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Preparation of the Speech-Language Pathologist Specializing in Voice: An Educational Survey

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EDITORIAL NOTE

Preparation of the Speech-Language Pathologist Specializing in Voice: An Educational Study

This manuscript generated an unusual amount of controversy among the Editorial Review Board, and has been accepted for publication over the objections of some reviewers. Concerns included the contention that the study is not directed toward "students specializing in voice" as the title suggests, but is designed rather "to determine the baseline understanding of normal voice production, voice disorders, and voice therapy techniques for the new master's graduate in speech-language pathology." The critical reviewers argue that finding that there is little academic training in voice production at the graduate level was entirely predictable. The Educational Training Board (ETB) of the American Speech-Language-Hearing Association (ASHA) dictates the curricula of accredited programs and guides which courses are given at the undergraduate level, and which courses are given at the master's level. By decision, programs in speech-language pathology offer instruction on the laryngeal anatomy and physiology and aerodynamic-acoustic studies of normal voice at the undergraduate level. The critical reviewers concurred with the study's conclusion that greater clinical practicum experience in voice is needed in speech-language pathology training programs, but challenged the methodology of this survey study in proving the point. Other reviewers believe not only that this study addresses important concerns, but that it has**,** in its present form, sufficient merit to warrant publication, and the insightful interpretation of our readers.

Robert Thayer Sataloff, M.D., D.M.A.

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A preliminary version of this paper was presented at the 29th Voice Foundation Symposium, Philadelphia, PA, June 5-10, 1995.

Summary: This study investigates the academic and clinical preparation a speech-language pathologist receives in the area of voice. The purpose is to determine how to structure continuing education and specialty training in vocology, defined as the science and practice of voice habilitation. Surveys were sent to the graduate programs in speech-language pathology accredited by the American Speech-Language-Hearing Association (ASHA) in 1994, and again in 1999. Results from the 1994 survey indicated that students received limited information and clinical experience in handling typical voice cases. Although most programs required a voice disorders course, fewer mandated coursework in normal voice production or clinical experience with voice patients. The follow-up survey showed that the educational environment in 1999 is similar to that in 1994. It is evident that the programs are in compliance with the Educational Training Board model developed by ASHA for basic clinical competence, but no structure for specialty training has yet emerged. **Key Words:** Education—Voice—Voice training—Speech-language pathologist—Training—Vocologist.

INTRODUCTION

Approximately 10%–20% of the workforce in developed countries use their voices as primary occupational tools, often speaking with clients, students, assemblies, and the general public several hours a day.[1] Vocal demand has gone beyond a conversational level. It appears that many of these workers need to be vocally habilitated, as evidenced by the fact that they are seen in disproportionate quantities in voice clinics in comparison to other working populations.[1] The notion that voice habilitation requires some special skills appears to be evident in statements issued within disciplines involved in such habilitation. The Voice and Speech Trainers Association, a professional organization for theater voice and dialect coaches, issued a guideline statement regarding various skills for a theater voice coach, recommending personal involvement in voice training, academic study of the voice, and practical internships under a qualified voice trainer.[2] The National Association of Teachers of Singing and the American Speech-Language-Hearing Association also have guidelines regarding the education and practice of voice training.[3-5] To this end, some educational institutions and individuals have sought to educate specialists in voice habilitation, which we call vocologists, equipping them with those skills necessary to train the human voice for vocational or avocational needs. Programs to augment the general speech-language pathology curriculum with specialty education are under way. Seminars, symposia, and workshops all over the country (and globe) are addressing the need to provide greater depth in the understanding and treatment of disorders of language, speech, and voice. Given the rate at which knowledge in these areas is accumulating, the question is no longer "Is specialty education necessary?" but rather "How can it be done in the most effective way?"

In the area of voice, the Voice Foundation's Annual Symposium: Care of the Professional Voice, and the Pacific Voice Conference, in parallel with focus sessions at the American-Speech-Language Hearing Association, have addressed this need on a continuing education (CE) basis. The advantage of this format is that practitioners and clinicians obtain access to the best clinicians and scientists in the world. The disadvantage is that the exposure is brief, there are no examinations, and the topics are sometimes not as well integrated as they could be. A second approach has been offered by The University of Iowa (and a similar approach is used at the University of Minnesota) in the form of a vocology specialty track. In this track, several didactic courses and extra clinical training are added to the general speech-language pathology curriculum. The advantage of this format is a longer exposure to the instructor and the topic, as well as a formal grading and accreditation procedure. The disadvantage is a possibly narrower point

of view (fewer faculty members), greater expense, and a longer commitment (an extra full semester).

As these approaches are being streamlined, it is important to understand the knowledge base that exists among typical enrollees. The current study addresses a simple objective: to determine the baseline interest and understanding of normal voice production, voice disorders, and voice therapy techniques for the new master's degreed graduates in speech-language pathology. The study was repeated following a 5-year interval to assess educational trends in light of the increasing body of knowledge in voice production and therapy techniques. Furthermore, the emergence of vocology programs in the last few years may have impacted the educational trends in this profession. To date, there have been no previous organized, published studies addressing academic preparation in the area of voice for the speech-language pathologist. Information gathered from this survey will serve those creating graduate vocology programs and continuing educational materials for speech-language pathologists.

This study has several shortcomings. To create a totally unbiased survey with an adequate sample size would require resources beyond our current means. It may even be argued that our survey shows nothing other than compliance by speech pathology departments with recommendations by the Educational Training Board of ASHA. But that is one of our major points of contention. What is taught at universities should be driven by what professors feel is relevant, based on current knowledge and how a field is moving. Having a professional organization dictate academic curricula will produce stagnation and stifle innovative approaches in academic institutions.

METHODS

Data collection

The 215 graduate programs in speech-language pathology, registered with ASHA as of May 1994, and the 207 graduate programs registered with ASHA as of January 1999, were solicited with letters and surveys. The 1994 cover letter, sent to the voice instructor, explained that the survey's purpose was to gather knowledge about graduate training in the area of voice and voice disorders so that continuing education materials could be developed for new practitioners (Appendix A). A cover letter with the second survey (1999) was sent to each departmental chair. This letter explained a similar purpose including the intention of comparing results with those from 1994 (Appendix B). The 1994 and 1999 questionnaires were identical in content (Appendix C). A copy of the current, complimentary vocology guide, published by the National Center for Voice and Speech, was included in both surveys in appreciation for participating in the survey.[6,7] Thirty-eight schools responded to the first survey within a 3-month period of time. To increase the response rate, nonrespondents were telephoned, and the questionnaire was completed orally. Respondents identified themselves as instructors responsible for teaching voice disorders courses. The interviewer explained that a telephone interview was being conducted to increase the response rate. The telephone questionnaire was identical to the written format (Appendix D). Questionnaires from 31 schools were completed through the telephone survey. Thus, the total response was 69, or 32%.

The second set of surveys was mailed January 2, 1999, to the chairs of the 207 accredited programs of speech-language pathology in the United States. By April 27, 1999, 71 surveys had been completed and returned, for a response rate of 34%.

Data analysis

Data were analyzed in three areas: (1) student interest, (2) academic training, and (3) clinical training. Student interest questions required respondents to state the number of graduate students in their programs, the number of students interested in voice and voice disorders, and the number of students with backgrounds in vocal performance. The criteria for a student with a primary interest in voice included those students who opted for a masters' thesis in voice, asked for extra clinical hours in voice disorders, or stated preferences to advisors or voice instructors. A background in voice performance was defined as current activity in the music, theater, or broadcasting field, or as participation in advanced training in music, theater, or broadcasting. Each school's response was tallied for each question. The number of graduates interested in voice was divided by the total number of graduate students in each set-

ting. Likewise, the number of graduate students with a vocal performance background was divided by the total number of graduate students.

Academic training questions required respondents to choose a range of credit hours offered and required in voice production and the number of credit hours taken by students. Credit hour ranges included four categories: no credit hours, 1-3 credit hours, 4-6 credit hours, and 7+ credit hours. Academic training questions also required respondents to select a range of credits offered and required in voice disorders and the number of credit hours taken by students. Again, credit hour ranges included: no credit hours, 1-3 credit hours, 4-6 credit hours, and 7+ credit hours. Responses were tallied under each category, and the percentage of programs within each category was calculated.

Finally, clinical training questions addressed two areas: (1) the average ASHA clinical practica hours taken by students. Because ASHA no longer specifically requires any voice hours for school accreditation, each program was queried regarding internal requirements. Respondents were asked to choose a range of clinical hours required and taken. Clinical hour ranges included: none, 5-10 clinical hours, 11-15 clinical hours, 16-25 clinical hours, and 25+ clinical hours. Responses were tallied under "hours required" and "hours taken" and the percentage of programs within each range was calculated.

RESULTS

Student interest

Table 1 reflects student interest in voice across the two time periods. In 1994, 14.7% of all graduate students met at least one requirement defining them as "having an interest in voice." In 1999, 10% of all graduate students met at least one of the student interest criteria. The 1994 survey reported 3.7% of all students within the programs possessed backgrounds in voice, as compared to the 1999 result of 2.5%.

Academic training

Voice production

Table 2 depicts the comparison of academic coursework offered, required, and taken in voice

TABLE 1. *Percentage of Students from the Programs Surveyed with a Primary Interest in Voice Disorders and with a Background in Voice Performance in 1999 and in 1994**

	1999	1994
Student interest in voice disorders	10	14.7
Students with backgrouds in voice performance	2.5	3.7

TABLE 2. *Academic Coursework, in Credit Hours, Offered, Required, and Taken in Voice Production in 1999 and in 1994**

Range of Credit Hours	Voice Production Hours					
	Offered		Required		Taken	
	1999	1994	1999	1994	1999	1994
None	13	9	32	18	16	8
1-3	52	52	49	60	58	58
4-6	30	26	16	22	24	31
7 or more	5	12	2	0	2	3

*Values represent the percentage of programs surveyed in 1999 and 1994 for each of the categories: none, 1-3 credit hours, 4-6 credit hours, and 7+ credit hours.

production in 1994 and in 1999. For academic coursework offered in voice production, about half (52%) of the programs surveyed offered 1-3 credit hours in voice production for both time periods. Interestingly, the percentage of programs offering no credit hours in voice production increased from 1994 to 1999 (9%–13%).

Only five programs of 71 (7%) in the 1999 survey stated that they offer a course solely devoted to voice production; in 1994, the total was two programs of 69 (3%). The other programs surveyed reported offering voice production information in combination with coursework in voice disorders, speech science, or anatomy and physiology classes.

Responses pertaining to academic coursework required in voice production indicated that 60% of programs surveyed in 1994 required 1-3 credit hours in voice production as compared to 49% in 1999. Nearly one-third of the programs surveyed currently do not require coursework in voice production.

Results from 1994 and 1999 were identical for the questions regarding academic coursework taken in voice production in the category of 1-3 credit hours (58%). Of note, the percentage of students taking no credit hours in voice production rose between 1994 and 1999 (a difference of 8%).

Voice disorders

Table 3 represents the findings for academic coursework offered, required, and taken in voice disorders for both the 1999 and the 1994 surveys. In 1994, for academic coursework offered in voice disorders, two-thirds (67%) of programs surveyed offered 1-3 credit hours in voice disorders as compared to 58 percent of the programs in 1999. Rarely (one program in 1999 and 0 in 1994), did an accredited academic program surveyed have no offerings in voice disorders.

For academic coursework required in voice disorders, findings were similar across the two time periods. Fewer programs surveyed in 1999 had no requirement for voice disorder credits for graduation (10% versus 17% in 1994). About two-thirds (67% in 1999 and 64% in 1994) of the programs surveyed required 1-3 credit hours of voice disorders coursework.

Across both time periods, for academic coursework taken in voice disorders, the majority of students from programs surveyed (71% in 1999 and 78% in 1994) take between 1 and 3 credit hours in voice disorders.

Clinical training

Table 4 represents the findings for ASHA clinical practica hours required in voice disorders and taken by students for both the 1999 and 1994 surveys. There were few differences across the time periods for clinical practica hours required in voice disorders from programs surveyed. Interestingly, however, nearly one-third of students from programs surveyed (27% in 1999 and 34% in 1994) could graduate without any clinical voice experience. Very few programs surveyed (1% for each time period) required 25 clinical voice hours or more. For clinical practica

TABLE 3. *Academic Coursework, in Credit Hours Offered, Required, and Taken in Voice Disorders in 1999 and in 1994**

Range of Credit Hours	Voice Disorder Hours					
	Offered		Required		Taken	
	1999	1994	1999	1994	1999	1994
None	0	1	10	17	3	0
1-3	58	67	67	64	71	78
4-6	38	26	22	19	23	17
7 or more	4	6	1	0	3	5

*Values represent the percentage of programs surveyed in 1999 and 1994 for each of the categories: none, 1-3 credit hours, 4-6 credit hours, and 7+ credit hours.

TABLE 4. *ASHA Clinical Hours Required and Taken for Voice Diagnostic and Treatment in Voice Disorders in 1999 and in 1994**

Range of Credit Hours	Clinical Voice Hours			
	Required		Taken	
	1999	1994	1999	1994
None	27	34	1	1
5-10	10	6	21	14
11-15	4	13	14	18
16-25	16	7	15	19
25+	1	1	8	

*Values represent the percentage of programs surveyed in 1999 and 1994 for each of the categories: none, 5-10 clinic hours, 11-15 clinic hours, 16-25 clinic hours, and 25+ clinic hours. (Note: Many respondents did not complete this section of the survey, and thus, columns do not total 100%).

hours actually taken, it appears that from the programs surveyed, almost all students receive some clinical exposure to voice patients. The current trend is moving toward the extremes—in 1999, there was an increase in students with only 5-10 clinic hours (21% versus 14%) and an increase in students with 25 or more hours of clinical experience (8% versus 0%).

DISCUSION

Attempting to draw firm conclusions from a simple survey leads to certain caveats. First, no inferences can be made about a general population (e.g., all academic programs training speech-language pathologists) because the survey has an inherent bias. Specifically, those who responded to the survey may have stronger programs in voice than the nonrespondents. Second, survey answers to academic and clinical questions were based on numerical ranges rather than specific values. These ranges were thought to bolster the ease of completing the survey, and thus, increase the response rate; accuracy of exact credit hours was sacrificed for an increased response rate. Thus, only a general idea of the number of academic hours from a program's survey could be evaluated. Finally, respondent error cannot be statistically managed and therefore must be factored into any conclusion or observation made from the study.

However, some general observations can be noted. Academic offerings are nearly identical to coursework actually taken. This comparison is consistent across both time periods and true for both voice production and voice disorders coursework. Would graduate speech pathology students take more voice-oriented courses if they were offered? Could a lack of faculty members qualified to teach voice courses limit the amount of available opportunities in voice study?

Second, the students' tendency in the 1999 survey to select either minimal (5-10 hours) or ample (25 hours or more) clinical hours with voice patients raises a provocative question. Can this be interpreted as evidence that students do seek as much specialty training—either in vocology or away from vocology—as they are able within their academic programs?

Finally, Tables 2, 3, and 4 reveal that many new speech-language pathologists graduate without coursework specifically devoted to voice production or voice disorders and without experience with voice clients. Many others in the current academic climate receive only limited exposure to voice production in a course focusing on voice disorders. An ability to skillfully treat voice clients, then, is dependent on postgraduate experiences either through clinical fellowships or continuing education opportunities for the speech-language pathologist.

CONCLUSIONS

Based in part on these results, the specialty track in vocology at The University of Iowa was developed and currently consists of 9 semester hours of coursework. The track includes 3 semester hours in Principles of Voice Production, 2 semester hours in Instrumentation for Voice Analysis, 2 semester hours in Voice Habilitation, and 2 semester hours in Voice Disorders. In addition, students are encouraged to take private voice lessons and enroll in either or both of the methods courses designed for singing pedagogy and theatre voice (offered by allied departments). Most recently, the entire track of nine graduate credit hours has been offered as a Summer Vocology Institute in Denver, Colorado. Students

from all over the world earn these credits and transfer them to their individual programs at other institutions. This program saves many academic departments the need to enlarge their faculties in the voice area if budgeting constraints exist.

On the continuing education level, it is of interest to note that the Voice Foundation Symposium: Care of the Professional Voice, sponsored annually by the Voice Foundation, offers 1-2 days of instruction in basic voice production followed by 1-2 days of voice disorders topics. At least 1 half-day (out of 4 days) is devoted to practical "how to" instruction in the form of master classes and workshops. Continuing education credits are given for all of these course and workshop offerings.

It appears that the two mechanisms—specialty tracks in speech-language pathology departments and continuing education at national meetings—are beginning to fulfill the needs of bringing an ever-growing body of knowledge in voice to the practitioner.

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APPENDIX A

June 21, 1994

Dear Voice Instructor:

The National Center for Voice and Speech, an organization dedicated to research and continuing education in voice, is conducting a survey to improve its continuing educational services. In order to best serve those clinicians practicing in the field of voice, we would like to obtain a general idea of the training a new clinician receives in voice production and voice disorders. We are targeting this survey to all the speech-language pathology programs in the United States accredited by the American Speech-Language-Hearing Association.

Enclosed you will find a pamphlet introducing the National Center for Voice and Speech as well as a sample of some of the information we make available to voice clinicians and voice teachers. Please feel free to look through this information and provide us comments on the information. Also enclosed is a survey inquiring about the voice program at your institution. We would greatly appreciate your time and efforts in completing the questionnaire and either faxing, e-mailing, or mailing the information back to us at the address below by July 15, 1994. This would enable us to better serve those clinicians working with voice patients as well as those students interested in receiving additional information in voice.

Please be assured that the information you provide will be kept confidential. If you would care to receive additional information about this survey's results or the Center's ongoing research and programs, there is also a question in the survey where you can request this information.

Again, thank you for your time and efforts to fill this questionnaire. We look forward to your reply.

Sincerely,

Miriam van Mersbergen
Continuing Education Representative
National Center for Voice and Speech
Miriam-van-mersbergen @ uiowa.edu

APPENDIX B

December 31, 1998

Dear Departmental Chair:

The National Center for Voice and Speech requests your assistance in gathering information about the educational preparation speech language pathologists receive in the area of voice production and voice disorders. The attached survey is a follow-up to a similar questionnaire distributed by the NCVS four years ago. The new data will identify trends—if any—in the number of courses and clinical hours students experience in the area of voice. The survey is being sent to each speech-language pathology program in the United States accredited by the American Speech-Language-Hearing Association.

I ask that you complete the attached survey or forward it to the person in your department who teaches courses in voice production and voice disorders.

Please return the questionnaire no later than FEBRUARY 15, 1999.

Responses may be made via the attached self-addressed, stamped envelope or by FAX (319/335-8851).

Please be assured that the information you provide will be kept confidential. If you would like to receive additional information about the survey results, research at the NCVS, or our outreach programs, please do not hesitate to contact me. I can be reached by e-mail (julie-ostrem@uiowa.edu) or direct telephone (319/335-6602).

Several publications are enclosed as examples of the informational outreach developed by the NCVS. Additional copies may be made available upon request.

Thank you in advance for your assistance.

Sincerely,

Julie Ostrem
Continuing Education Coordinator

APPENDIX C

GENERAL INFORMATION

University Name: _____

Department Name: _____

Department Chair: _____
e-mail address: _____

INFORMATION ON VOICE INSTRUCTORS

Instructor 1. _____
(Name and Degree)

_____
(e-mail address)

a. What is your percent of responsibility to teaching voice:

100% 75-90% 50-70% 25-45% 10-20% (circle one)

b. What is your primary research interest?

_____

Instructor 2. _____
(Name and Degree)

_____
(e-mail address)

a. What is your percent of responsibility to teaching voice:

100% 75-90% 50-70% 25-45% 10-20% (circle one)

b. What is your primary research interest?

_____

INFORMATION ON VOICE SUPERVISORS

Supervisor 1. _____
(Name and Degree)

_____
(e-mail address)

a. What is your percent of responsibility to teaching voice:

100% 75-90% 50-70% 25-45% 10-20% (circle one)

b. What is your primary research interest?

_____

Supervisor 2. _____
(Name and Degree)

_____
(e-mail address)

a. What is your percent of responsibility to teaching voice:

100% 75-90% 50-70% 25-45% 10-20% (circle one)

b. What is your primary research interest?

_____

INFORMATION ON STUDENTS
Number of students in the Department of Speech-Language Pathology:

____ Master's ____ Doctoral

Number of the above students with an interest in voice production or disorders:

____ Master's ____ Doctoral

Do any of the above students have a background in theatre, music, or professional voice use?

yes no (circle one)

If yes, how many? ____ Master's ____ Doctoral

INFORMATION ON ACADEMIC VOICE REQUIREMENTS
Voice Production (or Voice Science)
Number of voice production credit hours offered:

None 1-3 4-6 7 or more (circle one)

Number of voice production credit hours required for a master's degree:

None 1-3 4-6 7 or more (circle one)

Number of voice production credit hours the average student takes:

None 1-3 4-6 7 or more (circle one)

Is the topic of voice production covered in a combined class or included in another class?

yes no (circle one)

If yes, what classes?

_____

What texts and readings are used to cover this material?

_____

Would you be interested in contributing your syllabus(i) to a national registry?

yes no (circle one)

Optional: Please submit copies of your syllabi of your voice-related courses.

Voice Disorders

Number of voice disorder credit hours offered:

None 1-3 4-6 7 or more (circle one)

Number of voice disorder credit hours required for a master's degree:

None 1-3 4-6 7 or more (circle one)

Number of voice disorder credit hours the average student takes:

None 1-3 4-6 7 or more (circle one)

Is the topic of voice disorder covered in a combined class or included in another class?

yes no (circle one)

If yes, what classes?

_____

What texts and readings are used to cover this material?

_____

Would you be interested in contributing your syllabus(i) to a national registry?

yes no (circle one)

Optional: Please submit copies of your syllabi of your voice-related courses.

INFORMATION ON CLINICAL PRACTICUMS IN VOICE

Number of ASHA hours in voice required for a master's degree:

None 5-10 11-15 16-25 More than 25 (circle one)

Number of ASHA hours in voice a student would take on average:

None 5-10 11-15 16-25 More than 25 (circle one)

What are the methods of voice therapy used in the clinic?

_____

_____

_____

_____

Where do master's students obtain their voice hours? (answer with approximations of the nearest 10%)

University Clinic ____% Hospital Outplacement ____%

School Outplacement ____% Private Practice ____%

Other ____% ____% ____%

What is the voice clientele the students see? (answer with approximations of the nearest 25%)

Children ____% Adult ____% Neuro ____% Professional Voice Users ____%

Where do you send voice clients if you cannot service them?

_____

How would you consider your school in the area of voice disorders?

Very Strong Strong Neutral (circle one)

Do you wish to receive the results of this study?

yes no (circle one)

Comments? _____

_____

_____

_____

_____

_____

THANK YOU

APPENDIX D

Telephone survey script

Hello, my name is Miriam van Mersbergen. I am calling on behalf of the National Center for Voice and Speech. We are conducting a survey on the number of credit and clinical hours that a graduate student receives in the areas of voice and voice disorders. You might have received something in the mail regarding this. I am following up with a telephone call to increase the response rate in this survey. Do you have time for a few questions?

What is the number of master's students in speech pathology?

____

Of these students, how many of them have an interest in voice production or disorders?

____

____ Do any of these students have a background in theater, music, or professional voice use? ____

The next few questions require you to answer a number within a range.

1. What is the number of voice production credit hours offered at the graduate level?
   None 1-3 4-6 7 or more
2. What is the number of voice production credit hours required at the graduate level?
   None 1-3 4-6 7 or more
3. What is the number of voice production credit hours the average student takes?
   None 1-3 4-6 7 or more

A. 1. What is the number of voice disorder credit hours offered at the graduate level?
   None 1-3 4-6 7 or more
2. What is the number of voice disorder credit hours required at the graduate level?
   None 1-3 4-6 7 or more
3. What is the number of voice disorder credit hours the average student takes?
   None 1-3 4-6 7 or more

B. 1. What is the number of ASHA hours in voice required for a master's degree?
   None 5-10 11-15 16-25 25+
2. What is the number of ASHA hours in voice a student would take on average?
   None 5-10 11-15 16-25 25+

Thank you for your time.

Conversations after questions are acceptable.