, and increased vocal effort.

Pedagogues might benefit from being trained to administer an S:Z ratio test, which measures the maximum length (in seconds) of sustained exhalation on /s/ against the maximum length of sustained phonation on /z/. A calculated ratio above 1.5 is considered outside of normal limits. A sustained /z/ that measures significantly shorter than sustained /s/ may indicate poor vocal efficiency due to functional dysphonia, glottal insufficiency, or vocal fold pathology. Pedagogues may obtain S:Z ratios from students presenting with perceptually normal voices in order to establish a baseline. Repeating the test in the setting of hoarseness or voice complaints may support the pedagogue's decision-making process.

Adopting a Team-Based Approach to a Student's Recovery

Research data indicated that all participants considered collaboration with clinical voice care providers to be a leading facilitator for student injury recovery. Some

pedagogues consulted voice care specialists early and often. Several had attended the evaluation or voice therapy session with the student and requested the student's authorization to communicate with the health care providers. As multiple pedagogues in this study expressed concern that they weren't getting an accurate description of the student's diagnosis and treatment plan (as relayed by the student after the evaluation), building supportive and reliable communication pathways between the student, the pedagogue, and the voice care team has the potential to drastically improve the student's injury outcome. For students undergoing a course of voice therapy, follow-up between all team members should occur with regularity.

The value of collaborative care is not a new discussion in vocal health. A recent qualitative study, "Just Add ZEST: Cultivating Fruitful Collaborations for Injured Student Singers," explored clinical singing voice health specialists' attitudes and opinions on collaborating with an injured student's voice teacher (Nixon and Scheuring, forthcoming 2019). Insights gained from interviews with five subjects led the authors to conclude with the following recommendations for pedagogues working with an injured student: practice what you preach; discuss signs of vocal fatigue; teach efficient practice habits; discuss vocal pacing; collaborate with clinical team to spearhead a screening program; keep communication lines open; and help the student understand the role of each voice care team member. Pedagogues may thus be encouraged that clinical providers are also eager to increase and optimize collaborative efforts.

Study data indicated that establishing a relationship with a mentor or a trusted colleague can serve to facilitate a student's injury recovery. Beginning pedagogues may

experience indecision or low confidence in making decisions affecting their students' vocal health. Several participants indicated that their comfort and confidence in dealing with student vocal health increased with years of experience. Pairing young and experienced pedagogues in a mentor-mentee relationship may help beginners develop an ear for perceptual signs and symptoms that may be cause for concern. Establishing a mentor-mentee relationship may also afford the beginning pedagogue an opportunity to invite the mentor to listen to the student in question, gaining the beginning pedagogue a second opinion that would inform subsequent decisions.

The Importance of Flexibility and Persistence

Pedagogues perceived that they have the potential to greatly impact a student's course of recovery through modifying standard curricular requirements. The importance of the pedagogue's flexibility in managing an injured student's course requirements emerged as a top facilitator for injury recovery. Allowing the injured student to continue in applied voice lessons and other performance coursework while sufficiently reducing their vocal load to facilitate recovery requires creativity and collaboration with colleagues. While participants from different institutions generally described curricular modification scenarios specific to their university, all participants had modified a student's course requirements during recovery. Examples of modification included postponing or canceling the jury; decreasing, swapping, or modifying assigned repertoire; assigning alternative assignments—reading or writing tasks, for example—in place of a

performance requirement; and restructuring lesson time to focus on technical goals and, if applicable, voice therapy exercises.

Because maladaptive compensatory strain is highly likely to occur in the setting of a vocal health problem, teachers can play a larger role in mitigating its extent and duration. The pedagogue's ability to develop a student's awareness of the (sometimes subtle) sensations of compensatory strain may be a valuable facilitator for recovery. A student's ability to monitor tactile and proprioceptive feedback over auditory feedback may increase awareness of compensatory strain. Though participants did not commonly discuss the idea of shifting a student's awareness toward tactile and proprioceptive feedback during injury recovery, this may be a valuable topic of future research and discussion.

Data indicated that persistent follow-up with an injured student regarding their detailed recovery plan was a perceived facilitator for recovery. Frequent review of a student's voice care guidelines, restrictions, and relevant curricular modifications may help the student develop insight into the problem. With increased insight, the student may demonstrate greater motivation to take the necessary steps toward recovery. As voice injuries can often feel overwhelming and isolating, consistently reviewing a step-by-step plan may increase a student's confidence and empower them to take charge of their vocal health. Though developing a student's insight into their voice problem emerged as a facilitator for recovery, limited student insight emerged as a leading perceived barrier to injury recovery. This suggests that student insight appears to remain limited even with pedagogues' efforts to increase it, a phenomenon that has been reported both anecdotally

and in the vocal health literature. The relationship between these findings may represent a potential area of future discussion and research.

Revisiting Assumptions from Chapter I

While discerning a potential vocal health problem in a student emerged as a barrier to resolution of a voice problem, the researcher made the prior assumption that this theme would emerge as the most prominent barrier. Instead, pedagogues' concern for student-mediated factors (i.e., voice misuse and overuse, poor vocal hygiene) and external vocal demands emerged as significantly stronger themes. This suggests that pedagogues feel more confident in managing a student's vocal health problem than originally anticipated. Several participants remarked on an increased feeling of confidence in making decisions regarding a student's vocal health as they gained years of practical experience. Others recalled that their first experience in managing a student's vocal health problem greatly informed their decision-making process in dealing with future student injuries. This insight further supports the potential value in encouraging more mentor-mentee relationships between practicing pedagogues.

Summary of Interpretation of Findings

In reviewing the coded qualitative research data, five interpretative categories emerged for discussion: concern for student-mediated factors; concern for external factors perceived to be outside pedagogues' control; deciding whether to refer a student for voice care; adopting a team-based approach to a student's recovery; and the

importance of flexibility and persistence. The discussion above represents the author's interpretation of participant interview data supplemented with the author's professional estimations and experiences. Chapter V provides conclusions and recommendations based on the five interpretative categories discussed above.

CHAPTER VI

CONCLUSION

The purpose of this study was to explore with a sample of collegiate voice pedagogues their perceptions of barriers and facilitators to effective resolution of phonotraumatic injury in collegiate singers. The conclusions from this study follow the research questions and the qualitative description of findings, and consequently address two areas: perceived barriers, which were poor student vocal hygiene and pacing, poor student insight into voice problem, the effects of sociocultural influences, the ability to discern a voice problem, and access to care; and perceived facilitators, which were consulting with other professionals, making curricular adjustments, monitoring a student's progress in recovery, following up regularly regarding a student's treatment plan, and providing support. Following is a discussion of the major findings and conclusions that were gleaned from this qualitative description research study.

The first major finding of this study was that participants felt the greatest concern for student-mediated factors (i.e., vocal pacing, vocal hygiene, lifestyle habits) functioning as barriers to voice injury recovery. Many students were perceived to continuing misusing and overusing their voice despite learning about the importance of vocal pacing and hygiene. A conclusion to be drawn from this finding is that students need earlier vocal health education, especially as it regards vocal pacing and mitigation of

chronic misuse and overuse. Another conclusion is that students would likely benefit from speaking voice efficiency training.

The second major finding of this study was that participants perceived factors outside their control (i.e., production and ensemble demands, sociocultural influences, access to care) to function as a common barrier to efficient resolution of phonotraumatic injury. One conclusion to be drawn from this finding is that increased vocal health education and outreach is needed for production managers, choral conductors, and community singing teachers. In addition, enhanced collaboration between pedagogue, choral conductor, and stage director may help injured students adhere to a recovery plan. A third conclusion is that students would benefit from improved access to specialized voice care.

The third major finding of this study was that some pedagogues may have trouble discerning a student's vocal health problem, and that this challenge was perceived to act as a barrier to the student's recovery. A conclusion to be drawn from this finding is that students may be getting referred to voice care later than optimal because the pedagogue may be unsure of what they are hearing. Students may experience better vocal health outcomes when the pedagogue follows a strategic and measurable protocol that supports their decision-making process in the setting of a potential vocal health problem.

The fourth major finding of this study was that pedagogues perceived a team-based approach to be beneficial in addressing a student's voice problem, and appears to facilitate injury recovery. A conclusion to be drawn from this finding is that more frequent and comprehensive pedagogue-voice care center relationships are needed to

optimize student voice injury outcomes. Another conclusion is that more pedagogues would likely benefit from a mentoring relationship with a colleague who has greater confidence and experience with managing student voice injuries.

The fifth major finding of this study was that flexibility and persistence on behalf of the pedagogue appeared to facilitate a student's injury recovery. A conclusion to be drawn from this finding is that voice curriculum modifications may be more effective if they could become more standardized. Though each injured student's needs may be unique, adopting a generalized modification to the standard voice curriculum that is unique to the pedagogue's home institution may improve accessibility, compliance, and consistency between studios. Another conclusion is that students may benefit from pedagogue-developed protocols that engage persistent follow-up on the student's voice recovery plan.

Recommendations

The investigator offers recommendations based on the findings, interpretations, and aforementioned conclusions of this qualitative description study. The following actionable recommendations are for (a) collegiate voice pedagogues, (b) members of the clinical singing voice rehabilitation team, and (c) future research and creative activity.

Recommendations for Collegiate Voice Pedagogues

- Increase student vocal health awareness and decrease stigma associated with voice injury:

    - Share your personal vocal health journey with your students. Strive to be a vocal health role model.
    - Encourage students to share their vocal health experiences and goals with their peers.
    - Discuss vocal health frequently in the studio, especially vocal pacing.
- Encourage and demonstrate healthy speaking voice habits for your students. Consider undergoing training in Resonant Voice Therapy (RVT) or another speaking voice efficiency method.
- Establish a relationship with your regional voice care team if you haven't already. Maintain frequent lines of communication to optimize collaboration when you need to refer a student for care. If referring a student, plan to maintain persistent follow-up with voice care providers (as authorized by the student) throughout the recovery process. Discuss the potential for developing an annual screening program for incoming undergraduate and graduate singers.
- Singers should first try to seek specialized voice care providers. If this is not an option, a general ENT would be the next best choice, but this type of visit rarely involves videostroboscopy and can carry a moderate risk of misdiagnosis. Singers should never seek voice care from primary care or urgent care providers, as these disciplines do not have the equipment or training to properly assess and treat voice problems. Treating a voice problem without knowing what the diagnosis is carries a high risk of the problem

proliferating. Well-intentioned providers not trained in voice disorders can prescribe medications with the potential to harm the vocal folds further. Even more pertinent is the risk that delaying an accurate diagnosis by consulting a non-voice-specializing provider commonly results in the progression of a voice problem.

- Do not accept a student's voice diagnosis if their vocal folds have not been visualized. Still-light laryngoscopes, present in all ENT practices, are not able to capture vocal fold vibration. Stroboscopy (available in a few general ENT offices and in all specialized voice centers) gives a much more detailed visualization of the vocal folds and minimizes the risk of misdiagnosis. Some voice care facilities are beginning to use high speed video assessment of vocal fold vibration, which is another state-of-the-art offering.
- Advocate for your student by helping them find *specialized* voice care services that are covered by their health insurance. For students with limited or no access to care and limited financial resources, inquire about governmental and private aid options for health care financial assistance.
- Consult with colleagues and voice care providers on developing a method for discerning a potential voice problem in a student. Consider learning how to administer the SVHI-10 or conduct phonation threshold and S:Z ratio tests.
- "When in doubt, refer out." Do not wait, especially if the student's voice problem has persisted for longer than two weeks. Do not speculate medical causes for the student's voice problem, and never recommend medications;

doing so places significant liability on you, as the teacher, and significantly raises the risk that the student's access to voice care will be delayed, which may lead the voice problem to worsen.

- In vocal pedagogy courses, instructors should thoroughly address practical management of vocal health problems and injury management for student singers. Beginning pedagogues enrolled in the course should be expected to develop a general understanding of what to listen for in their students and how to respond to a potential voice problem.
- Advocate for vocal health training for music education students. Doing so not only informs students' personal vocal health journeys; it also helps young music educators pass the message of vocal health to their own students.
- Consult a colleague or voice care provider if you feel unsure about how to intercept maladaptive compensatory strain in an injured student. Hone your pedagogical skill set to help students maintain balanced, efficient technique during an injury.
- Follow up *persistently* with an injured student regarding their recovery plan. If there is no plan, consult the guidance and resources of colleagues and regional voice care providers.
- Invite students to bring outside repertoire to their lessons, particularly if this repertoire differs from their primary style. Guide the student to discover healthy production between different styles of singing.

Recommendations for Members of the Singing Voice Rehabilitation Team

- Collaborate with local collegiate pedagogues to develop annual voice screening initiatives.
- Increase targeted vocal health education and outreach for the following populations:
    - Collegiate
        - Student singers and actors
        - Musical theatre stage and music directors
        - Opera theatre stage and music directors
        - Theatre stage directors
    - High school
        - Student singers and actors
        - Choral music educators
        - Musical theatre stage and music directors
        - Theatre stage directors
        - Drama teachers
    - Community
        - Singing teachers
        - Music theatre stage and music directors
        - Theatre stage directors
        - Church music/choral directors

Recommendations for Future Research and Creative Activity

- Examine participants' common observation that many students continue to practice poor vocal pacing and vocal hygiene, even after receiving vocal health education.
- Collaborate with local pedagogues to spearhead annual screening initiatives for collegiate singers.
- Develop and assess effectiveness of vocal health training initiatives for targeted populations listed above.
- Develop and assess standardized modifications to NASM-accredited music curriculum for injured students.
- Consider using findings from this qualitative research study to develop quantitative survey tools that assess pedagogues' experiences in working with injured student singers.

Researcher Reflections

I hope this study has helped voice pedagogues and clinical voice rehabilitation providers to understand the common experiences of collegiate pedagogues who are responding to and managing a student's vocal health problem. In gaining understanding of this common experience, fellow pedagogues and colleagues in the vocal health sector can develop increasingly fruitful and practical collaborations that address the specialized needs of collegiate singers, in turn decreasing incidence, severity, and duration of voice

injury. This was my earnest intention from the moment this dissertation was first contemplated.

The concept for this study was catalyzed and fueled by my observations of the tireless and intricate collaborative efforts between student singers, their teachers, and the clinical voice care team. The project was greatly enriched by the insights and visions of the participating pedagogues who graciously volunteered their time to share their experiences with me. My sincerest hope is that the findings and implications of this study clarify the intricacies of collaborative caring for young singers, who remain among the most vulnerable to voice injury. I am grateful for all that I have learned and continue to learn as a student, singer, beginning pedagogue, and vocal health care provider.

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APPENDIX A

RECRUITMENT SCRIPT

Dear Subject,

As part of my DMA dissertation at UNC-Greensboro, I am interviewing voice teachers from different universities about working with injured students. I would love to talk with you about how you promote and manage vocal health in your own studio and am particularly interested in understanding common challenges you might face in the detection and management of a student's voice injury.

The interview can take place in person or over the phone and will take no more than an hour of your time. Please see the attached document for more information about this study, which has been approved by the IRB at UNC-Greensboro.

Your professional insights will be incredibly valuable to ongoing vocal health research. Would you be interested in talking with me?

Thanks so much for considering.

Regards,

Emily Wolber

Doctoral student, UNC-Greensboro
Clinical Speech-Language Pathologist, Duke Voice Care Center
Lecturer in Music, UNC-Chapel Hill

APPENDIX B

CONSENT FORM

Project Title: Common Themes in the Prevention, Detection, and Management of Voice Disorders in the Collegiate Voice Studio

Principal Investigator: Emily Wolber, M.Ed., CCC-SLP; Doctoral Student, voice performance and pedagogy, UNC-Greensboro; Clinical Speech-Language Pathologist and Singing Voice Specialist, Duke Voice Care Center; Lecturer of Music (Voice), UNC-Chapel Hill

Faculty Advisor: Robert Wells, DMA; Associate Professor of Voice and Coordinator of Vocal Pedagogy, UNC-Greensboro

What is this all about?

I am asking you to participate in this research study because you work with student singers in a collegiate setting. As a voice teacher, you are often the first individual to detect a student's voice problem. I am interested in understanding common practices that voice teachers employ in preventing, detecting, and managing voice problems in students. This research project will only take about one hour of your time and will involve your participation in an interview. Your participation in this research project is voluntary. This study is the focus of the principal investigator's doctoral dissertation, in partial fulfillment of the Doctor of Musical Arts degree at UNC-Greensboro.

How will this negatively affect me?

No, other than the time you spend on this project there are no know or foreseeable risks involved with this study.

What do I get out of this research project?

Your participation may inform us of common problems teachers encounter in working with a student who may have a voice disorder. Identifying such problems will inform ongoing scholarly activity that serves to train vocal pedagogues in specific identified aspects of voice disorder prevention, detection, and management, with the ultimate goal of minimizing the incidence and severity of voice problems among their students.

Will I get paid for participating?

There is no compensation for participating in this study.

What about my confidentiality?

We will do everything possible to make sure that your information is kept confidential. All information obtained in this study is strictly confidential unless disclosure is required by law. Confidentiality will be maintained by storing data under the use of pseudonyms and non-specific identifiers. Your identity will not be revealed in any publications resulting from this study. All data will be stored using a password-protected computer to access a web-based encrypted storage service.

What if I do not want to be in this research study?

You do not have to be part of this project. This project is voluntary and it is up to you to decide to participate in this research project. If you agree to participate, you may stop participating at any time without penalty.

What if I have questions?

You can ask Emily Wolber (elwolber@uncg.edu) and Robert Wells (rawells2@uncg.edu) anything about the study. If you have concerns about how you have been treated in this study, call the Office of Research Integrity Director at 1-855-251-2351.

APPENDIX C

INTERVIEW OUTLINE

Date:
Subject:
Gender:
Degree:
Total years of teaching experience:
Years in university teaching:
Primary style:
Ped class:

INTERVIEW QUESTIONS

1. Tell me about your past experiences in working with students who have had a voice injury.

2. In the past, what actions did you take when you suspected a student was injured?

3. In what ways did your students' voice injuries evolve following onset?
    a. Who else was involved?
    b. How were you involved?

4. How have you modified class requirements and expectations to accommodate a student's voice injury?

5. Tell me about the challenges you may have encountered in detecting and managing a student's injury.

    a. Can you describe an instance when you didn't know what to do?

6. What information would have helped you make decisions on handling a student's injury?

7. In your opinion, what is the voice teacher's role through the duration of a student's injury?
    a. How might this role be optimized (for the best outcome)?

8. In your experience, what are the major factors leading to voice injury in collegiate singers?

APPENDIX D

CODE CLOUD

APPENDIX E

SINGING VOICE HANDICAP INDEX-10

Singing Voice Handicap Index – 10

(Cohen et al. 2009)

SVHI-10 Instructions: These are statements that many people have used to describe their singing and the effects of their singing on their lives. Please circle the response that indicates how frequently you had the same experience in the last 4 weeks. If you do not have a singing complaint, please circle zero (0) in response to these statements.

0 = Never
1 = Almost never
2 = Sometimes
3 = Almost always
4 = Always

It takes a lot of effort to sing.	0	1	2	3	4
I am unsure of what will come out when I sing.	0	1	2	3	4
My voice “gives out” on me while I am singing.	0	1	2	3	4
My singing voice upsets me.	0	1	2	3	4
I have no confidence in my singing voice.	0	1	2	3	4
I have trouble making my voice do what I want it to.	0	1	2	3	4
I have to “push it” to produce my voice when singing.	0	1	2	3	4
My singing voice tires easily.	0	1	2	3	4
I feel something is missing in my life because of my inability to sing.	0	1	2	3	4
I am unable to use my “high voice.”	0	1	2	3	4