

What is breathiness & roughness?

- The term breathiness refers to insufficient glottal closure resulting in audible airflow, during phonation
- The term roughness refers to irregular vocal fold vibrations during phonation
- These qualities while different. Usually coexist in clinical applications
- Voice quality assessments play a vital role in identifying and treating vocal disorders

Introduction

- Speech language pathologists find and treat voice disorders through the use of perceptual voice assessments, identifying breathiness and roughness.
- Research has shown a low confidence in completing these voice assessments from both professional clinicians and graduate students.
- Research has shown that the use of structured training with anchor files may improve perceptual accuracy (Chan & Yiu, 2002; Eadie & Kapsner Smith, 2011; Walden et al., 2022).
- Understanding student's perceptions can support the development of these training tools and as a result improve clinician confidence in completing voice quality assessments

Purpose

- To explore the self perceptions graduate students, have regarding their ability to rate breathiness and roughness
- To examine how structured training influenced students' perceptions of their voice assessing skill and identify themes within these perceptions

Training Program

- Participants completed a structured voice quality rating training program for rating breathiness and roughness .
- Participants completed a pre-test, six training modules, and a post test during one semester as part of a graduate course.
- Training included:
 - Repeated exposure to anchor files representing normal, mild, moderate, and severe levels
 - Immediate feedback following each rating
 - Progressive task difficulty across modules
 - Continuous access to anchor files during rating tasks

Participants

- Participant Group: 35 Graduate Students
- Format: Distance Learning
- Course: Vocal Disorders
- Semester: Fall 2025

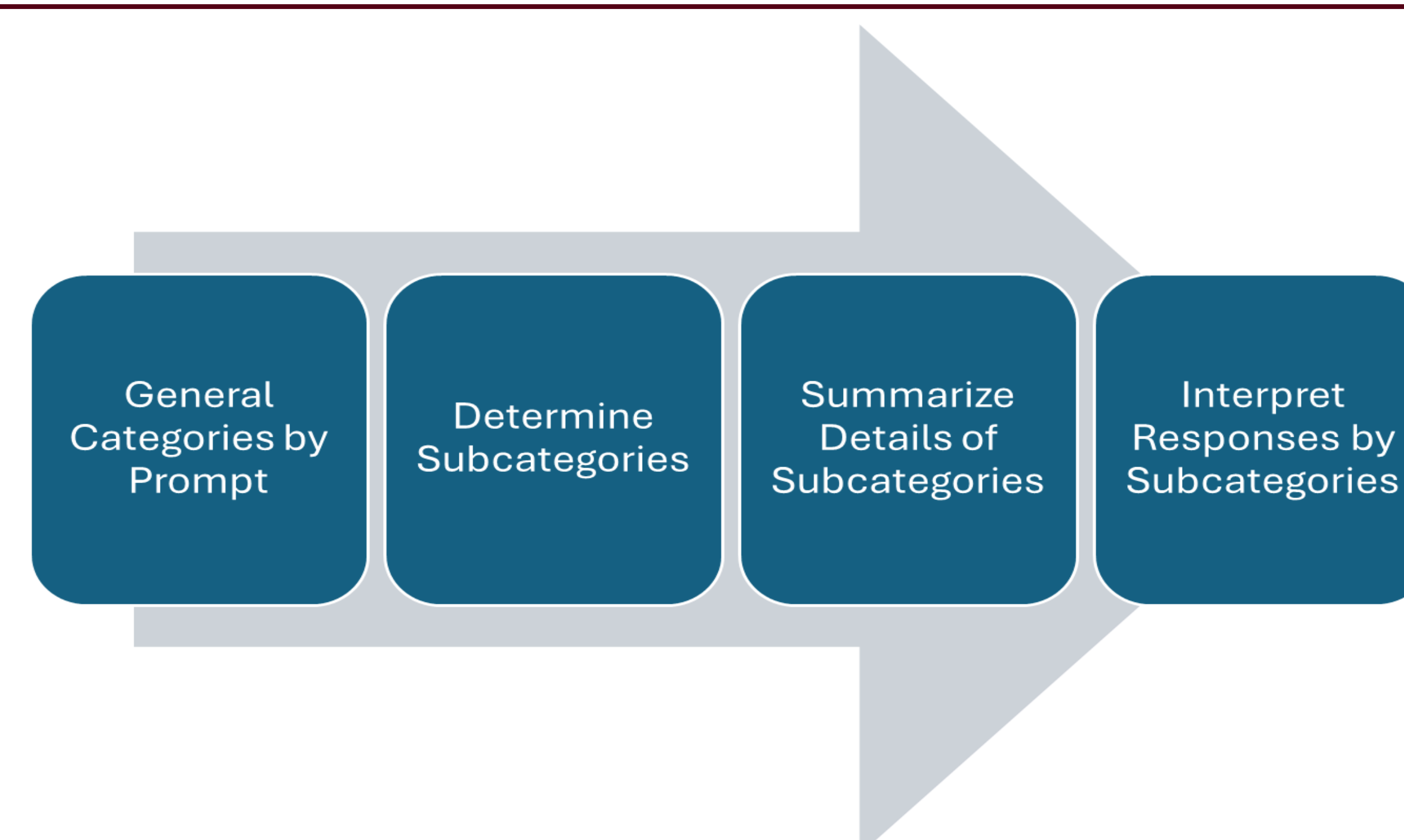


Figure 1. Process of Content Analysis

Methods

- Participants completed a questionnaire before and after the training program during the Fall 2025 semester that included three open-ended questions and self-efficacy ratings.
- Written question responses underwent content analysis from which coding categories were developed.
- Self-efficacy ratings were compared using t-test statistical analysis.
- The three open-ended questions included the following:
 1. Indicate the aspects of voice quality ratings that you feel you do best.
 2. Indicate the aspects of voice quality ratings that can be improved.
 3. What do you believe will help you be more confident in your ability to make voice quality ratings?
- Self-efficacy ratings had the following instructions for both pre and post testing:
 1. On a scale from 0 to 10, please indicate your level of confidence in your ability to accurately rate voice quality characteristic of breathiness (0 being not confident and 10being fully confident)
 2. On a scale from 0 to 10, please indicate your level of confidence in your ability to accurately rate voice quality characteristic of roughness (0 being not confident and 10 being fully confident)

Results/Discussion

- The participants exhibited significant self-efficacy improvements on the post-test for both the perception of breathiness ($t(34)=-10.3971$, $p<0.001$) and of roughness ($t(34)=-11.81931$, $p<0.001$).
- The categories and subcategories of the qualitative analysis are displayed in Table 1. The global nature of the responses to the pre-training prompts precluded determining subcategories.

Table 1. Summary of Pre- and Post-Training Content Categories

Category Analysis Pre-training - Lack of relevant skills, responses lacked specificity

- Need for practice
- Need for direct clinical exposure
- Need for clinical education

Post-training

Prompts 1, 2 and 3 Category Analysis – Lack of relevant skills, responses indicated specific areas of skills and weaknesses

- Need feedback on choices made during training
- Need for practice
- Need for direct clinical exposure

Prompts 1 and 2 Subcategory Analysis

- Better separation of breathiness and roughness in a single sample
- Specific aspects of breathiness
- Specific aspects of roughness
- Better skill at separating severity levels particularly for mild and moderate

Prompt 3 Subcategory Analysis

- Better feedback on responses during the training modules was needed
- Recognition of improved skills and self-confidence
- Need for direct clinical exposure
- Need for clinical education

Conclusions

Participants perceived improved skills and confidence from completing the voice quality rating training program. They continued to perceive the need for more classroom and clinical training on these skills. Their self efficacy ratings were consistent with their responses to the qualitative prompts. Participants were able to better identify and assess their needs after training in comparison, seen through more specific answers and categorization for the post-training responses. This feedback is important when improving the self-perceptions of voice assessment skills.