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# The Effectiveness of Near-Peer Mentoring and Clinical Laboratory Experiences in Undergraduate Student Perceptions of Career Preparedness and the Profession of Audiology

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# The Effectiveness of Near-Peer Mentoring and Clinical Laboratory Experiences in Undergraduate Student Perceptions of Career Preparedness and the Profession of Audiology

## Cover Page Footnote

The authors would like to thank Dr. Sue Mattson for her assistance in the initial planning phases of this project.

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## Introduction

Peer mentoring is a technique in which undergraduate students provide academic and social support for their undergraduate peers (Collier, 2017; Jacobi, 1991). Near-peer mentoring provides many of the same benefits of peer mentoring, but the mentor is at least one year ahead in the educational curriculum and can provide guidance and support to the mentee (Akinla et al., 2018). Research has shown that near-peer mentoring is often preferable to faculty mentoring, as mentees report higher levels of comfort, less intimidation, and more frequent interaction from near-peers compared to faculty (Quesnel et al., 2012; Singh et al., 2014). A systematic review of near-peer mentoring literature for first year medical students revealed positive outcomes in the areas of professional and personal development, stress reduction, and ease of transitioning (Akinla et al, 2018). Gondhalekar et al. (2020) found that a near-peer mentoring program that paired general practitioner (GP) doctor trainees with medical students of varying levels resulted in positive changes in student perceptions of GP doctors. Near-peer mentorship helps both near-peer mentors (Anderson et al, 2019) and mentees (Zaniewski & Reinholz, 2016) persist in science, technology, engineering, and mathematics (STEM) careers. Near-peer mentoring programs that paired MD/PhD students with STEM-focused high school students resulted in successful partnerships, allowing mentees to express concerns and receive guidance regarding college and career preparation as well as social and emotional issues (Qua et al., 2020). However, while there are clear benefits of near-peer mentoring on professional perceptions and career persistence in STEM fields and medicine, literature remains sparse in communication sciences and disorders (CSD) fields.

**Why Students Choose CSD Fields**. Over the years, CSD undergraduate programs have evolved from a narrower focus that is specific to communication disorders content to a broader focus, teaching more generalizable skills that prepare students to work in a variety of careers, including health care, education, and science (American Speech-Language-Hearing Association [ASHA], 2015). ASHA's Academic Affairs Board (ASHA, 2015) recommends that undergraduate CSD curricula include not only CSD content knowledge related to speech-language pathology and audiology but also an overview of the clinical process, co-curricular experiences, and exposure to working together in teams.

Within CSD, several factors have been found to influence career decisions for undergraduate students in the major. Among these, exposure to the field, both in course content and clinical experience, have been found to play a major role in career decisions among CSD professionals. Brodsky and Cooke (2000) found that, among audiologists, "course content in undergraduate education" was one of the top five major influential factors in the decision to become an audiologist. Stone and Pellowski (2016) conducted a survey of 474 undergraduate speech-language pathology and audiology students. They found that both indirect and direct personal exposure to either field were significant factors in students' career decisions. Keshishian and McGarr (2012) surveyed of 143 undergraduate CSD majors and found that students are most influenced by "intrinsic qualities" of the major, including factors like opportunity for pre-professional clinical experiences and opportunities for interacting with people. According to the authors, professional socialization, or learning the culture of the profession, is an important part of the intrinsic motivation for CSD undergraduate students. Additionally, team-based approaches to learning and work have been deemed important components of undergraduate CSD education (ASHA, 2015).

**Purpose of Study.** A search of undergraduate CSD curricula from across the country reveals that students in undergraduate CSD programs often only receive approximately a quarter of their major instructional hours in audiology-based courses. Because of this, students preparing for careers in communication sciences often may not have sufficient knowledge or experience to make career decisions regarding a speech-language or audiology career path. Therefore, the purpose of the present study is to examine what influences student perceptions of both their career preparedness and the profession of audiology as a whole. This study partnered with students to determine the impact of near-peer mentoring and clinical laboratory exercises on undergraduate CSD student career preparedness and perceptions of the profession of audiology.

## Method

**Participants.** Undergraduate CSD students ($n$ = 41) at a public, region-serving institution in the southeastern United States were enrolled in a fall semester introductory audiology course (Audiology I). All students in the class were assigned in teams to an audiology graduate student mentor ($n$ = 12) to complete a series of three clinical laboratory exercises. All undergraduate students were classified as seniors, except one who was classified as a junior. All graduate student mentors were enrolled in their first semester of graduate school for the doctor of audiology (Au.D.) program. The twelve Au.D. students were each assigned to teach and mentor a group of 3-4 undergraduate students as part of a basic audiology assessment course (Basic Audiologic Assessment). All graduate and undergraduate students were female, with the exception of one undergraduate male. Graduate students were all from an undergraduate CSD background but had limited clinical experience, as they were only allowed to observe in the on-campus clinic during their first semester of graduate school. Undergraduate students had previously completed a hearing science course but had no other audiology curricular exposure.

**Instruments**. Undergraduate students completed the following surveys: a pre-course questionnaire, pre- and post-lab questionnaires for each of 3 labs (termed “lab wrappers”), and a post-course survey. The pre- and post-course surveys (Appendix A) examined graduate school and career plans, perceptions of the profession of audiology, and perceptions of graduate school and/or career readiness based on knowledge and experience of the profession.

For each of the three clinical laboratory exercises, students completed a lab wrapper in addition to the lab assignment (Appendix B). The lab wrappers assessed student perceptions of knowledge and skills for each of the tasks assigned in the given lab, as well as perceptions of effectiveness of the graduate mentor during the lab.

The pre- and post-course surveys and lab wrappers largely consisted of the same questions (with modifications in the lab wrappers specific to each lab) to assess change over the course of the semester. The questions used in the surveys and lab wrappers were developed by the primary investigator based on pilot data taken in prior years of the course. The initial questions were reviewed by two separate individuals, one who is an expert in the field of the Scholarship of Teaching and Learning (SoTL), and one who is an expert in the field of CSD research. After initial review, the questions were edited and submitted to two additional peer reviewers (both SoTL peers, one in a CSD field, the other in a non-CSD STEM field). Following this second round of peer review, questions for the pre- and post-course surveys were placed into Qualtrics XM (Provo,

UT) for electronic distribution. Lab wrappers were put into a Portable Document Format (PDF) and given to students with each lab assignment.

**Procedure**. Undergraduate students anonymously completed the pre-course survey (Appendix A) on the first day of class. Lab due dates were assigned in the course syllabus. Due to scheduling difficulties, students were given several weeks to complete each lab. Graduate students were taught the content of the labs by the course instructor, a Ph.D./Au.D. level faculty member, and completed separate, more complex labs to ensure accurate understanding of the material prior to teaching the undergraduate labs.

For the first lab, students answered a series of questions regarding case history and otoscopy. The graduate student mentor led the undergraduate students through the guided questions in their lab form, and then supervised the undergraduate students as they practiced case history-gathering and otoscopy on each other. For the second and third labs, students answered questions about pure tone (Lab 2) and speech (Lab 3) audiometry. The graduate mentor again walked the undergraduate students through the lab questions and exercises. They performed pure tone and speech audiometry on each student so that the undergraduate students could understand audiometry from a patient perspective. The undergraduate students were then allowed to sit behind the audiometer, under supervision, and perform audiometry on their classmates. For the third lab, as a bonus, students answered brief questions about tympanometry and had tympanometry performed on them by the graduate mentor if they so wished.

At the end of the course, undergraduate students were encouraged to anonymously complete a post-course survey during class (Appendix A). It should be noted that, while all 41 students enrolled in the class completed the pre-course survey and all labs, not all students completed each lab wrapper (Lab 1, $n$=35; Lab 2, $n$=37; Lab 3, $n$ = 37) or the post-course survey ($n$ = 37). The post-course survey assessed changes in attitudes and perceptions regarding the profession of audiology overall, as well as assessed which specific components of the course were helpful in career preparedness (i.e., lab exercises, mentoring component, in-class activities, in-class lecture).

## Results

Pre- and post-course survey responses and lab wrapper responses were compared descriptively by assessing the responses as a percentage of total students completing the survey. Question topics were divided into three major categories: (a) career plans and preparedness; (b) perceptions of the profession of audiology; and (c) effectiveness of labs and mentoring.

**Career Plans and Preparedness.** Students answered a series of questions both pre-course and post-course relating to career plans and perceptions of preparedness. Results from pre- to post-course indicated small numbers of students, typically those that were more undecided, changing to a more confident audiology graduate path (Table 1). Results also indicated that more students felt they had sufficient knowledge and experience to make career path decisions after the course (Table 2).

**Table 1**

*Pre- and post-course responses to the question "What is your current plan for graduate school?"*

| **Response** | **Pre-Course (*n* = 41)** | | **Post-Course (*n* = 37)** | |
|---|---|---|---|---|
| | **Frequency** | **Percentage** | **Frequency** | **Percentage** |
| Definitely SLP* (1) | 20 | 48.8 | 18 | 48.6 |
| Not sure, learning toward SLP (2) | 9 | 22.0 | 6 | 16.2 |
| Completely undecided (3) | 2 | 4.9 | 1 | 2.7 |
| Not sure, learning toward AUD* (4) | 1 | 2.4 | 2 | 5.4 |
| Definitely AUD (5) | 3 | 7.3 | 5 | 13.5 |
| Going to grad school outside of SLP/AUD (6) | 4 | 9.8 | 4 | 10.8 |
| Not planning to attend grad school (7) | 2 | 4.9 | 1 | 2.7 |

*SLP refers to the field of speech-language pathology; AUD refers to the field of audiology

**Table 2**

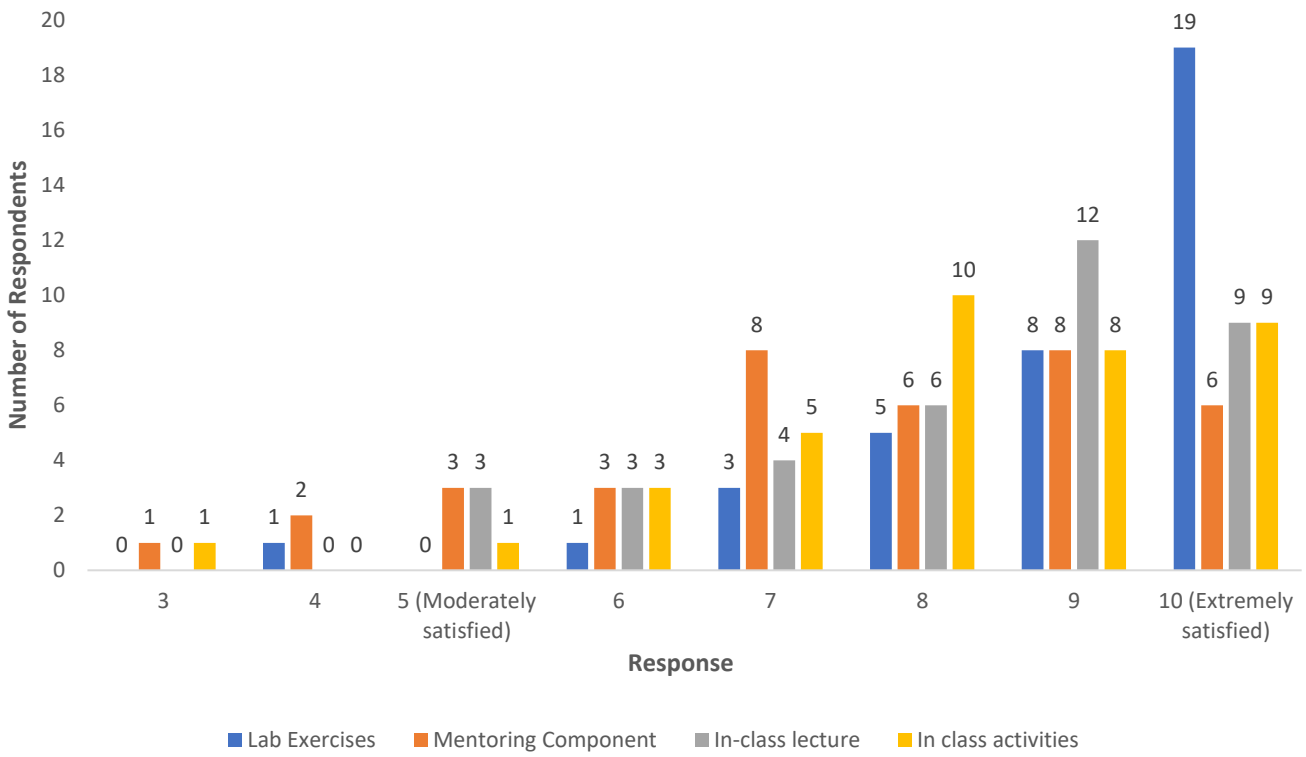
*Pre- and post-course percentage responses to the questions "Do you think you currently have sufficient knowledge/experience to make decisions about your career path?"*

| **Response** | **Knowledge** | | **Experience** | |
|---|---|---|---|---|
| | **Pre-Course** | **Post-Course** | **Pre-Course** | **Post-Course** |
| **No** | 14.6 | 2.7 | 17.5 | 13.5 |
| **Not Sure** | 22.0 | 24.3 | 32.5 | 18.9 |
| **Yes** | 63.4 | 73.0 | 50.0 | 67.6 |

In order to help disentangle the contribution of various course components on career preparedness, students were asked to rate the helpfulness of each of four course components (lab exercises, mentoring component, in class lecture, in class activities) on career preparedness using a 10-point Likert scale ranging from "Not at all satisfied" to "Extremely satisfied" (Figure 1). Nineteen students post-course identified being extremely satisfied with the lab exercises, whereas only nine students were extremely satisfied with in-class lecture and activities, and only six students were extremely satisfied with the mentoring component. This suggests that overall, students perceived the lab component of the course as being the most helpful in career preparedness.

**Figure 1**

*Helpfulness of Course Components in Career Preparedness*




**Perceptions of the Profession of Audiology.** Students were also asked to rate their interest in the profession of audiology (Table 3) and their perception of how useful it is for SLPs to have a general working knowledge of audiology (Table 4). Results indicated a general increased interest in the profession from pre- to post-course, with increased numbers of students (9 pre-course to 17 post-course) reporting that they were "moderately" or "very" interested in the profession, and decreased numbers (27 pre-course to 15 post-course) reporting "not at all" or "somewhat." Importantly, in response to the question, "How useful is it for SLPs to have a general working knowledge of audiology?", 26.8% of students answered "extremely" pre-course compared to 51.4% of students post-course, indicating an increased awareness of the importance of foundational audiology knowledge for speech-language pathologists.

**Table 3**

*Pre- and post-course responses to the question "How interested are you in the profession of audiology?"*

| Response | Pre-Course (*n* = 41) | | Post-Course (*n* = 37) | |
|---|---|---|---|---|
| | **Frequency** | **Percentage** | **Frequency** | **Percentage** |
| Not at all (1) | 7 | 17.1 | 4 | 10.8 |
| Somewhat (2) | 20 | 48.8 | 11 | 29.7 |
| Moderately (3) | 7 | 17.1 | 11 | 29.7 |
| Very (4) | 2 | 4.9 | 6 | 16.2 |
| Extremely (5) | 5 | 12.2 | 5 | 13.5 |

**Table 4**

*Pre- and post-course responses to the question "How useful is it for SLPs to have a general working knowledge of audiology?"*

| Response | Pre-Course (*n* = 41) | | Post-Course (*n* = 37) | |
|---|---|---|---|---|
| | **Frequency** | **Percentage** | **Frequency** | **Percentage** |
| Not at all (1) | 0 | 0.0 | 0 | 0.0 |
| Somewhat (2) | 1 | 2.4 | 0 | 0.0 |
| Moderately (3) | 4 | 9.8 | 1 | 2.7 |
| Very (4) | 25 | 61.0 | 17 | 45.9 |
| Extremely (5) | 11 | 26.8 | 19 | 51.4 |

Additionally, an open-ended question was asked of survey participants, "What do you think are some reasons that more people don't go into the profession of audiology?" Qualitative responses were coded by two separate researchers and were in good agreement (91% pre-course; 93% post-course). Both pre- and post-course survey responses could be coded into one of seven categories, which were as follows: (a) reasons related to undergraduate curriculum (e.g., audiology classes aren't introduced until later in the curriculum at the undergraduate level); (b) general perceptions of the field of audiology; (c) length/difficulty/cost of additional graduate school education; (d) not enough pay for the amount of schooling; (e) lack of general knowledge of the field of audiology; (f) personal preference for speech-language pathology or other fields; and (g) difficulty of the profession. Several students gave lengthier answers that incorporated multiple categories. Table 5

shows the number of students responding for each category, as coded by both researchers. When both researchers agreed, the response was counted as a single student response. When disagreement occurred between the researchers, the response was still included in the final count as a single student response (e.g.., if one researcher coded "1,5" and the other coded "1" only, the "5" was still included as one student response in the final count).

**Table 5**

*Number of students pre- and post-course responding to the question "What do you think are some reasons that more people don't go into the profession of audiology?" coded according to topic.*

| **What do you think are some reasons that more people don't go into the profession of audiology?** | **Pre-Course (*n* = 36)** | **Post-Course (*n* = 36)** |
|---|---|---|
| Reasons related to undergraduate curriculum | 8 | 6 |
| General perceptions of audiology | 3 | 1 |
| Length/difficulty/cost of additional education | 15 | 15 |
| Not enough pay for the amount of schooling | 2 | 1 |
| Lack of general knowledge of the field | 10 | 6 |
| Personal preference for speech pathology or other fields | 5 | 7 |
| Difficulty of the profession | 1 | 4 |

**Labs and Mentoring.** Students were also asked targeted questions regarding the lab experiences and mentoring components of the course, both in the pre- and post-course surveys, as well as in each individual lab wrapper. There was a significant increase pre- to post-course in positive student perceptions regarding helpfulness of a hands-on approach to learning. Student responses indicating that hands-on approaches are "extremely" helpful to learning course content changing from 31.6% pre-course to 70.3% post-course (Table 6). Overall responses regarding mentoring were also positive; over 75% of respondents indicating that their graduate mentor was either "most of the time" or "always" helpful in explaining concepts for the lab (Table 7). Additionally, over 80% of students reported that they were able to discuss topics with their graduate mentor beyond what was required for the course, including graduate school applications and graduate school in general (Table 8).

Lab wrappers for each lab were also assessed descriptively. The post-lab portion of the wrapper assessed student perceptions regarding the extent to which the graduate mentor helped in understanding of course concepts on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Results for all three labs revealed that the majority of students scored their mentor as a "5" or better with regard to helping the students understand concepts, although the perceived helpfulness of the mentor seemed to decrease in the third lab (Table 9).

**Table 6**

*Pre- and post-course responses to the question "Is it helpful to have a more hands-on approach to learning?*

| Response | Pre-Course (*n* = 41) | | Post-Course (*n* = 37) | |
|---|---|---|---|---|
| | **Frequency** | **Percentage** | **Frequency** | **Percentage** |
| Not at all (1) | 0 | 0.0 | 0 | 0.0 |
| Somewhat (2) | 0 | 0.0 | 0 | 0.0 |
| Moderately (3) | 9 | 22.0 | 2 | 5.4 |
| Very (4) | 19 | 46.3 | 9 | 24.3 |
| Extremely (5) | 13 | 31.7 | 26 | 70.3 |

**Table 7**

*Post-course responses to the question, "Was your mentor helpful to you in explaining concepts for the lab?" (n=36)*

| Response | Number of students | Percent of total students responding |
|---|---|---|
| Never | 0 | 0.0 |
| Sometimes | 4 | 11.1 |
| About half the time | 4 | 11.1 |
| Most of the time | 9 | 25.0 |
| Always | 19 | 52.8 |

**Table 8**

*Post-courses responses to question "Did you ever discuss anything outside of lab exercises with your mentor (audiology as a whole, graduate school applications, graduate school experiences, etc.)?" (n = 36)*

| Response | Number of students | Percent of total students responding |
|---|---|---|
| Yes, on several occasions (1) | 8 | 22.2 |
| Occasionally, once or twice (2) | 21 | 58.3 |
| Never (3) | 7 | 19.4 |

**Table 9**

*Lab wrapper responses (scored on a 7-point Likert scale, 1=strongly disagree; 4=Neither agree nor disagree; 7 = Strongly agree) to the statement "My graduate mentor helped me understand the concepts discussed in class."*

| Response | Lab 1 (*n* = 35) | | Lab 2 (*n* = 37) | | Lab 3 (*n* = 37) | |
|---|---|---|---|---|---|---|
| | Frequency | Percentage | Frequency | Percentage | Frequency | Percentage |
| 1 | 0 | 0.0 | 0 | 0.0 | 3 | 8.1 |
| 2 | 0 | 0.0 | 1 | 2.7 | 1 | 2.7 |
| 3 | 0 | 0.0 | 0 | 0.0 | 1 | 2.7 |
| 4 | 0 | 0.0 | 2 | 5.4 | 10 | 27.0 |
| 5 | 3 | 8.6 | 2 | 5.4 | 7 | 18.9 |
| 6 | 5 | 14.3 | 6 | 16.2 | 5 | 13.5 |
| 7 | 27 | 77.1 | 26 | 70.3 | 10 | 27.0 |

## Discussion

The present study sought to examine the impact of both near-peer mentoring and clinical laboratory exposure on undergraduate student career preparedness and perceptions of the profession of audiology. After the course, students who were undecided on their post-graduation plans reported increasing interest in audiology graduate programs. While students reporting "definitely team SLP" or "going to graduate school outside of SHS (speech and hearing science)" did not change significantly from pre- to post-course, students that reported more uncertainty about their post-graduation plans reported leaning more toward audiology post-course. Additionally, more students reported perceiving they had enough experience to make future career decisions post-course compared to pre-course.

There was also a change in perceptions of the profession of audiology from pre- to post-course. Students reported an increased interest in the profession of audiology from pre- to post-course. Importantly, in response to the question, "How useful is it for SLPs to have a general working knowledge of audiology?", the number of students responding "extremely" nearly doubled from pre-course to post-course, indicating an increased awareness of the importance of foundational audiology knowledge for speech-language pathologists.

Finally, the last set of questions examined the helpfulness of both lab exercises and mentoring. Student responses of "extremely" to the question, "How helpful is it to have a more hands on approach to learning?" more than doubled from pre-course to post-course, showing a significant

change in perception regarding hands-on lab experiences over the duration of the course. Overall responses regarding mentoring were also positive, with over 75% of respondents post-course indicating that their graduate mentor was either "most of the time" or "always" helpful in explaining concepts for the lab, and over 70% indicating that their graduate mentor helped clarify concepts discussed in class for Labs 1 and 2, although the number decreased for Lab 3 (more students responded neutrally for Lab 3). Additionally, over 80% of students reported post-course that they were able to discuss topics with their graduate mentor beyond what was required for the course, including discussing graduate school applications and graduate school in general, suggesting that the mentoring relationship carried over beyond the lab activities.

While it is somewhat difficult to disentangle the factors contributing to pre- to post-course changes in career preparedness and perception, questions targeting specific course components indicated that, in general, students perceived the lab exercises to the most helpful in career preparedness. Student responses to the question, "What do you think are some reasons that more people don't go into the profession of audiology?" were also revealing regarding perception of the profession. They indicated that the majority of students both pre- and post-course perceived the additional graduate education to be a major contributing factor (Table 5). However, other common factors included reasons related to the undergraduate curriculum, lack of general knowledge of the field, and personal preference for speech-language pathology or other fields. Open-ended questions also provided a window into student perceptions. Several students mentioned how helpful the lab exercises were in piquing interest and clarifying course concepts, addressing some of the above-mentioned concerns. In response to the question, "How did your perception of the profession of audiology change over the course of the semester?", one student responded, "Doing the labs, audiology became a lot more interesting to me. I think I admire the profession a lot more, seeing how much work actually goes into and how much knowledge a professional must actually possess." Another student reported, "The hands-on labs incorporated into this class really helped me understand the lessons, but also let me experience what it would be like to actually work in this field."

Open-ended questions also provided insight into the inherent challenges in incorporating lab requirements and near-peer mentoring in an undergraduate group. Many students reported difficulties scheduling the labs, as there was no set time to do so. Future studies incorporating lab exercises may consider a set "lab class time," where students pre-register and have a pre-set lab time to complete their activities. Two undergraduate students also mentioned that their graduate mentor did not take the labs seriously and treated the lab as "an extra task they're having to do." Because the survey responses were anonymous, there is no way to track which students reported this, and it is possible that these students both were reporting on a single graduate student. Several graduate students also informally reported that a few undergraduate students displayed a lack of interest in the labs. Two students also reported that their graduate mentor seemed "unsure" of protocols and unable to sufficiently answer questions. Although the graduate students were taught the material in class and performed more complex labs on each other prior to mentoring the undergraduates, it is important to note that all graduate students were first year, first semester students in the graduate program, and still somewhat novice learners themselves. In line with many other Au.D. programs in the country, as first year, first semester graduate students, the mentors were only allowed to observe in the clinic. Therefore, they themselves were only beginning to learn the clinical equipment and protocols. Because of this, it can be assumed that the difference

in knowledge and experience between graduate mentors and undergraduate mentees was minimal. It is likely that more advanced graduate students (such as third year students) might provide more benefit as mentors due to their increased knowledge and experience in the clinical setting. However, third year students are also further removed from many of the challenges faced by undergraduates (e.g., graduate school applications, making professional/career decisions) and therefore might also be less effective as mentors in these particular areas.

Despite these challenges, undergraduate students generally reported significant benefit from both the lab exercises and near-peer mentoring in terms of career preparedness, perceptions of the profession of audiology, and clarification of course concepts. Student responses to lab wrappers and post-course surveys indicated that they perceived the lab exercises to be more beneficial than the mentoring component, although both were generally helpful. Undergraduate exposure to the field of audiology, especially to hands-on clinical components, can have a beneficial influence on student perceptions of career preparedness and perceptions of the profession of audiology.

Not all universities with undergraduate CSD programs have graduate audiology programs or in-house clinics. As noted above, while students felt the mentoring component was beneficial, they perceived the lab exercises as more helpful to overall career preparedness. Therefore, even in CSD programs without audiology graduate students, the lab components could still be implemented by the instructor or with the help of a trained teaching assistant. Additionally, although the labs in this study were conducted in an in-house clinical setting, many of the components could be done in a classroom or laboratory setting with the use of simple screening tools (e.g., otoscope, screening audiometer, screening tympanometer). Indeed, taking audiologic case histories, performing otoscopy, and performing simple pure tone audiometry with a screening audiometer can largely be completed in a classroom setting, while still allowing for hands-on experience that the students in the present study reported to be so beneficial.

**Limitations and Future Research Considerations**

It should be noted that, while the questions utilized in the survey were extensively peer reviewed by both SoTL and CSD experts, they were developed by investigators and were piloted in this project. Future research should serve to further validate the questions used in both the pre- and post-course surveys and the lab wrappers. Additionally, as noted above, the graduate student mentors in the study were just beginning their graduate careers and lacked both knowledge and clinical experience compared to higher-level graduate students or faculty.

Future research should explore ways to overcome the above-mentioned challenges to incorporate more clinical audiology experiences and mentoring for undergraduate CSD students. Additionally, future research should seek to compare the benefits between first year and third year AuD students as mentors to undergraduate students. Future studies should also seek to compare the efficacy of peer mentoring and near-peer mentoring in CSD programs, as this is an area that has not specifically been explored.

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## Appendix A

**Pre-Course Survey**

1. What is your current status?
   A. Junior
   B. Senior
   C. Other

2. What is your current career plan for graduate school?
   A. Definitely team speech pathology
   B. Not sure, but learning more toward speech pathology
   C. Completely undecided between speech pathology and audiology
   D. Not sure, but learning more toward audiology
   E. Definitely team audiology
   F. I am planning to apply to grad school for a career outside of speech pathology or audiology
   G. I am not planning to apply to graduate school

3. Please rate how influential you expect each of the following to be in preparing for your career in speech pathology or audiology:

   0 1 2 3 4 5 6 7 8 9 10

   - Past personal experience
   - Working in a helpring profession
   - Expected salary
   - Family member works in the field
   - Other

4. How did you first learn about the field of speech-language pathology and audiology?
   A. I received evaluation and/or treatment services from a speech-language pathologist and/or audiologist
   B. A family member of friend received evaluation and/or treatment services from a speech pathologist or audiologist
   C. I learned about the field from a high school counselor or college admissions counselor/recruiter
   D. I personally know a speech pathologist and/or audiologist
   E. Other

5. Please read the following statements and rate them accordingly.
   Not at all (1) Somewhat (2) Moderately (3) Very (4) Extremely (5)

   - How interested are you in the profession of audiology?
   - How useful is it for speech-language pathologists to have a general working knowledge of audiology?
   - Is it helpful to you to have a more "hands on" approach to learning (e.g. completing lab exercises) as opposed to a more traditional lecture approach?

6. Please read the following statements and rate them accordingly.
   No (1) Not sure (2) Yes (3)

   - Do you think you currently have sufficient knowledge to make decisions about your career path?
   - Do you think you have sufficient experience to make decisions about your career path?
   - Have you ever had any experience (observation, as a patient, etc.) with audiology?
   - Have you ever had any experience (observation, as a patient, etc.) with speech pathology?
   - Do you have any questions about the grad school application process?

7. How much do you feel you know about the profession of audiology at this point?
   A. 0-10%
   B. 11-20%
   C. 21-30%
   D. 31-40%
   E. 41-50%
   F. 51-60%
   G. 61-70%
   H. 71-80%
   I. 81-90%
   J. 91-100%

8. What do you think are some reasons that more people don't go into the profession of audiology?

**Post-Course Survey**

1. What is your current status?
   A. Junior
   B. Senior
   C. Other

2. What is your current career plan for graduate school?
   A. Definitely team speech pathology
   B. Not sure, but learning more toward speech pathology
   C. Completely undecided between speech pathology and audiology
   D. Not sure, but learning more toward audiology
   E. Definitely team audiology
   F. I am planning to apply to grad school for a career outside of speech pathology or audiology
   G. I am not planning to apply to graduate school

3. Please read the following statements and rate them accordingly.
   Not at all (1) Somewhat (2) Moderately (3) Very (4) Extremely (5)

   - How interested are you in the profession of audiology?
   - How useful is it for speech-language pathologists to have a general working knowledge of audiology?
   - Is it helpful to you to have a more "hands on" approach to learning (e.g. completing lab exercises) as opposed to a more traditional lecture approach?

4. Please read the following statements and rate them accordingly.
   No (1) Not sure (2) Yes (3)

   - Do you think you currently have sufficient knowledge to make decisions about your career path?
   - Do you think you have sufficient experience to make decisions about your career path?
   - Have you ever had any experience (observation, as a patient, etc.) with audiology?
   - Have you ever had any experience (observation, as a patient, etc.) with speech pathology?
   - Do you have any questions about the grad school application process?

5. How much do you feel you know about the profession of audiology at this point?
   A. 0-10%
   B. 11-20%
   C. 21-30%
   D. 31-40%
   E. 41-50%
   F. 51-60%
   G. 61-70%
   H. 71-80%
   I. 81-90%
   J. 91-100%

6. How did your perception of the profession of audiology change over the course of the semester?

7. Please rate how beneficial you found each of the following to be in preparing you for your career:

*Lab Exercises*

| Not at all satisfied | | | | Moderately satisfied | | | | | Extremely satisfied | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

*Mentoring Component*

| Not at all satisfied | Moderately satisfied | Extremely satisfied |
|---|---|---|


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0 1 2 3 4 5 6 7 8 9 10

*In-class lecture*

Not at all satisfied — Moderately satisfied — Extremely satisfied

0 1 2 3 4 5 6 7 8 9 10

*In-class activities*

Not at all satisfied — Moderately satisfied — Extremely satisfied

0 1 2 3 4 5 6 7 8 9 10

8. Did your experience in this course have any influence over your professional decisions moving forward?
   A. No, not at all-this course has had no bearing on my professional decisions
   B. It has further confirmed my desire to go into speech pathology
   C. It has further confirmed my desire to go into audiology
   D. It has made me reconsider choosing to go into speech pathology, and consider choosing audiology instead
   E. It has made me reconsider choosing to go into audiology, and consider choosing speech pathology instead
   F. I have completely changed my mind and decided to pursue audiology as a career
   G. I have completely changed my mind and decided to pursue speech pathology as a career

9. Was the clinical/lab component helpful to you in understanding the concepts learned in class?
   A. Not at all helpful
   B. Somewhat helpful
   C. Extremely helpful

10. Was your mentor helpful to you in explaining concepts for the lab?
    A. Always
    B. Most of the time
    C. About half the time
    D. Sometimes
    E. Never

11. Did you ever discuss anything outside of lab exercises with your mentor (audiology as a whole, graduate school applications, graduate school experiences, etc.)?
    A. Yes, on several occasions
    B. Occasionally (once or twice)
    C. Never

12. For future students, what do you think would be beneficial as an addition to this course? Would you like to see more (or less) of any particular activity? Is there anything you would add or take away?

13. What do you think are some reasons that more people don't go into audiology as a profession?


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## Appendix B

### LAB WRAPPERS

### Lab 1: Case History and Otoscopy

Below are several statements that reflect the goals of this assignment. In particular, one of the goals of all of the labs is to help you gain exposure to the audiology clinical world. In this particular lab exercise, the goal is to help you learn more about taking case histories and performing otoscopy, two skills that are vital to all clinical audiologists.

**PLEASE COMPLETE ***BEFORE*** BEGINNING THE LAB:**
Before you actually begin this lab exercise, please rate how true each of the following statements is for you. Use a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree."

**1_____2_____3_____4_____5_____6_____7**
**Strongly Disagree** **Neither Agree nor Disagree** **Strongly Agree**

- I am very familiar with taking case histories. 1 2 3 4 5 6 7
- I am very familiar with the purpose of otoscopy. 1 2 3 4 5 6 7
- I have had someone look in my ears with an otoscope. 1 2 3 4 5 6 7
- I am very familiar with performing otoscopy. 1 2 3 4 5 6 7

**PLEASE COMPLETE ***AFTER*** THE LAB:**
Now that you've completed the lab, please again answer the following questions on a rating scale of 1 (strongly disagree) to 7 (strongly agree

**1_____2_____3_____4_____5_____6_____7**
**Strongly Disagree** **Neither Agree nor Disagree** **Strongly Agree**

- I understand the importance of taking an efficient case history to the diagnostic audiology process. 1 2 3 4 5 6 7
- I feel confident explaining otoscopy to a patient. 1 2 3 4 5 6 7
- I feel confident performing otoscopy. 1 2 3 4 5 6 7
- My graduate mentor helped me understand the concepts discussed in this lab. 1 2 3 4 5 6 7

- How long did you spend in the clinic completing this lab?
- How long did you spend answering questions for this lab?
- What new knowledge and/or skills, if any, do you have from completing this lab that you did not have from your readings or class?
- How did this lab change your understanding of audiology as a profession?

**Lab 2: Pure Tone Audiometry**

For this lab, you will learn about pure tone audiometry and get the experience of "being a patient" by having tests performed on you. As with Lab 1, below are several statements that reflect the goals of this assignment.

**PLEASE COMPLETE *BEFORE* BEGINNING THE LAB:**

Before you actually begin this lab exercise, please rate how true each of the following statements is for you. Use a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree."

**1_____2_____3_____4_____5_____6_____7**
**Strongly Disagree** **Neither Agree nor Disagree** **Strongly Agree**

- I am very familiar with pure tone audiometry. 1 2 3 4 5 6 7
- I feel comfortable giving instructions for pure tone audiometry to a patient. 1 2 3 4 5 6 7
- I know the steps of the modified Hughson-Westlake procedure well. 1 2 3 4 5 6 7
- I feel comfortable using an audiometer. 1 2 3 4 5 6 7

**PLEASE COMPLETE *AFTER* THE LAB:**

Now that you've completed the lab, please again answer the following questions on a rating scale of 1 (strongly disagree) to 7 (strongly agree)

**1_____2_____3_____4_____5_____6_____7**
**Strongly Disagree** **Neither Agree nor Disagree** **Strongly Agree**

After completing this lab...

- I feel confident giving instructions for pure tone audiometry to a patient. 1 2 3 4 5 6 7
- I know the steps of the modified Hughson-Westlake procedure well. 1 2 3 4 5 6 7
- I feel comfortable using an audiometer. 1 2 3 4 5 6 7
- My graduate mentor helped me understand the concepts discussed in this lab. 1 2 3 4 5 6 7
- My perception of the profession of audiology has changed as a result of this lab. 1 2 3 4 5 6 7
- How long did you spend in the clinic completing this lab?
- How long did you spend answering questions for this lab?
- What new knowledge and/or skills, if any, do you have from completing this lab that you did not have from your readings or class?
- How did this lab change your understanding of audiology as a profession?

**Lab 3: Speech Audiometry**

For this lab, you will learn about speech audiometry. As with previous labs, below are several statements that reflect the goals of this assignment.

**PLEASE COMPLETE *BEFORE* BEGINNING THE LAB:**
Before you actually begin this lab exercise, please rate how true each of the following statements is for you. Use a scale from 1 to 7, where 1 is "strongly disagree" and 7 is "strongly agree."

**1_____2_____3_____4_____5_____6_____7**
**Strongly Disagree** **Neither Agree nor Disagree** **Strongly Agree**

- I am very familiar with speech audiometry. 1 2 3 4 5 6 7
- I am very familiar with PB Rollover testing. 1 2 3 4 5 6 7
- I feel comfortable explaining the differences between SRT, WRS, and UCL. 1 2 3 4 5 6 7

- I feel comfortable giving instructions to a patient for speech audiometry. 1 2 3 4 5 6 7

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**PLEASE COMPLETE *AFTER* THE LAB:**

Now that you've completed the lab, please again answer the following questions on a rating scale of 1 (strongly disagree) to 7 (strongly agree).

**1_____2_____3_____4_____5_____6_____7**
**Strongly Disagree** **Neither Agree nor Disagree** **Strongly Agree**

After completing this lab…

- I feel confident giving instructions for speech audiometry to a patient. 1 2 3 4 5 6 7
- I feel comfortable differentiating between SRT, WRS, and UCL.
  1 2 3 4 5 6 7
- I understand the purpose of PB Rollover and know when to use it. 1 2 3 4 5 6 7
- My graduate mentor helped me understand the concepts discussed in this lab. 1 2 3 4 5 6 7
- My perception of the profession of audiology has changed as a result of this lab. 1 2 3 4 5 6 7
- How long did you spend in the clinic completing this lab?
- How long did you spend answering questions for this lab?
- What new knowledge and/or skills, if any, do you have from completing this lab that you did not have from your readings or class?
- How did this lab change your understanding of audiology as a profession?


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