Fall 12-12-2016

Teacher Candidates: Vocal Health

Sarah J. Pilkington
sarahjp@bgsu.edu

Teacher Candidates: Vocal Health

Sarah J. Pilkington

HONORS PROJECT

Submitted to the University Honors Program
at Bowling Green State University in partial
fulfillment of the requirements for graduation with
UNIVERSITY HONORS

12 December 2016

Dr. Ronald C. Scherer, Ph.D., Department of Communication Sciences and Disorders, Advisor

Dr. Mary Murray, Ed.D., College of Education and Human Development, Advisor

Brittany L. Perrine, M.S., Department of Communication Sciences and Disorders, Advisor

ABSTRACT

Classroom teachers are at high risk for developing voice problems and may experience positive benefits from vocal health education. Less is known about the experiences of student teachers. The objective of the study was to determine if vocal hygiene education affects the student teachers' vocal knowledge, vocal habits, voice quality, and their self-perception of their voice. Eight female education students who were student teaching the semester of the study were randomized into either the Experimental Group (who received vocal health information before their student teaching semester) or the Control Group. Both groups were assessed using a battery of qualitative and quantitative instruments at the beginning, middle, and end of the semester. There were no statistically significant differences between the Experimental Group and the Control Group on vocal hygiene knowledge, vocal hygiene habits, VHI-10 score, and all CAPE-V ratings. Analysis of the individual differences, however, indicate that knowledge of vocal health may influence other variables related to vocal health. Analysis of the qualitative data indicates that seven of the eight student teachers experienced problems with their voice and that all four members of the Control Group wanted information about vocal health. Due to potential limitations of the study, the researchers were not able to determine whether educational information resulted in fewer incidences of voice problems, but the data suggest, similar to classroom teachers, that student teachers are at high risk for developing voice problems during their student teaching practicum and they too may benefit from information on prevention of voice problems.

INTRODUCTION

According to previous literature, teachers are at high risk for developing voice problems during their teaching careers. The current prevalence of voice disorders in teachers is 11% compared to the current prevalence of voice disorders in non-teachers, which is 6.2% (Nelson et. al., 2004). Velsvik (2008), affiliated with Volda University College in Norway, reported that voice use is an essential aspect for teaching and unfortunately many teachers' voices are negatively affected. Some research has found that student teachers are also at high risk for developing voice problems. Fairfield and Richards (2007), both affiliated with the University of Reading, reported that 37 % of trainee teachers have had voice problems during their teaching experience. Because of these high rates for voice problems in teachers and student teachers and the adverse effects those problems can have on educating student, it is important to continue conducting research with the student teacher population and determine how their voices are affected during their student teaching experience.

Bowling Green State University's Teacher Education Unit currently does not require their teacher candidates (i.e., student teachers) to receive information about vocal health prior to beginning their student teaching experience.

Research conducted by Kovacic (2005) focused on teacher-training students' knowledge about the voice and voice care. According to the article, the teacher-training students received no prior knowledge or resources on voice and voice care, similar to the teacher candidates at Bowling Green State University. Kovacic provided a 20-item, true-false voice care questionnaire to the teacher-training students. The instrument asked about the teacher-training students' habits and health in relation to the voice, and their knowledge about the voice. For instance, one of the knowledge questions on the questionniare stated, "Loud whispering has less of an adverse effect

on voice than moderately loud speaking" (Kovacic, 2005). The researcher concluded that teacher-training students were not aware of voice problems and had little knowledge about the voice. . If teacher candidates indicate a lack of knowledge and poor habits relative to voice preservation and care, then it seems more likely that the teacher candidates may experience voice problems sometime in their careers.

Research conducted by Timmermans and colleagues (2011) found that, "The fact that the future teachers [were given clear information about] … what is good for the voice and what is not good for the voice, how the voice should be used, and which techniques needed to be used, has [positive] impact" (p. e195). As well, Nanjundeswaren and colleagues (2012) compared whether it is beneficial to provide vocal hygiene education (VH) to student teachers or if it is more beneficial to provide vocal hygiene education plus voice training intervention (VH+VT) to student teachers. The results indicated that the vocal hygiene education was beneficial to provide for preventing voice problems in student teachers. Thus, it is relevant and potentially beneficial to develop a research study that provides vocal hygiene education to teacher candidates.

Thomas and colleagues (2007) studied the "psychosocial impact of current voice complaints and the pattern of risk factors in relation to their VHI" in student teachers with voice complaints and student teachers without voice complaints (p. 325). Individuals whose career did not require them to use their voice were put into the control group. The results of the study indicated that there were more vocal complaints and a higher total Voice Handicap Index (VHI) score for the student teachers. The results also indicated a higher VHI score for the student teachers with current vocal complaints.

Chen and colleagues (2010) studied the risk factors of voice problems and the impact on the teachers. The results indicated that, "teachers with a voice disorder may be at risk for using a

louder voice while teaching and were impacted by the voice problems more than the group without voice disorders" (p. 183). Therefore, the researchers state that it is important to make teachers at risk for using a loud voice aware of other options (e.g., using a quieter voice but with amplification) or to provide voice care prevention information.

Teacher candidates may be open to receiving information about the voice and how to overcome problems with the voice, if they better understand the importance of maintaining a healthy voice. Thomas (2007) found that "An increased awareness of risk factors in relation to their voice handicap would serve to motivate student-teachers to change factors that contributed to their voice problem" (p. 325).

Thus, it is potentially highly significant to develop a study that focuses on awareness and prevention. If awareness and prevention are provided to teachers prior to beginning their teaching careers, many of those individuals may be able to prevent voice disorders later on in life, disorders that would potentially affect their teaching as well as other aspects of their lives.

It is important to determine whether or not providing vocal hygiene information prior to the student teaching experience has any impact on their voice quality or voice use. In order to determine whether or not teacher candidates' voice are affected, questionnaires completed at the beginning of the semester and at the end of the semester should be filled out. Previous research has supported the use of participant-completed questionnaires. Trinite and colleagues (2011) found that it is well accepted to design a study that uses self-assessed questionnaires because they are valid research tools. Mattiske and colleagues (1998) studied whether "teachers are at risk of developing voice problems, what types of vocal problems the teachers experience, what the causes of such problems may be, and whether the current accepted methods for prevention and treatment are effective" (p. 490). Their research found that there should be more use of such

instruments to assess voice. Meulenbrock and colleagues (2011) also support the use of instruments to assess the voice. The research that Meulenbrock and colleagues (2011) conducted found that the female student teachers' own perceptions of their voices were not enough to indicate whether there was potential risk for a voice problem.

Therefore, it is important to not only use an instrument like the VHI-10 form as a self-perception instrument, but also include an auditory perceptual screening tool like the Consensus Auditory Perceptual Evaluation Form (CAPE-V) that will assess the teacher candidates' voice quality, and to administer such tools prior to and after the students' teaching experience. Timmermans and colleagues (2011) indicate that it is important that the study take place during a semester of student teaching because the teacher candidates' voices may be more likely to show changes or become problematic over the semester. Therefore, having a follow-up at the end of the semester is important to better understand whether the voice showed changes over the course of the semester.

All in all, the benefit of learning about vocal health may not only improve student teachers' vocal quality, but also may improve the learning environment for the students in the classroom. "The problems affect not only teacher, but also can affect students' learning progress and motivation (Morton & Watson, 2011)" (Chan, 2011, p. 62). For instance, if a student teacher is unable to speak above the background noise of her classroom because of a problem with her voice, the students will not learn the content as well because they will not be able to hear the student teacher.

Thus, the purpose of the present study is to determine whether information on voice care and healthy voice use affects teacher candidates' knowledge of vocal health, use of healthy vocal habits, voice quality, and the impact that their voice has on their lives. This study is unique

because it examines whether or not having been given information on voice care and voice use is helpful for student teachers during their student teaching experience. The study examines several research questions: (1) Will teacher candidates who are given the Vocal Awareness and Health Information pamphlet have fewer incidences of voice problems than teacher candidates who did not receive information on vocal awareness and health? (2) After receiving the Vocal Awareness and Health Information pamphlet, do teacher candidates feel they are more prepared to handle potential voice problems during their student teaching experience? (3) Is there evidence to to support administering vocal health and awareness information as part of the university's curriculum for teacher candidates? It is hypothesized that the teacher candiadtes in the Experiemental Group will have fewer incidences of voice problems during their semester of student teaching because they will have received the Vocal Health and Awareness Information pamphlet. Also, it is hypothesized that the participants in the Control Group will have less knowledge and poorer vocal habits throughout the semester of student teaching than the participants in the Experimental Group because the participants in the Control Group will not have received vocal health information prior to their student teaching semester.

METHODS

The methodology used in the present study was approved by the Bowling Green State University Human Subjects Review Board (Appendix A).

Participants

To begin the research, the research team wanted to make sure that it was feasable to recruit participants for the study. Therefore, members of the research team arranged a meeting with Mr. Benjamin Martin, director of field experiences at Bowling Green State University, to talk about the process to recruit teacher candidates (i.e., student teachers) to participate in the study. From the meeting with Mr. Martin, the research team learned that there was a large group of students who could potentially participate in the study. To recruit participants, members of the research team developed an email that Mr. Martin sent out to all the students who would be student teaching in grades K-8 general education classes during the spring semester 2016. The email was sent out on December 7, 2015 stating that there was an opportunity to participate in an undergraduate Honors research study that will begin during the Student Teaching Orientation Event on December 14, 2015. The email included a brief description of the three parts of the study (see the sections below) and when they would take place. Once the students received the email, those who were interested in participating in the research study were asked to click on the link provided in the email. The link took them to an online Qualtrics survey that asked them to fill out their name and BGSU email address. When the students submitted their information, a short message popped up on the screen that provided the time and location where Part 1 of the study would take place.

From the Qualtrics survey, nine female participants signed up and attended Part 1 of the study. All nine female participants were going to be student teaching during the spring semester

in grades K-6. One of the nine female participants eventually did not complete all three parts of the study so her data collected in Part 1 and Part 2 were not used for the analysis. Seven of the eight remaining participants taught in grades K-3, and one participant taught in grades 4-8. Four of the participants taught inclusive early childhood eduction, which includes both special education and general education training. Two of the participants taught early chilhood education, and one participant taught middle childhood education. The subjects ranged in age from 21 to 22 years of age, with one participant who did not provide her age. The average age of participants was 21.125

Materials

The materials included the demographic information questionnaire, Vocal Hygiene Knowledge questionnaire, Vocal Hygiene Habits questionnaire, Voice Handicap Index Form (VHI-10), and the Consensus Auditory Perceptual Evaluation screening.

Demographic Information Questionnaire

The demographic information questionnaire included background information and information about a history of voice problems, speech problems, voice training, and voice therapy. It provided information about gender, age, major, etc. (Appendix B).

Vocal Hygiene Knowledge Quiz

The Vocal Hygiene Knowedge quiz was developed by the members of the research team (Perrine, Pilkington, & Scherer, 2016). There are 15 questions with 4 to 5 forced choice answers. The questions were developed from a similar study by Fletcher, Drinnan, and Carding (2007) and were related to vocal health. The total number of questions the participants answered correctly on the Vocal Hygiene Knoweldge Quiz provided a vocal hygiene knoweldge score.

The maximum correct score that the participant could receive was 15, and the minimum was 0 (Appendix C).

Vocal Hygiene Habits Questionniare

The Vocal Hygiene Habits questionnaire was also developed by members of the research team (Perrine, Pilkington, & Scherer, 2016). The questions on this questionnaire asked about the participants' vocal habits and use of their voice. For instance, there are 13 questions about caffeine and water consumption, smoking, medication, snoring, allergies, exercise, and stress levels. A list of 20 behaviors with a 7 point frequency rating scale is also part of the questionnaire. The scale included the following ratings: 1 = never, 2 = rarely, 3 = infrequently, 4 = sometimes, 5 = frequently, 6 = usually, and 7 = always. The research team coded the habits into negative habits, postive habits, and neutral habits. The negative habits included, cough, clear throat, talk loudly, use of voice in noisy environment, make unusual sounds, use glottal fry, talk while exercising, talk in smoky environment, talk in dusty environment, talk loudly in noisy environement, eat late in the evening, have a tired voice, use voice too much, use extra muscular effort while talking, and use extra respiratory effort while talking. The postivie habits included, rest voice and warm up voice. The neutral habits included, sing, whisper, and use higher pitch voice.The neutral habits were not used for the anlysis because they did not ensure a potential negative influence on the voice. Thus, the questionnaire provided ratings of 17 habits (range: 1-7), an average habit rating of all 17 habits (range: 1-7), and a composite habit score (sum of habit ratings for all 17 habits)(range: 17-119) for each person. A higher composite habit score indicates that more negative habits are used more frequently (Appendix D).

Voice Handicap Index (VHI-10)

The Voice Handicap Index-10 (VHI-10) was developed by Rosen et al. (2004). The VHI-10 is a ten question survey completed by the participants to provided information about one's own perception of his or her voice (Appendix E).

Consensus Auditory – Perceptual Evalution (CAPE-V)

The Consensus Auditory-Perceptual Evaluation of the Voice (CAPE-V) (Kempster et al., 2009) was used to assess the quality of voice (Appendix F). When given the CAPE-V screening procedure, the participant was asked to read a paragraph and a series of sentences aloud. While the student was reading aloud, a supervised graduate student clinician (a master's student from the Department of Communication Sciences and Disorders) would rate various aspects of the participant's voice on the CAPE-V form, including overall severity, roughness, breathiness, loudness, and pitch (Appendix F).

Part 1

Part 1 of the study took place on December 14, 2015 in the Bowen Thompson Student Union. The nine female particpants who volunteered to participate were asked to provide signed consent that they understood the information provided to them about the research study. Once the participants signed the consent form, they each received a packet of forms that were labeled as either CG (Control Group) or EG (Experimental Group), which indicated to the researcher the group to which the participant was assigned. Participants were assigned to groups randomly (every other participant to the Control Group) based on order of arrival. The participant was asked to fill out the Demographic Information questionnaire, the Vocal Hygiene Knowedge quiz, the Vocal Hygiene Habits questionnaire, and the Voice Handicap Index (VHI-10) form. When the participant finished filling out the forms and was subsequently screened by a graduate student clinician, she was directed to a research member. If the participant was randomly

assigned to the Control Group, she was told to expect an email directing her to complete Part 2 mid-way into the semester. If the student was randomly assigned to the Experimental Group, she received the Vocal Awareness and Health Information pamphlet. The pamphlet included resources and educational information about vocal hygiene that had been created from the literature. For example, the pamphlet included information about preventing vocal problems, information on vocal advice, information on awareness of the voice, and how to consult a doctor (Appendix G). One of the research team members briefly highlighted some of the information that was provided in the Vocal Awareness and Health Information pamphlet with the participant and answered any questions the participant had. The participants in the Experimental Group were also reminded to complete Part 2 of the study when they received an email mid-way into the spring semester.

Part 2

The participants who were randomly assigned to the Experiemental Group received an email mid-way into their student teaching semester, spring of 2016. The email reminded them to complete Part 2 of the study. Within the email was a link to an online Qualtrics survey. The Qualtrics survey asked questions that were relevant for only participants in the Experiemental Group. See Appendix H for a sample of questions from the Qualtrics survey. Concurrently, each participant who was randomly assigned to the Control Group also received an email mid-way into their student teaching semester, spring of 2016. The email reminded them to complete Part 2 of the study. Within the email was a link to an online Qualtrics survey. The Qualtrics survey asked questions that were pertinent only for participants in the Control Group. See Appendex I for a sample of questions from the Qualtrics survey. Not all the questions were the same between the Control and Experimental groups. For instance, the Experimental Group was asked,

"Have you used your Vocal Awareness and Health Information pamphlet?" The participants in the Control Group did not receive a pamphlet, so they were asked, "Would it have helped you to receive information about the voice prior to your semester of student teacihing?" The questions from the Qualtircs survey were created by members of the research team. The participants of both groups were asked to respond to the survey and if they did not respond they received a follow up reminder the following week.

Part 3

Towards the end of the spring 2016 semester, participants received an email that reminded them to complete the final Part 3 of the study. Part 3 took place during the final week of their student teaching semester in conjunction with their Capstone Event in the Bowen Thompson Student Union. We had four participants complete Part 3 at the Bowen Thompson Student Union and four participants who completed Part 3 at another time during the final week of their student teaching semester in the Bowling Green State University's Speech and Hearing Clinic. To complete Part 3 of the study, participants were asked to fill out the Vocal Hygiene Knowledge quiz, Vocal Hygiene Habits questionnaire, and the Voice Handicap Index form (VHI-10). Participants also received the CAPE-V screening by a graduate student clinician or a certified speech-lanugage-pathologist. As well, participants in both the Control Group and Experimental Group also filled out a final survey that provided the same questions that were asked on the mid-semester (Part 2) Qualtrics survey. See Appendix J for the Experimental Group's final survey and see Appendix K for the Control Group's final survey. The final survey allowed the members of the research team to better understand the participants' experiences of student teaching relative to the voice. Once the participants completed Part 3 of the study, they

received a five dollar Starbucks giftcard as an appreciation gift for completing all three parts of the study.

Analysis

To find group differences, a factorial, repeated measure ANOVA was run. The independent variables were time (2 levels: Part 1 and Part 3) and the group (2 levels: the Control Group (CG) and the Experimental Group (EG)). The dependent variables were the habits score, knowledge score, VHI-10 score, and the ratings from the following CAPE-V categories: overall severity, roughness, breathiness, strain, pitch, and loudness. The alpha used was 0.05.

To find individual differences, the research team analyzed the results of the Vocal Hygiene Knowledge quiz, Vocal Hygiene Habits questionnaire, the VHI-10, and the CAPE-V. For each dependent variable, all participants were divided into three categories: increased from Part 1 to Part 3 on the given variable, decreased from Part 1 to Part 3 on the given variable, or did not change from Part 1 to Part 3 on the given variable. For each category (increase, decrease, remain the same) for each variable, the change (increase, decrease, remain the same) in each of the other variables was determined. For example, 5 participants experienced an increase in the roughness rating on the CAPE-V from Part 1 to Part 3. Of these 5 participants, all 5 also experienced an increase in their overall severity on the CAPE-V.

RESULTS

There were four participants in the Control Group and five participants in the Experimental Group. However, one of the participants in the Experimental group did not complete Part 3 of the study. Therefore, there were four participants in the Control Group who completed all three parts of the study, and four participants in the Experimental Group who completed all three parts of the study. Only the participants who completed all three parts of the experiment are included in the analysis. The study is a mixed methods study with both quantitative data results and qualitative data results.

Quantitative Data

Table 1 presents the descriptive statistics. There were no group differences in Vocal Hygiene Habits (Figure 1), Vocal Hygiene Knowledge (Figure 2), Voice Handicap Index-10 (Figure 3), and CAPE-V Overall Severity (Figure 4) between Part 1 (before student teaching) and Part 3 (end of student teaching).

Participants in the Control Group and Experimental Group reported more changes and problems in their voice at Part 3 compared to Part 2 (from 25% to 75% in both groups) (Table 2). At Part 2, midway in the semester, 25% of participants who received the Vocal Awareness and Health Information pamphlet (Experimental Group) reported using the pamphlet. At Part 3, end of the semester, 50% of participants in the Experimental Group reported using the pamphlet. At Part 2 and Part 3, 100% of participants in the Control Group reported that they would have liked to receive vocal health information.

Table 2 shows the number of participants who reported that the vocal health strategies used were beneficial. At Part 2, 50% of participants in the Control Group reported that the strategies used were beneficial. This increased to 75% of participants at Part 3. Across both Part

2 and Part 3, one participant in the Experimental Group reported that the strategies used were beneficial. For participants in the Experimental Group, these specific strategies may have come from the Vocal Health and Awareness Information pamphlet that they received. At Part 2, if the participants in the Experimental Group reported that they did not use the pamphlet, they were unable to report whether other strategies they used were beneficial. This is the reason 75% of participants are categorized as N/A in Table 2 for Part 2. The specific strategies that were reported by participants in the Control Group did not come from the vocal health pamphlet and are indicated in the qualitative results below.

Table 1. The average values, standard deviations, minimums and maximums for the dependent variables between time and group.

		Part 1				Part 3			
		Mean	SD	Min	Max	Mean	SD	Min	Max
Control Group	Composite habits score	66	11.49	53	81	64.5	9.75	58	79
	Average habit rating	3.77	0.72	2.87	4.6	3.66	0.60	3.2	4.53
	Vocal hygiene knowledge score	11	2.16	8	13	10.5	1	9	11
	VHI-10 score	7	2.94	3	10	7.25	4.27	1	10
	CAPE-V overall severity	3.25	5.19	0	11	15.25	16.80	2	37
	CAPE-V roughness	0.75	1.5	0	3	15.25	7.89	8	26
	CAPE-V breathiness	3.5	5.69	0	12	4.25	4.35	0	10
	CAPE-V strain	4.25	6.55	0	14	8.75	9.71	0	21
	CAPE-V pitch	2	2.71	0	6	5.25	5.38	0	12
	CAPE-V loudness	1.75	2.87	0	6	6.75	12.20	0	25
Experimental Group	Composite habits score	61.25	6.34	54	69	63.5	4.04	58	67
	Average habit rating	3.45	0.38	3.07	3.87	3.76	0.23	3.43	3.93
	Vocal hygiene knowledge score	12.25	1.71	10	14	12.75	0.96	12	14
	VHI-10 score	5	3.56	2	10	4	2.16	2	7
	CAPE-V overall severity	9.5	13.48	0	29	9.75	9.22	1	20
	CAPE-V roughness	9.5	15.76	0	33	10.5	12.40	0	26
	CAPE-V breathiness	7.25	6.70	1	14	3.75	3.30	0	7
	CAPE-V strain	0.5	0.58	0	1	5.5	5.92	1	14
	CAPE-V pitch	7.5	13.03	0	27	5.75	5.91	0	13
	CAPE-V loudness	6	9.42	0	20	4	3.37	0	8

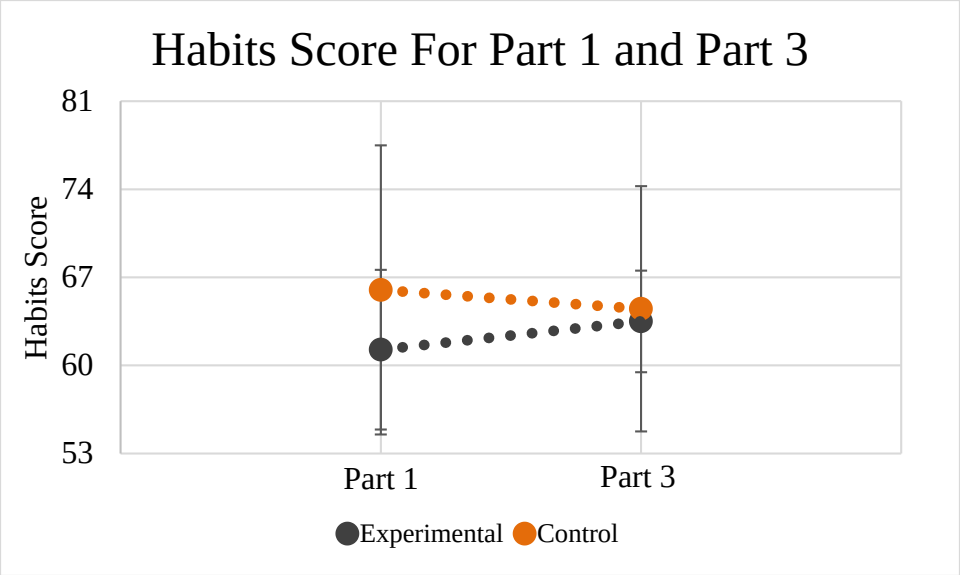


Figure 1. The mean composite habits score from the Vocal Hygiene Habits Questionnaire during Part 1 and Part 3. The line helps to indicate how the participants' habits changed from Part 1 to Part 3. The error bars represent standard deviations.

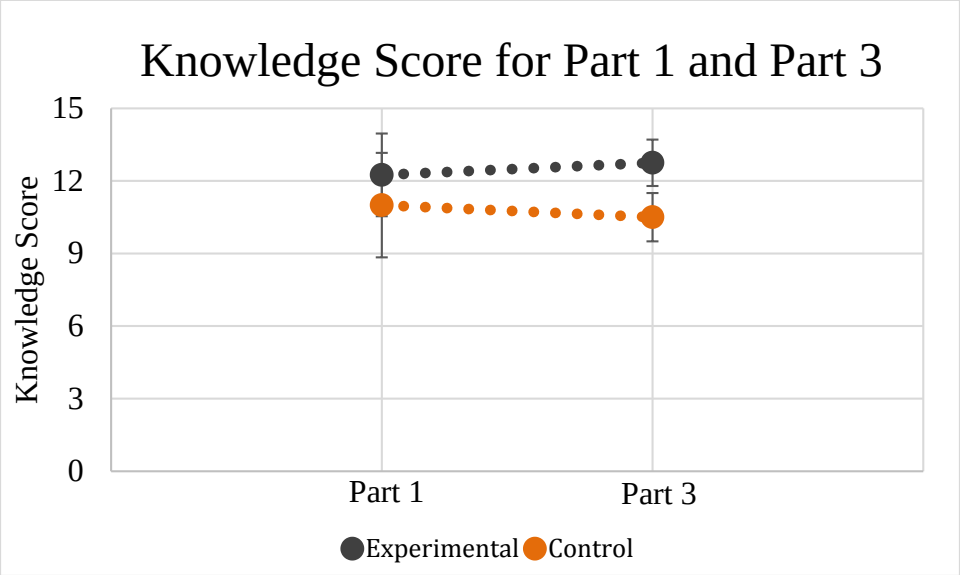


Figure 2. The mean overall knowledge score from the Vocal Hygiene Knowledge Questionnaire during Part 1 and Part 3. The line helps to indicate how the participants' knowledge changed from Part 1 to Part 3. The error bars represent standard deviations.

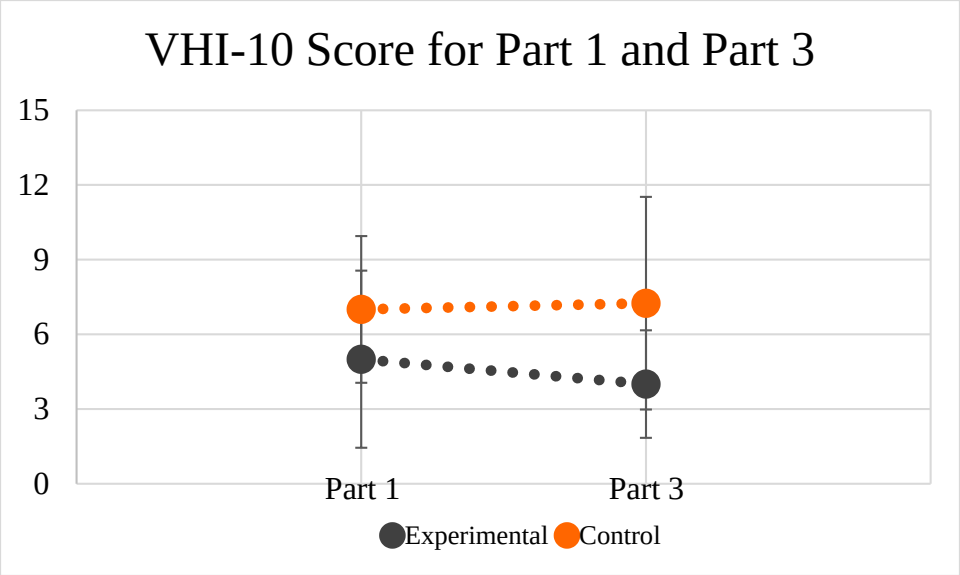


Figure 3. The total VHI-10 score from the Voice Handicap Index Form (VHI-10) during Part 1 and Part 3. The line helps to indicate how the participants' VHI-10 score changed from Part 1 to Part 3. The error bars represent standard deviations.

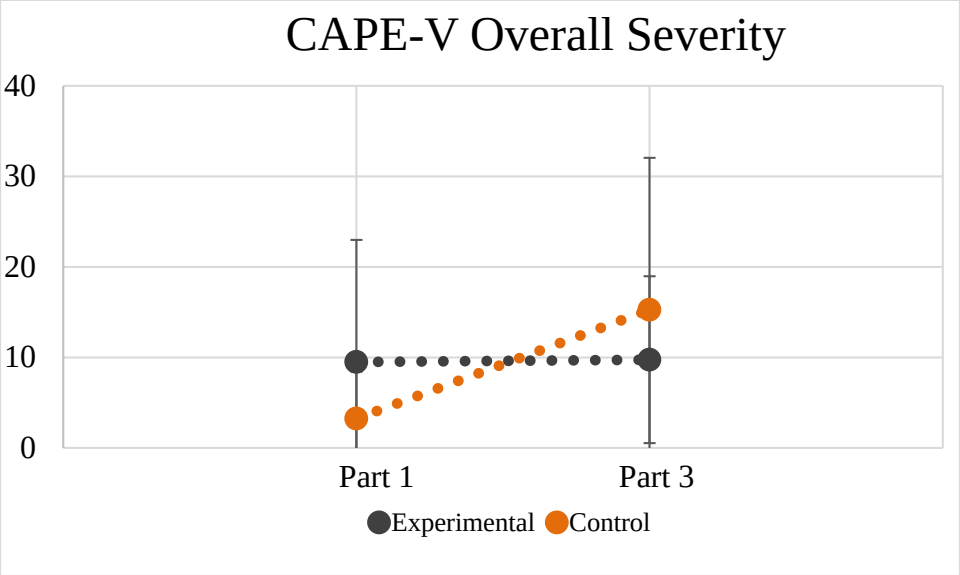


Figure 4. The overall severity score from the CAPE-V perceptual screening during Part 1 and Part 3. The line helps to indicate how the participants' overall severity of their voice changed from Part 1 to Part 3. The error bars represent standard deviations.

Table 2. The responses to the Yes/No questions on the Qualtrics survey for the Control Group and Experimental Group at Part 2 and Part 3.

Question			Count	
			Part 2	Part 3
Have you experienced any changes in your voice this semester?				
	Control Group	Yes	1	3
		No	3	1
	Experimental Group	Yes	1	3
		No	3	1
Have you experienced a problem with your voice?				
	Control Group	Yes	1	2
		No	3	2
	Experimental Group	Yes	1	3
		No	3	1
Have you used your Vocal Awareness and Health Information pamphlet?				
	Experimental Group	Yes	1	2
		No	3	2
Would it have helped you to receive information about voice prior to your semester of student teaching?				
	Control Group	Yes	4	4
		No	0	0
Were the specific strategies that you used beneficial to you?				
	Control Group	Yes	2	3
		No	2	1
	Experimental Group	Yes	1	1
		No	0	3
		N/A	3	0

Relationships Among Variables

Because there were no statistically significant differences between the Control Group and the Experimental Group across time, next analyzed were the individual dependent variables of the Vocal Hygiene Knowledge quiz, Vocal Hygiene Habits questionnaire, Voice Handicap Index form, and CAPE-V screening. Relationships were found among the variables and are displayed in Chart 1 below. The chart reports, for example, that when three participants' (n=3) knowledge overall scores on their Vocal Hygiene Knowledge quiz decreased from Part 1 to Part 3, their overall severity on the CAPE-V perceptual screening increased, or became worse. In addition,

their roughness scores on the CAPE-V perceptual screening also increased. Thus, for three participants, when their knowledge decreased, their overall severity and roughness became worse. Other findings from Chart 1 suggest that an increase of overall knowledge between the two time points (Part 1 to Part 3) is associated with a decrease in the VHI-10 score (an improvement) and a decrease in the CAPE-V Breathiness score (an improvement). Also, an increase in the VHI-10 score (a worse situation) is associated with a higher CAPE-V overall severity score (a worse situation). Also in the consistent direction is the observation from Chart 1 that a decrease in the VHI-10 score (an improvement) is associated with an increase in knowledge (an improvement) and a decrease in Breathiness (an improvement). The other results provided in Chart 1 suggest internal CAPE-V perceptual judgment consistencies (when one variable gets worse, others do also).

Chart 1. The right side of the chart reports the relationship between variables when a variable has increased from Part 1 to Part 3, and the left side of the chart reports when a variable has decreased from Part 1 to Part 3.

When **Knowledge Overall Score INCREASES** from Part 1 to Part 3 (n=3) • VHI-10 Score ⇩ • CAPE-V Breathiness ⇩	When **Knowledge Overall Score DECREASES** from Part 1 to Part 3 (n=3) • CAPE-V Overall Severity ⇧ • CAPE-V Roughness ⇧
When **VHI -10 Score** INCREASES from Part 1 to Part 3 (n=3) • CAPE-V Overall Severity ⇧	When **VHI -10 Score** DECREASES from Part 1 to Part 3 (n=3) • Knowledge Overall Score ⇧ • CAPE-V Breathiness ⇩
When **CAPE-V Roughness** INCREASES from Part 1 to Part 3 (n=5) • CAPE-V Overall Severity ⇧	
When **CAPE-V Breathiness** INCREASES from Part 1 to Part 3 (n=3) • CAPE-V Overall Severity ⇧ • CAPE-V Overall Roughness ⇧ • CAPE-V Overall Pitch ⇧ • CAPE-V Overall Loudness ⇧	When **CAPE-V Breathiness** DECREASES from Part 1 to Part 3 (n=3) • Knowledge Overall Score ⇧ • VHI-10 Score ⇩
When **CAPE-V Pitch** INCREASES from Part 1 to Part 3 (n=4) • CAPE-V Overall Severity ⇧ • CAPE-V Overall Roughness ⇧	

Qualitative Data

Two members (SP & BP) of the research team independently coded the responses into various themes. The members of the research team then came to a consensus on emergent themes that encompassed similar responses from the participants using contextualizing strategies (finding recurring messages reported by participants in each group at each time point) (Teddie & Tashakkori, 2009). In order to identify a theme, 3 out of the 4 participants needed to have provided a response that fit within the identified theme. The themes from each part will be explained in the following sections. Note that although they were given the qualitative survey at Part 2, no themes emerged from the Experimental Group at Part 2.

Part 2: Self-perception of Voice Difficulty

From the online survey in Part 2, the particiapnts in the Control Group (3/4) self-perceived voice difficulties characterized by negative descriptors of their voice. For instance, there were reports of participants' voices feeling tense, raspy, and hoarse. One of the participants in the Control Group, who student taught in the 3rd grade reported, " I tend to get a scratchy voice or sore throat often." As well, a participant who student taught in the 2nd grade reported, "My voice seems to go through a cycle of being raspy then going back to normal."

Part 2: Voice Use

From the online survey in Part 2, the participants in the Control Group (4/4) reported greater amounts of voice use and having to project their voice more. For instance, many of the particiapnts reported not realizing the amount of talking they would be doing during their teaching expereince. One of the participants in the Control Group, who student taught in the 6th grade, reported, "I have been raising my voice very often with students lately." Another

participant in the Control Group, who student taught in the 2nd grade, reported, "You don't really think about how much you are talking until your voice starts going away."

Part 2: Adjustments

From the online survey in Part 2, the participants in the Control Group (3/4) reported that they attempted to adjust to problems with the voice by using strategies such as drinking fluids and warming up the voice. These strategies were not received from the Vocal Awareness and Health Information pamphlet because participants in the Control Group did not receive the pamphlet. One of the participants in the Control Group, who student taught in the 3rd grade, reported, "I have helped my voice by drinking fluids."

Part 3: Self-perception of Voice Difficulty

From the final survey in Part 3, the participants in both the Control Group (4/4) and the Experiemental Group (3/4) self-perceived voice difficulties characterized by negative descriptors of their voice. One of the participants in the Control Group, who student taught in the 6th grade, reported, "I found that my voice frequently became tired and my throat hurt." One of the participants in the Experiemental Group, who student taught in Kindergarten, reported, "Having the tense throat feeling was mainly my experience."

Part 3: Drinking Fluids

From the final survey in Part 3, participants in the Experimental Group (3/4) reported drinking fluids as a strategy to overcome their voice difficulties. These strategies were provided in the Vocal Awareness and Health Information pamphlet that particiapnts in the Experimental Group received. One of the participants in the Experiemntal Group, who student taught in Kindergarten, reported, "I drank water to help." Another participant in the Experimental Group,

who student taught in the 1st grade, reported that, "With the aid of daily water and tea with honey over time talking all day became easier and I didn't have a sore thraot all the time."

Part 3: Voice Use

From the final survey in Part 3, participants in the Control Group (4/4) reported greater amounts of voice use and having to project their voice more. One of the participants in the Control Group, who student taught in the 2nd grade, reported, "My voice feels a bit overworked/tired." Another participant, who student taught in the 6th grade, reported, "I found that my voice frequently became tired and my throat hurt. Very often I would raise my voice to get students' attention."

Part 3: Preparedness

From the final survey in Part 3, participants in the Control Group (4/4) indicated a desire to be better prepared to handle voice difficulties. All four participants in the Control Group reported that they would have liked to have received information about the voice to be prepared for their student teaching expereince. One of the participants in the Control Group, who student taught in the 2nd grade, reported, "No one prepares you for how much you will talk." Another participant in the Control Group, who student taught in the 6th grade, stated that, "I could have known better what to expect, overuse symptoms to look for, and how to treat them."

Part 3: Did Not Use Strategies

From the final survey in Part 3, participants in the Experimental Group (3/4) reported that they did not use the strategies that were provided to them in the Vocal Awareness and Health Information pamphlet. One of the particiapants in the Experiemental Group, who student taught in the 2nd grade, indicated that, "I read through at the beginning and half way through, but didn't necessarily change any habits."

DISCUSSION

The present research study was a mixed methods study that used both qualitative and quantitative data to help answer our research questions. The quantitative data indicated no significant differences between groups during Part 1 and Part 3 for the knowledge, habits, VHI-10, and CAPE-V. The teacher candidates in the present study had a relatively normal voice quality as indicated by lower ratings for overall severity on the CAPE-V and a high level of knowledge of the voice at Part 1. When looking at individual differences, the three participants (one from the Experimental Group and two from the Control Group) who had a decrease in the overall knoweledge score from Part 1 to 3, also had a corresponding increase in CAPE-V overall severity and roughness. The three participants (two from the Experimental Group and one from the Control Group) who had an increase in overall knowledge scores experienced a decrease in VHI-10 score (a lower score on the VHI-10 is good) and a decrease in their CAPE-V breathiness rating. Thus, knowledge of vocal health has an impact on participants' voice quality and self-perception of voice. When participants do not retain vocal health information, their voice quality may become worse. As well, when participants gain knowledge of vocal health, they may have a better perception of their voice. Together the results indicate that knowledge of vocal health seems to effect other variables related to vocal health.

Research Question 1: The Effect of Eduction on Incidence of Voice Problems During Student Teaching

The education that was provided to teacher candidates did not impact the incidence of voice problems for participants in the Experimental Group during their student teaching semester. Three of the four particpants in the Experimental Group reported in the Qualtrics survey that they experienced difficulty with their voice during their student teaching semester at

Part 3. The one participant from the Experimental Group who did not report voice problems, did have an overall severity rating on the CAPE-V of 20. This indicates that the participant may have had an unrecognized voice problem. Similar to the Experimental Group, all of the participants in the Control Group also reported experiencing voice difficulty at Part 3. The impact of vocal health education on the incidence of voice problems may be better understood in a study with a larger sample size, less homegenious group, and more formal education.

Research Question 2: Prepared to Handle Problems After Given Vocal Health Information

The participants in the Experiemental Group received the Vocal Awareness and Health Information pamphlet. They reported that they did not use the information on the pamphlet. However, results from the qualitative data show that participants in the Experimental Group but not the Control Group did use strategies, such as drinking fluids, to overcome voice problems during their student teaching semester. As well, all four participants in the Control Group indicated wanting information about vocal health in their reponses.

Research Question 3: Evidence to Administer Vocal Health Information in University Curriculum

The research study was a mixed methods study, and although the quantitaive data showed no statistically significant difference between the Experiemental Group and the Control Group at Part 1 *versus* Part 3, the qualtitative data analysis did indicate that the teacher candidates reported experiencing voice difficulties during their student teaching semester. Just in the short time period of one semester, 7 out of 8 of the participants reported experiencing some voice difficulty. Also, 4 ouf of 4 participants in the Control Group reported that they would have liked to have received information on vocal health prior to beginning their student teaching semester. The responses from the qualitative data suggests that BGSU teacher

candidates lack information about vocal care and prevention of voice problems prior to student teaching and report wanting and needing this infromation.

CONCLUSION

There were limitations to this study that may have affected the statistical results. For instance, there may not have been statistically significant group differences because of the small sample size. In addition, when the researchers reviewed the Vocal Health and Awareness Information pamphlet when it was given to the participants at Part 1, they were given a limited explanation of the study. Therefore, it may have been beneficial to have provided a test of the participants' knowledge after receiving the vocal health information, in order to better understand how much of the information from the pamphlet they retained before beginning their student teaching semester.

Future implications for this study may include implementing a lecture or session on vocal health and how teaching effects the voice during the teacher candidates' final semester before student teaching. As well, for future studies on this topic, it will be important to include a larger sample size to give more statistical power, and also provide more formal education about vocal health than just giving the participants in the Experiemental Group a pamphlet. Overall, the research supported the literature that suggests that similar to teachers, student teachers are also at high risk for developing voice problems during their student teaching practicum.

REFERENCES

Chan, K. M. K. & Yiu, E. M. (2011). Green Voice Project: Preserving the healthy voice in teachers. *Perspectectives on Voice and Voice Disorders, 21*(2), 62-70. doi: 10.1044/vvd21.2.62.

Chen, S. H., Chiang, S. C., Chung, Y. M., Hsiao, L. C., & Hsiao, T. Y. (2010). Risk factors and effects of voice problems for teachers. *Journal of Voice, 24*(2), 183-192.

Fairfield, C., & Richards, B. (2007). Reported voice difficulties in student teachers: a questionnaire survey. *British Journal of Educational Studies*, *55*(4), 409-425.

Kempster, G. B., Gerratt, B. R., Abbott, K. V., Barkmeier-Kraemer, J., & Hillman, R. E. (2009). Consensus auditory-perceptual evaluation of voice: development of a standardized clinical protocol. *American Journal of Speech-Language Pathology, 18*(2), 124-132.

Kovacic, G. (2005). Voice education in teacher training: an investigation into the knowledge about the voice and voice care in teacher- training students. *Journal of Education for Teaching*, *31*(2), 87-97.

Mattiske, J. A., Oates, J. M., & Greenwood, K. M. (1998). Vocal problems among teachers: a review of prevalence, causes, prevention, and treatment. *Journal of Voice*, *12*(4), 489-499.

McNamara, A. P., & Perry, C. K. (1994). Vocal Abuse Prevention Practices: A National Survey of School-Based Speech-Language Pathologists. *Language, Speech, and Hearing Services in Schools*, *25*(2), 105-111.

Meulenbroek, L. F., & de Jong, F. I. (2011). Voice quality in relation to voice complaints and vocal fold condition during the screening of female student teachers. *Journal of Voice*, *25*(4), 462-466.

Nanjundeswaran, C., Li, N. Y., Chan, K. M., Wong, R. K., Yiu, E. M. L., & Verdolini-Abbott, K. (2012). Preliminary data on prevention and treatment of voice problems in student teachers. *Journal of Voice, 26*(6), 816-e1.

Perrine, B., Pilkington, S., and Scherer, R.C. (2016). "Vocal hygiene and voice quality in college students." Ohio Speech-Language-Hearing Association's Convention, Columbus, Ohio, March 12. (Poster presented by Perrine and Pilkington)

Teddie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences.* Los Angeles, CA: Sage Publications, Inc.

Timmermans, B., Coveliers, Y., Meeus, W., Vandenabeele, F., Van Looy, L., & Wuyts, F. (2011). The effect of a short voice training program in future teachers. *Journal of Voice*, *25*(4), e191-e198.

Timmermans, B., De Bodt, M. S., Wuyts, F. L., & Van de Heyning, P. H. (2005). Analysis and evaluation of a voice-training program in future professional voice users. *Journal of Voice*, *19*(2), 202-210.

Thomas, G., Kooijman, P. G., Donders, A. R. T., Cremers, C. W., & de Jong, F. I. (2007). The voice handicap of student-teachers and risk factors perceived to have a negative influence on the voice. *Journal of Voice*, *21*(3), 325-336.

Trinite, B., Sokolovs, J., & Teibe, U. (2011). Using a questionnaire design in the investigation of teachers' voice risk factors. *Special Education*, (2), 80-89.

Rosen, C. A., Lee, A. S., Osborne, J., Zullo, T., & Murry, T. (2004). Development and validation of the Voice Handicap Index- 10. *The Laryngoscope, 114*(9), 1549-1556.

Roy, N., Merrill, R. M., Thibeault, S., Parsa, R. A., Gray, S. D., & Smith, E. M. (2004). Prevalence of voice disorders in teachers and the general population. *Journal of Speech, Language, and Hearing Research, 47*(2), 281-293.

Velsvik Bele, I. (2008). The teacher's voice: vocal training in teacher education. *Scandinavian Journal of Educational Research*, *52*(1), 41-57.

APPENDIXES

Appendix A: The Human Subject Review Board

Appendix B: Demographic Information questionnaire

Appendix C: Vocal Hygiene Knowledge questionnaire

Appendix D: Vocal Hygiene Habits questionnaire

Appendix E: Voice Handicap Index Form

Appendix F: Consensus Auditory Perceptual Evaluation Form

Appendix G: Vocal Awareness and Health Information Pamphlet

Appendix H: Part 2 Qualtrics Survey for Experimental Group

Appendix I: Part 2 Qualtrics Survey for Control Group

Appendix J: Part 3 Final Survey for Experimental Group

Appendix K: Part 3 Final Survey for Control Group

Appendix A:

BGSU
BOWLING GREEN STATE UNIVERSITY
Office of Research Compliance

DATE:	December 4, 2015
TO:	Sarah Pilkington
FROM:	Bowling Green State University Human Subjects Review Board
PROJECT TITLE:	[834458-1] Teacher Candidates: Vocal Health
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF EXEMPT STATUS
DECISION DATE:	December 3, 2015
REVIEW CATEGORY:	Exemption category # *2*

Thank you for your submission of New Project materials for this project. The Bowling Green State University Human Subjects Review Board has determined this project is exempt from IRB review according to federal regulations AND that the proposed research has met the principles outlined in the Belmont Report. You may now begin the research activities.

Note that an amendment may not be made to exempt research because of the possibility that proposed changes may change the research in such a way that it is no longer meets the criteria for exemption. A new application must be submitted and reviewed prior to modifying the research activity, unless the researcher believes that the change must be made to prevent harm to participants. In these cases, the Office of Research Compliance must be notified as soon as practicable.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact Kristin Hagemyer at 419-372-7716 or khagemy@bgsu.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Bowling Green State University Human Subjects Review Board's records.

Appendix B:

Teacher Candidates: Vocal Health
Demographic Information

Age: _____
Gender: _____
Grade you will be teaching: _____
Year in School: _____
Major: _____
Extracurricular involvement:
_____
_____

Are you a professional voice user (singer, teacher, student-teacher, cheerleader, on the debate team, coach, etc.)? Y N

_____ number of years of singing training
_____ number of hours per week of singing training
_____ number of years of voice training
_____ number of hours per week of voice training

Have you ever had a voice disorder? Y N

Please indicate the type(s) of voice disorder(s) _____
Please indicate the year(s) of the voice disorder(s) _____
Did you receive treatment for your voice disorder? Y N

Have you ever had speech therapy? Y N

Please indicate the year(s) of the speech therapy _____

Have you ever received information regarding vocal hygiene? Y N

If yes, please indicate where. _____
Does the knowledge you received regarding vocal hygiene influence how you use your voice? Y N

Appendix C:

Teacher Candidates: Vocal Health
Vocal Hygiene Knowledge Questionnaire

1. Where is voice produced? Choose the best answer.
    a. In the mouth
    b. In the diaphragm
    c. In the larynx
    d. In the nose
2. In general, it will NOT harm the voice to (choose the best answer):
    a. Speak loudly in a noisy environment over long periods of time.
    b. Whisper loudly over long periods of time.
    c. Use a soft, low-effort voice over long periods of time.
3. Which of the following are signs of a voice problem? Choose ALL APPROPRIATE answers.
    a. Creaky voice
    b. Hoarse voice
    c. Fatigued voice
    d. Strained voice
4. Which ONE of the following is NOT harmful to the voice, in general:
    a. A dusty environment
    b. Antihistamines or any other allergy medication
    c. Eating warm food
    d. A smoky environment
5. When someone's voice feels tired they should (choose the best answer):
    a. Whisper.
    b. Rest their voice.
    c. Continue to talk normally.
    d. Talk louder.

6. Which of the following are examples of vocal harm? Choose the best answer.
    a. Using the voice until it hurts.
    b. Shouting for long periods of time.
    c. Coughing very loudly for long periods of time.
    d. All of the above.
7. Although it is heard every day, which of the following may be harmful to the voice? Choose the best answer.
    a. Vocal fry (a lower pitch at the end of phrases; think Kim Kardashian)
    b. Children making animal or car noises loudly and over long periods of time
    c. Cheering by screaming and hollering loudly at sporting events
    d. Talking while doing strenuous exercise.
    e. All of the above
8. Drinking water will generally (choose the best answer):
    a. Not benefit the voice
    b. Benefit the voice
    c. Be neither harmful nor beneficial to the voice
9. Generally, the best way to use the voice less is to (choose the best answer):
    a. Not talk
    b. Whisper
    c. Talk with an everyday normal voice
    d. Use a soft voice with little effort
10. What impact do medications have on the voice? Choose the best answer.
    a. Certain medications may dry out the mucosa of the vocal tract.
    b. Certain medications do not affect the voice.
    c. Certain medications can lead to increased risk of vocal fold hemorrhage during strenuous vocal use.
    d. All of the above choices indicate the impacts of mediations on the voice.

11. Eating just before going to bed may cause acid reflux. Acid reflux may (choose the best answer):

    a. Affect the voice by causing the vocal folds to become fused together.

    b. Affect the voice by causing inflammation of the vocal folds

    c. Affect the voice by reducing the amount of water needed to keep the vocal folds healthy.

    d. Not affect the voice

12. Which of the following may NOT dehydrate the vocal folds? Choose the best answer.

    a. Milk

    b. Caffeinated coffee

    c. Alcohol

    d. All of the above may dehydrate the vocal folds.

13. Reducing stress may help improve voice production by (choose the best answer):

    a. Decreasing tension in the vocal production muscles.

    b. Decreasing the number of breaths you need to take while speaking.

    c. Reducing forceful voice production.

    d. All of the above.

14. Which of the following statements about overuse of the voice is TRUE?

    a. The more one uses his or her voice, the healthier it becomes.

    b. There is no way to overuse the voice.

    c. Even if a person does overuse the voice, the tissue will always heal quickly so there will not be permanent damage to the vocal folds.

    d. Overuse of the voice can lead to hoarseness, breathiness, or vocal fatigue.

15. Relative to a pitch (choose the best answer):

    a. A change to a higher pitch may harm the vocal folds.

    b. A change to a lower pitch may harm the vocal folds

    c. A monotonic pitch may be indicative of a physiological problem.

    d. All of the above.

Appendix D:

Teacher Candidates: Vocal Health
Vocal Hygiene Habits Questionnaire

On the line, please indicate a number appropriate to the statement,

_____ number of 8 ounce glasses of water consumed on an average day

_____ number of 12 ounces of caffeine consumed on an average day

A "Tall" at Starbucks © is 12 oz, "Grande" is 16 oz, "Venti" is 20 oz.
A regular size can of pop is 12 ounces.
The average coffee mug is between 8 and 12 ounces.

_____ number of cigarettes smoked per day

_____ number of years of smoking

Did you use to smoke? Y N

What year did you quit? _____

_____ number of minutes of exercise per day

_____ number of hours of sleep per night

Do you snore? Y N

Do you wake up with dryness in the throat? Y N

Do you have allergies? Y N

Are you often stressed? Y N

Indicate with an "X" on the appropriate line which medications you take each day.

_____ aspirin (IB Profane)
_____ Tylenol
_____ muscle relaxers
_____ antibiotic
_____ antidepressants
_____ antihistamine
_____ Agiotensin-Converting Enzymes (ACE) Inhibitor

_____ steroids / corticosteroids
_____ decongestants
_____ non-steroidal anti-inflammatory drugs (NSAIDs)
_____ sleep or anxiety medications
_____ I do not take any of these medications on a regular basis.
_____ I'd prefer not to answer this question.

Please rate how often you do the following target behaviors by placing an "X" in the box that corresponds with the accurate rating.

	Always	Usually	Frequently	Sometimes	Infrequently	Rarely	Never
Cough							
Clear your throat							
Talk loudly (i.e., yelling, cheering, and screaming, shouting)							
Use your voice in noisy environments							
Sing							
Make unusual voice sounds (i.e., animal noises, car noises, ect.)							
Use glottal fry (vocal fry)							
Talk while doing intense exercises							
Whisper							
Talk in a smoky environment							
Talk in a dusty environment							
Talk loudly in a noisy environment							
Eat late in the evening within 3 hours of laying down							
Rest your voice							
Have a tired voice							
Use a higher pitch voice							
Use your voice too much							
Warm-up your voice before using it							
Use extra muscular effort while talking							
Use extra respiratory effort while talking							

Appendix E:

THE VOICE & SWALLOWING CENTER
A Division of Sound Health Services, P.C.

Voice Handicap Index (VHI-10)

Name:_____ Date:_____

Instructions: These are statements that many people have used to describe their voices and effects of their voices on their lives. Circle the response that indicates how frequently you have the same experience.

0 = never 1 = almost never 2 = sometimes 3 = almost always 4 = always

1. My voice makes it difficult for people to hear me.	0	1	2	3	4
2. I run out of air when I talk.	0	1	2	3	4
3. People have difficulty understanding me in a noisy room.	0	1	2	3	4
4. The sound of my voice varies throughout the day.	0	1	2	3	4
5. My family has difficulty hearing me when I call them throughout the house.	0	1	2	3	4
6. I use the phone less often than I would like to.	0	1	2	3	4
7. I'm tense when talking to others because of my voice.	0	1	2	3	4
8. I tend to avoid groups of people because of my voice.	0	1	2	3	4
9. People seem irritated with my voice.	0	1	2	3	4
10. People ask, "What's wrong with your voice?"	0	1	2	3	4

Rosen, C, Lee, A, Osborne, J, Zullo, T, and Murry, T (2004). Development and Validation of the Voice Handicap Index- 10. Laryngoscope: 114(9): 1549-1556

3860 South Lindbergh Boulevard, #108 St. Louis, Missouri 63127 **phone** 314-729-0077 **fax** 314-729-0101 **website** www.soundhealthservices.com

607 S. New Ballas Road, #2300 St. Louis, Missouri 63141 **phone** 314-729-0077 **fax** 314-729-0101 **website** www.soundhealthservices.com

Appendix F:

Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V)

Name:_____ **Date:**_____

The following parameters of voice quality will be rated upon completion of the following tasks:
1. Sustained vowels, /a/ and /i/ for 3-5 seconds duration each.
2. Sentence production:
   a. The blue spot is on the key again.
   b. How hard did he hit him?
   c. We were away a year ago.
   d. We eat eggs every Easter.
   e. My mama makes lemon muffins.
   f. Peter will keep at the peak.
3. Spontaneous speech in response to: "Tell me about your voice problem." or "Tell me how your voice is functioning."

Legend: C = Consistent I = Intermittent
MI = Mildly Deviant
MO =Moderately Deviant
SE = Severely Deviant

SCORE

Overall Severity _____ C I /100
MI MO SE

Roughness _____ C I /100
MI MO SE

Breathiness _____ C I /100
MI MO SE

Strain _____ C I /100
MI MO SE

Pitch (Indicate the nature of the abnormality): _____
_____ C I /100
MI MO SE

Loudness (Indicate the nature of the abnormality): _____
_____ C I /100
MI MO SE

_____ _____ C I /100
MI MO SE

_____ _____ C I /100
MI MO SE

COMMENTS ABOUT RESONANCE: NORMAL OTHER (Provide description):_____
_____

ADDITIONAL FEATURES (for example, diplophonia, fry, falsetto, asthenia, aphonia, pitch instability, tremor, wet/gurgly, or other relevant terms):

Clinician:_____

Awareness of the Voice

Student teaching is a new and stressful experience for you. **Be aware of the consequences that stress has on your voice and speech.**

If you experience extreme stress see a doctor or the Bowling Green State University Counseling Center.

Be aware of situations for which you may be tempted to raise your voice, such as the playground or lunchroom.

Know your voice and what you can handle.

Always monitor your voice and speech for changes. Pay attention to how your voice is feeling and sounding.

Be aware of your posture. Posture affects the torso and neck, which is an issue for maintaining optimal voice.

When you are talking to an individual or a group, get closer to them and face them.

Be aware that individuals react differently to different foods. Some common foods that lead to reactions such as acid reflux and heartburn are: spicy foods, soda/pop, fried foods, chocolate, and tomato-based foods.

Attempt to limit contact with dusty environments, cleaning products, chalk, and paint fumes. These may irritate the vocal folds.

Consulting a Doctor

See a doctor if changes in your voice are persistent or severe and you think the changes are related to

- *allergies*
- *medication*
- *overuse*
- *acid reflux*
- *cold or flu.*

If you have experienced voice problems related to medications, a cold, or the flu, see your **general practitioner**.

For those who are experiencing voice problems related to allergies, see a specialist called an **Allergist**. Find an Allergist: http://acaai.org/locate-an-allergist

For those who are experiencing hoarse or raspy voice, deeper (lower pitch) voice, vocal fatigue, dry throat, or having difficulty producing a higher pitch voice, especially if the symptoms have lasted three or four days, see a specialist called a **Laryngologist**. This doctor may be called an ENT, Ear Nose and Throat doctor, Otolaryngologist, or Otorhinolaryngologist. Find an ENT: http://www.entnet.org/content/find-ent

A local **Speech-Language Pathologist** (SLP, Speech Therapists) may be aware of specialists in your region. Find an SLP: http://www.asha.org/findpro/

BGSU

Vocal Awareness and Health Information

Preventing Vocal Problems

!REST!
If you do not rest, you may experience fatigue and discordination of the voice.

!PACE!YOURSELF!
Balance your voice use throughout the day. If you have a vocally demanding day ahead, talk only when necessary. “Use your voice only when being paid for it.”

!WASH!YOUR!HANDS!
Wash your hands often to help prevent getting a cold or the flu. Getting sick may affect your voice.

!DRINK!WATER!
Drink plenty of water. Six to eight glasses a day is recommended to lubricate the vocal folds.

!USE!A!MICROPHONE!
Consider using a microphone when appropriate to amplify your voice. This will allow you to be heard well while not using a loud voice.

!USE!A!HUMIDIFIER!
Heat without moisture while sleeping may dry your throat and nose. This often occurs in the winter. A humidifier will help increase moisture in the air.

!LIMIT!ALCOHOL!AND!CAFFEINE!
Limit your intake of drinks that contain alcohol or caffeine. Excess alcohol may cause coordination problems and excess caffeine may cause vocal dryness.

Vocal Advice

Have you noticed something different about your voice? Has someone else noticed something different about your voice?

Common symptoms that may occur while teaching include a hoarse or raspy voice, a deeper (lower pitch) voice, vocal fatigue, a dry throat, or difficulty producing a higher pitch voice.

The time of day you experience your symptoms may inform you about some possible solutions.

Morning Symptoms

- If you wake up with a ***DRY THROAT OR NOSE***, try using a humidifier while you sleep.
- If you experience ***ACID REFLUX***, avoid eating irritating foods before going to bed. Irritating foods include spicy foods, soda/pop, fried foods, chocolate, and tomato-based foods. If the acid reflux persists see a doctor.
- If you experience a ***DRY THROAT*** after drinking caffeinated beverages, drink water. Try to drink equal amounts of water and caffeine to maintain a hydrated voice.
- If you wake up with ***TENSION IN THE JAW***, you may need to wear a mouth guard while you sleep. Consider seeing your doctor or dentist.

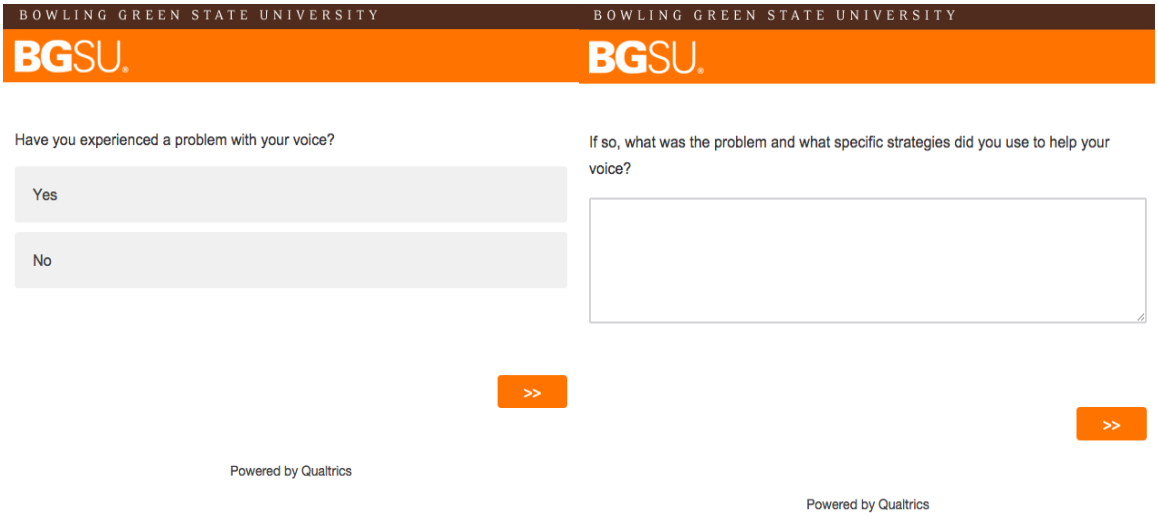
Daytime Symptoms

- If you feel ***FATIGUE***, ***TENSION IN THE MOUTH OR NECK AREA***, and it takes ***A LOT OF EFFORT*** to produce sounds, try to relax. If these symptoms persist or it becomes painful to speak, see a doctor.
- If your voice is ***TIRED***, use a microphone. Also consider alternative ways to get your students’ attention such as whistling or clapping.
- If you have to ***PUSH YOUR VOICE OUT*** in a tense way or use ***EXTRA EFFORT TO TALK***, focus on breathing and tension reduction. Pause at natural speaking boundaries to replace breaths. Do not speak at the end of a breath. If it becomes more severe see a speech-language pathologist or a doctor.
- If you are ***COUGHING*** or ***CLEARING YOUR THROAT*** frequently, swallow saliva and drink water. See an Ear Nose and Throat doctor.

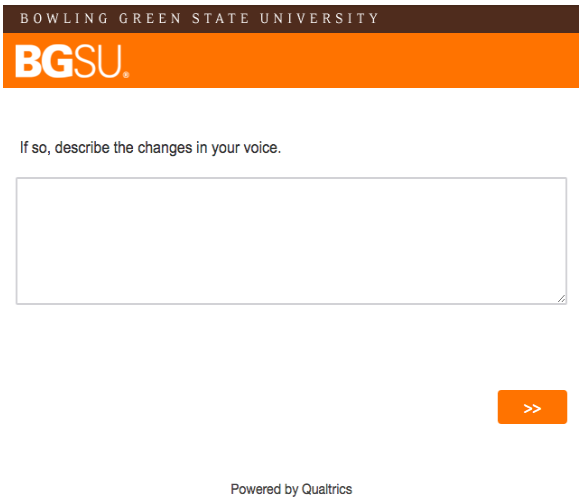
Nighttime Symptoms

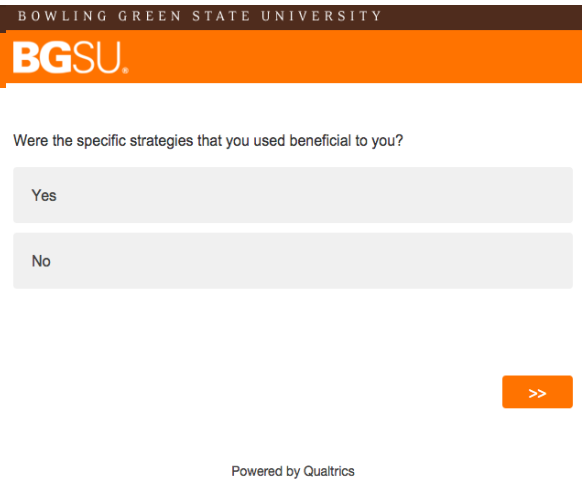
- If your voice feels ***FATIGUED***, or you have a ***LOWER PITCH***, or you have a ***HOARSE OR RASPY VOICE***, the voice was probably overused. Rest your voice.
- If your ***VOICE AND THROAT FEEL DRY*** at night, drink more water throughout the day and use a humidifier.

Appendix H:


BOWLING GREEN STATE UNIVERSITY
BGSU
Have you experienced a problem with your voice?
Yes
No
>>
Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY
BGSU
If so, what was the problem and what specific strategies did you use to help your voice?
>>
Powered by Qualtrics


BOWLING GREEN STATE UNIVERSITY
BGSU
If so, describe the changes in your voice.
>>
Powered by Qualtrics


BOWLING GREEN STATE UNIVERSITY
BGSU
Were the specific strategies that you used beneficial to you?
Yes
No
>>
Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU

If so, how?

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU

Has student teaching been difficult on your voice?

Yes

No

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU

What other experiences (positive or negative) have you had during student teaching relative to voice and speech?

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU

Would it have helped you to receive information about voice prior to your semester of student teaching?

Yes

No

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU

If so, how?

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

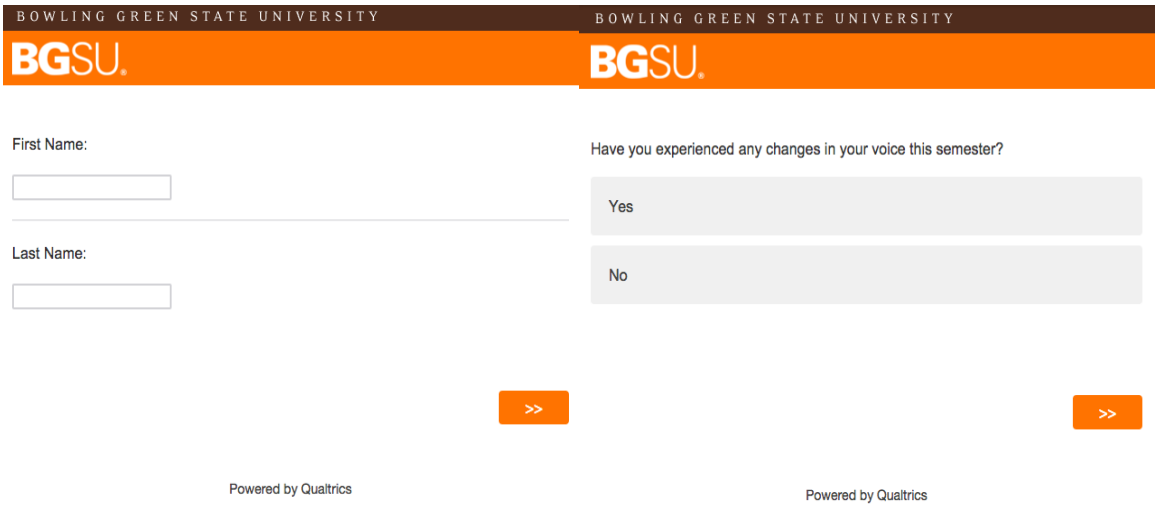
BGSU

If so, how?

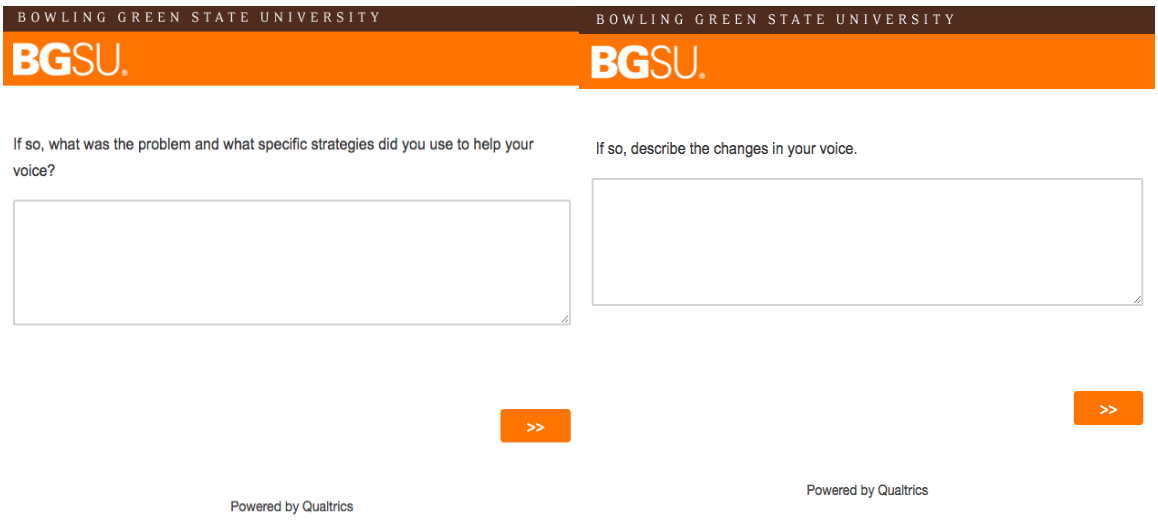
>>

Powered by Qualtrics

Appendix I:


BOWLING GREEN STATE UNIVERSITY
BGSU.
First Name:
Last Name:
>>
Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY
BGSU.
Have you experienced any changes in your voice this semester?
Yes
No
>>
Powered by Qualtrics


BOWLING GREEN STATE UNIVERSITY
BGSU.
If so, what was the problem and what specific strategies did you use to help your voice?
>>
Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY
BGSU.
If so, describe the changes in your voice.
>>
Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU.

Have you experienced a problem with your voice?

- Yes
- No

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU.

Were the specific strategies that you used beneficial to you?

- Yes
- No

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU.

If so, how?

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU.

Has student teaching been difficult on your voice?

- Yes
- No

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU.

What other experiences (positive or negative) have you had during student teaching relative to voice and speech?

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU.

Would it have helped you to receive information about voice prior to your semester of student teaching?

- Yes
- No

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU

If so, how?

>>

Powered by Qualtrics

BOWLING GREEN STATE UNIVERSITY

BGSU

If so, how?

>>

Powered by Qualtrics

Appendix J:

Teacher Candidates: Vocal Health Survey

1. Have you experienced any changes in your voice this semester? If so, describe the changes in your voice.

2. Have you experienced a problem with your voice? If so, what was the problem and what specific strategies did you use to help your voice?

3.Have you used your Vocal Awareness and Health Information pamphlet? If so, how have you used it?

4. Were the specific strategies that you used from the Vocal Awareness and Health Information pamphlet beneficial to you? If so, how?

5. Has student teaching been difficult on your voice? If so, how?

6. What other experiences (positive or negative) have you had during student teaching relative to voice and speech?

Appendix K:

Teacher Candidates: Vocal Health Survey

1. Have you experienced any changes in your voice this semester? If so, describe the changes in your voice.

2. Have you experienced a problem with your voice? If so, what was the problem and what specific strategies did you use to help your voice?

3. Were the specific strategies that you used beneficial to you? If so, how?

4. Has student teaching been difficult on your voice? If so, how?

6. What other experiences (positive or negative) have you had during student teaching relative to voice and speech?

7. Would it have helped you to receive information about voice prior to your semester of student teaching? If so, how?