2012 Needs Assessment

NDC
National Deaf Center
on Postsecondary Outcomes

Summary

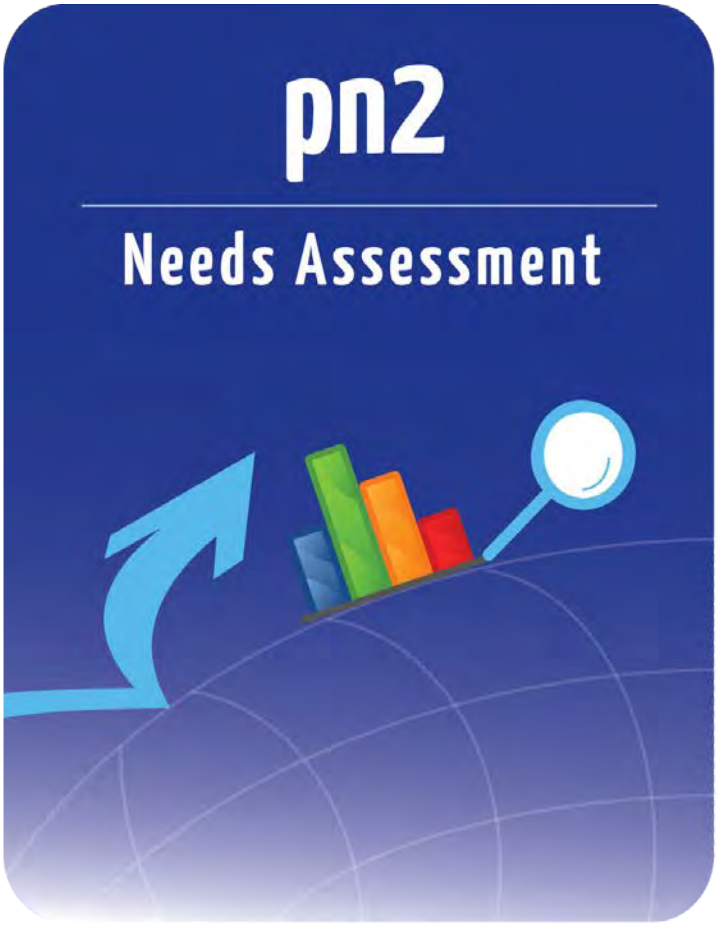
Pn2 conducted a comprehensive needs assessment as part of the first funding cycle, 2012–2016. More than 1,500 deaf individuals, parents, and professionals participated in surveys, interviews, and focus groups throughout spring and summer of 2012. The full details of the needs assessment methods, participants, and results are provided in this report.

NDC
National Deaf Center
on Postsecondary Outcomes

IDEAs that Work
Office of Special Education Programs
U.S. Department of Education

TA&D
NETWORK

Portions of the enclosed content were developed during past cycles of Department of Education funding. In 1996, the Department of Education funded four regional centers collectively known as Postsecondary Educational Programs Network (PEPNet). In 2011, the Department of Education changed the model from the four regional centers to one national center known as pepnet2. Materials from either or both PEPNet and pepnet2 cycles may be included herein.



Final Report

By Stephanie Cawthon and the pn2 RES Team

Dedication:

This report is dedicated to the memory of Mark E. Gobble: Colleague, Advocate, Father, and Friend.

Cawthon, S., & the pn2 RES team (2012). Pepnet 2 Needs Assessment Final Report. Austin, TX

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pn2 Needs Assessment
Executive Summary

pn2 conducted a comprehensive Needs Assessment as part of the first year 2012-2016 funding cycle. Over 1,500 individuals who are deaf or hard-of-hearing (DHH), parents, and professionals participated in surveys, interviews, and focus groups throughout spring and summer 2012. The full details of the Needs Assessment methods, participants, and results are provided in this report. In particular, the end of each main chapter includes a summary of implications, opportunities, and limitations of the results from the Needs Assessment. Key findings from this Needs Assessment include:

- **Experience Matters**: For professionals who serve individuals who are DHH, experience is a significant predictor of successful outcomes. Building opportunities for intensive experiences, particularly for professionals whose contact with DHH is not a regular part of their job, could be an impact point for pn2 professional development.

- **Mental Health:** Mental health conditions are a high prevalence co-occurring disability that receives little attention in assessment and practice with individuals who are DHH. Many institutions and agencies may benefit from specific training in this area.

- **Self-Advocacy:** Participants across the Needs Assessment discussed the critical importance of self-advocacy in successful postsecondary transition and outcomes.

- **Identity, Language, and Communication**: Choices about DHH identity, language, and communication modalities is an important topic for youth in transition, particularly in terms of choices about postsecondary training environments.

- **Orientation Programs**: Institutions can make their campuses or sites more accessible by developing orientation programs or opportunities for DHH youth to connect with each other as they are beginning their postsecondary experience.

- **Workplace Accommodations**: Students benefit when postsecondary programs and settings discuss workplace accommodations before they go on the job market. Specific strategies for disclosure and examples on accommodations for a range of workplace environments could be a focus of both technical assistance and professional development.

- **Outcomes Data:** There is inadequate information about how individuals who are DHH do when they leave postsecondary training. Building capacity in this area for states, regions, or institutions could be a focus of pn2.

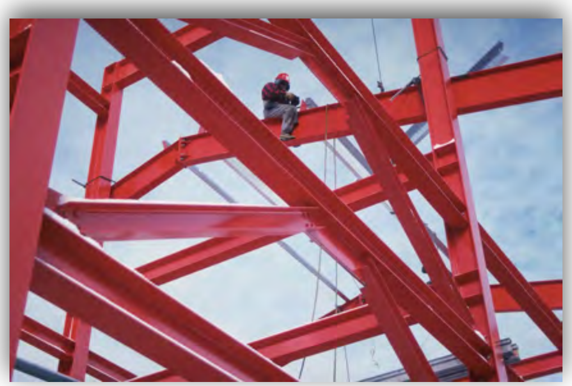
- **Database:** The pn2 database has a strong representation of Caucasian female professionals, ages 40-60. pn2 would benefit from outreach to broaden the demographics of its members, including parents, youth, and individuals from diverse linguistic, ethnic, and cultural backgrounds.

Chapter One: Introduction

Welcome!

In November 2011, pn2 began the process of conducting a wide-scale Needs Assessment. The overarching purpose of the Needs Assessment was to capture a wide range of perspectives to identify key issues that affect transition and postsecondary outcomes for individuals who are deaf or hard-of-hearing. The data gleaned from this Needs Assessment will provide pn2 with the information needed to plan and implement the work to be conducted in the current grant cycle (2011-2016), which includes technical assistance, professional development, research and evidence synthesis, and leadership activities. With this evidenced-based data, pn2 can be assured that its programmatic architecture and infrastructure are foundationally sound.

This chapter serves as an overview of the purpose and goals of the Needs Assessment, our general framework for understanding the findings of the Needs Assessment, priorities laid out in the planning of the Needs Assessment, and the structure of the remaining chapters in this document.

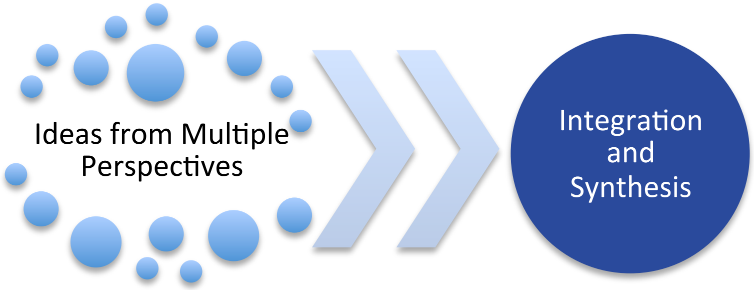


The Needs Assessment findings provide structure for future project activities.

Guidelines for the Needs Assessment come from the Office of Special Education Programs (OSEP) Request for Proposals for the grant and from the pn2 strategic plan. The Needs Assessment is an activity of the second goal of the project: To advance the field. As part of this larger vision for pn2, the activities related to the Needs Assessment do not end with this report. Rather, the Needs Assessment is a part of a larger, ongoing process of rigorous investigation into the critical factors that influence and shape experiences for individuals who are deaf or hard-of-hearing.

Purpose of this Document

The purpose of this document is to provide, in written form, a summary of findings from the year-long data collection process. It summarizes perspectives from a wide range of participants. In most cases, findings in this document reflect groups of individuals' perspectives from multiple points of view. While we do present quotations from individual participants where relevant, it is important to remember that the Needs Assessment's overarching purpose is to capture a wide range of perspectives to identify key issues that affect transition and postsecondary outcomes for individuals who are deaf or hard-of-hearing.



This main document is lengthy and captures the majority of the information that we collected over a one-year period. From this document will come smaller, more digestible pieces for dissemination both within pn2 and to our stakeholders. The plan for this dissemination is described in Chapter 9: Moving Forward. This document should not be viewed as static; it is our hope that the Needs Assessment will serve as a catalyst for further discussion on the key issues in the field and potential roles and places of impact for pn2 activities.

Needs Assessment Design Contributors

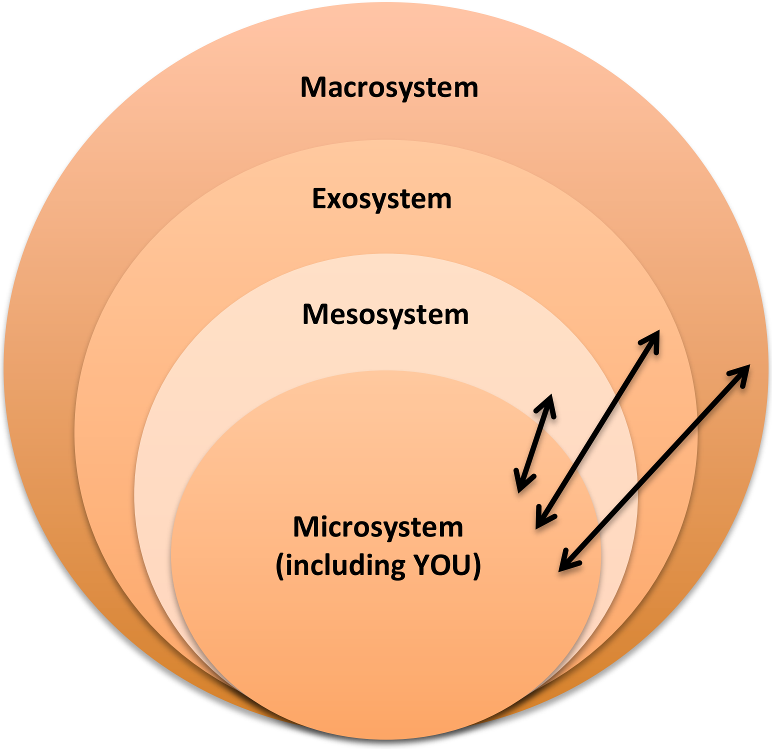
The pn2 Research and Evidence Synthesis (RES) unit, housed at The University of Texas at Austin, held primary responsibility for the Needs Assessment process. Members of the team include doctoral students with expertise in the Needs Assessment content areas as well as the range of methodologies used to collect data. RES team members are, in alpha order by last name: Mark Bond, Dr. Stephanie Cawthon (Associate Director for RES), Jackie Caemmerer, Mark Gobble (RIP), Carrie Lou Garberoglio, Grace Hamilton, Rachel Leppo, Josh Rainey, and Sarah Schoffstall.

Back Row: Jackie Caemmerer, Josh Rainey, Grace Hamilton, Mark Bond
Front Row: Sarah Schoffstahl, Rachel Leppo, Carrie Lou Garberoglio, Dr. Stephanie Cawthon

This process would not have been possible without the time, dedication, and contributions from an entire community of individuals from across the country. The RES team solicited input from experts in a wide range of content areas, both within pn2 and those who have worked with individuals who are deaf or hard-of-hearing in a variety of settings. Care was taken to ensure active participation by individuals who are deaf or hard-of-hearing throughout the development of the Needs Assessment plan. In total, nearly 100 people participated in the development of our Needs Assessment approach.

Ecological Systems Framework

This Needs Assessment is guided by an ecological systems approach to human behavior and development (Urie Bronfenbrenner, 1979). This ecological systems framework) assumes that we grow and experience life in a context, not as an island by ourselves. This context includes people we interact with every day, those in our homes and communities, as well as larger structures that influence us in different ways, such as state systems, federal agencies, and larger societal movements. Although these structures may seem removed from our everyday lives, they shape the world that we live and interact in on a daily basis. For example, the Individuals with Disabilities Education Act, or IDEA, lays out specific transition planning guidelines for how students who are eligible for special education or special services. IDEA, as a law, is thus part of the larger environment that a young adult lives in, implemented on a local level by her teachers, parents, and, most importantly, herself.



Each layer of the system moves from close to a person (e.g., the microsystem is one's immediate, home environment), to more abstract, larger factors at work in the world. The most abstract is the macrosystem, but this by no means lessens its impact on an individual. This largest system includes factors such as time in history, cultural ideals, whether a country is at war or at peace, economic times of prosperity or stress, and so on. This model is helpful when one tries to think about all of the different things that affect a person's experiences and outcomes because it helps us to organize where different factors come from in our environment. It is critical to note the bi-directional arrows from the individual to each of the other layers. We are not passive in how people or contexts affect us; we actively, even without knowing it, evoke responses from other people through our individual characteristics, personalities, and experiences. The arrows represent the assumption that life is a two-way street, and that individuals interact with their environment through their journey through life.

We use this basic ecological systems framework as a way of thinking about the different roles that individuals, agencies, and larger societal factors affect the lives of individuals who are deaf or hard-of-hearing. Each chapter is dedicated to persons or structures that fit in this framework, beginning with the individual who is deaf or hard-of-hearing and moving out to larger societal factors that influence postsecondary outcomes.

Terminology

Throughout this process, the RES team has been very aware of the critical need for clarity around terminology and labels related to deafness, education, legal guidelines, polices, and so forth. When our materials were reviewed by the Institutional Review Board, or IRB, we were asked to provide clear definitions of our terms at the start of every data collection activity. For the sake of clarity in this Needs Assessment report, we provide the definitions that our stakeholders received. These are not all-encompassing, but do provide a starting point for understanding the types of definitions we offered to people throughout the Needs Assessment process. A sample of key terms is provided below.

> ***"PEPNet": PEPNet*** *is a national technical assistance and professional development center sponsored by the US Department of Education, through the Office of Special Education Programs, also known as OSEP.The mission of PEPNet 2 (pn2) is to improve postsecondary outcomes of individuals who are deaf or hard-of-hearing.*
>
> ***"Postsecondary setting":*** *Settings and experiences after high school. This can include technical training, community colleges, vocational rehabilitation, four-year institutions, programs such as independent living, or other training or educational programs.*
>
> ***"Transition":*** *The process of moving from a secondary (middle and high school) setting to a postsecondary setting. Transition includes planning, preparation, setting goals, identifying settings for further training, gaining that training, and, if relevant, gaining employment after that training. Transition "teams" vary by location, but may include local teams and state teams.*

"IEP/ARD/504": *Transition plans may be discussed in the context of student's larger discussion of services. Depending o the eligibility an fit with the student, individuals may have an Individualized Education Program (IEP) plan under IDEA, a Admission, Review an Dismissal (ARD) process (e.g., in Texas), or a 504 plan. So while we will typically refer to an IEP, we extend this definition to all formal, legal planning tools that might include transition plans.*

Planning for the Needs Assessment

As part of the Needs Assessment development the RES team spent a significant amount of time working with the pn2 Leadership Team (LT), Dr. Louise Tripoli (Project Officer), and experts across the country to identify and clarify the Needs Assessment goals. The first part of this process was a two-day Needs Assessment planning meeting held in Austin, TX in December 2011. This meeting focused on four activities:

- **Interviewing** pn2 LT and Project Officer regarding previous experiences and desires for the current Needs Assessment;
- **Reviewing** content area literature and best practices for data collection;
- **Identifying** pros and cons of different methodologies for data collection; and
- **Discussing** priorities and targeted content areas for Needs Assessment.

Interviews. On Day 1, each pn2 LT member, as well as Dr. Tripoli, was interviewed by at least two members of the RES team. These interviews served as a way to gather information about previous experiences with Needs Assessment processes, what individuals liked, what they did not like, and what RES team could do to make this Needs Assessment a satisfactory experience. Their perspectives were summarized across the main steps of the Needs Assessment process: Development, Dissemination, Sampling, and Analysis. A summary of their expectations is provided in the table on the following page (**bolded items were mentioned multiple times).**

Needs Assessment Expectations

Process Component	Desired Outcome
Development of Process	• **Increase collaboration** • Capitalize on expertise • Bring in evidence-based practices • Use valid measures • **Have more meaningful data** • Be more specific on what is ‘needed’ • Use situational examples

Development of Items	• Explore Technology- how, when, where, who?
	• Recognize intangible items such as:
	    • Communities of practice
	    • Attitudes
	    • Engagement
	    • Motivation
	    • Persistence
	    • Dropping out- why?

Sampling	• **Capture differences within groups of stakeholders** • Find neglected individuals/groups • Need more from **students** and parents • Transitioning group — younger students • **Use Qualitative data** • **Follow up with participants, longitudinal tracking** • Need our sample to ‘buy in’ • Focus on Networking • Present at Conferences • Include focus groups • Strategize on how to capture student participation • Include ASL formats • Make it Interactive & online • Use social media
Analysis	• Capture overarching theme/themes • Provide big picture ideas • Identify critical areas • Streamline priorities • **Clarify priorities** for team to build products, guide practice
Dissemination	• Provide Clarity! Fit audience • **Make User friendly** • Make Online & interactive • Write up ‘Mini’ write up of results • Support training/Professional development.

Reviews. The RES Team then led a discussion of research literature and key areas related to Language and Communication, Identity, Advocacy, Deaf Education, Professional Development, Transition, Access, Institutional Capacities, and Family Support. Although brief, these discussions were rooted in the research literature and provided a context for the evidence base that currently exists in the field.

After this summary of the literature, we silently brainstormed important areas and potential research questions to pursue in the Needs Assessment. This brainstorm was conducted on large pieces of butcher paper throughout the room, each with a different category such as "vocational rehabilitation", or "community colleges" or "state agencies". The participants broke up into teams to delve into these areas further, and to look for ways to combine or prioritize questions for this first phase of the pn2 data collection process. These discussions were transcribed and synthesized for use in the second day of the Needs Assessment planning process.

Methods Pros and Cons. On Day 2 the team focused on the specific approaches for the Needs Assessment. There was a range of expertise in the room in terms of the populations that were to be targeted for the Needs Assessment, in the content areas to be measured, the settings, and the ways in which data could be reliably collected and interpreted. We also were aware that it is important to lay out best practices in data collection so as to strive for the highest standards in our Needs Assessment. We decided to start the day with a brief discussion of the pros and cons of various research methods. We focused on four key approaches:

- Surveys
- Focus Groups
- Interviews
- Standardized Measures

We provided example studies using each of these types of approaches and discussed, as a group, what we would need to be mindful of when making decisions about how best to investigate our research questions. For example, if a measure is standardized in written English, would the results of the measure still be valid if the measure were provided via an interpreter in ASL? As a further example, how much time could we ask a parent to provide in a Needs Assessment versus a professional who works in the field? This discussion provided a foundation for the next discussion that brought together both the content and the available methods for the Needs Assessment.

Discussion. Using all of the information presented thus far, we then worked together to brainstorm best matches between the Needs Assessment format and content areas. For example, the "Parent" category had a few key questions about parent awareness, advocacy and attitudes. We laid these out on a grid and then discussed potential ways to gather this information from parents.

Theme	Survey	Focus Group	Interview	Measures	Comments
Parent Awareness and Information about Transition					
Parent Advocacy					
Parent Attitudes					

Overview and Structure of Remaining Chapters

Content Overview

The remainder of this Needs Assessment report is divided into the following 8 chapters.

Chapter 2: Methodology. This chapter focuses on the methods used to collect information for the Needs Assessment. It describes the measures and pilot procedures used, the venues used to conduct interviews and focus groups, and the coding and analysis plans.

Chapter 3: Participants. This chapter describes the participants, providing information about demographics and experiences that they have in the field. The chapter includes information about each targeted stakeholder group: individuals, parents, and professionals.

Chapter 4: Individuals who are Deaf or Hard-of-Hearing: This chapter describes findings related to the transition and postsecondary experiences of individuals who are deaf or hard-of-hearing. Topics related to identity, language, self-advocacy, and future goals are explored in this chapter.

Chapter 5: Families and Friends: This chapter describes findings related to families, peers, and role models in the lives of individuals who are deaf or hard-of-hearing, including their views of the IEP process, expectations for future success, and the role of peers in postsecondary experiences for individuals who are deaf or hard-of-hearing.

Chapter 6: Professionals: This chapter describes findings from the perspective of professionals who serve individuals who are deaf or hard-of-hearing, including their perspectives on transition, postsecondary experiences, and workplace success.

Chapter 7: Institutions and Agencies: This chapter describes capacities of institutions and agencies that serve individuals who are deaf or hard-of-hearing, including postsecondary campuses and vocational rehabilitation. This chapter also includes discussion of larger systemic issues that go beyond one site or state that affect transition outcomes for individuals who are deaf or hard-of-hearing.

Chapter 8: Accommodations: This chapter focuses specifically on accommodations used in postsecondary settings and in the workplace. The chapter includes a discussion of accommodations quality and availability, rated by all three groups of stakeholders in this Needs Assessment. The chapter includes a discussion of interpreters, specifically.

Chapter 9: Moving Forward. This chapter is both a synthesis and a plan for how pn2 can use these findings to make decisions about professional development, technical assistance, research, and leadership activities. Chapter 9 also focuses on technology and ways in which our participants might access information and support from pn2.

Structure

Chapters 4-8 follow a similar structure and flow. The goal in each of these chapters is to provide both qualitative and quantitative data in a meaningful way. Each chapter begins with a "big idea" or overarching theme or question. Results are then presented as they as they relate to that larger concept. In most cases, data is provided in the following sequence.

Descriptive: Many of the initial findings in each chapter focus on "how much" participants reported on a particular outcome or theme. This is true for all of our data collection processes, both quantitative and qualitative. For survey data this is reported as "counts" of numbers and proportions of individuals who responded to an item, or for scaled items, the mean (average) score. For focus group and interview data this is reported as "counts" of themes that arose across all of our transcripts. All information is given in tabular or graphic form, with an accompanying description, when possible. This descriptive information provides a general overview of what participants reported across the board and is a broad snapshot of the area.

Disaggregated: As a follow up to the descriptive findings, we present, where available, disaggregated results. For the survey data, this is typically a table with the distribution of responses between groups of people, such as professionals who are in different roles or individuals who are in different settings. We only show the disaggregated survey data when there are meaningful differences to display. For the qualitative data, we display co-occurrence rates between codes, or themes that "hung together" during our analysis vs. items that tended to standalone. Taken together this disaggregation results in a more nuanced understanding of our Needs Assessment findings.

Statistical: For the survey data, there were some results where we had enough participants and meaningful information to look more closely at the types of relationships between different factors. For these we conducted appropriate statistical analyses such as chi-square statistics, ANOVAs, correlations, and regressions. Most of these findings are presented in tabular form with an emphasis on identifying statistically significant results. These findings help clarify the strength of relationships between personal characteristics, settings, and reported outcomes.

Interpretive: For the focus group and interview data, our team went beyond the "coding" process and looked at how responses from individuals and groups of participants shaped our understanding of the different factors involved in postsecondary outcomes for individuals who are deaf or hard-of-hearing. The team created written narratives that addressed each of the themes of Chapters 4-8; these are combined along with quotes from the transcripts to provide a contextual analysis of findings from the Needs Assessment.

After presenting the data each chapter has two concluding sections:

- Implications, opportunities, and limitations; and
- References

The purpose of the implications, opportunities, and limitations section is to synthesize across the data presented, highlight areas where pn2 might have a potential impact through its activities, and cautions as to limitations to this data set and the methodology used to collect it. The references section includes a brief list of related literature in the field for those who are interested in learning more about the topic.

Thank you for reading!

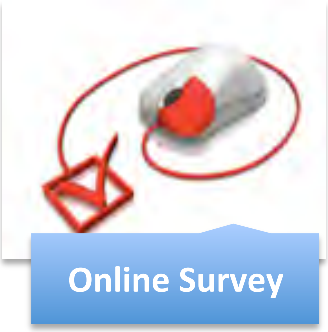
Chapter Two: Methodology

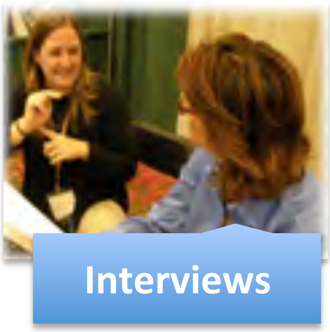
This chapter describes the process and methods used in the pn2 Needs Assessment. The pn2 Needs Assessment used a mixed-methods design, utilizing both qualitative and quantitative methodology. Our qualitative methods included interviews and focus groups, whereas our quantitative methods focused on a large-scale online survey. This chapter first covers how we developed and revised the measures. We then discuss the data collection and analysis process for the qualitative and our quantitative approaches. At the end of this chapter we review how the methodological choices made in this Needs Assessment affect how we present and interpret the findings from this study.

Development and Review

The design and content of the Needs Assessment tools came from the planning sessions held in November and December 2011, in Austin, Texas (described in Chapter One). The RES team took this information and divided up topics according to their breadth and relevance for three different audiences: deaf and hard-of-hearing individuals (DHH), parents of DHH, and professionals who serve DHH individuals.

To reach the target audiences, the team identified three primary tools: interviews, focus groups and surveys.


Online Survey


Interviews


Focus Groups at Conferences

The team then developed three versions of each tool, one each target audience. In total, nine tools were developed as noted in the following table.

Participant	Interview	Focus Group	Survey
Individual	x	x	x
Parent	x	x	x
Professional	x	x	x

Invitations to review the measures were sent out to over 100 individuals who possessed a wide range of expertise and experience. Most of the reviews occurred during February 2012. Reviewers had the option of providing comments online or live via a videophone conversation. In the end, over 50 people reviewed the Needs Assessment measures, with many individuals reviewing more than one tool. Comments were then transcribed and compiled into a master chart of proposed changes over 100 pages long.

All proposed revisions were discussed with the entire RES team and implemented whenever possible. In addition to the measures themselves, the Needs Assessment process included invitation scripts, consent forms, and related documentation. The pn2 Needs Assessment process was reviewed and approved both by The University of Texas at Austin Institutional Review Board (IRB) and the US Department of Education (Appendix A).

Data Collection

Interviews

The purpose of the interviews was to provide an in depth look at issues related to transition for individuals who are DHH. The interviews were primarily of individuals who work in the field, including those who are DHH. Future data collection will focus on more interviews of parents and individuals who are DHH.

The pn2 team conducted nine interviews in July 2012. These interviews occurred both at the Association on Higher Education and Disability (AHEAD) national conference in New Orleans and at a postsecondary program for DHH. When possible, teams of two RES graduate students were present for each interview. Each interview was scheduled for approximately one hour. Interviews were recorded via scribe or CART, creating a transcript of each interview. Participants received a copy of the interview transcript to review for clarity as a method of increasing reliability of our results, typically referred to as member checking. The focus group and interview procedures guide is available as Appendix B.

Focus Groups

The purpose of the focus groups was to engage in conversation with individuals in the field from a variety of perspectives throughout the system. Two of the focus groups were with students who had just entered postsecondary education, two were with professionals in related fields, and four were with professionals within deaf education. Each focus group began with an overview of the pn2 process, either through a formal PowerPoint presentation or through a more informal discussion of the pn2 mission statement and purpose of the focus group.

The pn2 team conducted 8 focus groups with over 70 participants from April through July 2012. These focus groups occurred at the American Educational Research Association (AERA) annual meeting, California Educators of the Deaf and Hard-of-Hearing (CALED) conference, AHEAD, and two programs for incoming postsecondary students. These focus groups ranged in size from three to over 15 people, depending on the setting. Each focus group was scheduled for approximately one hour.

Survey

The purpose of the survey was to provide information from a wide range of individuals in a relatively short period of time. The survey sought to summarize the experience of individuals with issues related to transition and postsecondary training. The survey was designed for three main groups: individuals who are DHH, parents of individuals who are DHH, and professionals who serve individuals who are DHH.

The survey launched via Surveygizmo in April 2012. The survey took an average of 10-15 minutes to complete and remained open until late June 2012. Invitations to participate in the survey were sent to the over 9,000 members in the pn2 database; advertised on the pn2 website, Facebook and twitter feeds; sent to partnering organizations via listservs and emails; and solicited during pn2 conference presentations throughout the spring of 2012. Over 1,500 participants, representing the three target audiences, responded to the survey.

Analysis

The Needs Assessment analysis process followed four key overarching questions:

- *How did individuals who are DHH's characteristics and contexts shape their experience of transition and postsecondary outcomes?*
- *How did professionals' experiences, preparation, and perspectives shape transition and postsecondary outcomes for individuals who are DHH?*
- *How did institutional capacity and resources shape transition and postsecondary outcomes for individuals who are DHH?*
- *How did larger societal factors shape transition and postsecondary outcomes for individuals who are DHH?*

Through these four overarching questions, we hope to better understand how pn2 can be a constructive and proactive part of the transition and postsecondary education process for individuals who are DHH. The description of the analysis process for the Needs Assessment is divided into two sections: qualitative (focus group and interviews) and quantitative (survey). There are places where the survey responses were in an open-ended text format; these responses were also analyzed via the qualitative process described below.

Qualitative

The qualitative analytic process is a reiterative approach to understanding main themes and findings in a dialogic dataset. This analytic process is strengthened by the "team" approach to the analysis: We had four team members with primary responsibility for coding across the 17 transcripts. Each transcript was coded by two team members, one who acted as a "primary" coder and one who acted as a "secondary" coder. An effort was made to ensure that at least one person on each team was present at the original interview or focus group. The role of the “primary” coder was to take a first attempt at coding and to be responsible for the final set of codes and the qualitative narrative for that transcript. The role of the “secondary” coder was to review the primary’s initial codes in order to ask questions and identify issues for discussion. After the discussion period, the primary coder went back and redid the codes for each transcript In addition to the primary, secondary, and discussion phase of the coding process, we also created a reliability coding process to show the extent to which our team was able to come to consensus on the codes. The reliability transcripts were randomly selected excerpts from across all of the interview and focus group texts. Our reliability was at 87% across all codes.

Codes were developed by the team using both a thematic analytic and grounded theory approach. An initial set of codes was developed by the team based on the content of the interview/focus group questions as well as main content areas that are part of the mission of pn2. This initial list was expanded and refined twice: once after an early review of the transcripts and again after the closer, primary and secondary coding process. The final code list and examples are provided below.

LANGUAGE AND COMMUNICATION (CODE: LC)
"Right, it goes back to the philosophy of the bi-bi method. I tell them to take a chance. Hopefully parents want them to have 10 fingers, 10 toes, but that's not it. You know, take a chance. So I would rather have the dual path, you know, signing, a good language foundation. You've got the speech skills? Great! Take advantage of it. If not, then you've got your ASL skills." (Deaf, professional)

DHH IDENTITY (CODE: DHH IDENT)
"I was mainstreamed in the 80s and 90s. I didn’t really learn ASL until I got to college. So my heart is with that class that has gone through the similar experience that I have. For those that have gone through schools for the deaf, it was hard for me to identify with that particular group because that wasn’t my experience, although we had similarities." (Deaf, professional)

ADVOCACY (CODE: ADV)
"A lot of students come to college and they don't have any idea where they're going, and they're having someone push them around. So the number one advocacy skill that I want all students to have, especially students who have been hovered over a lot, many of the students that come to the disability office have been hovered over an awful lot. They need to discover for themselves what they want to do with their life. The number one thing they have to do is learn how to advocate for their aspirations." (Hearing, professional)

SOCIOEMOTIONAL (CODE: SOCIOEMO)
"I hated school. All I wanted to do half the time was play football because it was the only thing that made me feel halfway close to people. I hated people that I sat around with because they would all have things handed to them in their life, money, cars, vacations. They had perfect eyesight, perfect hearing, and I just, I never really felt like it was the place for me." (Hard-of-hearing, postsecondary student)

GOALS (CODE: GOAL)
"I'm just excited for a new beginning and I'm excited to do what I want finally. I'm excited to play football; I'm excited to go to college. I want to be the first person in my family to graduate with a bachelor's degree." (Hard-of-hearing, postsecondary student)

OUTCOMES—ACADEMIC (CODE: OUT)
"So now I'm realizing, maybe they think this truly is an 'A' quality paper; an 'A' product. So now, do I tell them? Do I fail the child? Or do I have to change and kind of adjust to what their needs are? Because it's not their fault, but it kind of puts me in a bind because I want to maintain the academic rigor and integrity." (Deaf, professional)

FAMILY (CODE: FAM)
"My father refused to let me work there [at the oil rig]. I kept asking him why. He said, "You need to go to college first. Get your education. Because as you get older, you're not going to have much of a future if you don't have a college degree". I felt stuck. I was trying my best already. But he said, "You need to go to college to get the best education you can". My parents didn't want me to be stuck because they thought they were. I never really understood what they meant until now." (Hard-of-hearing, postsecondary student)

PEERS (CODE: PEER)
"Yeah it's good to do more of an informal question/answer kind of thing because I think that the high school students might have questions that they would like to ask as opposed to having somebody just present something. But also for the students that are in college, they know what really shocks them, or what really helped them. And so letting them have a chance to say their piece of what they feel is the most important thing that they learned." (Hearing, professional)

TRANSITION FACTORS—IEP & 9th-12th (CODE: TRANS)
"Well, maybe it's possible that the program itself is what failed the child. One example would be like an IEP is designed to make sure that the child reaches these goals. Unfortunately what happens is that the goals were based on very low standards to the point where they'll be achievable, that way the school looks good. So instead of setting up these really high standards and forcing the child to really work to get them, or getting close- and even if he's getting close they say, well he failed." (Deaf, professional)

VOCATIONAL REHABILITATION (CODE: VR)
"Well, what I would like to see is for us to be able to setup a program—a separate program from the school […] where they [deaf and hard-of-hearing ++ students] could be living there and so they're learning all of the independent living skills, and learning how to live with other people. And then being able to go out to a work site with support [...]." (Hearing, professional)

INSTITUTIONAL FACTORS (CODE: INST)
"Yeah well I think all things relating to accessibility are going to vary quite a bit by the size of the school and the resources they have available. As a major research institution, we sort of feel, for some reason, like we're scraping the bottom of the barrel for money but it's just because no one

wants to let loose of their own. But there's got to be a lot of money out there; it's just a matter of figuring out where it comes from." (Hearing, professional)

ACCOMMODATIONS AND SERVICES (CODE: ACC)
"The more information we have, particularly from a hard-of-hearing individual who is asking for accommodations specifically related to how they hear, because they have to listen to some part of the test, that's where you [pn2] may be useful. And it's often tricky getting the information that we need." (Hearing, professional)

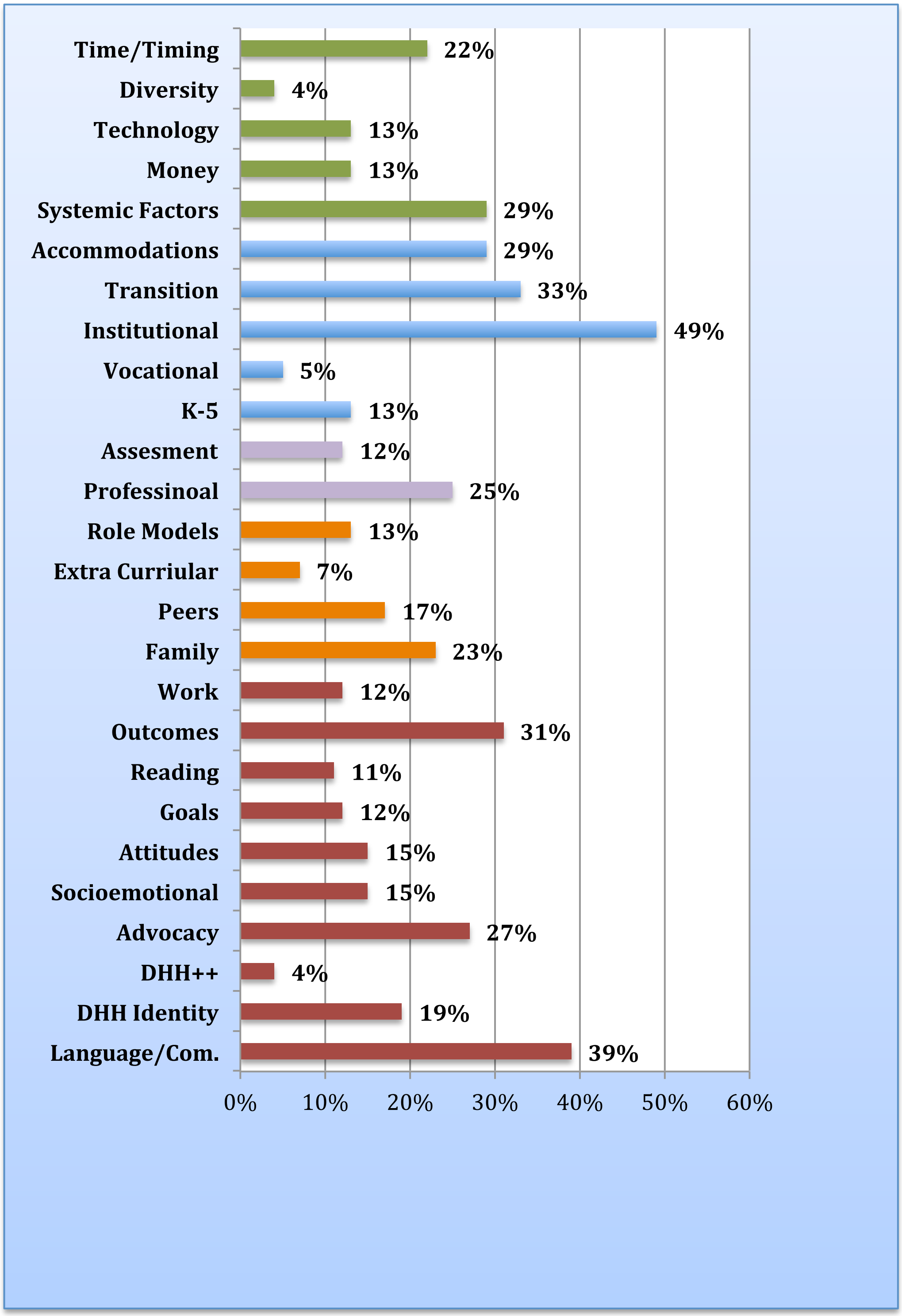
PERSONNEL AND SERVICE QUALITY/TRAINING (CODE: PROQUAL)
"Clearly experience [and training impact evaluator competency for deaf and hard-of-hearing students]. And certainly if nobody mentions anything about the possible consequences of hearing loss. . ." (Hearing, professional)

ASSESSMENT (CODE: ASSESS)
*"There may be some [students] who have co-occurring disabilities that aren't diagnosed. So sometimes they see reading or writing deficits, and, yeah, that's not surprising for someone who has a hearing loss. But the evaluator wouldn't have a clue. So we do get some who have been evaluated by somebody who is trained and experienced in working with students who are deaf and hard-of-hearing. And so we do get somewhere…I actually have some faith in the evaluation indicating that there is a co-occurring disability. But there are just a lot more [for individuals] where the evaluation is worthless." (*Hearing, professional)

SOCIETAL FACTORS—INSTITUTIONAL OR PERSPECTIVE (CODE: SYSTEMIC)
"The cultural, societal, sub-barriers, […] attitudinal barriers build up expectations, not only of the students themselves so they cannot be limited but also of the environment, postsecondary environment in particular. Employers [as well] maybe. Erase some of the artificial constructs that stand in their way [deaf and hard-of-hearing] because of people's attitudes about deaf and hard-of-hearing." (Hearing, Professional)

A summary of the prevalence of each code is shown in the following table. It is organized, roughly, according to the systems framework used in analysis. The codes at the bottom of the list are proximal to an individual, whereas the codes at the top of the list are broader cultural, societal and more abstract concepts.

Code Prevalence



The results of the qualitative data in this Needs Assessment report draw on two main forms of data: Code Occurrence and Qualitative Narratives. Each type is discussed below.

Code Occurrence reflects the proportion of responses that included reference to the specific code, or theme, from the coding table. We divided up the transcripts in to response segments, so that each person's response to a question (either in a focus group or in an interview) counted as one "response". A code like TRANSITION occurred often, and had a high occurrence rate of 33% of all response segments. We also tracked which codes occurred together, or were frequently mentioned within the same response. A co-occurrence measure looks like a correlation statistic found in quantitative reports. A correlation varies from 0 to 1, and can have either a positive or negative value. For example, TRANSITION and TIMING were often discussed together, one would find a statistically significant positive correlation, in this case, $r = .29$ $p < .0001$. However, if two codes rarely, if ever, were mentioned together, you would have a very small r value, such as $r = .02$. We will refer to these co-occurrences as we discuss the qualitative findings throughout the document.

Although convenient in understanding overall trends, the Code Occurrence measures do not represent the full story in our qualitative analysis. **Qualitative Narratives** represent the bulk of the reported findings of the focus groups and interviews. These narratives represent the reflections that team members had as a result of spending weeks of intensive time with the transcripts. These written summaries are a result of their own individual processes, as well as in joint conversations. These narratives were structured around the four overarching questions at the top of this analysis section, and provide a space for further conversation and dialog about these experiences.

Quantitative

We used a quantitative approach to analyze our survey findings. Quantitative analyses were conducted using SPSS and SAS data analysis tools. As with the qualitative analysis, our focus included information about individuals, professionals, and institutions. We also asked for information about how pn2 might best serve our stakeholders, both in terms of important content and delivery methods.

After cleaning up the dataset, the RES team designed an analysis plan to describe both the demographics of the participants as well as their responses. This analysis plan provided the detailed, variable-focused perspective required to then conduct needed descriptive and statistical analysis on our survey dataset. We divided up our analysis into four main types:

- Descriptive
- Cross Tabulations
- Correlations
- Regressions

Descriptive analyses are mostly prevalence, percent of respondents, and average responses across groups. Descriptive findings give an overview of how the participants in these surveys responded to each main question. They provide a good summary of where people stand on an issue or their experiences in the field.

Cross tabulations are disaggregations of the results by groups. We chose to look mainly at groups based on demographic characteristics such as professional role, workplace setting, DHH status vs. hearing, DHH versus DHH with additional disabilities, among others. Where meaningful, we conducted statistics on the differences between groups, either as chi-square analyses or ANOVAs, depending on the nature of the variables**.**

Correlations are analyses that show the relationship between one variable and another. These are different than the cross tabulations because here we are not looking at the differences between groups but rather in the strength of the association between two factors. These are similar to the Code Occurrence described above. A correlation varies from 0 to 1, and can have either a positive or negative value. In the survey examples, if the number of DHH students served is highly correlated with the number of years of professionals' experience, one would find a higher correlation coefficient, such as $r = .75$. However, if two characteristics or responses rarely occurred together, one would have a small correlation, such as $r = .10$. We will explain the meaning of these correlations as they occur within the report. Overall it is most important to remember the old adage: Correlation is not causation. We can only say that factors are related to one another, not that one causes the other.

Regressions were used to answer questions in the analysis plan that looked at how many factors, not just one, contribute to an outcome or question of interest. In those cases a regression analysis was used to look at the relative contribution of different factors, such as number of DHH individuals served by the professional, language used, type of setting, and so on. The purpose here was to look at the amount of "variance explained" or how much the differences between outcomes (in an individual's response, for example) can be associated with the predicting factors. Regressions were typically done using "blocks" of variables, with personal characteristics entered first, then institutional characteristics. We used these regressions to look at "bigger picture" questions when the descriptive and preliminary statistical analysis indicated justification for the more in depth analysis.

The analysis plan was also divided into central questions with follow up analyses that we felt were most relevant to the Needs Assessment process. An excerpt of this analysis plan is below.

What do accommodations look like in settings that serve individuals who are DHH?

a. Do professionals prepare individuals to discuss accommodations with employers? How does this vary by role and setting?
b. Do professionals report that their setting provides accommodations for certification exams, when applicable? How does this vary by setting?
c. Do professionals report that their setting provides accommodations for extracurricular activities, when applicable? How does this vary by setting?

In the example above, the target for this question is “accommodations.” We asked about accommodations from all three of our groups – individuals, parents, and professionals. This section relates specifically to what professionals reported about accommodation use in their settings. For each question, we first started out with descriptive information such as “what accommodations are used?” or as in the example above, “do professionals prepare individuals to discuss accommodations with employers?”. We then looked at some more complex questions that included factors that influence those outcomes. In the excerpt above, there is reference to professionals’ role and setting as a key factor: How does this vary by role and setting? To answer this question, we looked at whether responses to this question are different for professionals with different roles (e.g., administrators, vocational rehabilitation specialists, disabilities office staff) and settings (e.g., two-year college or technical program, four-year program, independent living center). If there was an overall difference detected by omnibus statistical tests, we then ran post hoc comparisons to see more specifically where those differences may lie. A full online spreadsheet tracked the proposed question, variables involved, analysis approach, who completed it, and when the tasks were completed.

Implications, Opportunities, and Limitations

Readers of this Needs Assessment should be mindful of the following implications, opportunities, and limitations of the tools utilized and analyses conducted in the Needs Assessment.

Who Participated

The majority of persons who participated in our Needs Assessment were professionals, followed by individuals who are DHH. We had relatively few parents respond to the survey. Those parents who did participate in the pn2 Needs Assessment were also professionals in the field and/or DHH, and so may have brought a different perspective than hearing parents or parents who are not professionals in a related field. Instead of a parents’ perspective, we relied more heavily on information the students themselves.

As with all surveys, those who respond to the survey are likely those who are most familiar with pn2 or who are more likely to share their experiences with our organization. Therefore, these findings should not be seen as representative of the field as a whole. To the greatest extent possible, we contextualized the characteristics of the participants so that appropriate generalizations and conclusions about these findings might be made.

We were very fortunate to have the opportunity to spend several days at one postsecondary campus in conjunction with another pn2 activity (campus is not named to maintain the confidentiality of students and staff). This was not a planned activity in our Needs Assessment, but when the opportunity arose, it was a wonderful chance for our team to spend quality time on the campus. We are very grateful for the openness and support of everyone who participated in the data collection, particularly given the relatively compressed timeline. We would have loved to have this experience at more campuses and look forward to more in depth discussions at a range of sites as we continue our data collection this year.

Technology and Access

Technology played a significant role in the implementation of our Needs Assessment. For both qualitative and quantitative data collection, we relied on the strength of web-based technologies to reach our national audience. There were times when technical challenges arose and we were not able to capture all of the information as intended. For example, the survey platform was not always compatible with the platforms used by our participants. Although rare, there were times when the survey could not be fully completed.

During the focus groups and interviews we were often reliant on either an ASL interpreter, or a CART recorder, or both. These levels of translation most certainly had an impact on the accuracy of our transcripts. While the interviewees had an opportunity to review and revise the transcripts of their interviews, it was not possible for the same to be true for the focus group participants. We attempted to alleviate these mistranslations by always having one person on the interview or focus group team who shared the language of communication with the participant(s) and reviewing the transcripts for accuracy after the end of each session.

Self-Report

Throughout this Needs Assessment, it must be remembered that our participants reported the findings as they understood the questions asked of them. In all cases we use the term “participants reported that….”**.** This notation is important because we do not want to claim that we observed or had a way of checking on their responses to verify accuracy.

There were times when there were not opportunities to discuss the questions and the different ways one might answer them. This is particularly true in the survey, which despite our efforts to make accessible to a broad range of readers, was still very much a text-based experience. While the directions were presented in ASL in a video format, the modularity and length of the survey precluded a full ASL version of the survey itself. We do not know how many individuals may have left the survey due to difficulties with the reading level required to finish the survey.

Throughout the survey we provided spaces for participants to fill in “other” or to describe their responses. This allowed us to see what people were thinking if they felt they could not use one of the options we had provided for them. This categorization followed a similar coding process as we described for the qualitative codes. When we had a significant number of “other” responses that were the same, we created new code for them in the analysis.

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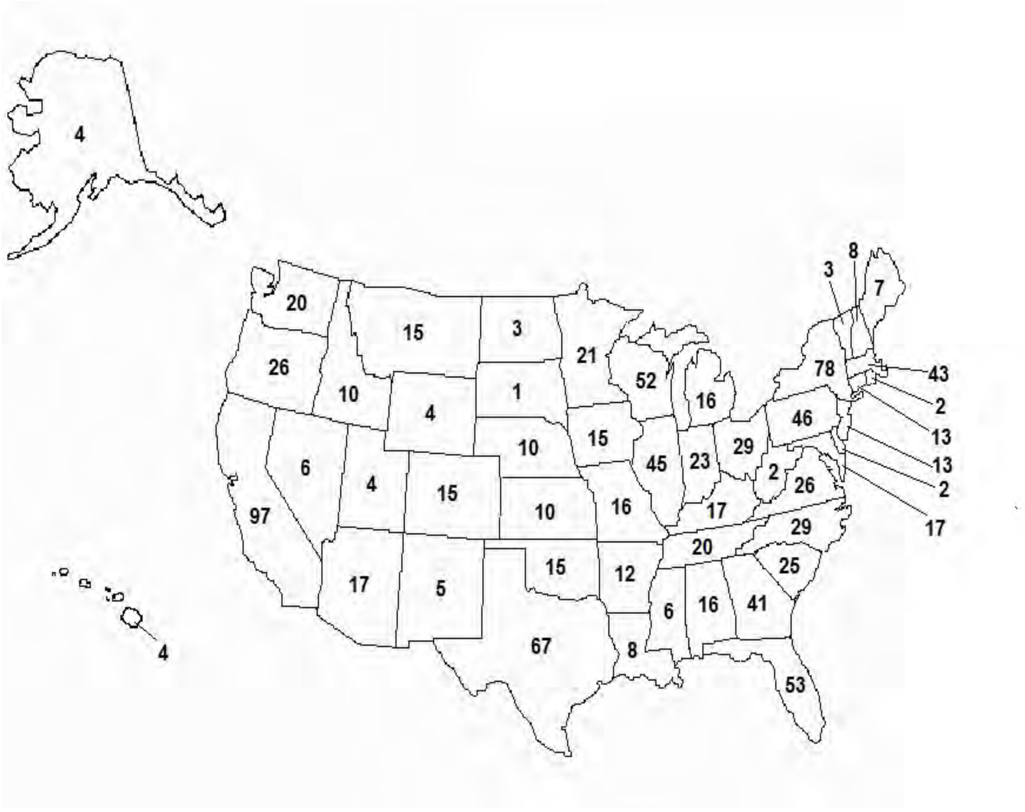
Chapter Three: Participant Demographics

Chapter 3 provides an overview of the demographics of the Needs Assessment participants. For the qualitative (interview and focus groups) participants, we provide a narrative overview of the participants. For the survey participants, we provide descriptive graphs and charts of overall demographics for our three main participant groups: individuals who are deaf or hard-of-hearing (DHH), parents of individuals who are DHH, and professionals who serve individuals who are DHH. This chapter concludes with the implications, opportunities, and limitations to the Needs Assessment due to the demographics of those who participated, along with some key references in the field.

Representation

We were fortunate to have participants from all 50 states. In addition, we had two participants from the District of Columbia, two from Puerto Rico, one from American Samoa, four from Guam, one from the Marshall Islands, one from the Northern Mariana Islands, three from the Virgin Islands, and five from outside the United States or Territories. The following map illustrates the geographic distribution of the participants.



Interview and Focus Group Participants

As part of the consent form process, we promised to keep all data confidential. Therefore we will not describe the individual characteristics of the participants. The interviews and focus groups were few enough in number that providing such information as specific professional roles and responsibilities could result in participant identification. Instead, we provide an overall description of each participant group.

We conducted nine interviews at the AHEAD conference and at a postsecondary campus. These interviews focused primarily on individuals with experience in postsecondary settings working directly with individuals who are deaf or hard of hearing. Participants were split between men and women and mostly represented individuals with at least a decade of experience in the field. They had a range of expertise within that context, from individuals who focus on assessment to those who provide accommodations or coordinate programs for incoming students. On the whole, these individuals were familiar with pn2 and the goals of the project.

We conducted eight focus groups across several regional and national conferences, including AERA, CALED, AHEAD, and the OSEP Project Director's Conference. The focus groups ranged in size from three to 15 individuals depending on the place and settings. The focus groups were split between groups of professionals who serve individuals who are DHH, professionals who are in related field but do not have expertise with DHH, and students who are DHH from a wide variety of backgrounds. The participants across the focus groups were split between men and women and across a broad age range. Not all individuals were familiar with pn2 but all were either participating in transition (as students) or who were focused on issues related to transition and postsecondary outcomes.

Survey Participants

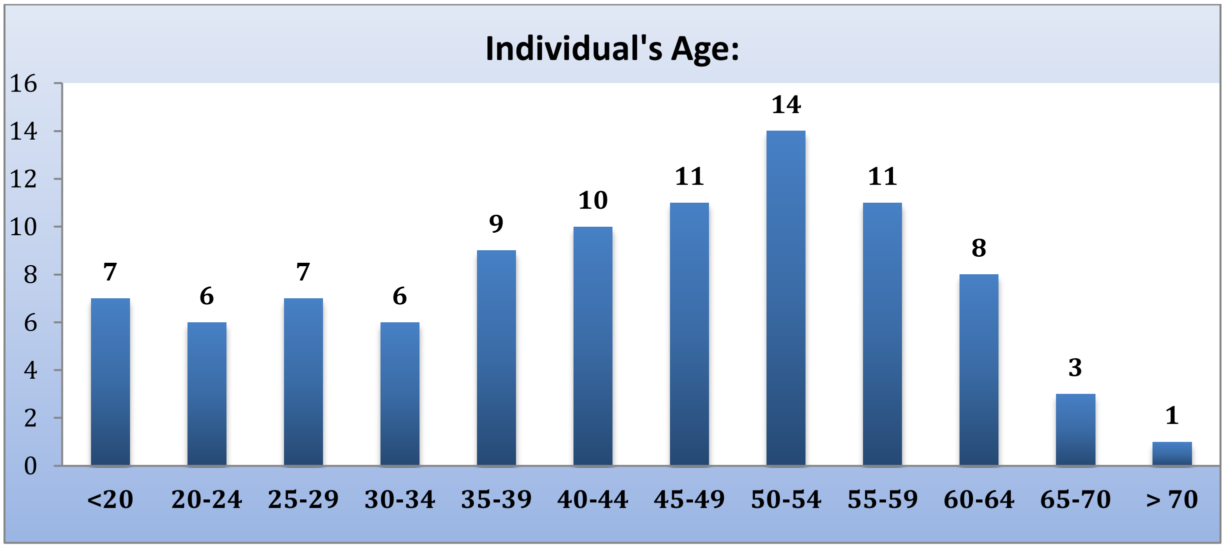
The summaries below are based on self-reported information on the survey. Not everyone answered all questions on the survey, so the overall number of participants may vary from graph to graph, reflecting attrition of our participants as they completed the survey. We summarize first the respondents who are DHH, followed by the parents, and lastly professionals.

Individuals who are DHH

This group of respondents participated in this survey from three different perspectives: as individuals, as parents, and as professionals. We utilized three different surveys, one tailored to each of those groups. There were times, however, where all participants answered the same question, making it possible to sum up or aggregate items across all individuals who are deaf or hard of hearing regardless of the participant type. We therefore first describe the entire DHH sample and then provide more indepth information about participants who responded as "individuals who are DHH", "parents", and "professionals".

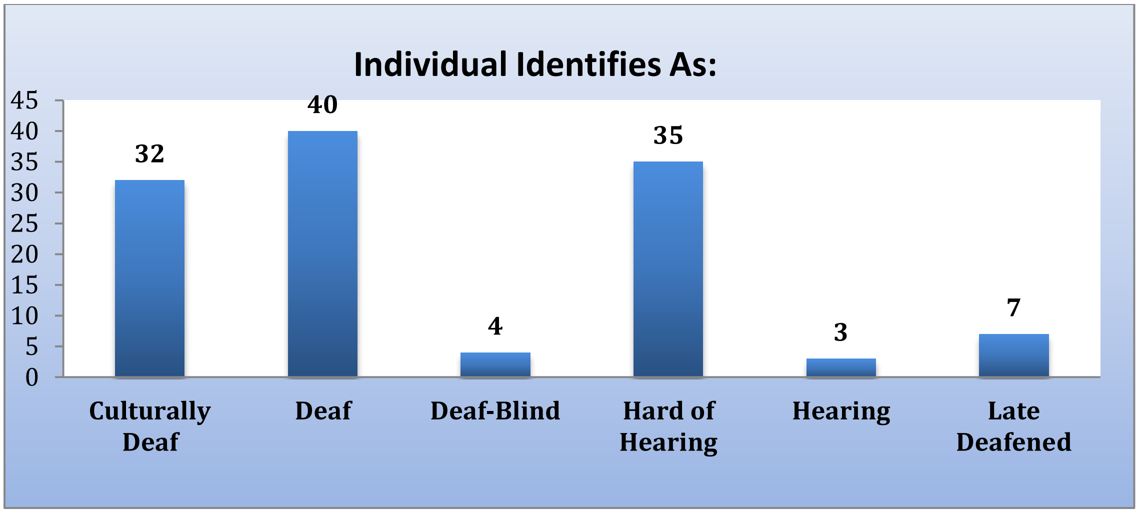
Our **overall** sample of individuals who are deaf or hard of hearing was n = 346 participants, with n = 259 females and n = 87 males. A total of 26 individuals had a cochlear implant. A total of 294 participants identified as Caucasian, with n = 11 Hispanics, n = 11 African Americans, n = 11 Asians, n = 9 mixed race, n = 3 Native Americans, and n = 2 Pacific Islanders.

The rest of this section describes demographics for the three survey categories, beginning with those who responded as an individual who is DHH. We first collected information about their age.

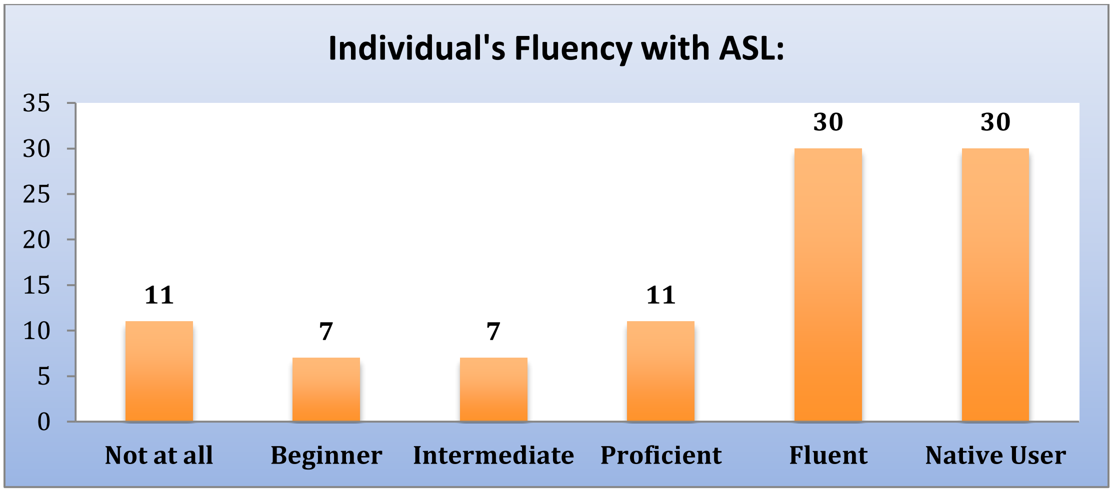


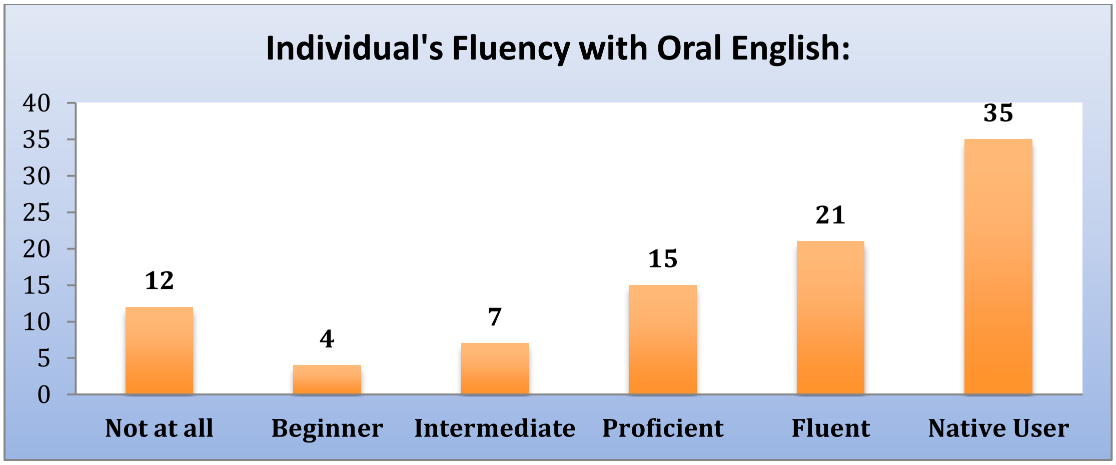
Relatively few of our participants were currently in the traditional college age group. These demographics reflect the characteristics of the pn2 database, indicating a need for pn2 to find ways to make more inroads with younger members of the DHH population.

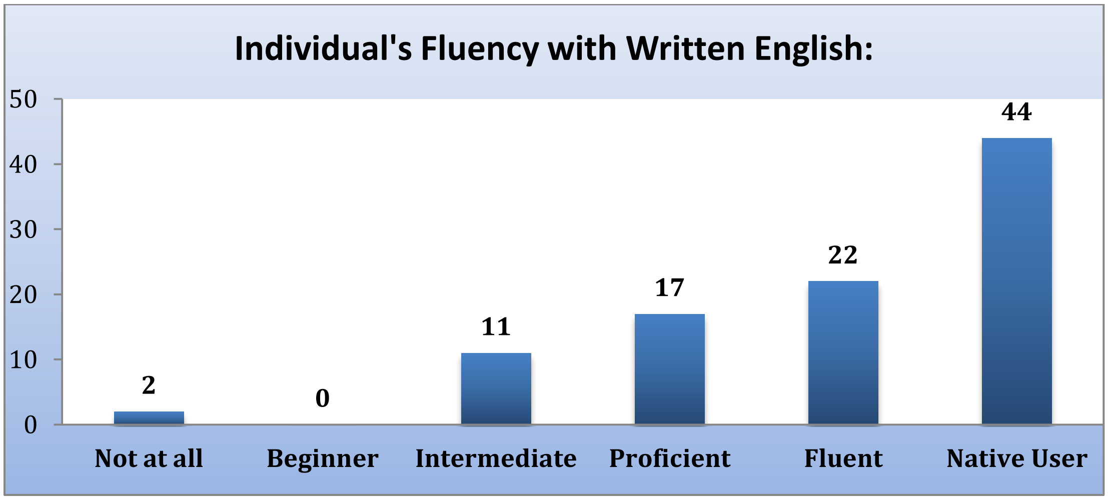
We asked participants about their identification as culturally deaf, deaf, hard of hearing, deaf-blind, hearing, or late deafened. Participants could choose more than one response from this list, allowing for people to indicate that they may identify differently depending on the context. About as many individuals identify as culturally Deaf (n = 32) as deaf (n = 40) or hard of hearing (n = 35). Very few of our participants identified as Deaf-Blind, hearing, or late-deafened. Nine of our “individual” participants were current users of a cochlear implant.

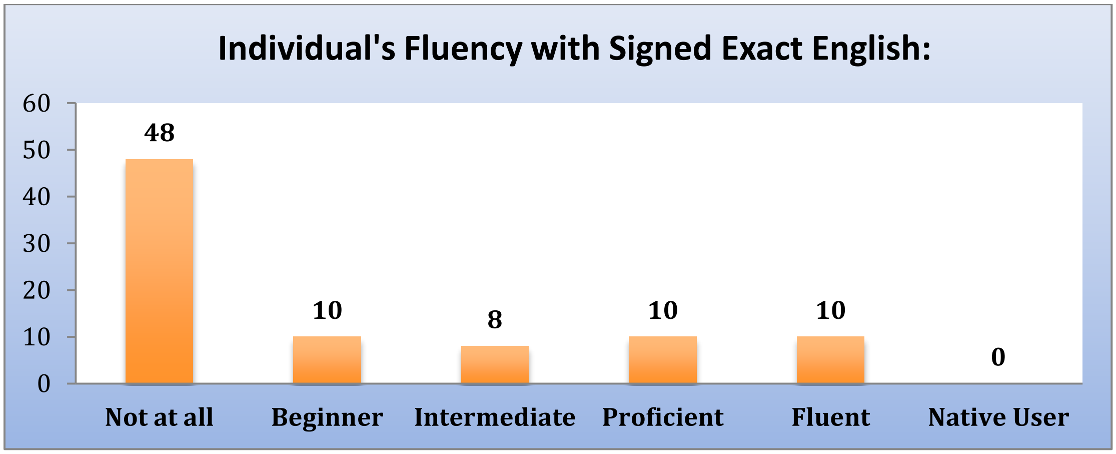


Participants provided information about use of different languages and communication modes. Data for ASL, Written English, and Oral English are provided below. For these questions, participants chose one level (ranging from "not at all to being a "native user") per language or communication mode. There were about as many native ASL users (n = 30) as there were native Oral English (n = 35) speakers. A small, but significant group had varied experience with Signed Exact English and very few individuals used Cued Speech. In addition, few individuals were high-level users of Spanish, either orally or in written expression.

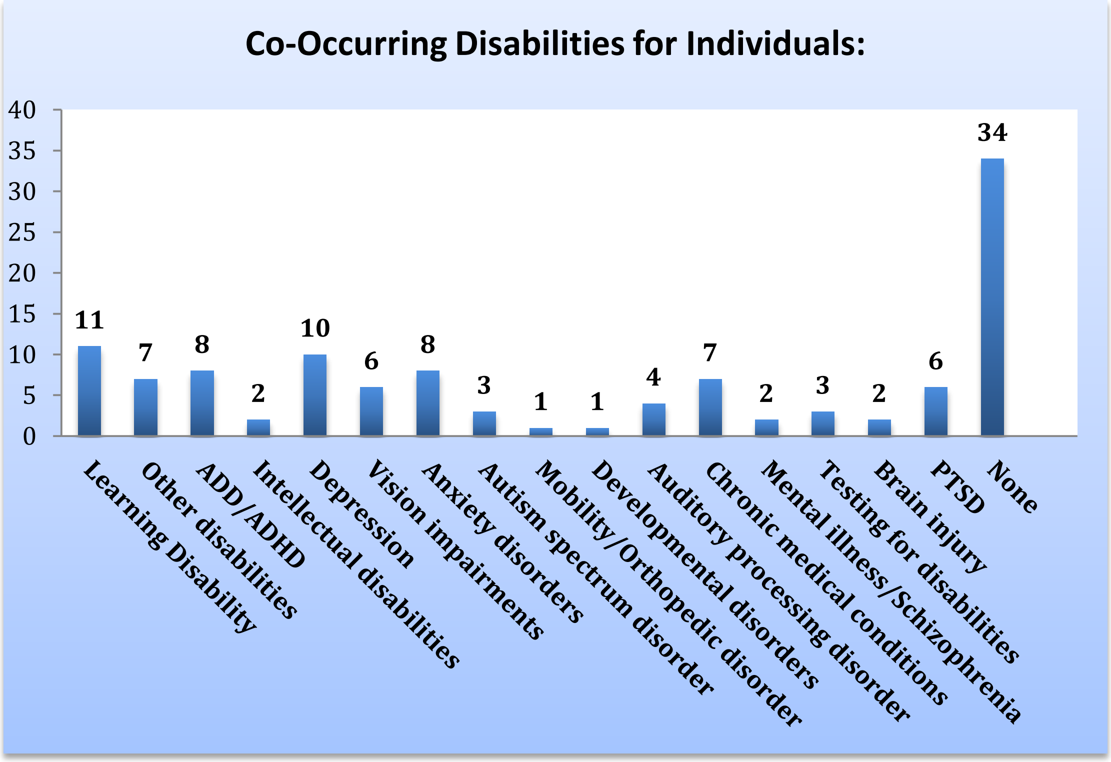



Individual's Fluency with Oral English:
40
35
30
25
20
15
10
5
0
12
4
7
15
21
35
Not at all
Beginner
Intermediate
Proficient
Fluent
Native User

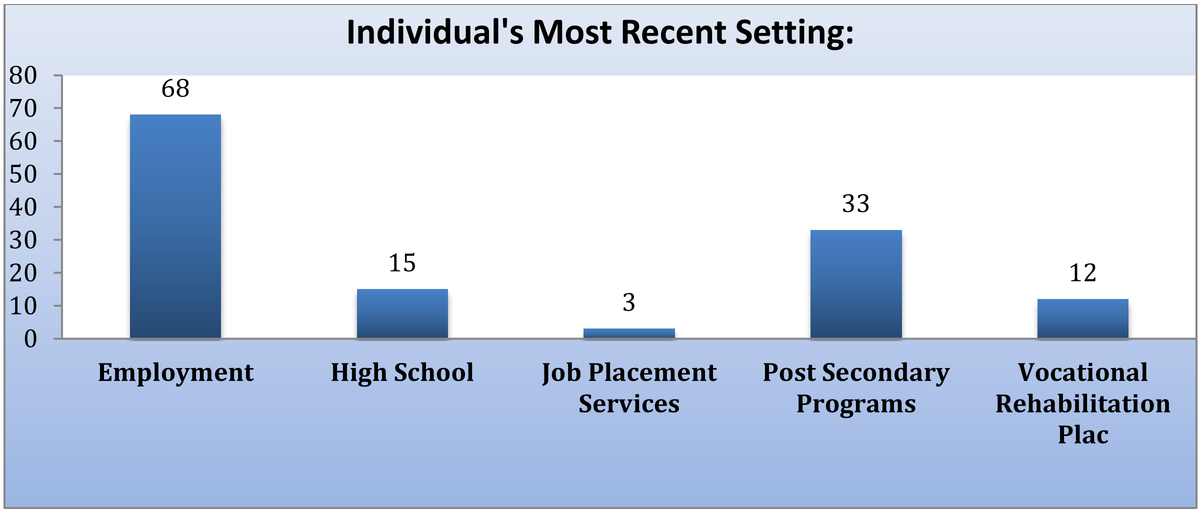

Individual's Fluency with Written English:
50
40
30
20
10
0
2
0
11
17
22
44
Not at all
Beginner
Intermediate
Proficient
Fluent
Native User


Individual's Fluency with Signed Exact English:
60
50
40
30
20
10
0
48
10
8
10
10
0
Not at all
Beginner
Intermediate
Proficient
Fluent
Native User

About two-thirds of our sample indicated that they had an additional disability. (In this report we will refer to DHH with additional disabilities as DHH ++.) Individuals could select more than one disability if applicable. The most commonly reported additional disability was a learning disability, followed by depression, ADHD, anxiety disorders and chronic medical conditions. This may be, in part, due to the generally older distribution of our samples; chronic medical conditions increase with age.



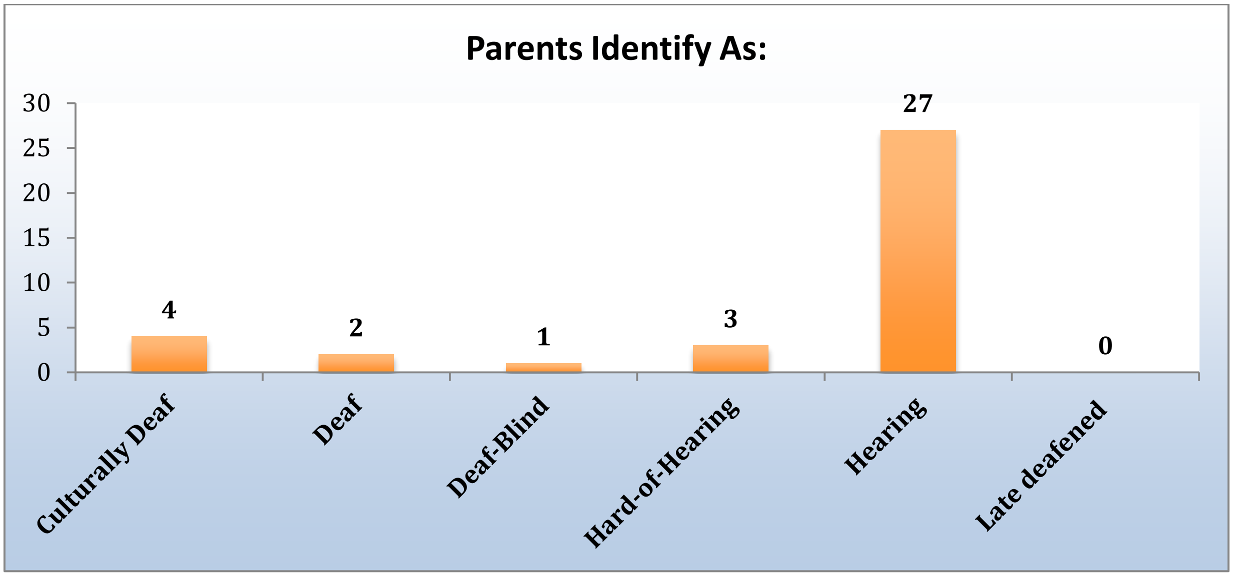
We asked individuals about their current or most recent setting. For the majority of the sample of individuals who are DHH, their most recent setting was employment (n = 68), with postsecondary programs as the second most common setting (n = 33). An additional 12 individuals were currently in a Vocational Rehabilitation placement, and 15 were still in high school (though over 18 years of age).



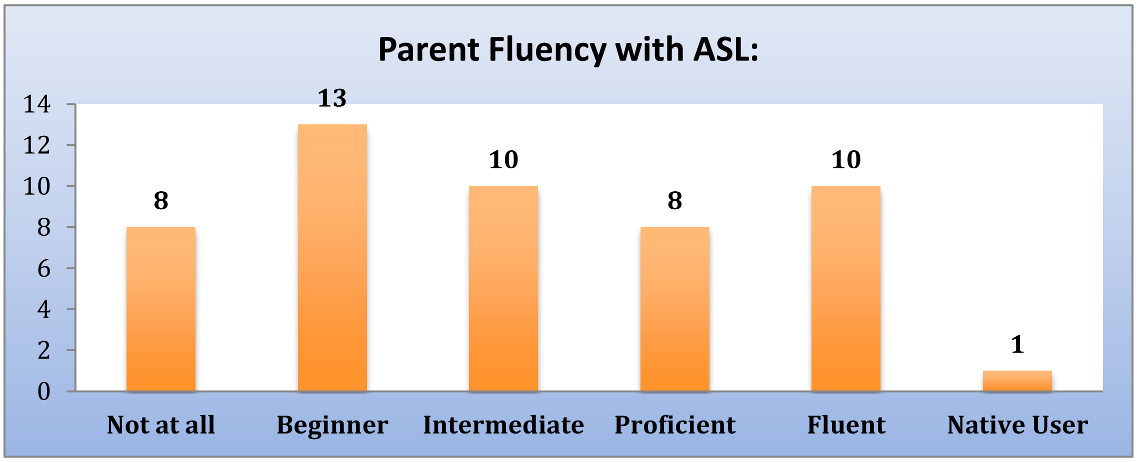
Parents

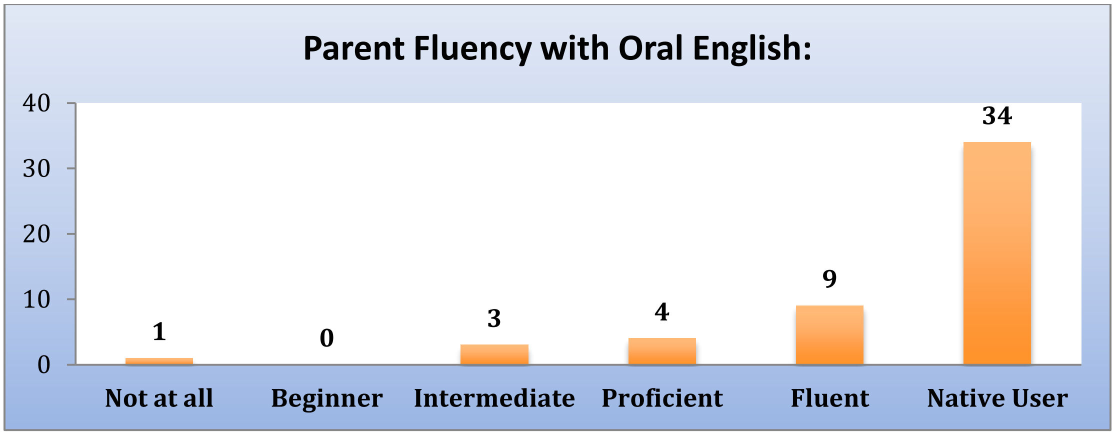
Parents were the smallest group to respond to the survey. They made up (n = 54), or .5% of the over 1,500 responses that we received. The parents were overwhelmingly female (n = 50), a higher proportion than was found in the participant group of individuals who were DHH. The majority of these respondents identified as Caucasian (n = 45). The parents in this group ranged in age from 30 to over 65, with the largest group ranging from age 40-55. This is to be expected for parents of children who have started or completed the transition process, as their children would need to be at least in their mid-adolescence at the time of this study.

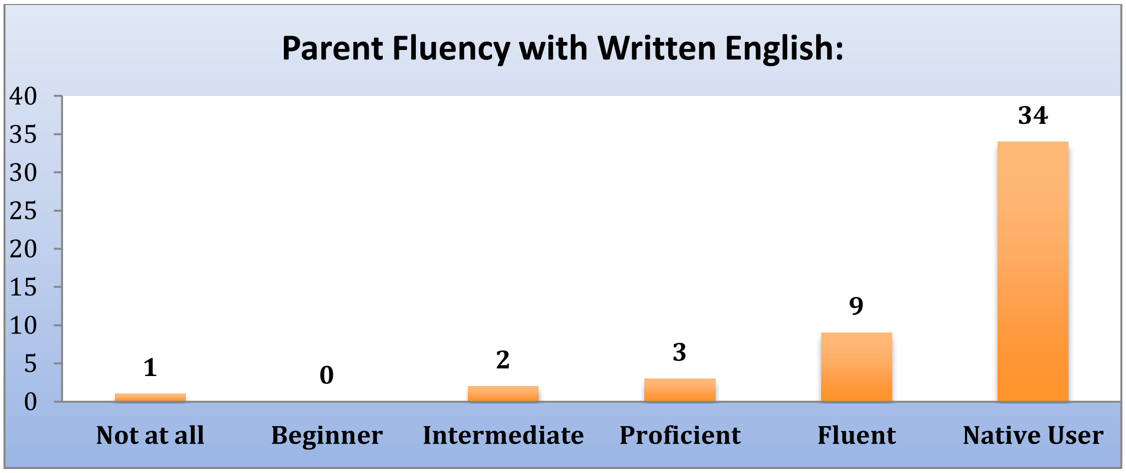
As with individuals who are DHH, parents reported whether they identified as culturally Deaf, deaf, hard-of-hearing, and so forth. Parents could choose more than one category. Out of those who responded to this question (n = 37), the vast majority of parents (n = 27) identified as hearing.

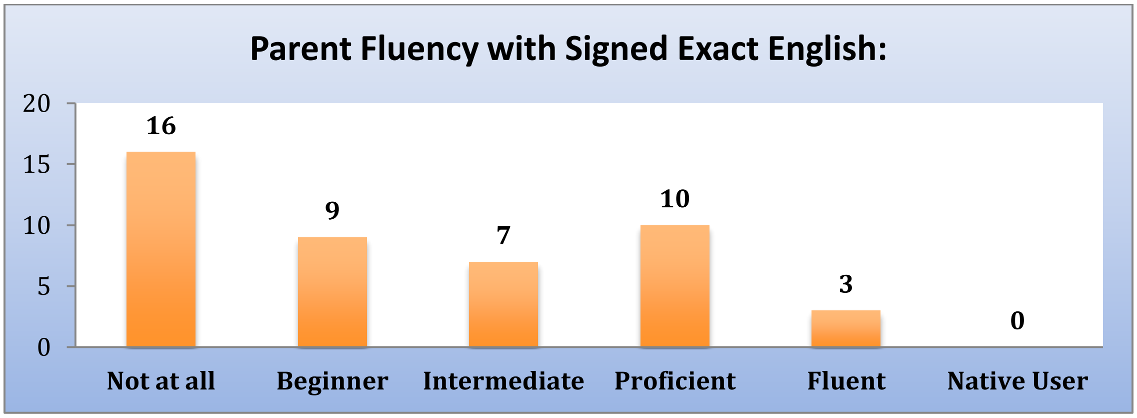


Their levels of language proficiency varied across several languages and communication modes. The majority of parents had at least some experience with ASL, with only eight parents reporting no experience with ASL. The vast majority (n = 34) were native oral English users, though these levels were likely higher than reported given that the majority of participants were hearing and Caucasian. Their levels of fluency in expressing themselves in English through writing were similar. Few parents were high-level users of Spanish, either orally or in written expression. A smaller though still meaningful number of parents had some experience with Signed Exact English, but very few reported proficiency in Cued Speech.



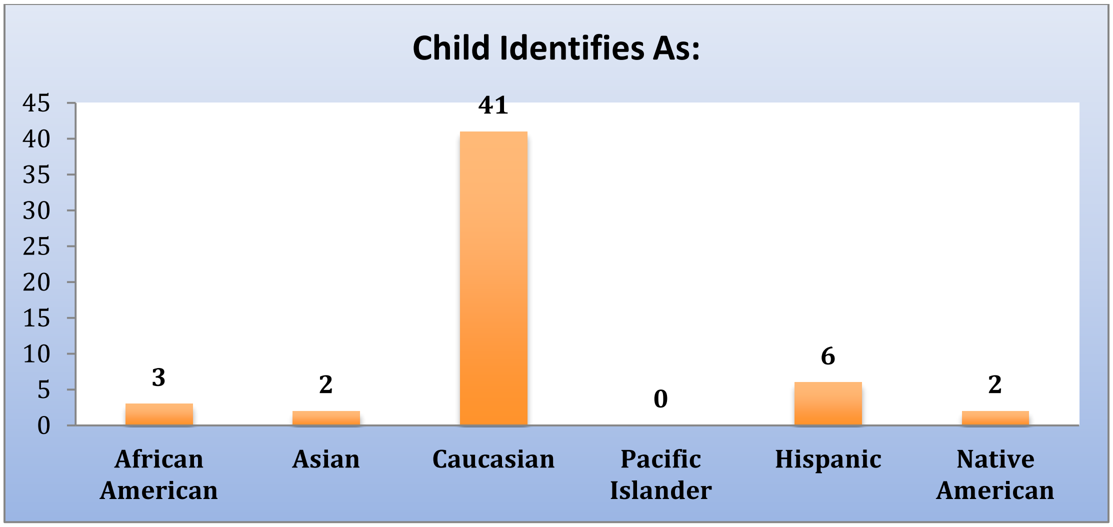




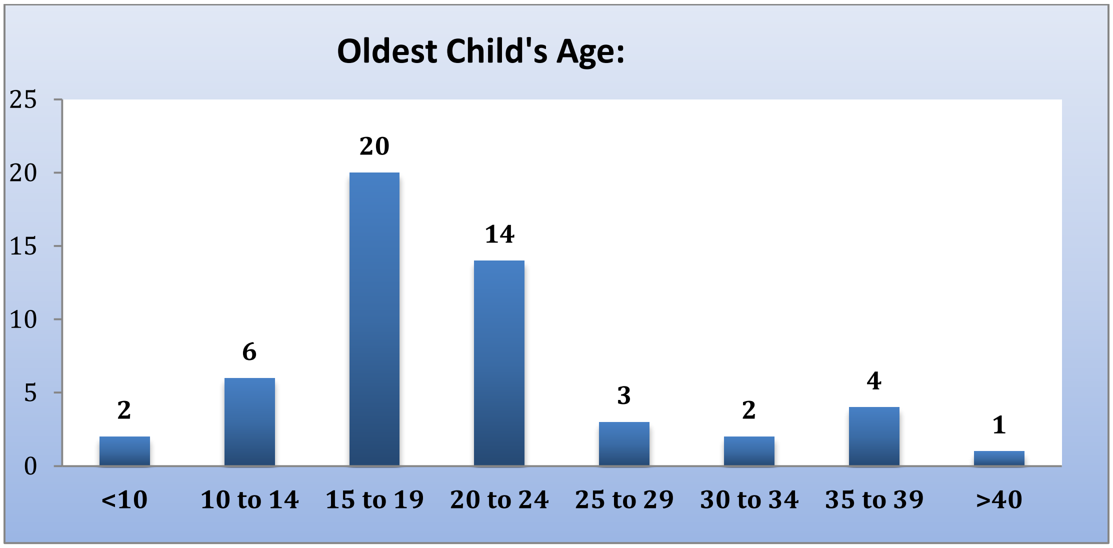


Demographics of their Children

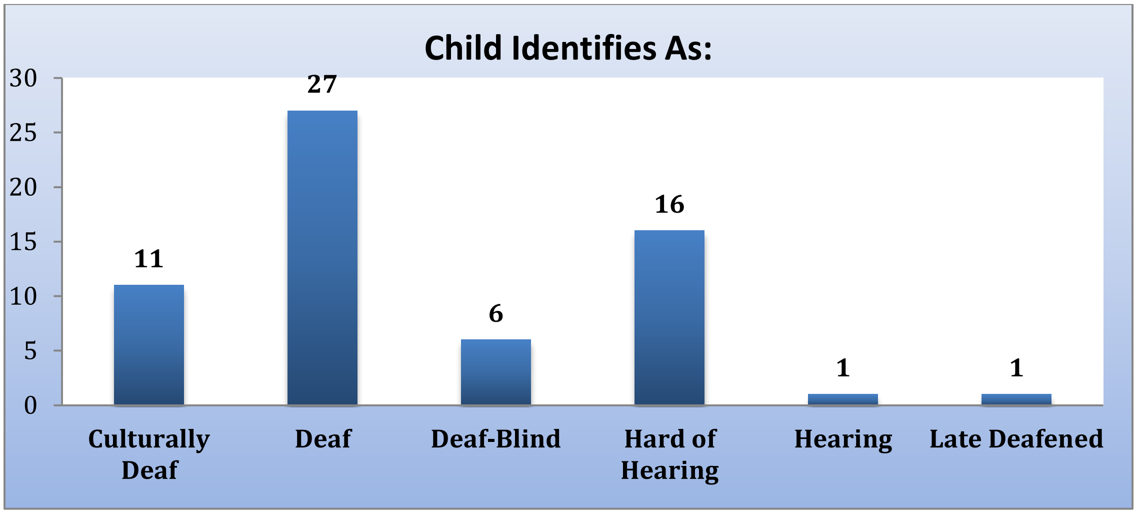
In addition to collecting demographic information about the parents themselves, we also asked them to describe the DHH child that informed their responses on the survey. Unlike the parents themselves, who were mostly female, the gender of their children was split between female (n = 23) and male (n = 32). In response to the question about ethnic and racial identity, parents indicated that the identity of the children largely, but not completely, reflected those of their reporting parent.



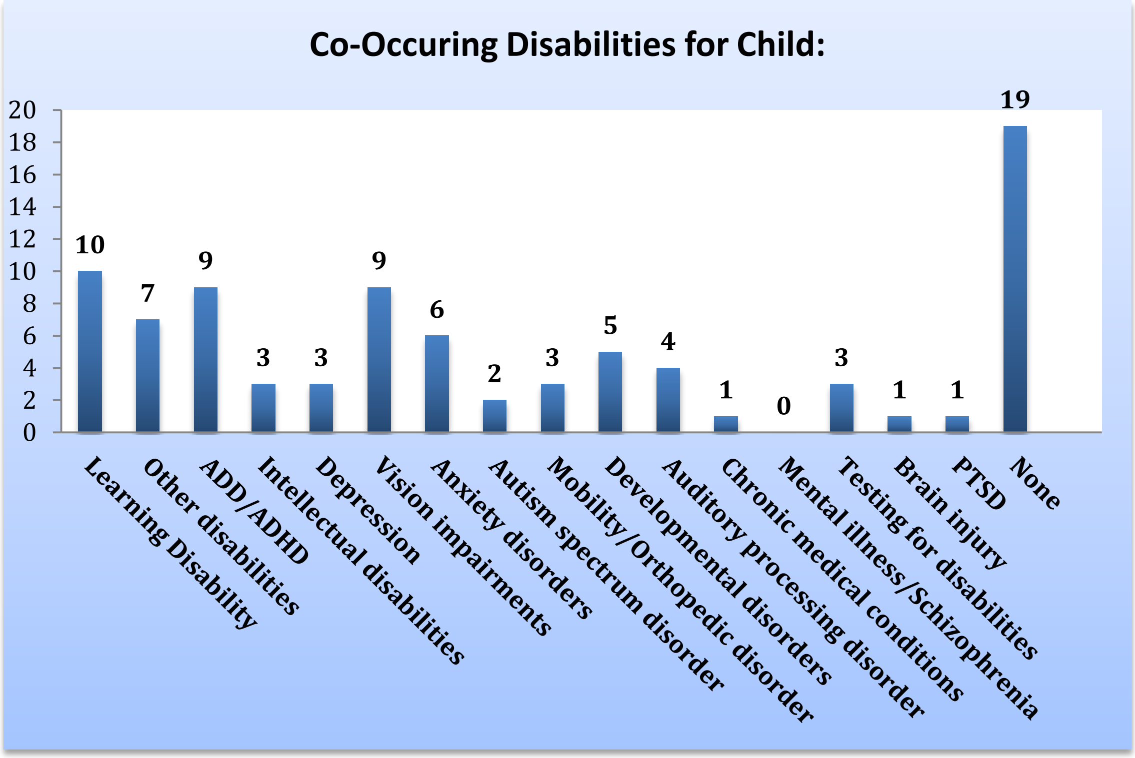
In this survey we asked parents to provide information about the child who most recently went through transition or postsecondary settings. The majority of parents had children who were either in the middle of transition from secondary and into postsecondary settings. This is critical to the relevance of parents' responses to the goals and mission of pn2 to serve this population.



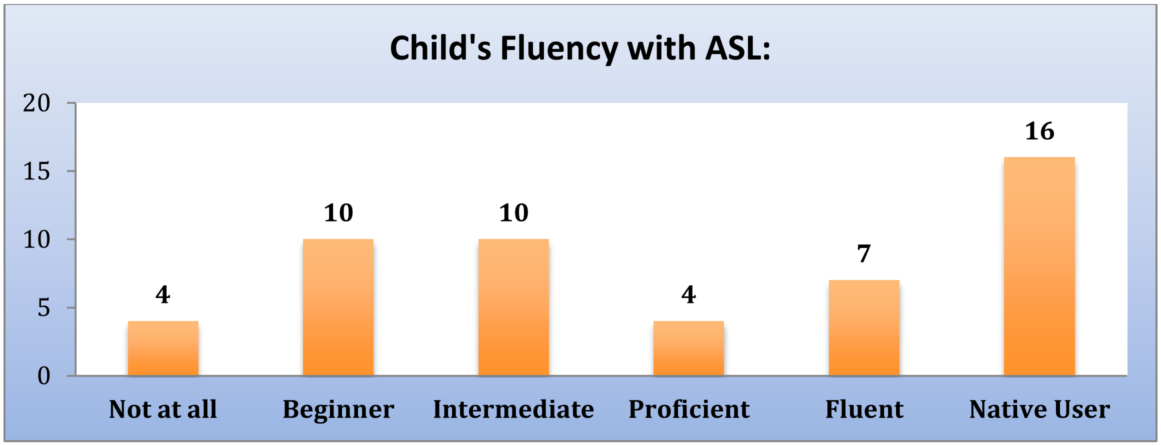
Child identification measures were similar to those found in other demographics sections of this report. Parents could report as many different identities as might apply to their child. Parents reported that the majority of their children identified as deaf (n = 27), followed by hard of hearing (n = 16), and culturally deaf (n =11). Thirteen of their children were users of a cochlear implant. There was not a significant relationship between a child's identity as a DHH individual and parent's reported levels of ASL proficiency for their child (p = .12).

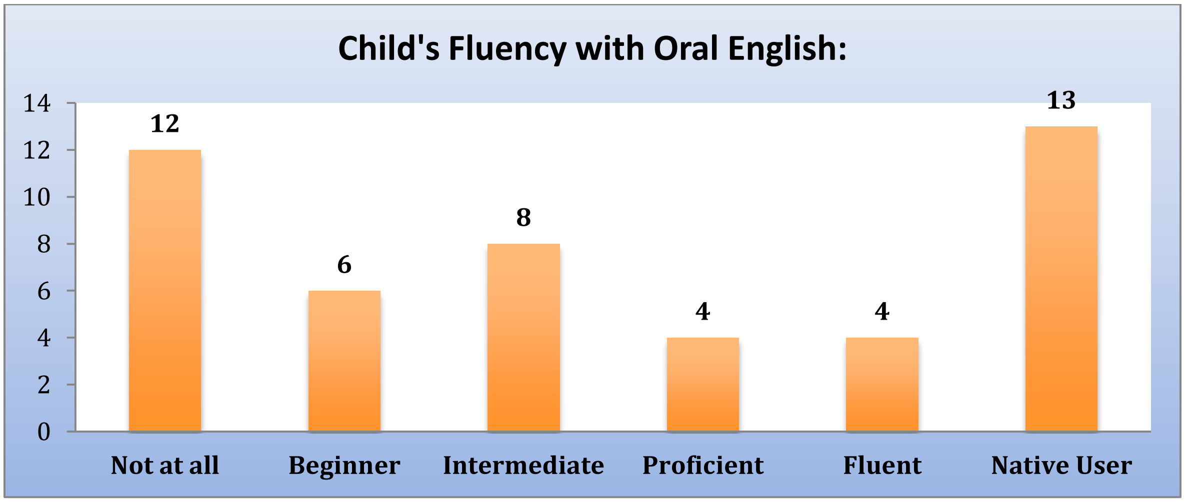


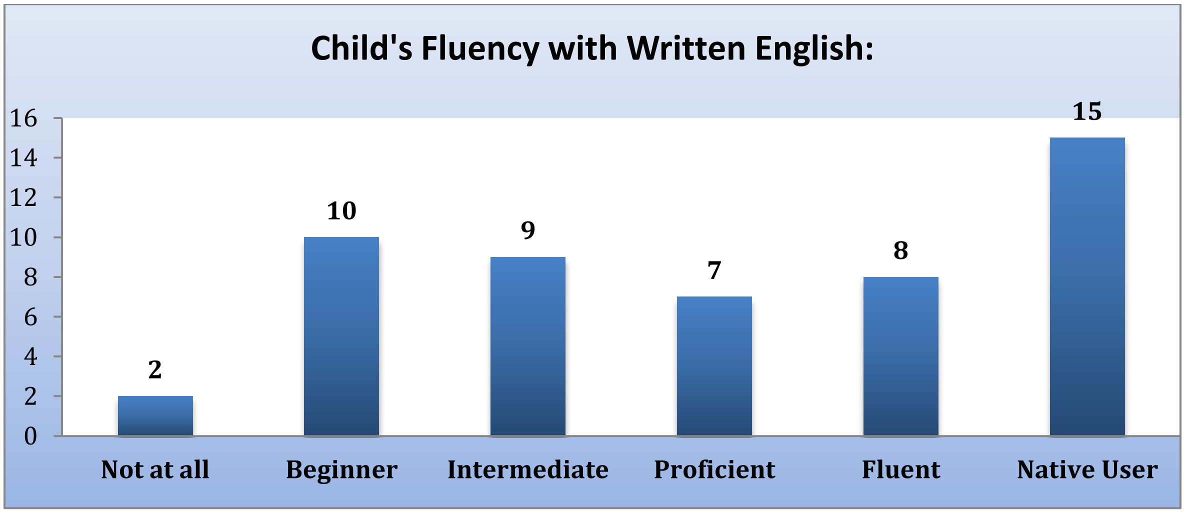
A third of parents in this survey reported that their children did not have an additional disability (n = 19) such as learning disabilities, limited vision, ADD/ADHD and anxiety, which were named as additional disabilities in this sample.

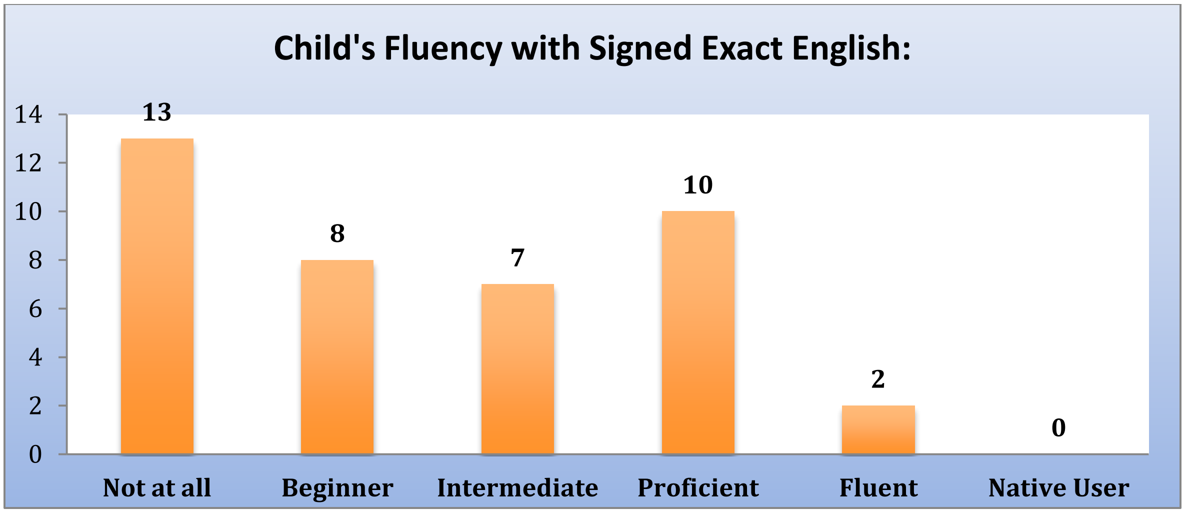


Children's language fluency was more variable than their parents across different modalities. More children were native ASL users than Oral English. There was a large amount of variability among their use of Signed Exact English, but most were not fluent with Cued Speech and very few had experience with Spanish. When compared between parents who identified as DHH and those who did not, there were no differences in child proficiency across all modalities (however, please note we did not have power to detect even a large effect size for this comparison).



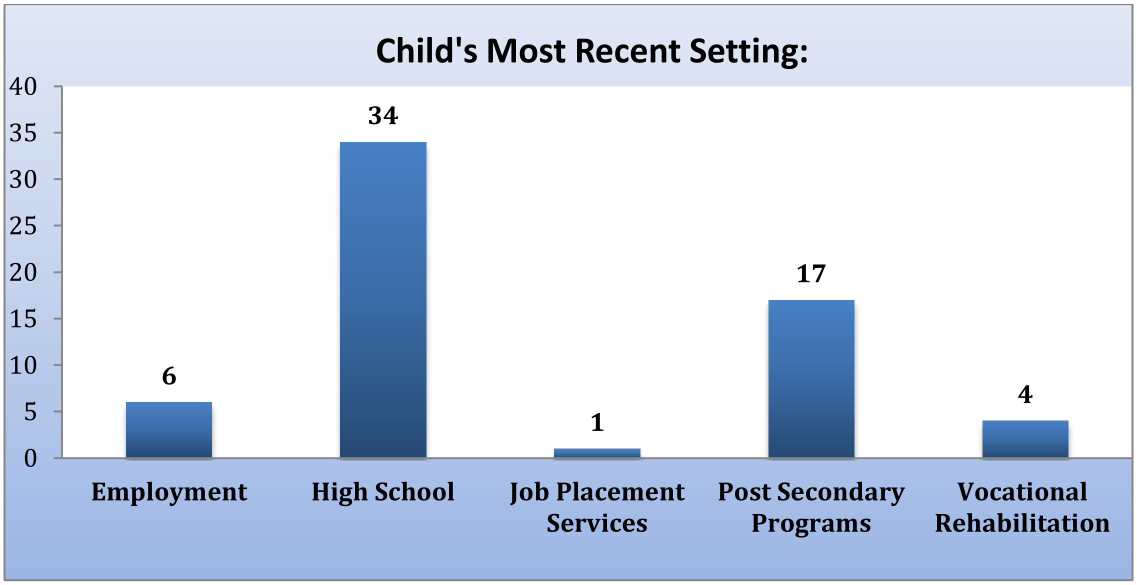






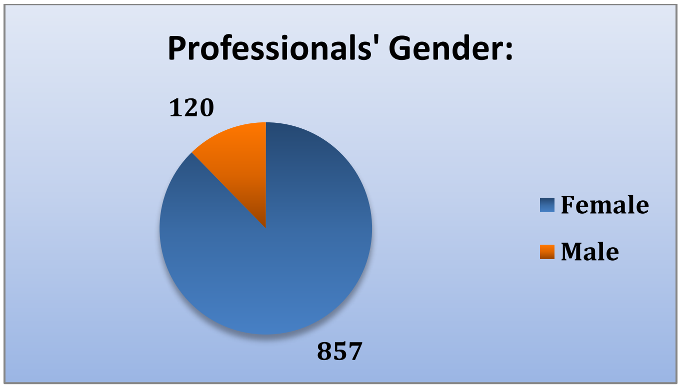
For the purposes of our survey, we asked parents to focus on one child while responding to the items. However, we collected information regarding the number of their children who are DHH. The majority of our parents had one child who is DHH (n = 69), with 14 indicating they had two children who are DHH. If the parent selected that he/she had more than one DHH child, we asked him/her to answer the questions based on one who is currently going through, or preparing for the transition from high school to postsecondary settings (or suspended their secondary education). If all the parent's children completed high school, she/he was asked to focus on the child who most recently completed high school.

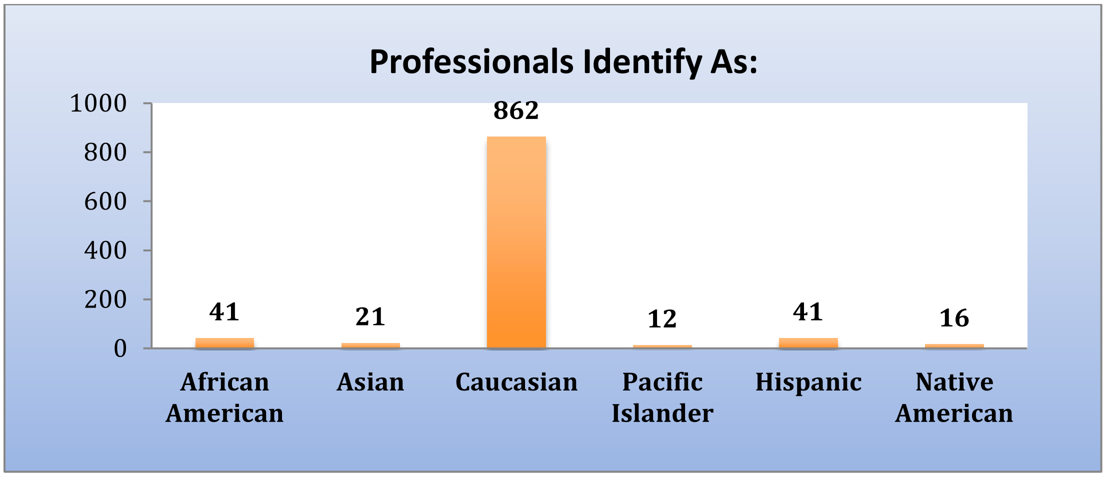
For a majority of the selected children (n = 34), their most recent setting was high school, followed by a postsecondary program (n = 17), and/or a vocational rehabilitation placement (n = 4).



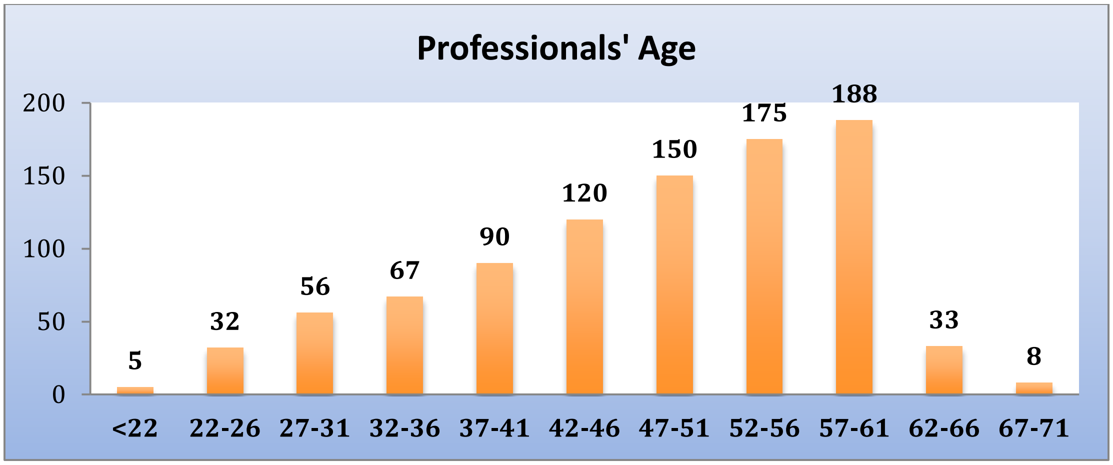
Professionals

Professionals were the largest group to respond to the survey. They constituted 87% of the 1,500 respondents. The professionals were largely a female sample and the vast majority of these respondents identified as Caucasian (n = 862).

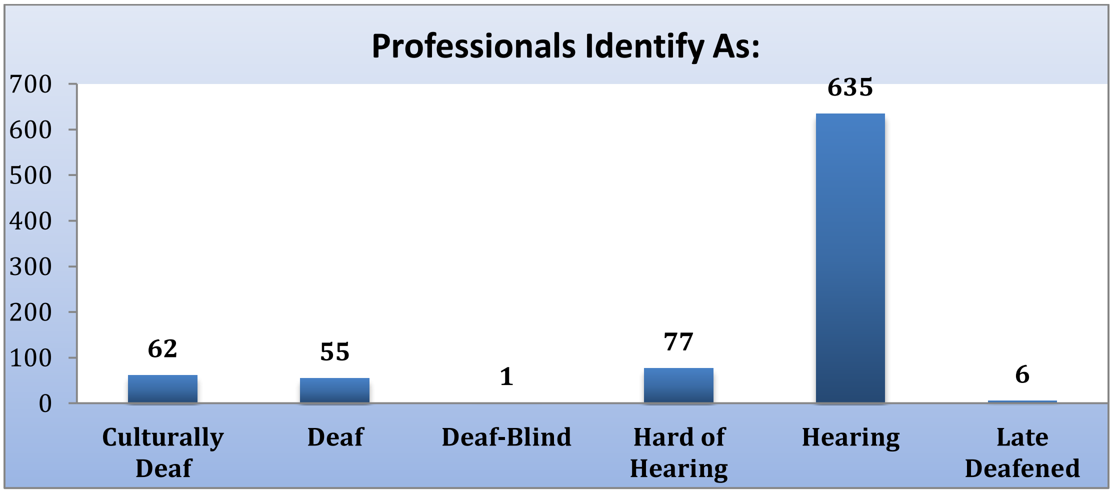




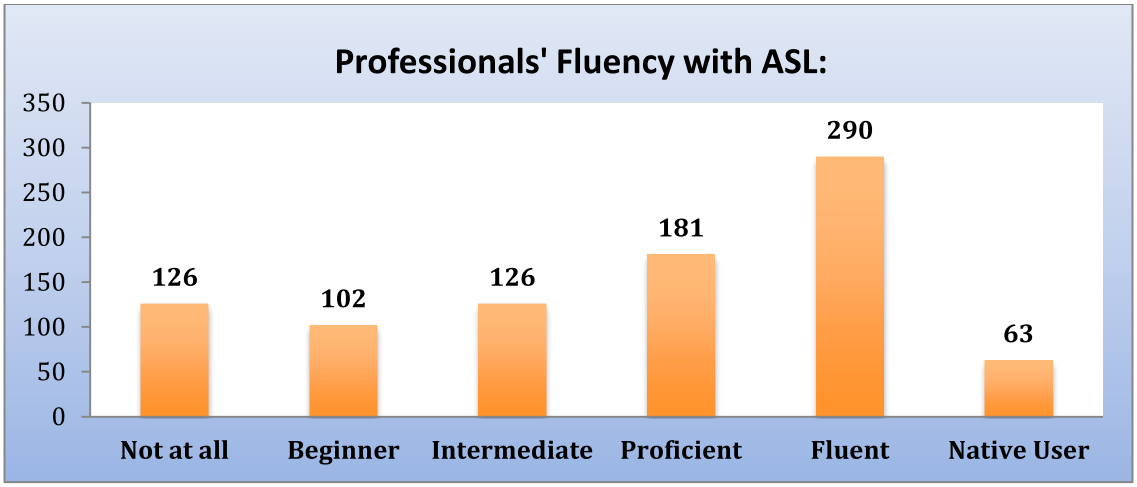
The age of our sample of professionals was skewed towards those who were between the ages of 40 and 60. There was a sharp drop off after 62, likely due to retirements from the field.

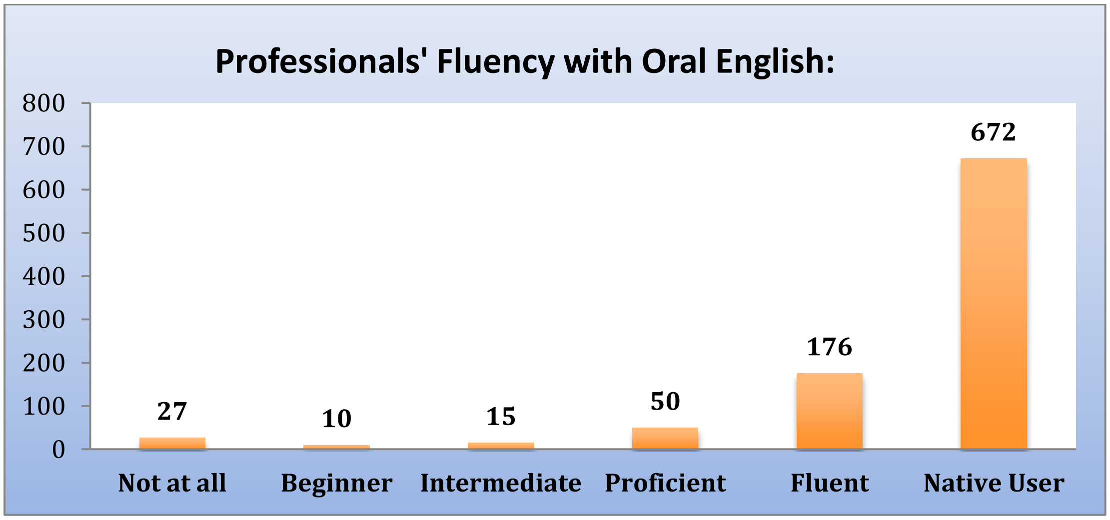


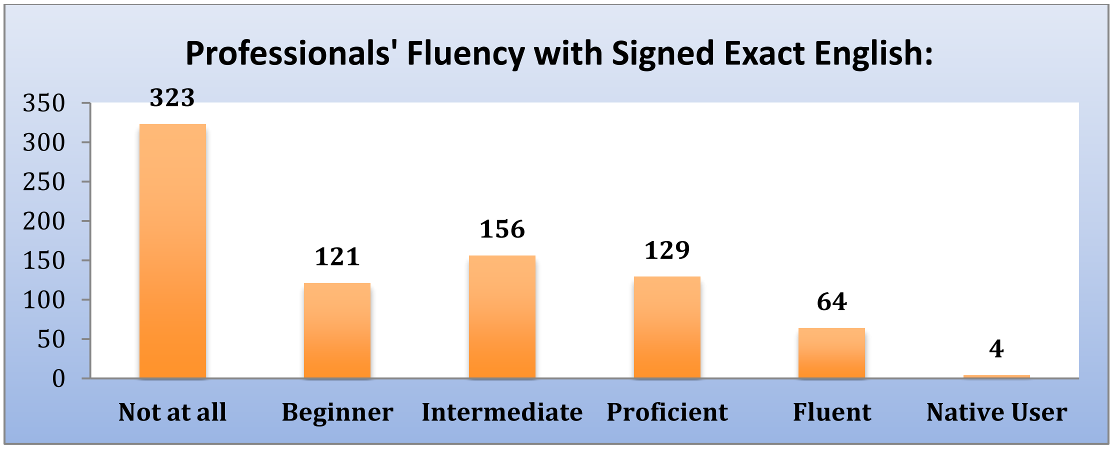
The vast majority of the professionals identified as Hearing (n = 635), followed by Hard-of-Hearing (n = 77), Culturally Deaf (n = 62) and Deaf (n = 55). Of the toal number of professionals in the sample, 21 used cochlear implants.



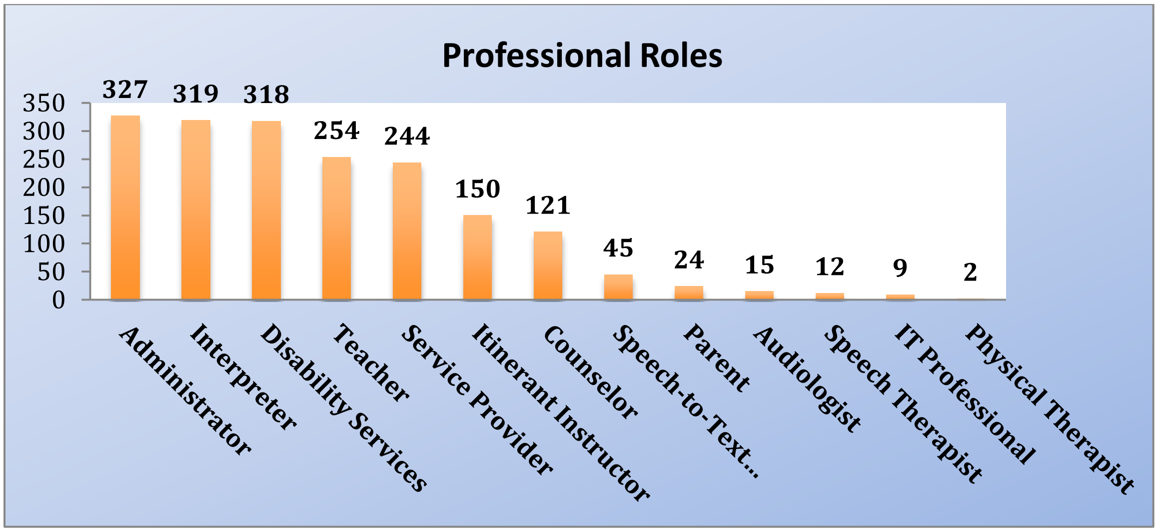
Their communication styles and proficiency were varied across several communication modalities. A large percentage of the professionals had at least some experience with ASL, with only (n = 126) with no experience at all with ASL. The vast majority (n = 672) were native oral English users. Their levels of fluency in expressing themselves in English through writing were similar. A small group of professionals were high-level users of Spanish, both orally and in written expression, a smaller amount with signed exact English, and an even smaller group with cued speech.

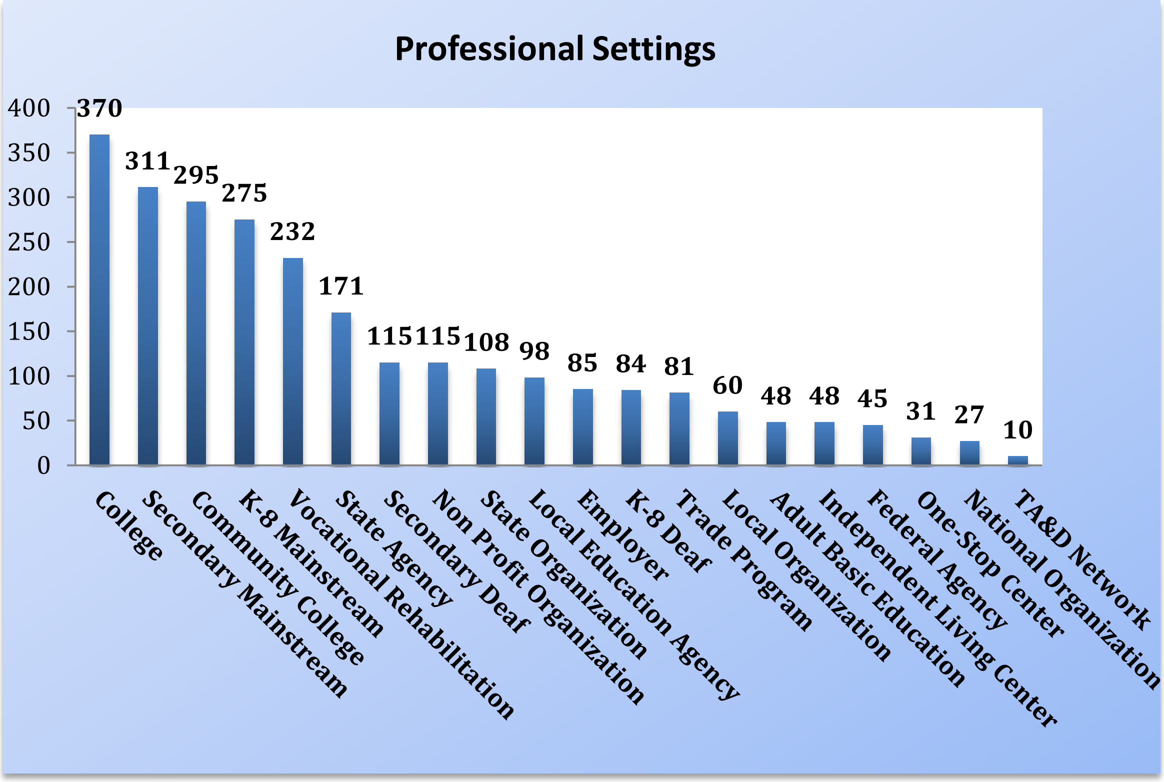

Professionals' Fluency with ASL:
350
300
250
200
150
100
50
0
126
102
126
181
290
63
Not at all
Beginner
Intermediate
Proficient
Fluent
Native User


Professionals' Fluency with Oral English:
800
700
600
500
400
300
200
100
0
27
10
15
50
176
672
Not at all
Beginner
Intermediate
Proficient
Fluent
Native User


Professionals' Fluency with Signed Exact English:
350
300
250
200
150
100
50
0
323
121
156
129
64
4
Not at all
Beginner
Intermediate
Proficient
Fluent
Native User

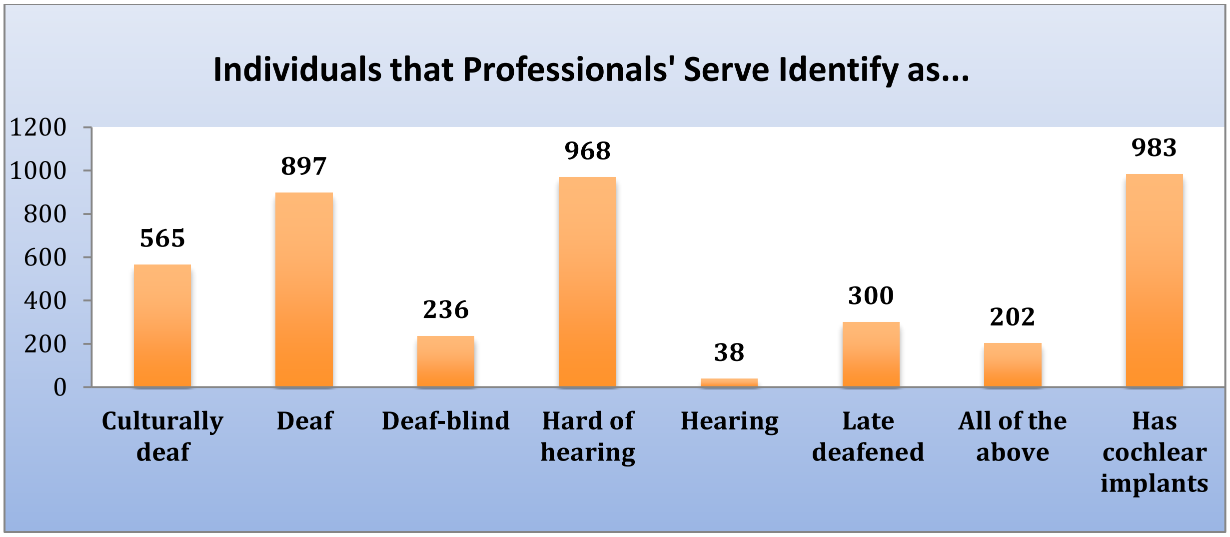
Participants were asked which professional role(s) they held and in which settings. These categories were aligned with categories in the pn2 database to allow for easier interpretation of study findings. They were allowed to select *more than one role*, if applicable. These two tables are for descriptive purposes; we aggregate these roles and tables into larger categories for statistical analyses in chapters 4-8.



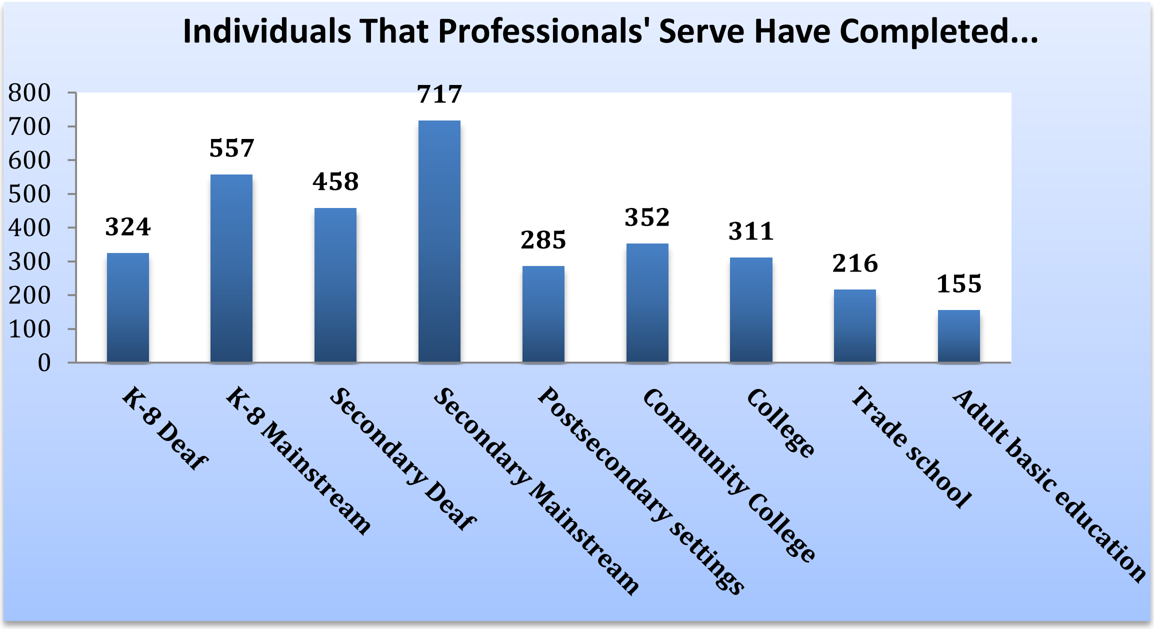


Individuals that Professionals Served

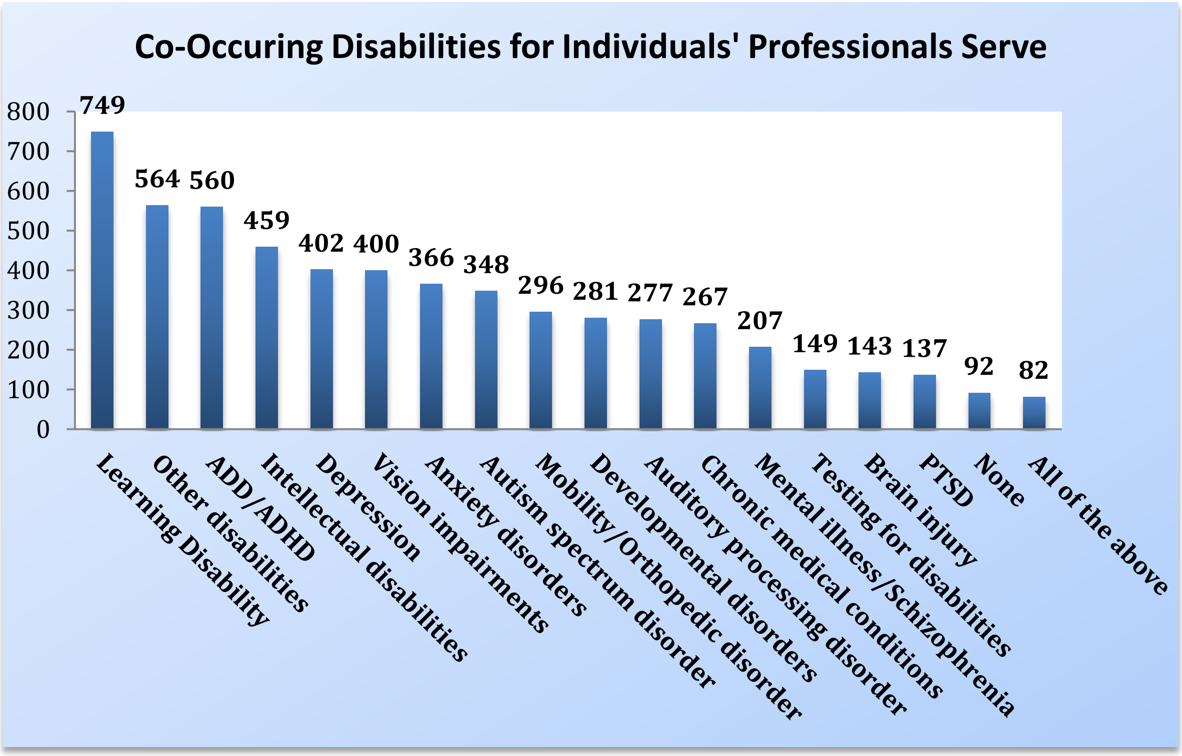
In addition to collecting demographic information about the professionals themselves, we also asked them to describe the individuals they served. These questions were focused on the professional's overall experience, not individual clients. For example, if a professional indicated that he or she serves students who identify as culturally Deaf, that is counted as "one" response in these tables. In keeping with the professional as the unit of analysis, all of these questions allowed professionals to select "all that apply." The majority of professionals in our survey served individuals who identified as Deaf, hard-of-hearing, and have cochlear implants. Fewer (n = 236) have experience with Deaf-Blind, late-deafened or individuals across all available categories (n = 202).



In terms of academic experiences or training opportunities, professionals in our sample have experience serving students from a wide range of primary, secondary, and post-secondary settings. Of those in our sample, the majority reported that their clients were from mainstream secondary settings (n = 717), followed by mainstreamed primary settings (n = 577), and secondary schools for the deaf (n = 458). After secondary schools, professionals in our survey served a broader range of individuals, including those in community college (n = 352), trade schools (n = 216) and adult basic education (n = 155). These demographics help inform the professional capacities gained and needed by participants in the survey.



Finally, professionals reported the incidence of co-occurring disabilities among the individuals served by the professionals. The most common was learning disabilities, followed by ADHD, various mental health disorders, visual impairments, mobility disorders, developmental disorder, and medical conditions. Very few (n = 92) indicated that none of their clients had additional disabilities, making this a prevalent theme amongst participants in the survey.



Implications, Opportunities, and Limitations

Implications

- The pn2 database has a strong representation of professionals in the field and less representation of parents and young individuals who are DHH.
- Most survey participants, across all stakeholder categories, were Caucasian females between the ages of 40 and 60. While this may be representative of the professionals in the field, it is not representative of either parents or individuals who are DHH.
- Children of parent participants had a range of overlapping language and communication modalities. Individuals are likely to make choices about modalities depending on the location and context of communication.
- Additional disability categories should be taken at face value, as a guide for further exploration of what it means to work with individuals who are DHH ++. The later chapters in this Needs Assessment highlight the challenges and need for professionals who are working with and identifying individuals as having an additional disability, particularly those that are cognitive or socio-emotional in nature.

Opportunities

- Pn2 could look for ways to more specifically recruit underrepresented groups for membership in the database, particularly young people and minority groups.
- Mental health conditions are a high prevalence co-occurring disability that receives little to no attention in the field of assessment and practice with individuals who are DHH. Many institutions and agencies may benefit from specific awareness raising and training in this area.
- Related to the above, outreach to mental health professionals on issues related to deafness through the use of such tools as *Access: The Fundamentals* may be fruitful.
- There is a need for diversification of professionals who work with DHH. This is not unique to this field; models and programs from other allied health, educational, and social service professions may be valuable resources for pn2.

Limitations

- Parents were particularly challenging to reach via standard survey, interview, and focus group methods, particularly when operating at a distance in a national needs assessment format.
- Opportunities to discuss issues at length were limited partly due to the time available during summer 2012 to conduct interviews and focus groups with the other pn2 infrastructure activities being built.
- We do not have enough information to differentiate findings among the broad range of postsecondary programs, particularly Adult Basic Education programs or schools for the deaf with programs for 18-21 year olds.

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Blanchfield, B. B., Feldman, J. J., & Dunbar, J. L. (2001). The Severely to Profoundly Hearing-Impaired Population in the United States: Prevalence estimates and demographics. *J Am Acad Audiol*, 12, 183-189.

Mitchell, R. E., & Karchmer, M. A. (2011). Demographic and achievement characteristics of deaf and hard of hearing students. In M. Marschark & P. E. Spencer (Eds.), Oxford handbook of deaf studies, language, and education (vol. 1, 2nd ed.) (pp. 18-31). New York: Oxford University Press.

Mitchell, R. E., Young, T. A., Bachleda, B., & Karchmer, M. A. (2006). How many people use ASL in the United States? Why estimates need updating. Sign Language Studies, 6(3), 306-335.

U.S. Department of Education, National Center for Education Statistics (1999). An Institutional Perspective on Students with Disabilities in Postsecondary Education.(NCES 1999-046). Washington, DC.

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Chapter Four: Individuals who are Deaf or Hard-of-Hearing

This chapter focuses on the transition and postsecondary experiences of individuals who are deaf or hard-of-hearing (DHH). Parents' perspectives about their children are provided in Chapter 5. It is important to keep in mind that the information presented here is as diverse as the DHH population itself. The goal is not to summarize or to over-simplify, but to illustrate with examples and highlight some ideas that are important when thinking about supporting transition and postsecondary outcomes.

This chapter pulls from the entire range of data sources that were a part of this Needs Assessment, including the survey, interviews, and focus groups.[1] The bulk of this chapter will, most appropriately, be from the perspective of individuals who are DHH. When reading this chapter, keep in mind the demographics information summarized in Chapter 3. Many of the DHH respondents of the survey are employed or have completed their education; those in the interviews and focus groups represent a broader range of ages and experiences, including many who are just coming into adulthood.

Identity Development

Adolescence and early adulthood is a time of exploration, both in understanding what to pursue for a career and in understanding who you are, your cultural context, and how you view the society around you. It is not surprising, therefore, that the participants provided a great deal of information about their own development as a deaf or hard-of-hearing person, particularly in the context of moving from high school to a postsecondary setting. The purpose of this section is to provide a description of how the participants conveyed the significance of identity development in their discussion of issues that shape transition and attainment of postsecondary goals.

In the qualitative analysis we focused on elements of DHH identity development. DHH Identity was coded for 19% out of the possible coding segments. Many of the other codes were frequently associated with codes for DHH Identity. Codes that were **not** significantly correlated with DHH Identity were coded for DHH ++, Vocational Rehabilitation, Institutional Factors, Money, Assessments, Technology and Diversity. Those codes with the highest correlations (above $r = .20$) with DHH Identity are provided in the figure below.

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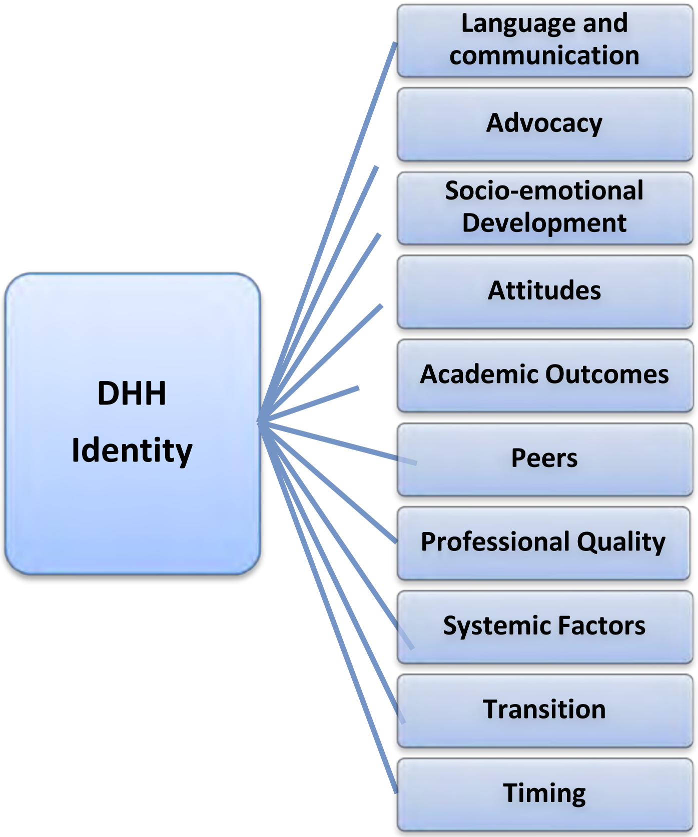
[1] All findings are significant unless otherwise noted. Significance for coding correlations is set at $p < .01$. Significance is set at $p < .05$ for individuals' responses to the survey and all statistical tests are two-directional.



Before exploring issues of DHH identity further, it is important to note the particular relevance of language and communication with development of DHH identity, and vice versa. Many of the examples from the qualitative work show the strength of this relationship, and will be discussed below. Language and communication, as a whole, was addressed in 39% of the coded segments, the second highest category across the 26 topics that we coded for in the analysis. The co-occurrence between language and communication and DHH identity was also high with an r = .34, also among the highest co-occurring topics with language (only peers was higher).

Perspectives from DHH individuals: Being DHH

Participants shared numerous anecdotes and personal reflections as they described their experiences of being deaf and hard of hearing (DHH) either as a student in the K-12 setting or as a current postsecondary student. Several interesting elements emerged across all transcripts, most notably the participants' processes of understanding themselves as a person with a disability and specific hearing status to the arrival of how they feel about themselves today. The process of moving across settings and situations made for varied stories of what participants understood of their identities and self-concepts across these processes. Where one participant felt disengaged from the school system as a secondary student, another one felt a sense of solidarity and belonging as an adult. For instance, several participants discuss the feelings of difference, or of feeling different than others:

> *"I felt lost. Everybody would communicate talking to each other. I was never a part of the conversation. There was communication break down in my family. They treated me like a little girl. Never as an adult. They would just summarize what they talked about or just use gestures to communicate with me. It was irritating." (student)*
>
> *"It wasn't until later when I finally got it, I realized I was different from hearing people. And I got to understand[ing] I can't communicate and understand what they're saying. They can understand each other, but I can't. And moving around, my parents didn't understand what my needs were or what I was doing. It was confusing." (student)*
>
> *"Everybody else around me was hearing. I was the only deaf person there. So when finally we moved to Missouri, you know, when I lived in the dorm, I was like oh, wow, I can communicate here. This is a lot better than what I had in New York where everybody was talking around me and I was too shy to talk to myself. Now I was like what's up, I can communicate by myself." (student)*
>
> *"It was hard. I was struggling in all the classes. I was struggling so bad that I stopped going to the classes." (student)*

Additionally, participants shared that even though they felt lost, confused, and irritated in situations where communicating was the immediate barrier (largely due to mismatch of communication modality between family, school, or other personnel), they found ways to adapt and make sense of their surroundings as noted below.

> *"I wanted to go there [day school program for deaf]. It was fascinating to me. My parents said cool. I was there for a while. Things seemed to improve. But still felt kind of hearing to me in a way. I tolerated it. You know, if the interpreters could communicate what was being said, that's okay." (professional)*
>
> *"Finally, you know, once I learned how to communicate and how to call or ask for things and derive some pleasure for that, it became more easy to do it. It was like a self‐realization. Yeah, when I was young I didn't feel like I could control anything. But as I started to individualize more [I felt like I could]." (professional)*
>
> *"[. . .] I have a little sister who's a genius and she helped me a lot like through math and reading and anything, so I was glad to have her around. We'd look at the question together and answer it together, you know, like she'd show me how to do it. I would like to be able to do it on my own but it was kind of hard. I wasn't that good in school. She was just there to help me anytime I needed it." (student)*

Despite the situations that warranted feelings of frustration and feeling as if they did not belong, participants were resilient in their adaptations and adjustments to make the educational setting work for them in meaningful ways. These findings are indicative of the experiences of individuals who are currently students or who have successfully navigated postsecondary education. A level of perseverance and belief in their abilities and capacities to pursue higher education holds particular meaning in how they describe themselves as individuals who made it through the system.

Achieving Education and Career Goals

Defining Success

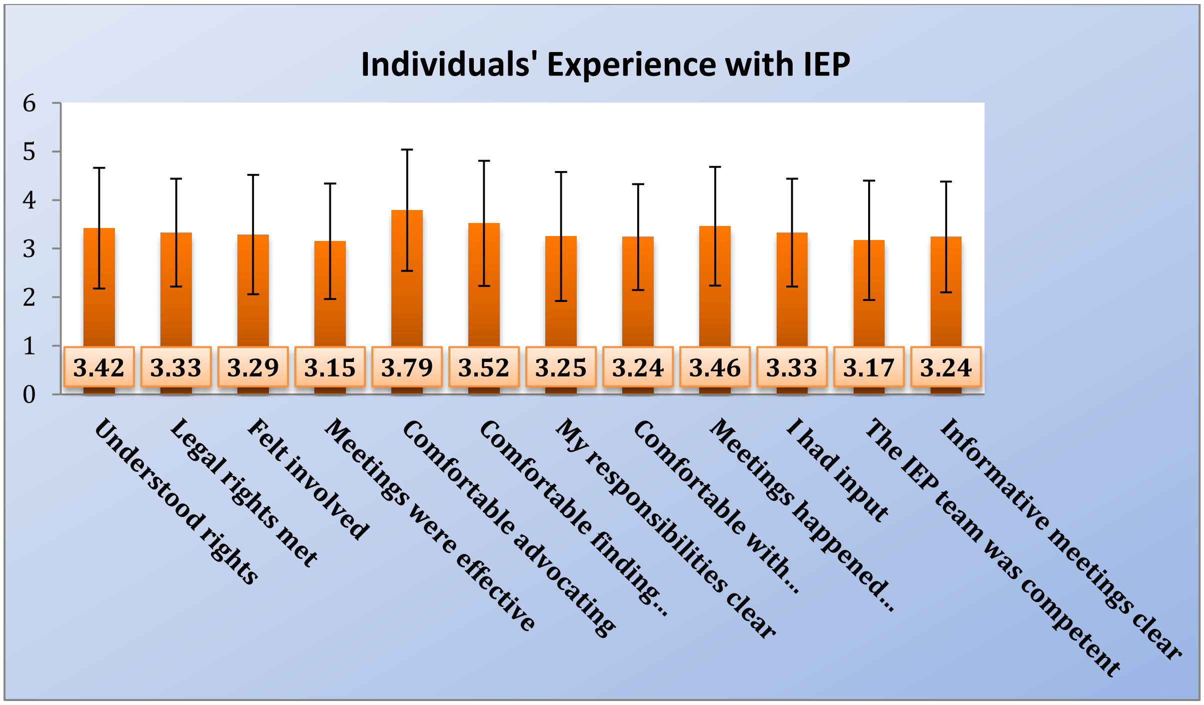
What does it mean for a child to succeed in transition and in postsecondary outcomes? Definitions of success are at the heart of evaluating potential paths to reaching academic and employment goals. Definitions of success in this data collection effort were centered on the context of postsecondary schools and programs, the focus of pn2's mission. Most of these definitions of success were captured by codes such as reading (11% of coded segments), academic outcomes (31%) and work (12%). However, we gathered some very interesting information about how one might broaden the definition of success and then support that process.

> *"Success is where the student is. And I think the staff who work with the students, have a great appreciation for success as being who you are, and kind of fulfilling who you are." (professional)*
>
> *"This community of kids who come [here], they really amaze me every year --spectacular. Kids with all kinds of disabilities are in this building at all times and these kids never cease to amaze me in their full acceptance of who everyone is and their own limitations and the abilities to succeed at whatever range that looks like without putting one another down. And I do think that comes from leadership-down and down-up, you know. It just speaks to t he attitude that is in the building." (professional)*

It is helpful to see perspectives that incorporate the whole person and their journey towards their own version of success more broadly defined. Participants touched upon these in their discussions of students' socio-emotional development (15%), attitudes (16%), and future goals (12%). These components, while perhaps not the direct area of focus for transition and postsecondary decision-making, are still an integrated component of what it means for individuals to be successful in their experiences past high school.

Individualized Education Program Plans

We continue with one of the earliest components of the transition process, at least under the IDEA laws of the last 15 years: the Individualized Education Program plan. Through this question, we sought to have a sense of how individuals experienced this formal component of the planning process. Individuals were asked about different parts of their experiences with individualized education plans, Section 504 plans, or their state's equivalent. Data below reflects those individuals 40 years of age or younger, as individuals above that age did not have transition experiences in secondary education under IDEA.



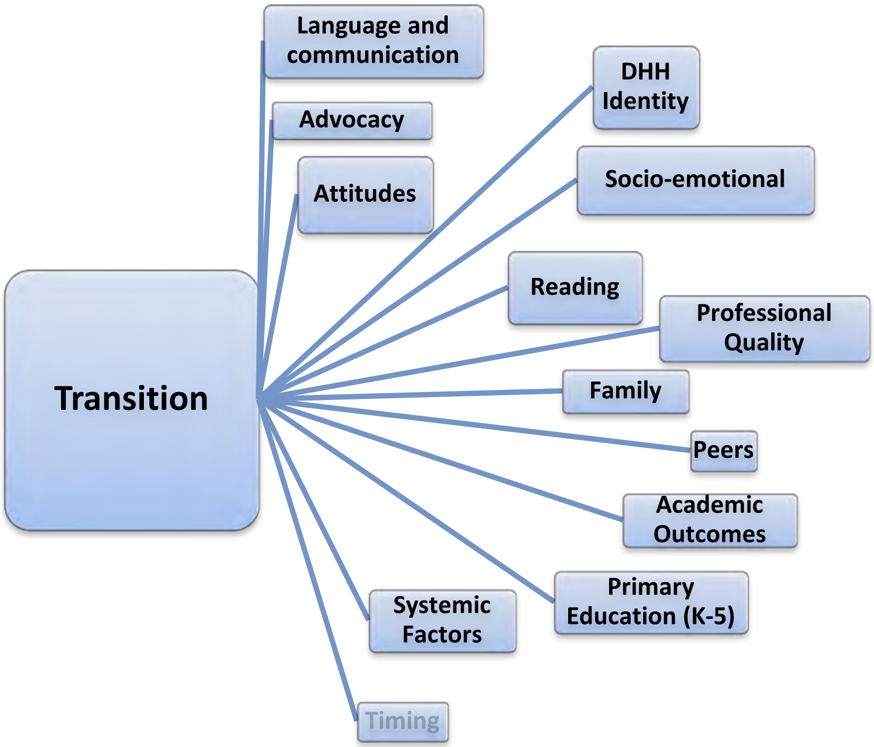
The response scale ranged from 1 to 5 (never to always). The average rating across this group of individuals was approximately 3, meaning that they "sometimes" experienced the statements above. While this is not a very high rating overall, it is important to note that participants had a broad range of experiences across the board. The black bars extending above orange bars are error bars. Error bars provide information about how much the responses varied in each item and demonstrate the accuracy of each measurement. For each of these items, there were individuals who rated the experiences very highly, close to a 5 (always), and others who rated them quite poorly, with ratings close to a 2 (rarely).

We also asked the interviewees and the focus group participants about their transition experiences. Transition-related topics were one of the highest coded topics, present in 33% of the coded segments. We coded the transcripts for examples of how participants described transition, specifically, as well as experiences that co-occurred with transition.

> *"I kept thinking negative thoughts. What if I ask for this. I didn't want to be too assertive. I didn't want to embarrass myself in front of the administration"* (student).
>
> *"[I was] never included in any IEP type meeting. So nobody ever explained anything. . .I was paranoid until I had a couple of older friends who were . . . ahead of me [who explained everything]"* (student).
>
> *"The IEP needs to be focused on the child. Does the child really know what the IEP is saying? Do they understand that the IEP has all this information, history, from when they were much younger? Maybe they don't have access to it, they have never read it"* (professional).

In the coding we found that transition was both prevalent and co-occurred with many other topics. However, there were some topics that did not co-occur with transition that we may have expected to find. For example, discussion about transition was not significantly related to DHH ++ (students with additional disabilities), Work/Employment, Extra Curricular Activities, Role Models, Vocational Rehabilitation, Institutional Factors, Accommodations, Assessment or Technology. This may be due to the individuals who were in the interviews and focus groups and the unique characteristics of their experiences. We will continue to explore this further in future research.

Factors that were significantly correlated (above r = .20) with discussion of transition are summarized in the figure below.



The information collected in the qualitative analysis shows that professionals have concerns about the lack of self-advocacy and initiative in the DHH student population. There were several factors that relate to this matter including individuals who are DHH not knowing what services are available, lack of initiative in self-advocacy, lack of motivation in academics, and distractions in postsecondary education settings. There tended to be a significant emphasis on DHH students not taking accountability for their studies, specifically in postsecondary education. Those serving individuals who are DHH were likely to believe that there are resources available; however, these resources were not being taken advantage of by the students. The professionals tended to agree that not taking advantage of resources could ultimately be damaging to the student success.

> *"Well, I think that we want to see the student's transition into the world and be happy, and be able to function. And to be independent, be self-advocates. And to be able to get the services they need. And that's a big challenge… They need to advocate for themselves." (professional)*
>
> *"What are primary needs of students? Realizing they need to be their own advocate, and a strong advocate. Realizing what is expected of you as a college student." (professional)*

Personal Characteristics

There are many factors that contribute to a successful outcome for individuals who are DHH. In the discussions with individuals and professionals, many noted how important personal characteristics were in the transition experience; motivation, confidence, assertiveness, taking responsibility, and possessing strong social skills stood out as characteristics of students who were most successful.

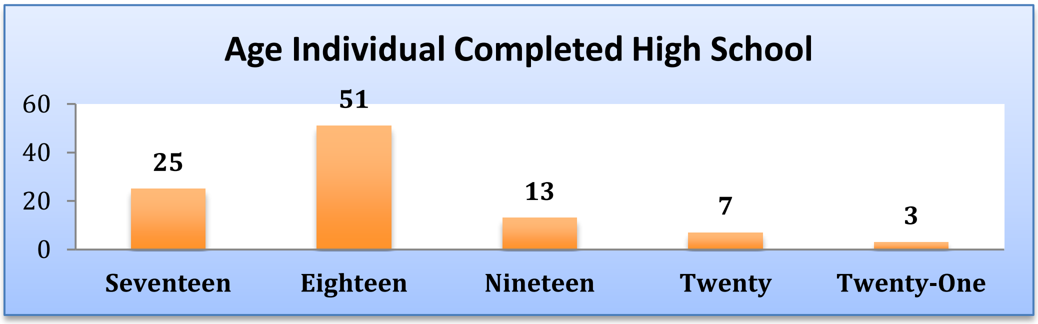
> *"I think just through my experience, and those students' experiences, those individuals who are more self-initiators, versus those who are more timid or apprehensive to get involved at first, those students are the ones who can be more assertive and successful." (professional)*
>
> *"[If] you don't have confidence, you are not going to be a great self-advocate for yourself. If you don't have that initiative to go in and meet with a disability services office; I mean, in higher education, there are a lot of resources there, but if you don't go out and search for those resources, then you can just be left kind of hung out to dry." (professional)*
>
> *"It's not just about their communication skills or their language skills, but about their social skills. A lot of our students, and it's not necessarily just deaf of deaf, but those students who have strong social skills, who have good civic responsibility, those are our students who tend to do well post-secondarily." (professional)*

An interesting explanation was provided as to why some students might not possess self-starting behaviors, or be motivated to assert themselves. It was posited that many students who are DHH have become dependent upon feedback or direction from others, which then impacts their ability to take personal initiative.

> *"One of the things you see, just in general, with students who isare deaf and hard of hearing that they become 'therapized' so that they are dependent on immediate feedback and so that sort of early training somehow impacts the classroom in that students are not willing, or less willing in general to tough things out for themselves, to be students who will really work on projects without too much prompting. I think in general, that's kind of been noted among deaf and hard of hearing. They need too much to be led." (professional)*

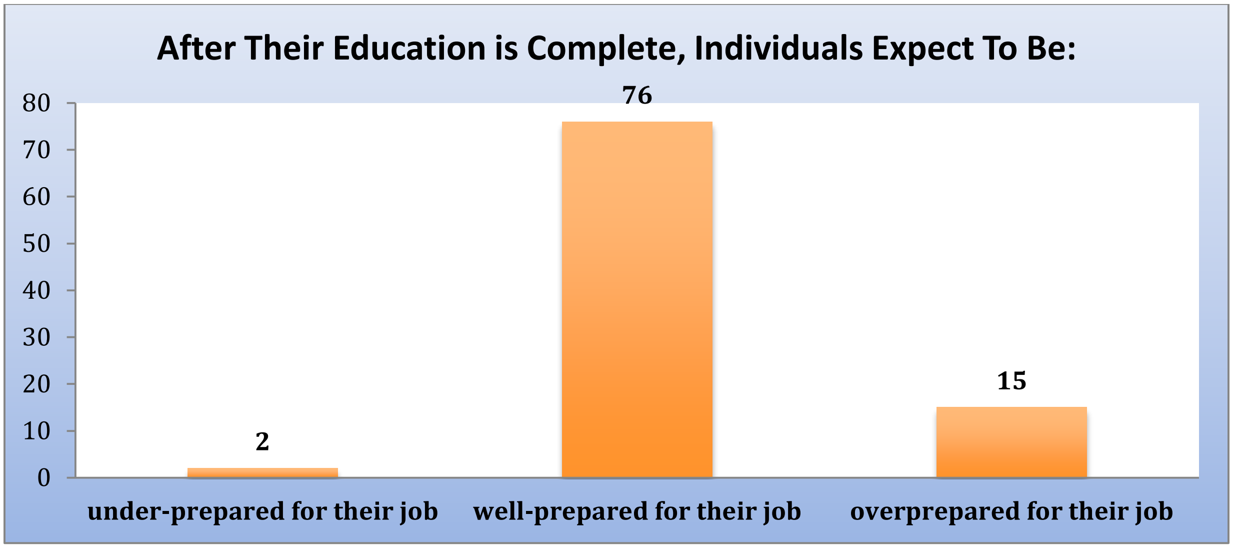
Education and Career Expectations

Both survey and focus group participants provided information about their education and career expectations. From the survey, we collected both retrospective information and future plans. The first question was about when the participants had completed high school. The majority of participants graduated at or before age 18 (n = 76), with the remaining graduating between 19 and 21 years of age (n = 23).

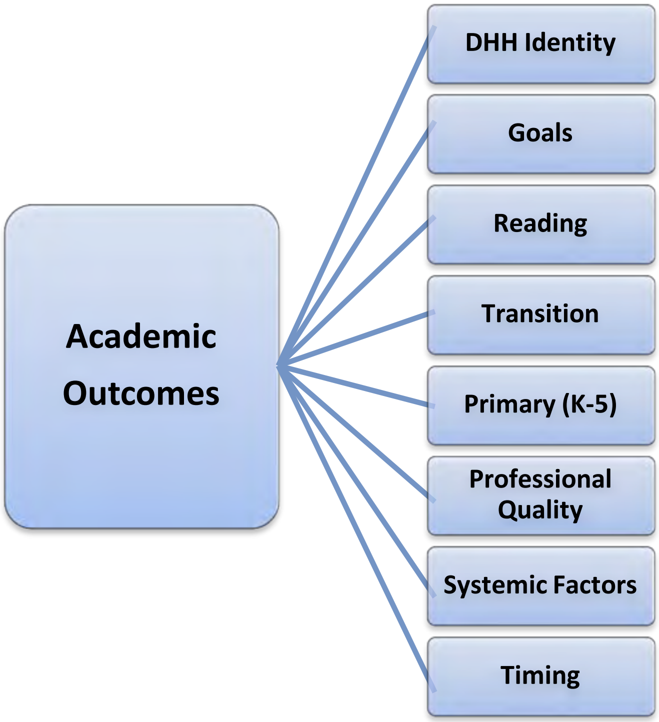


Participants who were currently enrolled in college provided information about their expected future education and training. As the majority of individuals who responded were older and were already employed or had completed their training, this question only applied to 14 participants in the survey. Of those in college, two expected to finish a bachelor's degree, five a master's degree, five an advanced graduate degree, one an associate's degree, and one person reported he would complete coursework only.

And finally, we asked individuals about their employment and levels of preparation for the workforce. Of the 95 individuals who provided information about their activities after education n = 87 reported that they would be (or already are) employed full or part time. Participants largely felt, or expected to be, well-prepared for their jobs (n = 76), with a few additional participants reporting that they were, or expected to be, over-prepared for their job (n = 15) and only two that they were, or expected to be, under-prepared for the jobs they had after completing education or training.



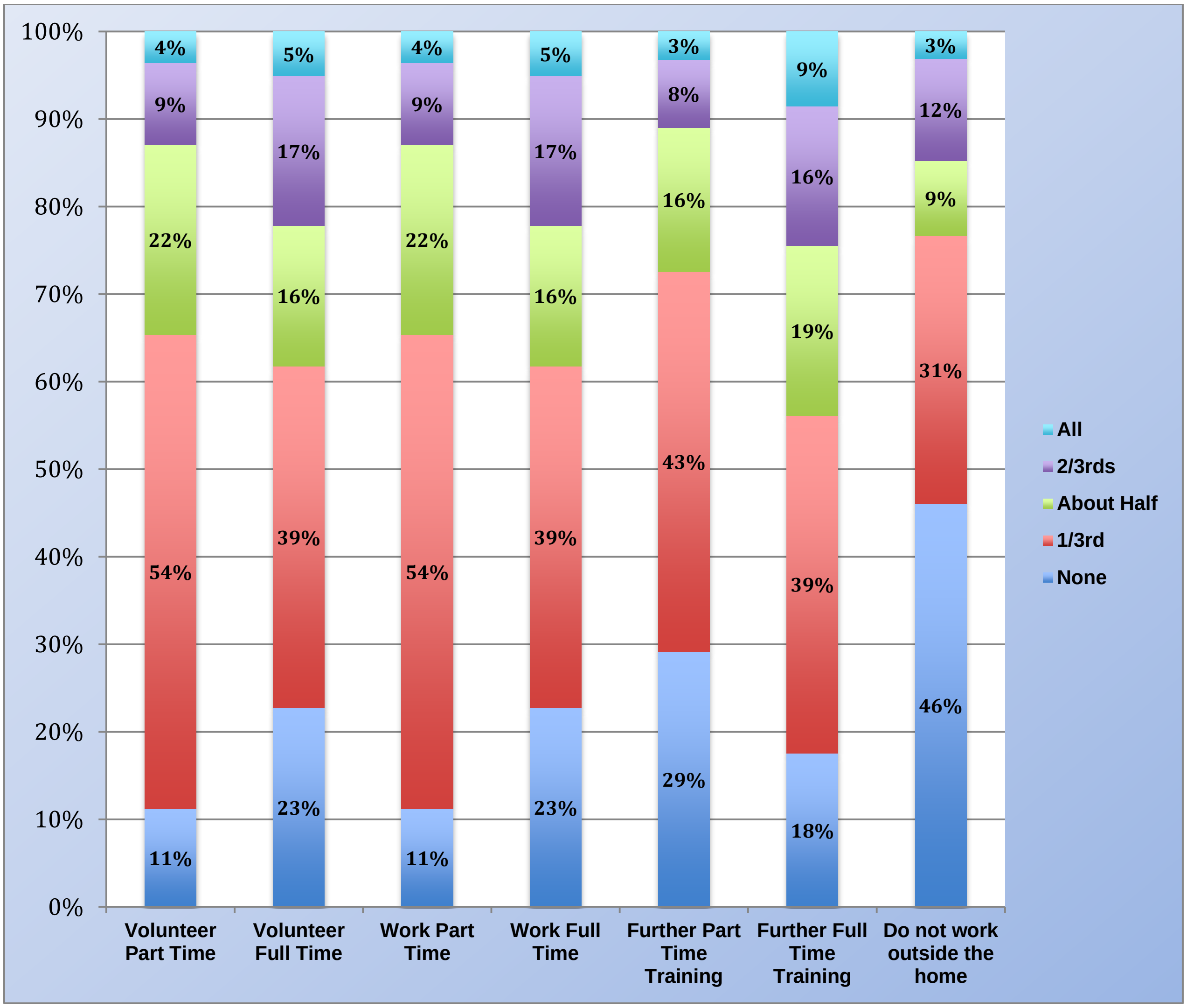
Issues related to academic outcomes were a strong part of our qualitative analysis, with codes for academic outcomes noted as part of 31% of the coded segments. More specific focus on reading was only discussed in 10% of the coded segments, reflecting a lesser emphasis on reading-specific outcomes than academic outcomes as a whole. However, when reading was mentioned, it was likely to be in the context of the discussion of academic outcomes overall ($r = .23$, $p < .0001$). Factors that were correlated at least $r = .20$ are shown in the following figure.



It is interesting here to also note the factors that did not significantly co-occur in participants' discussions of academic outcomes. The first is Vocational Rehabilitation, which had a non-significant correlation of $r = -.08$. Similarly, many of the infrastructure factors such as participation in extracurricular activities, institutional capacities, funding, accommodations, and technology were also not a part of these conversations. These are more tangible aspects of DHH participation in postsecondary settings, but the conversations about successful academic outcomes centered on the individual student characteristics, the K-12 process (primary and transition), and larger, less malleable factors listed in the figure above.

Activities Post-Program Completion

Professionals reported on the types of activities that individuals who are DHH engaged in after completing their program. What are their goals once they complete their current training or placement? What kinds of opportunities are professionals preparing individuals for? We focused on volunteer (part and full time), employment (part and full time), further postsecondary education and training (part and full time), and cases where individuals did not work or go to school or training. Because estimates across settings vary so widely, we asked professionals to provide "rough estimates" of the proportion of the individuals they work with and their outcomes. Please note that these figures only represent responses from individuals who indicated that they were aware of what these outcomes were, and thus should not be seen as representative of outcomes from all programs and settings across the entire survey sample. These results also represent potential overlaps between categories of postsecondary outcomes; it is likely that individuals engage in one or more category of activity over the course of their postsecondary trajectory.



Volunteering. Nearly 90% of professionals reported that *at least a third* of their clients engaged in some form of a volunteer activity. Stated another way, very few professionals reported that part time volunteer work was not a part of client activities after completion of their program or training. For full time volunteer work, there was a higher percentage, nearly a quarter, that said that this was not an outcome for any of their students, but it still was at least an option for at least 75% of their clients. Looking at volunteer opportunities as a way to develop work skills or make connections for later employment may be a place where pn2 can develop further resources for individuals and service providers.

Employment. Part time work also was also a highly reported client outcome, again with most participants saying that a third or more of the DHH individuals they serve would be engaging in part time work. A smaller percentage indicated that some or all their clients would have full time work immediately following the current placement, with a similar trend for full time work as full time volunteer activities. This finding does not tell us about the fit of the work to the individual, whether or not they are underemployed, how long they stay employed, or the equitability of their salary. However, it does indicate that participants in this survey largely see individuals who are DHH successfully entering the workforce soon after participation in their current training or education program.

Further Education and Training. A sizable portion of the survey participants reported that individuals they serve are often not finished with their education or training when they complete their current program. There were some differences between part and full time training that may be important in looking at these data. More specifically, nearly 30% of participants indicated that none of DHH individuals that they serve would be going to postsecondary education on a part time basis after their current setting. Participants were more likely to report a continuation into a full time than a part time program. A question for pn2 may be how do we help individuals plan the kind of multi-step trajectory, one that likely includes both part-time and full-time options that may be required to attain one's educational and occupational goals?

In a further analysis of participants reports of further postsecondary education enrollment for individuals who are DHH, we ran correlations with a number of professional attributes including the extent to which they discussed accommodations with their clients, their self-rating of preparedness (in a range of areas, including self-advocacy, assessment, working with DHH ++, and technology), and the number of DHH they served last year. The correlations indicated that the more years of experience that professionals had, the higher likelihood that they were to report that a higher proportion of their DHH clients pursued full time postsecondary training ($p < .01$).

Home. The last category of outcome was where an individual does not seek volunteer opportunities, employment, or further training. There are many reasons that an individual may not seek opportunities outside of the home; these findings are not contextualized enough to draw conclusions as to the reasons behind individual situations. Nearly half of these professionals did not have clients who would remain at home after completion of their programs. Also, these findings do indicate that a small proportion (about 25%) of professionals work entirely with a client population where at least half will not pursue further volunteer work, paid employment or training. In a further analysis of participants disaggregated by work setting (e.g., secondary, agencies, post-secondary, and multiple settings), we did not find a significant difference in the average proportion of participants with clients in this category ($F = 1.69$, $df = 3$, $p = .16$).

Relationship between Volunteer Work, Employment, and Further Training

In order to better understand the relationships between various volunteer, work, and training activities, we ran a correlation between each of the categories identified in the graph above. Because professionals could “select all that apply”, reported outcomes and experiences were not mutually exclusive. Perhaps not surprisingly, working part time was significantly correlated with all of the other types of volunteer, work, or training experiences. It is the most flexible in terms of also participating in other activities. Part time training was also correlated with all of the other activities, perhaps due to similar reasons as part time work.

Outcome	Volunteer PT	Volunteer FT	Work PT	Work FT	Training PT	Training FT	Home
Volunteer PT	1						
Volunteer FT	**.52****	1					
Work PT	**.31****	**.32****	1				
Work FT	-.12	.12	**.34****	1			
Training PT	**.20****	**.21****	**.27****	**.24****	1		
Training FT	.13	.09	**.20****	**.21****	.05	1	
Home	-.12	-.01	**.17****	.10	.06	-.05	1

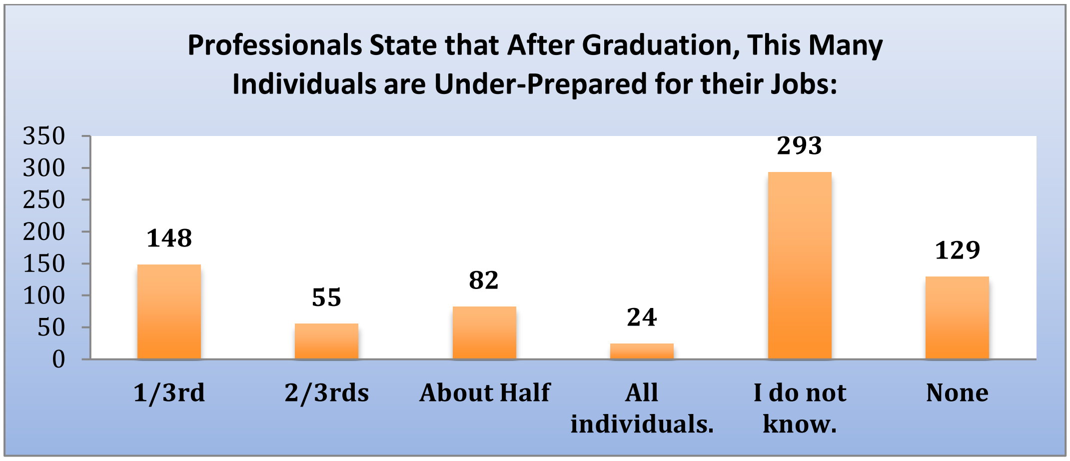
** $p < .01$ two-tailed test

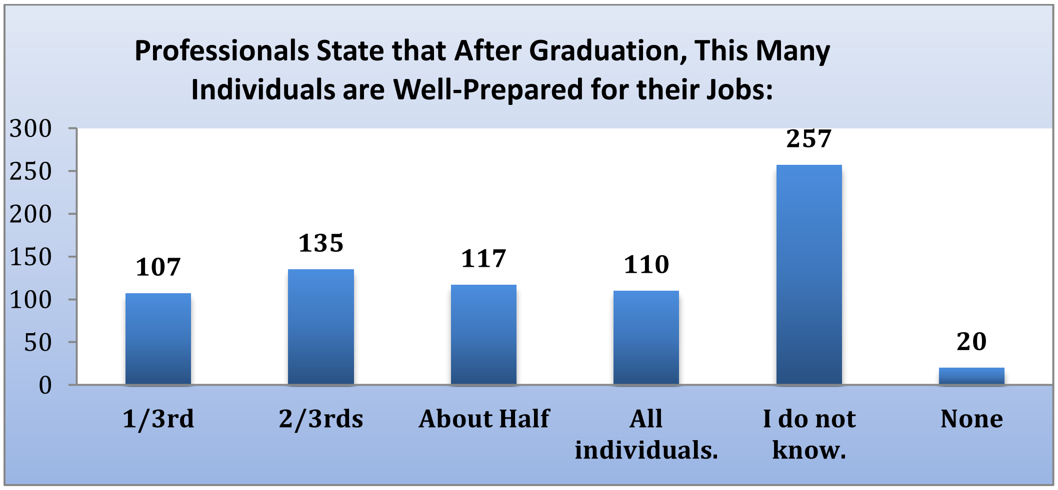
We then conducted a regression model examining factors that may predict professionals’ reports of the proportion of DHH individuals in their program being employed full time. The first block of the model with the professional-level malleable factors (professionals’ reported level of preparedness and their preparing students to discuss accommodations in the workplace) accounted for .026 of the variance (R^2). The second model, which included the program-level factors (overall quality of accommodations in the program and the number of DHH students served in the program) resulted in an $R^2 = .032$, a .006, R^2 change. Both models were statistically significant at $p < .05$ with $F = 4.05$ (df = 2, 304) for the first model and $F = 2.53$ (df = 4, 302) for the second model. Standardized Beta Coefficients, t statistics, and factors with significance for both models are shown in the table below.

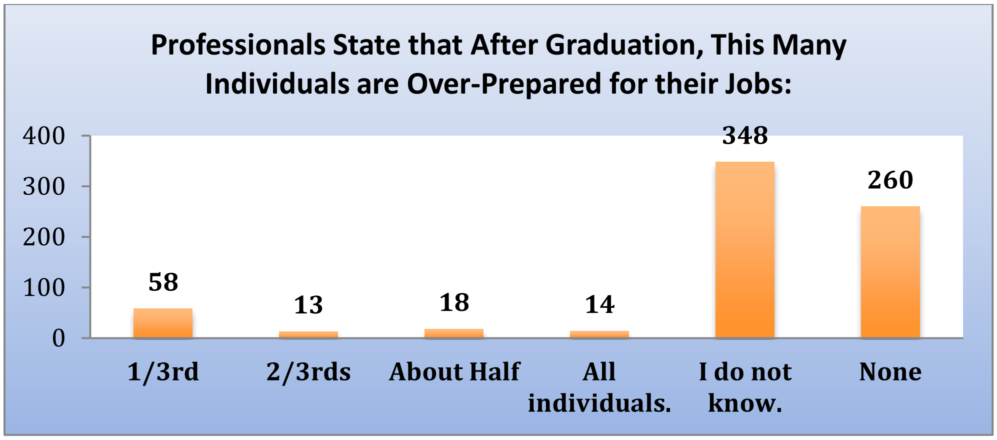
Model	Standardized Coefficient (Beta)	t test statistic
1 (Constant)	--	9.07**
Preparedness	-.057	.42
Discuss Accommodations for Workplace	**.166**	**2.83****
2 (Constant)	--	3.63**
Preparedness	-.060	-.97
Discuss Accommodations for Workplace	**.149**	**2.48****
Quality of Accommodations	-.016	-.26
Number of DHH Served	.078	1.31

** significant at $p < .01$

This model indicates that when professionals prepared DHH individuals to discuss accommodations for the workplace, those professionals reported that higher percentages of DHH would be employed full time upon completing their program. These findings indicate that when looking at factors that may be significant in predicting employment success for individuals who are DHH, proactive discussion on what accommodations may be helpful and how to ask for them may be a productive focus for pn2 professional development and training. Professionals provided some context on how many of the individuals they serve would be under prepared, well prepared, or over prepared for their jobs. The following figures look at these perspectives across all settings, looking at the range of outcomes as well as the professional's level of awareness of this outcome data.







Professionals were asked whether the individuals who they work with are under-, well-, or over-prepared for their jobs following graduation. Their most common response was that they did not know, so this information is based on the smaller subset of professionals who were reporting on information that they had about employment outcomes. Professionals were most likely to believe that individuals were well-prepared for their jobs after leaving their setting. We then looked at differences in ratings of preparedness depending on the professionals' setting. Those results are in the following table.

Professional Setting	Under Prepared	Well Prepared	Over Prepared
Secondary	53 (22%)	91 (39%)	92 (39%)
Agencies	26 (22%)	17 (14%)	77 (64%)
Postsecondary	121 (33%)	123 (34%)	121 (33%)
Multiple Settings	39 (12%)	106 (33%)	178 (55%)

Due to the small sample sizes here, it is not possible to statistically compare results between groups. However, it is interesting to see how the distribution of responses represents a range of perceived outcomes for individuals who are DHH, this finding is quite different than the finding in Chapter 3 where DHH individuals largely rate themselves as well or over-prepared for the work setting.

To gain a further understanding of factors that may have a relationship with program outcomes, we ran correlation analyses on a range of professionals' demographics. Very few were statistically significant. Number of years of experience (r = -.14) and number of DHH individuals served (r = -.13) were both negatively correlated with the rating that individuals would be well prepared for the workforce. In other words, the more experience professionals had, both over time and in the number of individuals served, the less likely they were to rate their clients as being well prepared.

A regression model was conducted to examine how professional-level and program-level factors may predict professionals' perspectives of DHH students being well-prepared for the workforce. The first block of the regression model with professional-level malleable factors (professionals' reported level of preparedness and their preparing students to discuss accommodations in the workplace) accounted for .019 of the variance (R^2). The second model, which included the program-level factors (overall quality of accommodations in the program and the number of DHH students served in the program) resulted in an R^2 = .088, a .069, R^2 change. Both models were statistically significant with F = 4.10 (df = 2, 417), p < .05, for the first model and F = 10.04 (df = 4, 415), p < .01 for the second model. Standardized Beta coefficients, t statistics, and factors with significance for both models are shown in the table below.

Model	Standardized Coefficient (Beta)	t test statistic
1 (Constant)	--	21.36**
Preparedness	**.14**	**2.86****
Discuss Accommodations for Workplace	-.05	-1.05
2 (Constant)	--	4.41**
Preparedness	.11	2.16
Discuss Accommodations for Workplace	.001	.014
Quality of Accommodations	**.21**	**4.42****
Number of DHH Served	**-.131**	**-2.68****

** significant at p < .01

This model indicates that the program-level factors play a significant role in professionals' perspectives of the preparedness of individuals who are DHH. In particular, the higher quality of accommodations and the higher number of DHH individuals in the programs result in professionals being more likely to indicate that a high proportion of DHH individuals completing their program will be well-prepared for the workforce. When only considering professional-level factors, professionals' reported preparedness appeared to play a significant role, but when we included program-level factors in the model, these factors demonstrated more importance. Our stringent p value cut off of .01 meant that preparedness, with p < .03, did not meet our criteria for significance in the second model.

Implications, Opportunities, and Limitations

The information in this section provides much “food for thought” across all units of pn2. Some findings to keep in mind as pn2 moves forward from this Needs Assessment:

Implications

- Individuals in this developmental stage are looking for way to gain autonomy from parents and teachers and want to gain control over decisions about their lives.
- Individual characteristics beyond academic outcomes, such as socio-emotional development, leadership skills, confidence, and motivation play a strong role in success.
- Postsecondary experiences, for good or for ill, may be very different than K-12 experiences in terms of language, communication, and culture.
- Systematic factors also play a role in individual outcomes, such as the number and variability in the DHH population served and the role of professionals in the program.
- Training experiences appear to be adequate in preparing individuals for work.
- Resources appear to be largely available, but un-activated by individuals who are DHH as they arrive to postsecondary settings.
- From a professionals’ perspective, there may be a challenge in providing effective accommodations while at the same time encouraging individuals to be strong self-advocates for their needs.

Opportunities

- There are fruitful and meaningful opportunities to discuss DHH identity within the context of transition, postsecondary training, and employment goals.
- Alongside identity, choices about language and communication modalities as an individual moves from adolescence into adulthood is an important topic, particularly in terms of choices about postsecondary training environments.
- Pn2 might look further into the finding that some professionals, particularly at agencies, feel that individuals are over-prepared for their jobs. This may be a case of chronic under-employment given training and education, and it would be good to pursue this issue further.
- Preparing DHH individuals to discuss accommodations and self-advocate for their needs appears to be a significant factor in preparedness and successful outcomes.
- There appears to be room for improvement in the IEP process, both in how individuals get information about transition planning and in how specific needs are met.
- In making decisions about where to enroll in postsecondary training or experiences, it may be helpful to look at how to build a social peer network of those who are also DHH. This can be less formalized for individuals at institutions that do not have a separate DHH identity.
- DHH individuals often have a multi-step process in moving from high school to employment; identifying strategies for navigating through these steps may be helpful.

Limitations

- The qualitative findings did not include the perspectives of individuals currently in the middle of their postsecondary training, nor did it include individuals from a broad range of educational settings.
- Because all participants had to be over 18, we did not have access to individuals at the earliest stages of their transition process.

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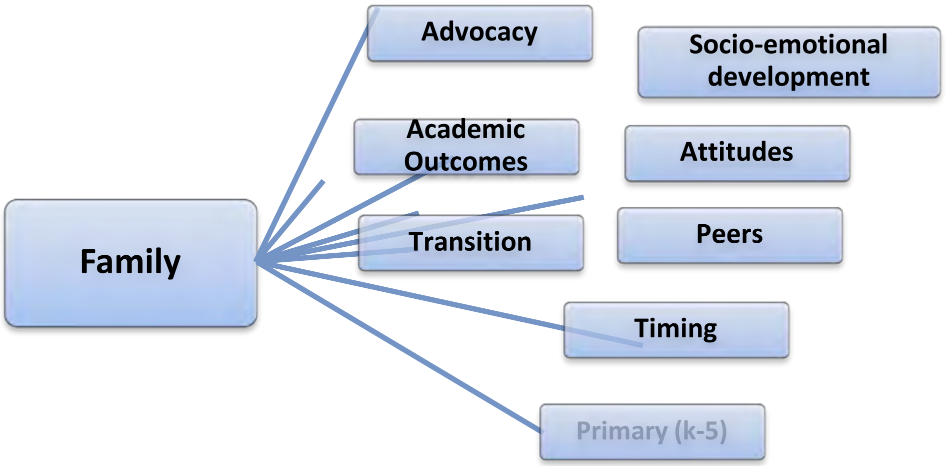
Chapter Five: Families and Friends

Families and friends are some of the most important factors that affect an individual's life. Within the systems theory framework guiding this Needs Assessment, families and friends are those individuals we spend time with on a regular basis and who have an immediate impact on what we learn and how we view the world. In this chapter we explore how parents, siblings, friends, and role models potentially shape the transition journey for individuals who are deaf or hard-of-hearing (DHH). This discussion will draw from both the survey findings and from the focus groups, particularly those with young people. We hope that this chapter will provide pn2 with useful information about the role of VIPs, the Very Important People, in the lives of those they serve.

Parents

This section focuses on the parents and their perspectives on transition and postsecondary outcomes as well as DHH individuals and their views about their parents. Chapter 3 provided a summary of the demographics of the parents who participated in the survey, which was the primary avenue for soliciting information directly from parents. Recall that parents with more than one child who was DHH were asked to pick the one who was currently or who had most recently gone through the transition from high school into postsecondary options.[1]

Participants described the significant impact that family, peers, and role models have on individuals who are DHH. Family and peers were seen to potentially significantly alter how successful or unsuccessful one is at finding resources and developing language and communication skills. In our qualitative coding, we found that Family code occurred in about a quarter (23%) of the coded segments. Those codes that had a correlation of above r = .20 are listed in the figure below.



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[1] As with previous chapter, all findings are significant unless otherwise noted. Significance for coding correlations is set at $p < .01$. Significance is set at $p < .05$ for parents and all statistical tests are two-directional.

Codes that were not significant included DHH ++ (DHH individuals with additional disabilities), Reading, Work, Extra Curricular Activities, Vocational Rehabilitation, Institutional Capacities, Money, Accommodations, Professional Quality, Technology, and Diversity. What is interesting about these factors is that many of them are mostly beyond the reach of parents as their children move from high school and into postsecondary settings.

Family Support

We found that participants attributed success to family members who sought out the best resources and pushed them to achieve academic goals. However, the participants did not always see that family support was a common trait, and that sometimes these roles could also serve to limit achievement in certain circumstances.

> *"…my dream was to go to an American university, and my parents really supported that dream… and my parents are still supporting me financially. They've really encouraged me and financially they've supported me and we communicate a lot and they really push me- which is rare, I think… I think I grew up normally but I meet some other deaf people and they tell me about their communication struggles with their families and I realize, wow, I really am very thankful for my life." (student)*

Another individual who is DHH made reference to support structures often, most notably the role of her parents and brother in her development of language, communication, DHH identity, and financial support. She placed high regard for her family as a structure that enabled her to pursue her educational goals despite many obstacles she faced, including leaving her country of origin in pursuit of higher education and seeking services for individuals who are DHH.

> *"The reason I came here is because I wanted better educational opportunities. My parents are hearing, my brother is deaf so we are both looking for a much better education… My parents obviously wanted a better education for me." (student)*

She goes on to say that role models and peers were also a way for her to build confidence in her skills; however, at times fostering relationships with these supports was extremely challenging.

> *"I went to an orientation and I went to a deaf center to be exposed to more deafness here in the US. That helped me find my deaf identity and really helped me a lot… I also had a deaf mentor which helped me and I also became more confident." (student)*
>
> *"But it's a challenge too because being the only deaf person, sometimes it's very limiting too. Sometimes I can't always communicate with my classmates… Sometimes I have a hard time developing rapport." (student)*

The significance of support from family and older adults could not be understated among participants. However, a re-occurring theme seemed to center around what kind of support was helpful, or how much support was too much. There seemed to be a fine line between the support that enables students to take the lead and the support that disables the student from taking responsibility for their own livelihood. Professionals who viewed family support positively frequently said things like:

> *"When those skills come from home, the difference is really clear. [The skills] are not artificial; they are not set up in a teaching situation. They see mom and dad use a videophone, to make a doctors appt, or to schedule an interpreter for whatever. And so, I think, ideally, the strongest skills are the ones that develop at home." (professional)*

> *"In terms of where the students kind of learn about success, you know an adult will say, 'I heard you did a great job in the academic bowl, or I heard you had a great game of soccer', or whatever it is, all of those things help to build that students self esteem, you know word of mouth kind of travel, so students like to hear those kind of things and that really builds self esteem." (professional)*

> *"I would tell parents that you are your own child's best advocate. I can't tell you what's best for your child. You have to. But at the same time I can tell you that whatever it is you want or need, you need to be persistent about getting it, and make sure you that complain in order to get what you need. You need to take care of that for your child because that's what your child needs and you know it. And it's really just about that, advocating and consistent advocating for it. I think that also it's how the language is mediated is an important part of it. It doesn't matter what method is used. It's about the mediation of that language. And that's the skills that the child will develop. " (professional)*

> *"Yeah, because one of the biggest problems we see is parents saying not everyone is right for college whether they're disabled or not. But what we see are parents coming with their child saying my child is going to college, come hell or high water. And it may not be what this student wants, but it's what mom and dad want. So that's really hard." (professional)*

> *"Growing up, what you had said earlier about the parents being supportive, but that can also make them fall short, because if the parents are "oh, poor baby, poor baby", and do everything for [their child], that can also be detrimental on them as well." (professional)*

> *"Yeah, it's also that, you know, providing the support. [Parents] have to balance that with teaching the student to advocate for themselves, and the parent helping and helping, and then finally letting go, and letting the student do it on their own. As many of us have said, there are a variety of things that help to make a student successful. But you're right. Sometimes you have to help the child to a point, and then let them figure it out on their own." (professional)*

However, for professionals who viewed family and counselor involvement more negatively, there was an indication that a 'hovering parent' would prevent the student from asserting their needs and wants, especially at the postsecondary level.

> *"But I do find that a lot of the people that I work with [in VR], especially the younger transition students from high school to college, when they come in to first meet me they are with their parents or, you know, someone else, another advocate that's with them [...] they have always had someone, an advocate for them in high school." (professional)*

> *"Many students don't realize that they need to get documentation. They've had a IEP all their life, and everybody did it for them, you know, daddy and mommy, or mommy and a counselor or an advisor, and everybody did the paperwork. And the school provided the evaluation. And everything was paid for." (professional)*

Several participants emphasized that family still plays a crucial part in their life as college students, focusing on their communication relationships at home or when visiting during breaks and when considering career choices. Participants engaged in careful and deliberate negotiation of where they located their hearing status, educational setting, and identity—all which influence and impact current educational and personal decisions as DHH adults.

> *"If they've got deaf family, they've kind of got a head start. Definitely have a head start. They arrive and they're very responsible and most of them, you know, are like, "Oh, wow," and they meet new friends and come to school. And sometimes their priority isn't the school because some of the students that come from hearing families are so fascinated by all of the sign language when they get there, and they might have been, you know, using the oral method. They come and they may even have a hard time identifying with, you know, the other students. . ." (professional)*

Language and Communication

Language and communication are significant issues in families, particularly when one member of the household may use a different language modality than his or her family. Although language and communication was not one of the top co-occurring topics with families, it was still statistically significant (r = .16). Many of the stories that were told in the focus groups touched upon issues of language and communication, particularly in the context of families.

After we had conducted our main analyses on the demographics of the parent survey participants, we decided to also look at the extent to which the child and the parent "matched" on their level of proficiency in ASL. For the purpose of this analysis, we combined "native" and "fluent" into a single category of "expert". We only had 49 pairs for this analysis, so these should be seen as descriptive in nature only.

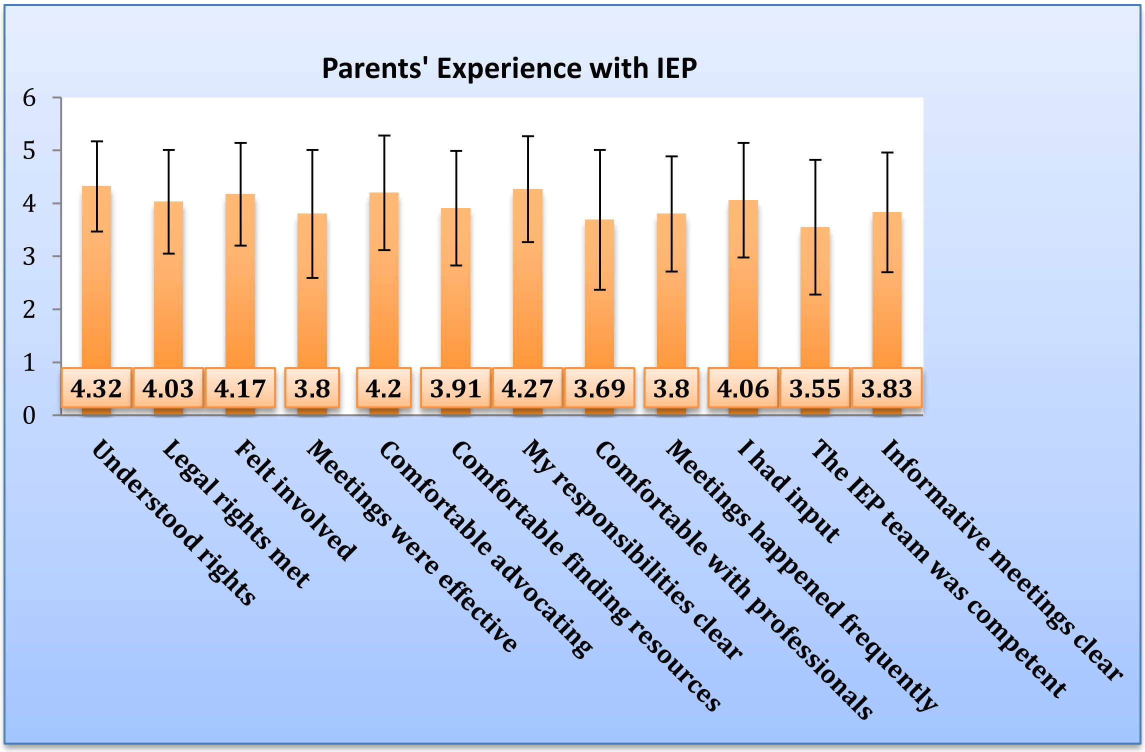
ASL Proficiency	Child None	Child Some	Child Expert
Parent None	3	5	0
Parent Some	1	15	14
Parent Expert	0	2	9

Again, the purpose of this chart is only to look at trends. There were no cases where a parent was an expert in ASL and the child had no reported proficiency in the language. There were many cases where both the parent and the child had some proficiency, but neither were fluent or native users of ASL. This idea of a “match” between the parent and the child in language and communication modalities is used in later analyses in this chapter. The fit between child and home language was also evident in stories about experiences from family or in the transition out of high school and into college. For example:

> *"I come from a deaf family. My dad, he's the only one who was ever hearing. We used home sign. Because it was kind of illegal when they came up, so they had a lot of home signs. They picked up a lot of ASL and English signing. We incorporated both into our household. Because, you know, we think you got to live with a lot of hearing influence. We kind of accommodated everybody and had a mix of it.” (student)*
>
> *“My parents didn't know to sign. They couldn't understand what I needed. I could get it from my teachers, but my parents didn't understand what my needs were. So I grew up not communicating very clearly at least with my parents [about the IEP].” (student)*
>
> *“I would try to lip read, but it was so [much] more complex speaking … the Mandarin language. So I would try to understand what they're saying. But my brother would sometimes interpret it for me into English. But I felt it wasn't fair to rely on my brother to interpret for my parents. So now up until this past year that's how it happened. But it has improved in the past year. Sometimes, you know, I'll communicate with them just to clarify what it was that they were talking about.” (student)*
>
> *“I was raised in a hearing family. And we all communicated using ASL24/7. None of us ever used our voice. I always signed. I have a twin sister and the whole family uses sign language to communicate in my family.” (student)*

Parents Experience of Transition

As with the participants who were DHH, we asked parents about their experiences with the transition planning process. Parents were asked about their experiences and satisfaction with individualized education plans, 504 plans, or their state’s equivalent. The response scale ranged from 1 to 5, and the options were never (1), rarely (2), sometimes (3), most of the time (4), and always (5). The average rating across this group of parents was approximately 4, meaning that they experienced the statement positively most of the time. The lowest average ratings concerned the IEP team itself, and whether the parents thought the members were competent.



In an analysis of overall parent IEP experiences based on the current educational or employment setting of their child, we found no significant differences between groups (p = .11). We found it helpful to look at the relationships between the parent characteristics and their perspectives of the IEP process. We conducted correlation analyses on a variety of factors, including parent-child language match from the above section and child characteristics. The following parent and child characteristics were significantly correlated with the parent's IEP score:

- Parent-Child match on English (written) proficiency level (r = .37)
- Child additional disability (r = .47)

As part of our further analysis, we conducted a regression on parent and child demographic factors and their *predictive* value of parents' ratings of the IEP process. We conducted a regression model that looked at factors that predicted the experiences parents had when advocating for their children who are DHH. The first model with only parent-level factors in the first block (parents' DHH identity, ASL proficiency level, written English proficiency level, and age) accounted for .135 of the variance (R^2). The second model which included child-level and combined factors (whether or not child had additional disabilities, and if parent/child matched in ASL proficiency) resulted in an R^2 = .388 a .253, R^2 change. Only the second model was statistically significant at p < .05 with F = 3.27 (df = 6, 31). Standardized Beta Coefficients, t statistics, and factors with significance for the two models are shown in the table below.

Model	Standardized Coefficient (Beta)	t test statistic
1: Parent (Constant)	--	4.18**
P DHH Identity	.30	1.72
P ASL Level	.05	.33
P English Written	.09	.53
P Age	-.15	-.91
2: Parent & Child (Constant)	--	2.71**
P DHH Identity	**.34**	**2.21***
P ASL Level	.16	1.09
P English Written	.18	1.23
P Age	-.06	-.37
C DHH ++	**.53**	**3.57****
C and P Match ASL Level	.05	.35

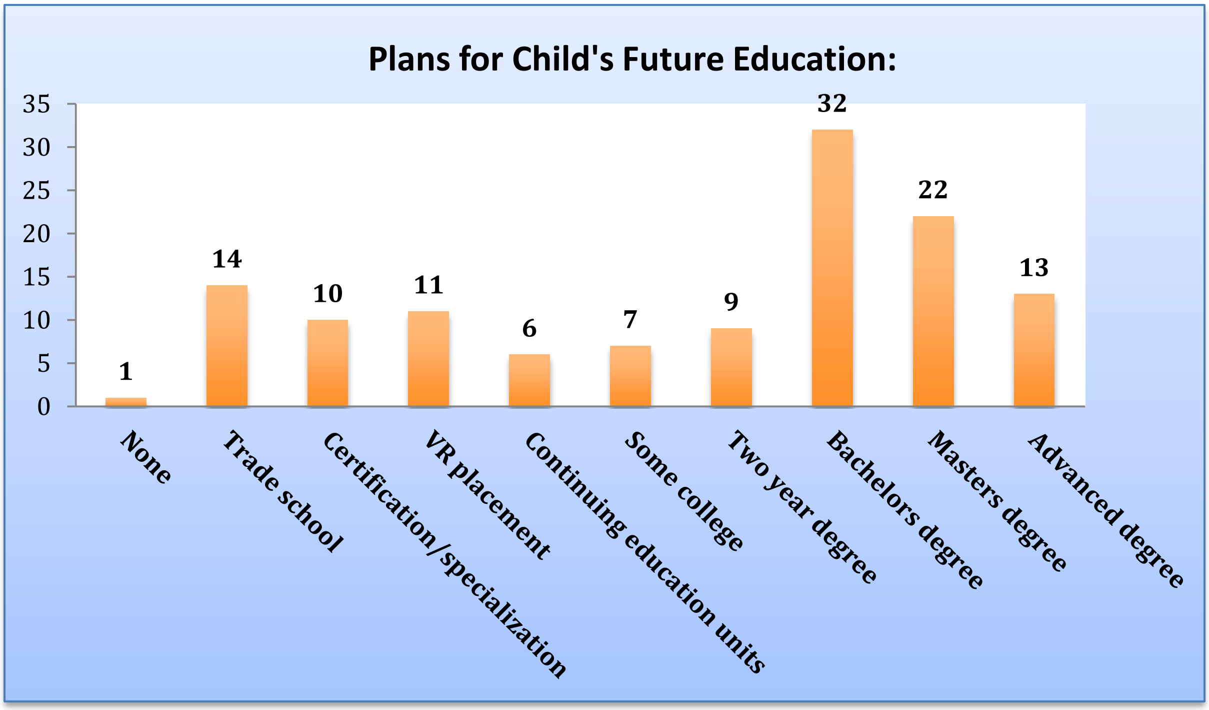
P = Parent; C = Child
* significant at p < .05
** significant at p < .01

The takeaway from this model is that parent demographics do not significantly predict their experiences with the IEP, not until also taking into account the complex variation in children who are DHH. What is most interesting here is that only two demographic factors in the final model predicted parent positive ratings of the IEP process: if their child had additional disabilities and the parent's identity as also being DHH. And, only when adding in child-level factors, did the parents' DHH identification become significant. When all other factors were held constant, if their child had an additional disability, the parents' overall IEP experiences were significantly higher. This was also true if the parents themselves had identified as a DHH individual. Other than DHH Identity, the parents' demographic information did not significantly predict their ratings of the IEP process. In contrast with professionals' ratings, where participants were reflecting on work with individuals who are DHH across a range of experiences, these findings are specific to a parent and his or her child. The strength of the DHH ++ finding suggests that this is an area for further exploration. Perhaps parents of children who are DHH ++ interact differently with the IEP team? Perhaps the composition of that team is different when students have multiple disabilities? What is it about the experience of parents of children who are DHH ++ that is different than those whose children are DHH?

Parent Expectations for Education

The next area from the survey that we explore is that of parent expectations. Understanding what parents hope for and expect for their children is one barometer of how they perceive their child's transition into and through the postsecondary training process. Although only a subset of the parents responded to all components of this part of the survey, we can look at these findings to get a sense of parents and their perspectives on their child's education. For those parents with children *still in high school* (n = 24), the majority of parents (n = 17) expected their child to complete high school on time (or by age 18). Only seven parents estimated that their child would be between 19 and 21 before they completed their high school experience. For those parents with children *currently enrolled in college* (n = 12), three reported that their child would complete a bachelor's degree, seven a master's degree, and two an advanced graduate degree (e.g., MD, JD, or PhD).

These high expectations for future education are further emphasized in parents' plans for their child's future education overall (regardless of current enrollment). In this question, parents could choose all settings that they thought might apply to their child's future education, as noted in the following table. Only one parent felt that their child had completed his or her education at this point in time. Some parents (n = 11) reported that their children would use Vocational Rehabilitation services as part of their education and training experience. Many parents reported that their child would enroll either in a trade school, certification, continuing education program, or two-year college, ranging from 6 to 14 parents depending on the category. The emphasis here was on formal education: a total of 32 parents expected their child to earn a bachelor's degree, 22 a masters degree, and 13 an advanced graduate degree.



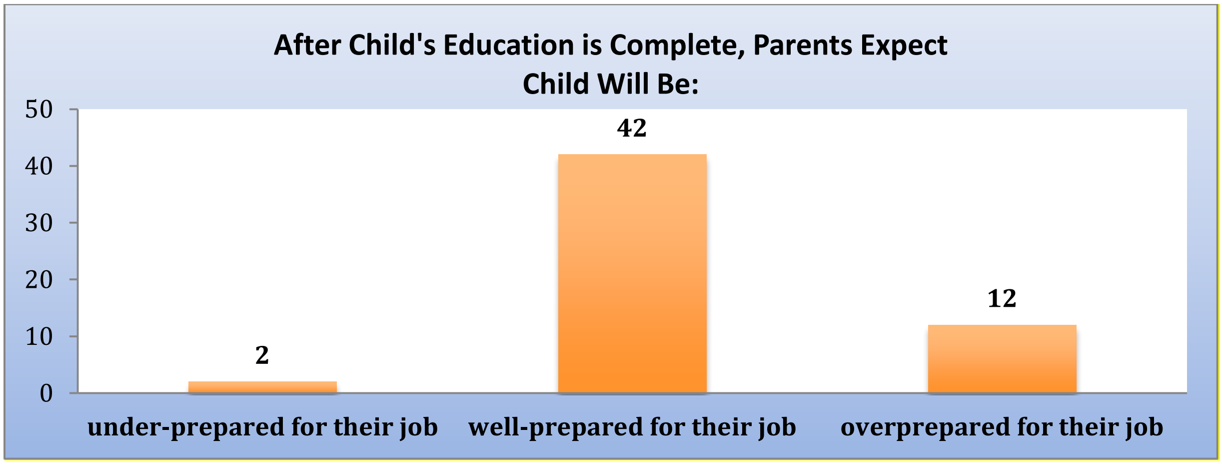
To further explore this area we looked at the relationship between parents' perspectives on their child's future education and two student characteristics: whether or not the child had an additional disability and whether or not the parent identified as DHH. Only trade school placements were significantly positively correlated (r = .54) with whether or not the child had an additional disability (p < .01). Expectations that the child would obtain a master's degree or higher were negatively correlated (r = - .33, - .34) ($p < .05$) with a child having an additional disability. There was no significant relationship between a parent's identity as a DHH individual and plans for their child's education.

Participants in the focus groups often referred to parent expectations and the role they played in their own decisions about higher education and training:

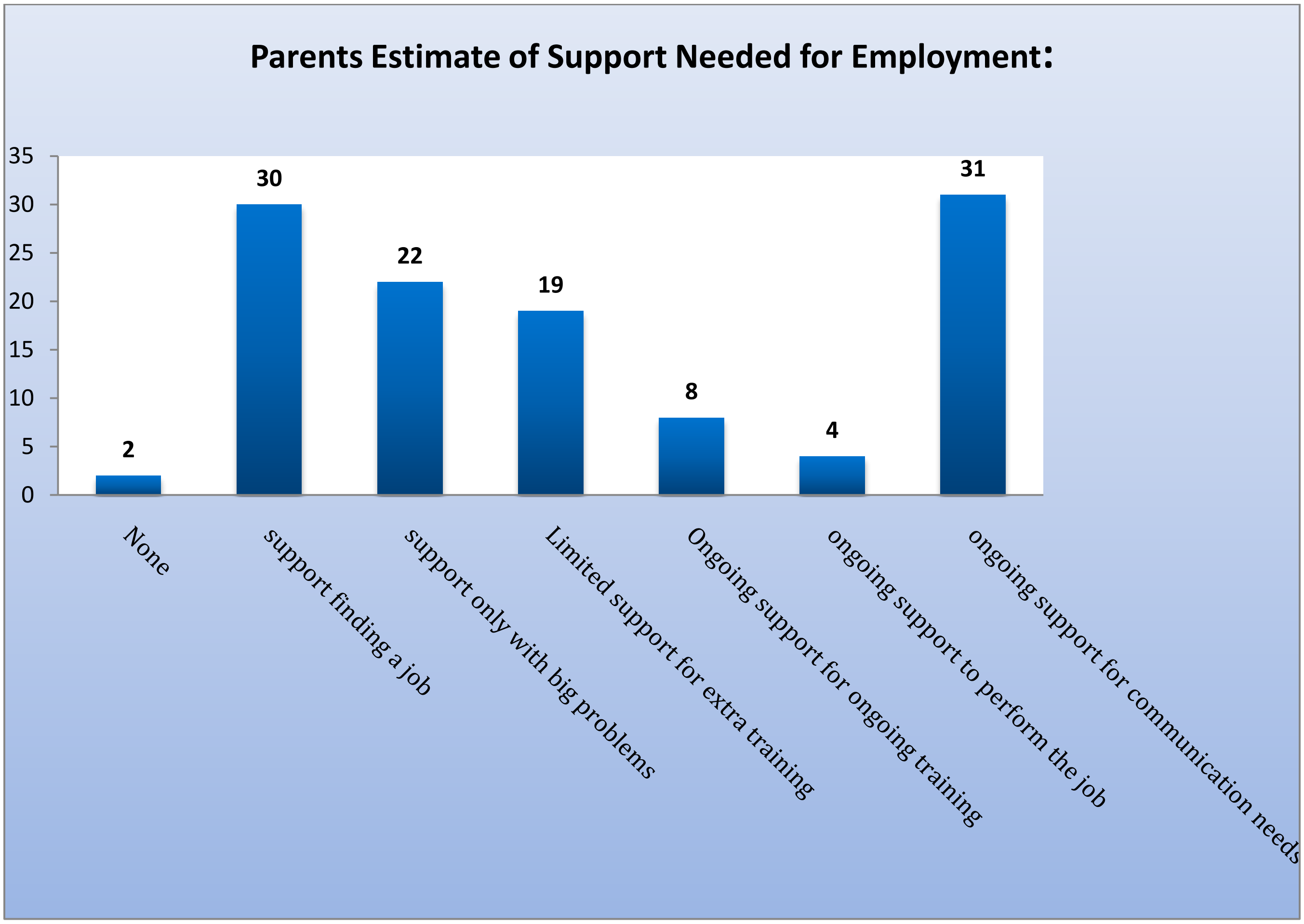
> *"I came from a family that works pretty much. My father is a master class mechanic and my mother has an associate's degree in early childhood development and she suffered from a heart attack when she gave birth to my sister, so my mother would always help me if I had reports or problems that I couldn't do, but for the most part, I was on my own, whatever I had I would ask help for, what I couldn't get help for, I would just figure it out." (student)*
>
> *"My parents really expected me to go [to college]. My sister graduated from college and that's always been what I wanted to do. I liked [high] school, I just didn't like being in school because of the people." (student)*
>
> *"My mom had an associate's degree. My father graduated high school and went into the army but was honorably discharged for having a medicine reason. College was never really for us, it was just an option. My parents have always had the mentality that I should be able to make my own decisions and learn from my mistakes. -- if you did go to college, that's what you did, but I never really wanted to go. I always wanted to work. To be honest, football really kind of made me do it. . ". (student)*

Parent Expectations of Future Employment

Parents provided information regarding their expectations for their child's future employment. With few exceptions, this group of parents reported that their children would be employed full time. Interestingly, when parents were asked how prepared their children would be for their future employment, the majority (n = 42) felt their child would be ***well-prepared,*** whereas only 12 responded that their child would be over-prepared and two felt that their child would be under-prepared. Individuals who are DHH have a much higher sense of their own level of preparedness than do parents ($p < .01$).



While their expectations were high for education and employment, parents estimated that their children would need some support to secure and maintain a job. Information about needed support is in the figure below. Parents were encouraged to select all response options that were applicable.

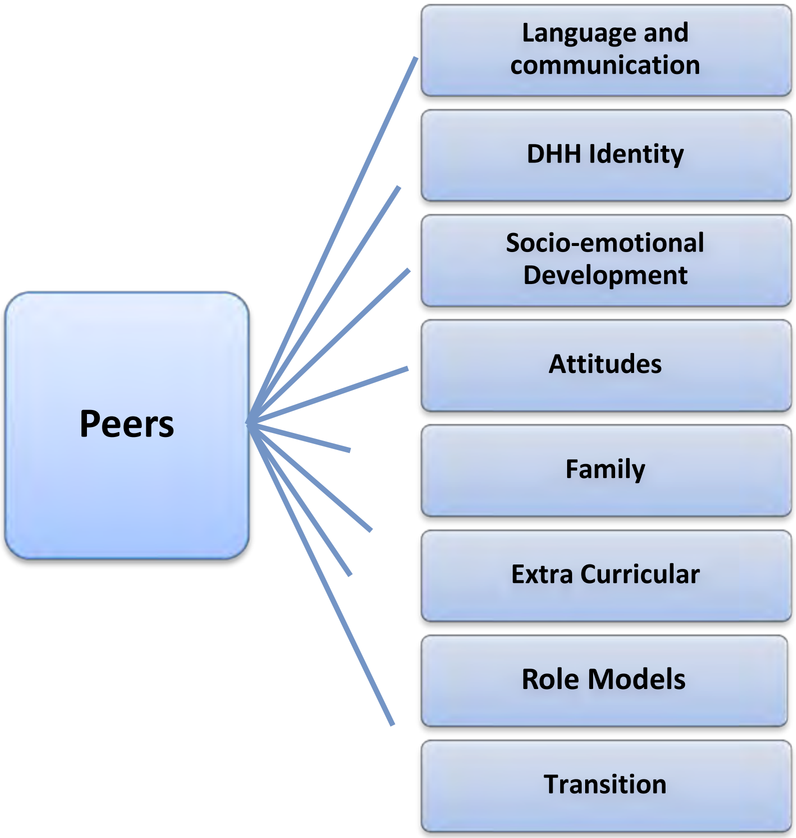


Most parents reported that their children would need ongoing support for their communication needs, but few thought that they would need ongoing support to perform the job itself. Interestingly, there were a large number of parents who thought their child would need support finding a job, and a few that reported a need for limited support for extra training while on the job. Clearly, some additional support may be helpful for individuals who are DHH, beyond a high level of education and training.

Peers and Role Models

As individuals move into late adolescence and early adulthood, the peer group becomes immensely important in every day decision-making and the development of future plans and goals. This section of Chapter 5 focuses on peers and role models, both in terms of those in the same school cohort but also those relationships that are in more informal settings. All of the findings here are drawn from our qualitative research, looking at areas where the code for Peers played a key role in understanding the context of the participants' experiences.

Peers were mentioned in 17% of all of the coded segments of the interviews and focus groups. Codes for peers co-occurred across almost all of the codes that related to individual characteristics and the transition experience. This is a robust influence in an individual's experience, even beyond the most highly significant factors listed here. A summary of those that were correlated at r = .20 or higher is provided below.



Three of the above codes deserve honorable mention because they stand out so much higher than the others: DHH Identity (r = .37), socio-emotional development (r = .34), and extra-curricular activities (r = .37). The correlation values for these three topics are almost double those of the other categories. This indicates a place of emphasis in the strength of relationship between peers and particularly socio-emotional development of individuals who are DHH. A further note is the interesting space in which adult role models are discussed in conjunction with peers, particularly in goal setting activities. Both same-age and different-aged colleagues are influences that can help to clarify or expand an individual's thinking about their own future. The assumption that can be made by the professionals' attitudes toward support structures is that peers and role models significantly affect individuals who are DHH. These relationships can help build life skills if fostered appropriately, but can be a significant barrier to success if they interfere with postsecondary responsibilities. Professionals also tended to think that extracurricular activities were closely linked to success in postsecondary education. They believed that students who were engaged in extracurricular events would have greater social skills and be more inclined to engage in academics than students who were more isolated:

> *"…opportunities across campus to engage as any other student might in extracurricular activities, study-abroad opportunities, things that go on in the dorm, whatever that might look like. Just that complete experience I think has to be a way that we see success. It enriches the whole experience." (professional)*

Several professionals mentioned specific extra-curricular activities for students to become involved with and develop a sense of community.

> *"I know that I've noticed whenever we get a new commuter student, it seems that they aren't really familiar with their identity and haven't really made that determination yet. But after being involved in the after school programs, it helps a great deal. I mean, really, for most students, they can be involved in Drama or a variety of other activity and we can see a tremendous growth. If you look to the other schools, that don't offer those same kinds of after school experiences for students, we just don't see the same things to help students be successful." (professional)*
>
> *"I think through their involvement in some of the after school activities, we see them being very successful. I mean we have elections for student to become student body president and that sort of thing. Being involved in that helps build leadership skills. So we really try to teach every individual to become a leader, not just looking to those who have the skills for it. We really teach everyone to become a leader." (professional)*

However, the professionals seemed to have a mixed opinion on the role of peers in the postsecondary setting. They found that it is crucial for students to have a strong peer support group, but that over socialization was one of the biggest barriers to success for individuals who are DHH in the postsecondary setting.

> *"And the one thing we really emphasize to students is when you get there, join something. Be part of something. If you are part of a group, you are going to be okay." (professional)*
>
> *"We have a lot of students who grew up in small towns where maybe they were the only person, or maybe there are only a couple of people, and so when they're getting to campus, it's opening their eyes when they're meeting other students." (professional)*
>
> *"You have nobody to study with you are out partying every night. You know that's a big issue. And there's no – there are no immediate consequences of your behavior. It's only when you get the "F" and it's too late." (professional)*

Individuals who are DHH focused heavily on the important relationships at school in their discussions regarding transition and postsecondary outcomes. Similar to the way family is utilized in other educational contexts, peers and teachers hold important status and position within their lives. Two seemingly critical elements of the personal support structure were evident across nearly all participants: peers as survival mechanisms and teachers/professional role models as lifelines. Particularly salient are comments regarding friendships and community networks as being mediators between home and school.

> *"I was a person who had problems. Most of my deaf friends were oral and they had the same sort of thoughts. We are kind of like a pariah. We're at a deficit. We need to be fixed. Our disabilities need to be fixed by attaining what the hearing people value: lip-reading, audiological issues, speech issues." (professional)*

> *"Yeah, I was paranoid until I had a couple older friends who were a couple years ahead of me. They saw I was depressed and crying and they asked me what was going on. They said honey, you've got four [how many years in high school]. This year's done, and this year's done, and this year's done. And when this year is done, you're free. It was like new life. I was so excited. I understood I wasn't going to be there forever. I saw my friends leave and not come back. Then I understood what was school was for." (professional)*

> *"I remember at my oral school, the parents and parents of my friends in the school. They got together to talk about their frustration, to express their happiness and support of each other. They actually had a bowling league, I think it was every Wednesday and they still do, up to this day. So they still get together." (professional)*

> *"My friends didn't care [if I was deaf], they just wanted to be friends. They helped me a lot. I grew up playing baseball and they helped me get through things. If I had a problem, they helped me out. They didn't care whether I could hear or not. They said they were proud of me for coming here, glad I'm in college and going to a non‑hearing school really for the first time." (professional)*

> *"And then you have those students from the deaf schools and the oral schools come together. There are several [Deaf clubs and organizations] where I'm from (St. Louis) and those are very, very powerful because early on that helped me to learn more about deaf people who were out there." (professional)*

Teachers were seen as lifelines for coping and making sense of frustrating or negative situations.

> *"I remember that my teacher and I, we did this, and this is how my teacher accommodated me, and I was able to work into that classroom. So now I know how to do the same thing with my new teachers, or with my interpreters." (student)*

> *"She [teacher] teaches it [sign language] to hearing students but her goal is to get into the school and even though this teacher is atrocious, she tries to befriend them so the deaf students know there's somebody, a healthy, successful deaf person around that they can come to. That's what it's going to take, that mentoring and partnership." (professional)*

> *"But I never grew up with parents really involved as part of my education process. So I understand the problems now. My parents didn't know to sign. They couldn't understand what I needed. I could get it from my teachers, but my parents didn't understand what my needs were." (professional)*

> *"My English teacher was like a drill instructor. She became friends with me on Facebook, she got my cell phone number off my coaches, she knew all my friends, she knew all my teachers. She knew where I was, where I wasn't supposed to be. It pushed me to the point I was ready to jump out of a window because if I was late for class, I got a text message, a phone call if I wasn't in school. She's crazy because she knew I was captain and if I did anything she didn't think was right, she called my coaches so she made sure I was trying to do my best at all times. She was nuts but I love her." (professional)*

All in all, peers and teachers play pivotal and critical roles in the lives of these participants—roles that became significant over time and across diverse contexts, situations that encompassed skills and capacities which weaved into their personal and educational spaces, either as a young student or as an adult today. Although an indirect factor in the overall picture of transition and postsecondary success, peers and role models do still play a salient role in the experiences of individuals who are DHH.

Implications, Opportunities, and Limitations

Information about families and peers are important in that they touch upon the personal context of individuals who are DHH. They may not be the primary recipients of pn2 support in many cases, but they are very important to consider as potential resources to support individuals who are DHH as they transition from high school into postsecondary training and employment.

Implications

- As in the previous chapter, there were questions about degree of support, and how the amount or type of support may inhibit individuals as they transitioned into a postsecondary setting.
- Home was seen as the place to develop independent living skills and how to manage logistics such as paperwork, communication, and financial arrangements.
- Often there was uneven communication at home, where parent and child were not equally proficient at a same modality, creating a context for potential misunderstanding or limited effective problem solving.
- As in the previous chapter, findings here emphasized the adequacy of training and education programs in preparing individuals for postsecondary goals.

Opportunities

- Parents report opportunities for additional training or support once individuals who are DHH reach the workplace. Areas of additional support might include issues surrounding obtaining a job, communication, and trouble-shooting when significant issues arise.

- Peers and extra-curricular activities are a significant factor in an individuals' socio-emotional well-being. Fostering positive peer relationships and meaningful participation in extra-curricular activities may be a strategy for individuals both in postsecondary settings and once they leave their education and training.
- Role models were explicitly named as examples of how members of the DHH community can support individuals currently going through transition and training.
- Hands and Voices and other parent groups may be good resources for collaboration, information sharing, and product development.
- Community networks can serve as a resource for both individuals and families as they navigate the transition process.

Limitations

- Data collection in this Needs Assessment did not specifically target areas of peers. Future research will need to look at this area more explicitly.
- Data collection also did not include parents in qualitative data collection; our opportunities for interviews and focus groups were mainly at postsecondary settings or at professional conferences. Future research will need to recruit parents as part of larger qualitative data collection activities.

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Chapter Six: Professionals

Professionals were the largest group of participants in the pn2 Needs Assessment. This chapter focuses on the experiences of professionals who work with individuals who are deaf or hard-of-hearing (DHH) across a wide range of settings and roles. This chapter begins with a more in depth look at the contexts and characteristics of the participants who responded to both the survey and to the focus groups and interviews. The chapter then describes professionals' perspectives on the field as well as some of the important contextual factors that affect their work.[1]

Professional Roles and Characteristics

The professionals who participated in focus groups and one on one interviews provided rich and impressive insights into their work; multiple issues described as complex systems of intersections among advocacy, services, and communication. Each participant, whether via a focus group or an interview, expressed sincere and genuine concern for the nature of the field as professionals working with and for DHH individuals. It is clear that these professionals care, advocate, and deeply concern themselves with ongoing challenges and solutions for the field—they certainly deserve recognition for their commitment to their work.

Chapter 3 provided overall demographic information about the many different types of roles and settings that professionals serve across the field. The majority of the participants (over 80%) were Caucasian women between the ages of 40-60 across all settings. For the purpose of this more in depth discussion, we combined the professionals in this study into five main categories: Administrators, Educators, Interpreters, Service Providers, and Multiple Roles. This report also aggregated professionals across settings: Secondary, Regional or State Agencies, Postsecondary Settings, and Multiple settings. Further information about the distribution of participants across both Roles and Settings is provided in the first chart, below.

Professional Setting	Administrator	Educator	Interpreter	Service Provider	Multiple Roles	Total
Secondary	33 (12%)	127 (46%)	31 (11%)	26 (10%)	56 (20%)	**273**
Agencies	32 (21%)	16 (11%)	8 (5%)	56 (38%)	37 (28%)	**149**
Postsecondary	42 (10%)	18 (4%)	35 (8%)	167 (39%)	162 (38%)	**424**
Multiple Settings	58 (14%)	33 (8%)	68 (17%)	119 (30%)	114 (29%)	**392**
Total	**165**	**194**	**142**	**368**	**369**	**1238**

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[1] As with previous chapter, all findings are significant unless otherwise noted. Significance is set at $p < .01$ for professionals and all statistical tests are two-directional.

The majority of professionals were either service providers or professionals working in multiple roles. Fewer participants in this survey had a single professional role, or one that had fairly delineated borders in both how and where they worked. Participants therefore wore many hats and are more likely to work in a variety of contexts and locations than in a single stand-alone setting. It is interesting to see that many of those who have multiple roles also work in multiple settings.

DHH Identities of Professionals

The table below summarizes participants' responses to the question about DHH identities by Professional Role. Participants could choose all types of DHH identities that applied; those who chose more than one identity were aggregated into the category "Multiple DHH Identities".

Professional Role	Culturally Deaf	Deaf	Hard-of-Hearing	Hearing	Late Deafened	Multiple DHH Identities	Total
Administrator	9 (8%)	6 (5%)	10 (9%)	67 (61%)	2 (2%)	15 (14%)	**109**
Educator	4 (2%)	3 (2%)	12 (8%)	128 (80%)	0	12 (8%)	**159**
Interpreter	0	0	3 (3%)	95 (95%)	0	2 (2%)	**100**
Service Provider	22 (9%)	14 (6%)	25 (10%)	138 (55%)	1 (.4%)	50 (20%)	**250**
Multiple Roles	9 (3%)	17 (6%	11 (4%)	199 (73%)	1 (.4%)	36 (13%)	**273**
Total	**44**	**40**	**61**	**627**	**4**	**115**	**891**

There were some interesting differences in the DHH identities between different professional roles. First, service providers had the most variability in their DHH Identities, with 55% identifying as hearing, 20% as multiple DHH Identities, 10% hard-of-hearing, and 15% culturally deaf or deaf. Administrators and those who serve in multiple roles also had some diversity in their identities. Interpreters, in contrast, were most likely to identify as Hearing.

To further understand the relationships between professionals' characteristics, we ran correlation analyses for four key factors: Proficiency in ASL, Age, DHH Identity, and use of a Cochlear Implant. The correlation table below describes the likelihood of one factor being present (row) given a second factor (column). All of these correlation values are very low, meaning that there is not a strong relationship between proficiency in ASL, age, DHH Identity, and user of a cochlear implant in this sample of professionals. The three that are statistically significant are mostly due to the very large sample size that we have for this analysis. The first finding was that the older a participant is, the less likely they were to have rated themselves as proficient in ASL. The second finding was that individuals with a DHH Identity were more likely to have a cochlear implant than individuals who did not have a DHH identity, and vice versa. The last was that a person with a cochlear implant was more likely to be proficient in ASL.

Again, these are not causal statements, but show strengths of relationships between personal characteristics.

Factor	Proficiency in ASL	Age	DHH Identity	Cochlear Implant
Proficiency in ASL	1			
Age	**-.16****	1		
DHH Identity	.04	.03	1	
Cochlear Implant	**.11****	-.04	**.24****	1

** p < .01 two-tailed test

Experiences with Individuals who are DHH

We asked professionals to describe some of their experiences. A comparison of the types of experiences by Professional Setting is shown below. Individuals working in postsecondary settings tend to serve fewer numbers of individuals who are DHH than their counterparts in other settings, have fewer years of experience, are less likely to have students with cochlear implants (though still 74%, so quite high), and serve students with fewer number of different types of disabilities. As individuals who are DHH++ gain greater access to postsecondary settings, it is possible that professionals in this setting will gain experience serving a greater diversity of DHH.

Professional Setting	Average Number of DHH Individuals Served Last Year [a]	Average Number of Years of Experience [b]	Average Percentage Serving Individuals with Cochlear Implants [c]	Average Number of Different Types of Disabilities Served [d]
Secondary	26	19	83%	4.7
Agencies	42	17	84%	5.1
Postsecondary	**15**	**14**	**74%**	**2.9**
Multiple Settings	42	20	89%	5.4

[a] F = 45.71 (3), N = 1,147, p < .0001. All pairwise Tukey tests are significant.
[b] F = 16.21 (3), N = 1,228, p < .0001. Postsecondary significantly less than all other settings, p < .05.
[c] F = 10.39 (3), N = 1,187, p < .0001. Postsecondary significantly less than Multiple settings, p < .0001.
[d] F = 34.32 (3), N = 1,161, p < .0001. Postsecondary significantly less than all other settings, p < .0001.

We also looked at these characteristics by Professional Role. Administrators served more students than the other participants, but all in this survey served at least 15 DHH individuals per year, a fairly high number. This group is also a group of veterans in the field, with an average of 13 to over 20 years of experience, depending on the role. It is not surprising, then, that professionals had exposure to cochlear implants across the board, as well as a range of students with additional disabilities.

Professional Role	Average Number of DHH Individuals Served Last Year [a]	Average Number of Years of Experience [b]	Average Percentage Serving Individuals with Cochlear Implants [c]	Average Types of DHH ++ Served [d]
Administrator	**52**	21	89%	4.9
Educator	17	19	81%	4.1
Interpreter	21	16	82%	**3.4**
Service Provider	30	**14**	84%	4.6
Multiple Roles	28	20	79%	4.6

[a] F = 20.59 (4), N = 1,153, p < .0001. Administrators served significantly more DHH individuals than other roles, p < .0001.
[b] F = 17.58 (4), N = 1,228, p < .0001. Service Providers had significantly fewer years of experience than Administrators, Educators, and those in Multiple Roles. p < .0001.
c No significant differences between groups.
[d] F = 3.39 (4), N = 1,165, p < .01. Interpreters significantly fewer than other roles. p < .01

For the next question, we looked at potential differences in language and communication expertise between participants in different professional roles. The survey question asked participants to rate their proficiency in different language and communication modalities. They rated their proficiency on a scale of 1 to 5, from “no experience” to “expert” or “native”. A “3” rating indicated some proficiency in the modality. The chart below shows the average proficiency rating scores for each modality, by professional role.

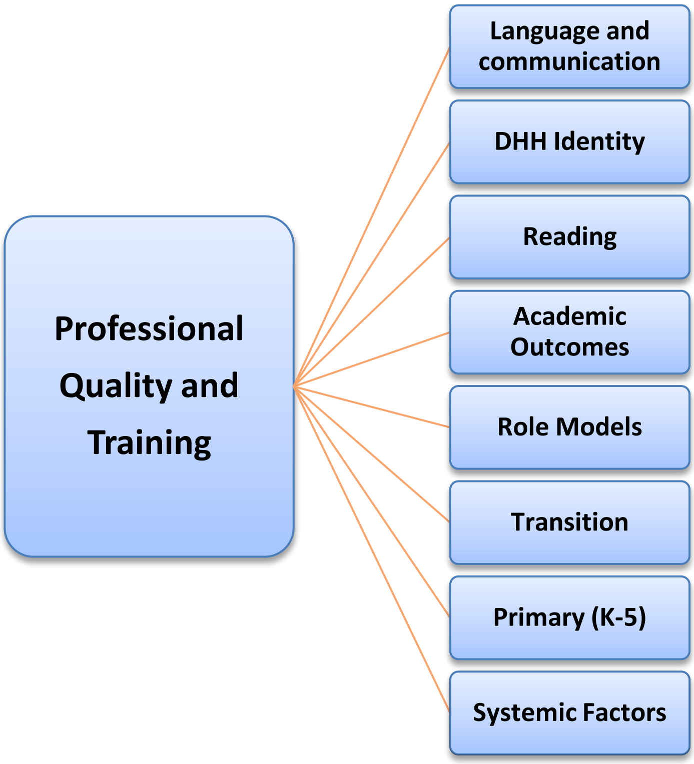
Professional Role	ASL[a]	Spoken English[b]	Written English[b]	Spoken Spanish[b]	Written Spanish[b]
Administrator	3.6	5.4	5.5	1.5	1.4
Educator	3.5	5.5	5.6	1.6	1.6
Interpreter	**4.6**	5.7	5.7	1.7	1.6
Service providers	3.1	5.3	5.4	1.4	1.4
Multiple	3.9	5.6	5.6	1.5	1.4

[a] F = 22.01 (4), N = 1760, p < .0001. Interpreters significantly higher proficiency ratings than all other roles, p < .0001; Service providers significantly lower proficiency ratings than interpreters and multiple roles.
[b] No statistical differences between groups.

With the exception of ASL, professionals showed very similar proficiency ratings for language modalities in this survey. Ratings of ASL proficiency lay in the “some proficiency” range, with overall very high English proficiency ratings and very low Spanish ratings. ASL showed greater variability, partly connected explicitly to the interpreters’ professional duties.

Levels of Preparation

We gathered information about levels of preparation from both the survey and the interviews and focus groups. The qualitative coding included a code for Professional Quality and Training Needs. This code was represented in 25% of the coded segments, so definitely something that the participants were aware of in their discussions about transition and postsecondary outcomes for individuals who are DHH. Professionals, however, work in a context, one that often has demands from many systemic levels. Factors that were discussed in conjunction (r = .20 or higher) with professional quality included those listed in the figure below.



These topics largely reflect areas where participants felt that professionals either could have a significant impact or would benefit from more information or training. For example, one primary concern was that the evaluators have enough experience or expertise in working with deaf students to determine the boundary between characteristics associated with the effects of hearing loss and characteristics associated with having an additional disability. In fact, the topic of DHH ++ (DHH individuals with additional disabilities) was almost exclusively discussed in the context of assessment, both in terms of academic assessment and in identification of an additional disability. One interviewee pointed out the importance of the qualifications of the person who evaluates a students' eligibility for particular services, particularly if the student may have an additional disability.

> *“There aren't that many qualified psychologists who can evaluate LD or ADHD in someone who is also deaf or hard-of-hearing. So most of the psycho ed evals I've seen on deaf and hard-of-hearing individuals are not worth the paper that they're printed on.” (professional)*
>
> *“There may be some [students] who have co-occurring disabilities that aren't diagnosed. So sometimes they see reading or writing deficits, and, yeah, that's not surprising for someone who has a hearing loss. But the evaluator wouldn't have a clue. So we do get some who have been evaluated by somebody who is trained and experienced in working with students who are deaf and hard-of-hearing. And so we do get somewhere…I actually have some faith in the evaluation indicating that there is a co-occurring disability. But there are just a lot more [for individuals] where the evaluation is worthless.” (professional)*

We explored this idea of professional preparation more fully in the survey. A part of the survey focused on participants’ reports of their levels of preparedness to serve individuals who are DHH. We solicited participant input on a range of important topics, including serving DHH++, assessment, collaborating with colleagues, using evidence-based practice, working in online settings, making modifications to instructional materials, choosing accommodations, and self-advocacy skills. To analyze this question, we first present the descriptive findings with tables of findings by Professional Role and Setting. We then look at the relationships of these results and other factors with correlational analysis, including demographic factors of both the professionals and the individuals they serve.

Participant ratings of their level of preparedness, by setting, are in the table below. Participants rated their preparedness on a scale of 1 to 5, with low being not at all prepared and 5 being highly prepared. Participants were encouraged to think across all of their training, professional development, and on-the-job experiences when providing their responses.

Professional Setting	Assessment[a]	DHH ++[a]	Self-Advocacy[b]	Online Technology[a]
Secondary	3.7	3.7	4.3	3.7
Agencies	3.5	3.8	4.1	3.8
Postsecondary	3.4	3.6	**3.9**	3.7
Multiple Settings	3.6	3.8	4.1	3.7

[a] No significant differences between groups.
[b] F = 9.46 (3), N = 1104, $p < .0001$. Postsecondary significantly less than Secondary $p < .05$.

Across settings, participants felt moderately, but not overly prepared across many topics. For example, for assessment, the average rates across the groups were between 3 and 4, indicating some familiarity but certainly some room for additional expertise. The same was true for working with DHH ++ populations and within online settings. Of the topics here, professionals rated working on issues related to self-advocacy as their strongest areas of expertise. However, professionals working in postsecondary settings reported significantly less preparedness in supporting students’ self-advocacy skills, when compared to those working in secondary settings.

We also looked at this information across different Professional Roles to get a greater sense of preparedness levels. Two things stand out when we look at the information by Professional Role and not Setting. The first is the Interpreter role, with overall lower self-reported preparedness ratings, particularly in the area of assessment. The second is the Educator role, a group that felt the strongest in the areas of self-advocacy for students who are DHH. It may be that this group can serve as a role model or guide in working with their professional colleagues.

Professional Role	Assessment[a]	DHH ++[b]	Self-Advocacy[c]	Online Technology[d]
Administrator	3.43	3.66	3.99	3.75
Educator	3.72	3.77	**4.28**	3.66
Interpreter	**2.95**	**3.41**	3.91	3.46
Service providers	3.63	3.78	3.93	3.76
Multiple Roles	3.61	3.77	4.19	3.75

[a] F = 9.39 (4), N = 992, p < .0001. Interpreters reported significantly lower ratings than all other roles except Administrators, p < .0001;
[b] F = 5.87 (4), N = 1127, p < .0001. Interpreters reported significantly lower ratings than Service Providers, p < .0001;
[c] F = 8.40 (4), N = 1107, p < .0001. Educators reported significantly higher ratings than Service Providers, p < .0001;
[d] No significant differences between groups.

Finally, we ran a correlation analysis between the number of types of DHH++ that professionals served and their rating of preparedness to work with students with multiple disabilities. There as a small, but significant relationship between the two factors, r = .19 p < .001.

To further understand what factors might predict professionals' reported level of preparedness, we looked at regression models for some of the topic areas on the survey, followed by an overall regression of all the topics combined. For each of these regressions we took a two-block approach. The first block consisted of demographic variables that were correlated in the earlier analyses. The second block consisted of setting variables, elements related to the professional setting and the individuals they served, also from those variables that were correlated in the earlier analyses.

Predictors of Self-Advocacy Preparedness

Our first regression model looked at factors that predicted the level of preparedness professionals felt in the area of self-advocacy. The first model with only the first block, professional-level demographic factors (age, years of experience, gender, and DHH identity) accounted for .038 of the variance (R^2). The second model, with the setting demographics added in (number of DHH+ types, and DHH students served) resulted in an R^2 = .041, a .003, R^2 change. Both models were statistically significant at p < .0001 with F = 5.40 (df = 5, 702) for the first model and F = 4.16 (df = 7, 700) for the second model. Standardized Beta Coefficients, t statistics, and factors with significance for both models are shown in the following table.

Model	Standardized Coefficient (Beta)	t test statistic
1 (Constant)	--	12.79**
Age	-.09	-1.91
Years Served	**.13**	**2.70****
ASL proficiency	**.11**	**2.70****
Female	.06	1.62
DHH Identity	.07	1.83
2 (Constant)	--	12.63**
Age	-.09	-1.87
Years Served	**.12**	**2.49****
ASL proficiency	**.11**	**2.46****
Female	.06	1.61
DHH Identity	.07	1.70
DHH ++ Clients	.06	1.42
# DHH Served	-.008	-.182

** significant at p < .01

What is interesting here is that, although these factors explain relatively small amount of the differences between preparedness levels within the topic of self-advocacy, professionals' years of experience and level of ASL proficiency remained significant predictors of preparedness in this content area, even when controlling for the demographics of clients and professionals' age. This analysis indicates that professionals with greater ASL proficiency and more years of experience serving DHH individuals report higher levels of preparedness in supporting self-advocacy skills in their students. This finding indicates that the capacity to communicate directly with DHH, and familiarity with this population, may be associated with a greater sense of how to help individuals who are DHH self-advocate.

We discussed advocacy to a great extent with the professionals that we interviewed. Professionals who work with DHH postsecondary students, in particular, face several challenges in obtaining appropriate and relevant services for students to access the college environment. Self-initiated advocacy typically, according to many of the professionals included here, allows for a greater range of access to postsecondary settings and activities. In short, DHH individuals in postsecondary settings appear to exhibit a wider sense of academic and personal success than students who do not self-initiate these particular advocacy elements. Participants offer their perspectives on students who seem to possess stronger sense of self-advocacy skills and implementation:

> *"One of the biggest challenges that we have for all of our students that are in disability services, because a lot of them don't want to be seen the same way, or they think, "nope, I don't need it. I can do everything on my own". And once it got into the second semester, then they realize, "okay, well maybe I do need some help". And I am not sure how you instill that when they get to college. . . students that don't have the self-advocacy skills, we then need to instill in them." (professional)*

> *“They're already developed, and they already seem to know. It's a little bit more of a challenge. They are aware of their need to speak up, and need to have interpreters, and needing other accommodations, but they don't want to identify as that. And the hard-of-hearing or hearing impaired seem to be more hidden.” (professional)*
>
> *“First of all, they need to realize that it’s okay. That there are people who struggle like they do. Then, they can be able to advocate for themselves. It’s like one of those steps they need to take. So they need to be able to accept that “I’m deaf and I’m okay”. And then they need to make peace with themselves first before they’re ever able to advocate for themselves. They need to love who they are and make peace with that.” (professional)*
>
> *“The first things that popped up [for me] were not strengths, they were process[es]. And that's what I was thinking. Many deaf students, when I see deaf students, they're self-advocates. That's a big strength. Hard-of-hearing, I see the opposite, or really hearing impaired. That's their label for themselves, is the opposite [hearing impaired]. They don't want to advocate for themselves. They want to do it themselves [without services].” (professional)*

Predictors Co-Occurring Disabilities Preparedness

Our second regression model looked at factors that predicted the level of preparedness professionals felt in the area of serving students with co-occurring disabilities. The first model with only the first block (professionals’ demographics) accounted for .027 of the variance (R^2). The second model, with the setting characteristics added in resulted in an $R^2 = .042$, a .025, R^2 change. Both models were statistically significant at $p < .0001$ with F = 3.829 (df = 5, 702) for the first model and F = 5.41 (df = 7, 700) for the second model. Standardized Beta Coefficients, t statistics, and factors with significance are shown for both models in the table below.

Model	Standardized Coefficient (Beta)	t test statistic
1 (Constant)	--	12.82**
Age	.05	1.00
Years Served	.09	1.85
ASL proficiency	.04	.99
Female	-.07	-1.93
DHH Identity	.02	.61
2 (Constant)		12.58**
Age	.06	1.14
Years Served	.06	1.25
ASL proficiency	.01	.27
Female	.07	-.19
DHH Identity	.004	.14
DHH ++ Clients	**.15**	**3.75****
# DHH Served	.03	.77

** significant at p < .01

The picture for professionals' levels of preparedness for working with DHH ++ is different than in the area of self-advocacy. Whereas no professionals' demographics factors were significant predictors of preparedness in this area, the diversity of one's clients, specifically in the area of DHH ++, predicted professionals' feelings that they were ready to serve this population. While this should not be seen as a causal factor – it could be that readiness to serve DHH ++ leads professionals to seek out or to be given these opportunities, the link between the two is an important factor for pn2 to remember when building capacity in this area.

Predictors of Assessment Preparedness

Our second regression model looked at factors that predicted the level of preparedness professionals felt in the area of student assessment. Assessment here referred to a range of practices, including academic assessment and identification of additional disabilities, depending on the setting or role of the professional. The first model with only the first block (professionals' demographics) accounted for .042 of the variance (R^2). The second model, with the setting characteristics added in resulted in an $R^2 = .044$, a .001, R^2 change. Both models were statistically significant at $p < .0001$ with F = 5.370 (df = 5, 702) for the first model and F = 4.049 (df = 7, 700) for the second model. Standardized Beta Coefficients, t statistics, and factors with significance are shown for both models in the following table.

Model	Standardized Coefficient (Beta)	t test statistic
1 (Constant)	--	9.82**
Age	-.06	-1.20
Years Served	**.19**	**3.59****
ASL proficiency	-.02	-.46
Female	-.07	-1.74
DHH Identity	**.11**	**2.69****
2 (Constant)	--	9.66**
Age	-.06	-1.15
Years Served	**.18**	**3.38****
ASL proficiency	-.03	-.592
Female	-.07	-1.74
DHH Identity	**.11**	**2.53****
DHH ++ Clients	.05	1.16
# DHH Served	.001	.02

** significant at p < .01

Assessment has been an area of focus for pn2 in recent years. These results indicate that two demographic factors significantly predict professionals' ratings of preparedness to administer assessments to DHH individuals: years of experience and DHH identity. These factors are significant even when controlling for the professionals' level of ASL proficiency, age, and the number and diversity of DHH clients they serve.

Overall Preparedness

Our last preparedness regression model looked at factors that predicted the level of preparedness professionals felt in the area across all of the topics listed on the survey. (Reliability of the scale was high with a Cronbach's alpha of .88). The first model with only the first block (professional's demographics) accounted for .054 of the variance (R^2). The second model, with the setting demographics added in resulted in an R^2 = .059, a .004 R^2 change. Both models were statistically significant at $p < .0001$ with F = 8.069 (df = 5, 702) for the first model and F = 5.380 (df = 7, 700) for the second model. Standardized Beta Coefficients, t statistics, and factors with significance are shown for both models in the table below.

Model	Standardized Coefficient (Beta)	t test statistic
1 (Constant)	--	-.073
Age	-.08	-1.61
Years Served	**.19**	**3.94****
ASL proficiency	**.10**	**2.58****
Female	-.03	-.77
DHH Identity	.08	2.11
2 (Constant)	--	-.22
Age	-.08	-1.56
Years Served	**.18**	**3.65****
ASL proficiency	.09	2.22
Female	-.03	-.74
DHH Identity	.07	1.88
DHH ++ Clients	.01	.25
# DHH Served	.06	1.6

** significant at $p < .01$

These results indicate that one demographic factor consistently predicted professionals' ratings of preparedness across all topic areas: years of experience. Years of experience is significant even when controlling for the professionals' level of ASL proficiency, age, and the number and diversity of DHH clients they serve. One of the participants put it like this:

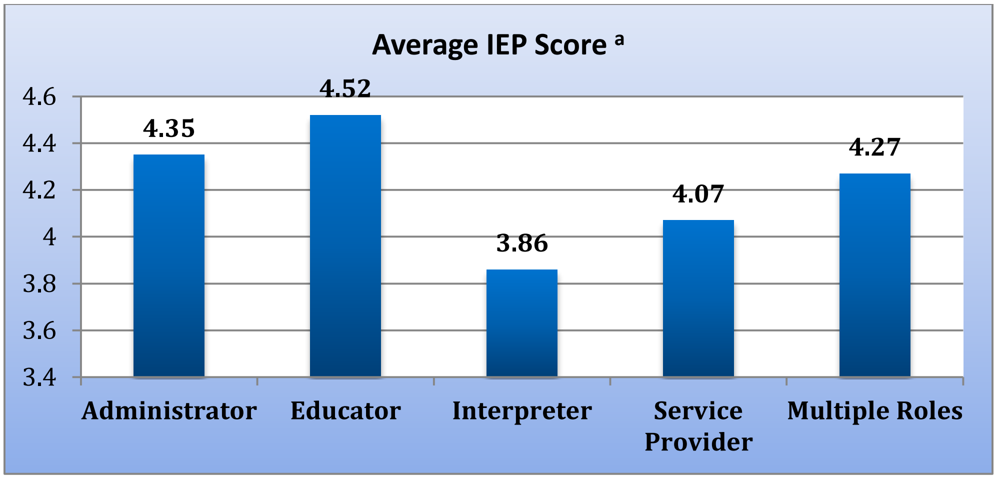
> *"Clearly experience [and training impact evaluator competency for deaf and hard-of-hearing students]. And certainly if nobody mentions anything about the possible consequences of hearing loss. . " (professional)*

Professionals with experience and familiarity with individuals who are DHH may be the only ones in a professional context who advocate for their student or client's needs. Our overall statistical analyses indicate that professionals' years of experience significantly predicts professionals' overall preparedness, as well as preparedness in using assessments and supporting self-advocacy skills. Other key factors that also predict preparedness are DHH identity, ASL proficiency, and the number of DHH++ served. Those may also be a part of facilitating greater experience in the field, in that self-identifying as DHH gives greater personal experience, while higher ASL proficiency increases the likelihood of communicating directly with DHH individuals, and the number of DHH++ also increases the diversity in the population served. The regression analyses in this report show how, when taken together, these different factors remain strong in their relationship with professionals' reported levels of preparedness to serve in individuals who are DHH.

Transition Experiences

> *"The IEP needs to be focused on the child. Does the child really know what the IEP is saying? Do they understand that the IEP has all this information, history, from when they were much younger? Maybe they don't have access to it, they have never read it. Like for instance, they make the decision to eliminate music from the curriculum, and then the student finds out later on and music is something that they love. Maybe they take it out because they don't think it's needed." (professional)*

The IEP process is one of the most important parts of IDEA and the transition experience. As with both parents and individuals, professionals shared their perspectives on the IEP process with students who are DHH. We focused only on those people who indicated that they had participated in an IEP or 504 meeting or similar process with students who are DHH. Professionals rated various aspects of the process based on the extent to which they occurred for students they have worked with (see appendix). In this analysis, we looked at the average scores across all items on the scale (reliability of the scale was high with a Cronbach's alpha of .92). Average scores can range from 1 to 5, from strongly disagree with the statement to strongly agree. Average scores, by professional role, are in the following figure:



[a] F = 21.42 (4), N = 697, p < .0001. Interpreters reported significantly lower ratings than all other roles except Service Providers p < .0001;

Overall scores were relatively high, between 4 and 5 on a 5-point scale. However, interpreters rated the IEP process as less effective and adhering to the guidelines under IDEA/504 than the other professionals.

To further understand the relationship between contextual factors and professionals' ratings of the IEP experience, we conducted correlations between the overall IEP score and factors such as Number of DHH served and range of DHH ++ served, as well as professionals' own DHH Identity and use of a cochlear implant.

Factor	IEP Score	DHH Identity	Cochlear Implant	# DHH Served	DHH ++
IEP Score	1				
DHH Identity	-.03	1			
Cochlear Implant	-.03	**.24****	1		
# DHH Served	-.03	**.15****	.07	1	
DHH ++	-.07	.05	.06	**.38****	1

** p < .01 two-tailed test

There were no significant relationships between the professionals' evaluation of IEP processes and their demographic characteristics or range of experiences with students who are DHH. What was interesting was that professionals' identity as a DHH individual was positively correlated, although small, with serving students with cochlear implants and in the number of DHH students served. The number of DHH students served was also strongly correlated with the likelihood that professionals' would serve a broader range of DHH ++, which is perhaps expected given the great diversity of the DHH student population overall.

Predictors of IEP Experience

We then conducted regression analyses looking at factors that predicted professionals' experiences with IEPs when working with individuals who are DHH. The first model with only the first block (professionals' demographics) accounted for .087 of the variance (R^2). The second model, with the setting demographics added in resulted in an R^2 = .095, a .008, R^2 change. Both models were statistically significant at p < .0001 with F = 8.501 (df = 5, 448) for the first model and F = 6.682 (df = 7, 446) for the second model. Standardized Beta Coefficients, t statistics, and factors with significance for both models are shown in the table below.

Model	Standardized Coefficient (Beta)	t test statistic
1 (Constant)	--	-.49
Age	-.02	-.39
Years Served	.14	2.33
ASL proficiency	**-.23**	**-4.79****
Female	**.12**	**2.56****
DHH Identity	.01	.26
2 (Constant)	--	13.56**
Age	-.03	-.47
Years Served	**.16**	**2.59****
ASL proficiency	**-.22**	**-4.42****
Female	**.12**	**2.59****
DHH Identity	.03	.56
DHH ++ Clients	-.01	-.19
# DHH Served	-.09	-1.86

** significant at p < .01

This regression model looks at professionals' demographic characteristics (Model 1) and those demographics combined with those of their clients (Model 2) to look at what factors predicted their ratings of the IEP experience. Across the two models, and particularly in model 2, years served, level of ASL proficiency, and being female significantly predicted significance in their IEP ratings. It is important to point out that the higher the ASL proficiency of the professional the lower their IEP ratings. This is a critical factor for pn2 to explore because it may mean that these individuals are tapping into a different or deeper part of the communication process than individuals who are not proficient in ASL.

Implications, Opportunities and Limitations

Implications

- Postsecondary professionals have less experience with individuals who are DHH++.
- Younger professionals are more likely to be proficient users of ASL.
- Professionals in all settings have very low proficiency levels in written or spoken Spanish
- Professional role is a more relevant differentiator of professional development need than professional setting.
- ASL proficiency is related both to stronger sense of capacity to build advocacy skills in individuals who are DHH, but also related to more negative impressions of the transition planning process, which indicates that direct communication with DHH individuals influences professionals' capacities and perceptions.
- Somewhat related to the above point, interpreters have a more negative view of the transition process than other professionals.
- Experience level of professionals here is quite high, providing potential models for induction of new professionals to the field.

Opportunities

- Nearly a third of professionals in this Needs Assessment identified as DHH, making their perspectives both personally and professionally relevant.
- Assessment and DHH++ discussion continues to be an important area of impact for professional development and technical assistance.
- Experience was relevant across topics; sharing these experiences with new professionals will likely add to their knowledge base and preparedness to serve individuals who are DHH.
- Self-rating of preparedness had a positive relationship with DHH outcomes, making strengthened professional experiences a potentially malleable factor in improving educational and occupational outcomes.
- Experience was a significant predictor of professionals' preparedness, experiences, and perceived program outcomes, which supports the need to capitalize on the skills of those experienced professionals and strengthening professional retention as a potential priority for pn2.

Limitations

- The sample is primarily Caucasian women between the ages of 40-60. This is likely representative of the field, but it also limits generalizability to those whose demographic background may result in different perspectives.
- These models do not include different credentials and their potential relationship to preparedness or outcomes. Future research will include an analysis of specific program training types and their contributions to the models in this report.

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Chapter Seven: Institutions and Agencies

The purpose of this chapter is to look at how the capacities and practices of institutions and agencies shape transition and post-secondary outcomes for individuals who are deaf or hard-of-hearing (DHH). This category represents a broad and varied set of institutions and agencies, each with its own mission and purpose. Many of them intersect the trajectory of individuals who are DHH in different ways. Some, such as mainstream high schools, serve students from many backgrounds. Other institutions, such as 18-21 programs at schools for the deaf, focus on a specific population of students who are DHH. Beyond institutions and agencies there are larger systemic factors that have a significant role in post-secondary outcomes for individuals who are DHH. We highlight these systemic factors especially from our qualitative work in focus groups and interviews.[1]

This chapter first discusses five main entry points for how an institution or agency might serve individuals who are DHH: before transition, secondary and transition, post-secondary, vocational rehabilitation, and employment. Within these sections we discuss some themes in depth, particularly in post-secondary settings. We then discuss larger systemic factors that cut across all institutions and agencies, issues that reflect larger educational and cultural factors than reside in any one school, agency, or program.

Secondary and Transition

Although the focus of this Needs Assessment is on transition and postsecondary experiences, inevitably there are significant factors stem from their experiences leading up to high school completion. The focus groups and interviews we conducted highlighted this in often dramatic ways. Communication modality decisions and educational placement choices often affected the views the participants held of themselves as secondary and later postsecondary students.

> *"I actually went back and forth to different schools. When I was younger we lived in New York. And we went to the school for the deaf at first. And then they switched me to a mainstream program in a regular public school setting. And then back when I became older. I guess it was 8th grade, and high school on. I spent two months in school. Then we moved to Missouri and I went to a different school there". (professional)*
>
> *"I thought where would the social exposure be and help me develop as I'm younger? My parents wanted me to go to MSSD. And I went back and forth over that with my parents, and they wanted me to stay at the school for the deaf. If I left [to attend the public school], I felt it would be injurious to my social background and all. So I stayed there. And I think there were a lot of opportunities there for deaf kids. And I don't think I would have had the same opportunities in the hearing environment". (professional)*

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[1] As with previous chapter, all findings are significant unless otherwise noted. Significance for coding correlations is set at $p < .01$.

> *"During the summer, I went to the summer camp, back in 1998 with other deaf students. And it was so interesting. I begged my parents to let me go to the school for the deaf. They said I was too young. I was only in 6th grade. After interacting with the other deaf kids, I wanted to go to the school for the deaf. I kept bothering my parents about this. I ended up going back to the mainstream program, and I just let it go, you know." (professional)*

Professionals in the field tended to see institutional support structures as both resources as well as possible barriers to transition and advocacy depending on the circumstance. They noted that parents, not the professionals, were often the voice of advocacy during the transition period and this was found to be a formative resource in attaining the services that helped their children gain the best educational practices. However, once students left the secondary setting, they found that individuals who are DHH lacked the self-advocacy skills needed to find their own resources.

> *"So going from high school to something more closely resembling reality and the real world. The fact that they're not going to have a room of 20 people advocating for themselves... you really need to step up and be your own advocate." (professional)*

> *"The expectations are not the same. If you are living in an adult facility, and you are expected to get yourself up in the morning, I think the way you look at that time is different than being in high school that way that your mother wakes you up every morning, and it's like, yeah, well they should wake themselves up… but they don't, they never have had to before." (professional)*

According to the professionals we interviewed, of primary importance is the school's ability to provide programming and hire faculty to support student development. Participants referenced orientation programs for new students that helped them to build connections, learn about campus resources, and identify helpful faculty who would support them throughout their transition into the school. Of secondary importance was the institutional capacity to promote campus services for students and to provide top-notch transition and disability services. Lastly, an established connection to Vocational Rehabilitation (VR) services was noted as highly important but lacking in many postsecondary settings.

Transition quality was often noted as lacking. More specifically, children are not beginning transition soon enough, they are not acquiring adequate language and communication skills, their study skills are not at a postsecondary education level, and their independent living skills are not appropriate for postsecondary living arrangements.

> *"Transition is extremely important. And we need to really be focusing more attention to that… And we would like to be starting in elementary and doing some things… But we're not currently." (professional)*

> *"Often they come to our offices and never have heard of assisted listening devices. And college may be the first time they are exposed to that… But that's an area where I think information in general is*

> *lacking a lot for people. It could make a huge difference in their experience, in K-12, and on the job, and everywhere." (professional)*

> *"Certainly, writing skills and reading skills are important, and they will help a person in the workplace, and they will open doors no doubt… I feel like that's our next big hurdle. I mean certainly we need to work on what happens before college to ramp those skills up. I mean, we're missing the boat there, too." (professional)*

The assumption is that based on the lack of these skills, students will have deficits that will not allow for success in postsecondary work or education. Furthermore, this has tied the hands of faculty, employers, and professionals in the DHH field, as traditional accommodations will not be successful for students with these deficits. Additionally, the professionals felt as if this trend has led to faculty pushing students through classes in both secondary and postsecondary settings, simply to avoid the social pressures associated with individuals who are DHH that are not meeting the minimum standards.

The professionals we interviewed mentioned that orientation programs and career awareness days were incredibly successful. They suggested that these programs helped students to develop a sense of identity, belonging, and well-being.

> *"[The Freshman Orientation Program] gave them that sense of belonging and teamwork. There were a lot of team building activities that happened during that freshman orientation program. So they understood how to deal with issues and problems and I think that we intend to actually reinstitute that program again." (professional)*

> *"We wanted to set up a career awareness day, where we brought in a number of different deaf professionals in different fields and we were over in the gymnasium so students could walk through and see all the different skills that are out there available to them. This year we are going to add a number of hearing professionals to let the students know that not all professionals are going to work with deaf, you may be in a workplace where people are hearing. Hearing people can be successful, deaf people can be successful." (professional)*

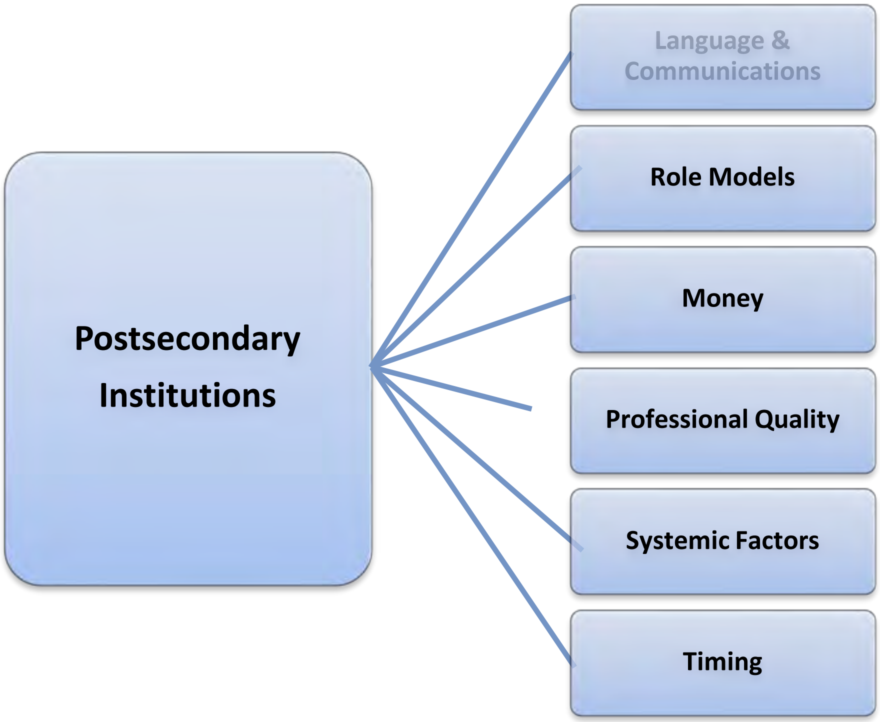
Having a supportive, positive staff was mentioned as a crucial ingredient for success. Seeing staff who are successful and who also identify as DHH provides a sense of mentorship and leadership for the students.

> *"Being a 24-7 program is a big challenge, and this staff is committed to providing the level of instruction that can provide support to reach the level of independence. Some [students] are really independent and some have their hand held until the day they walk out the door, but I think a really committed staff is critical to getting them to that place." (professional)*

> *"What we have here is young deaf students seeing that they can be successful adults. Professionally contributing citizens in multiple roles. [Members of our staff] have contributed to the tremendous career days in support of the transition to postsecondary settings. We seek to get as many deaf role models as we can. So I think those really do impact the students in their success after school." (professional)*

Postsecondary Institutions

Postsecondary institutions played a major role in the discussion of how individuals who are DHH experienced transition to higher education, and later to employment. Our qualitative coding was heavily geared towards discussion of postsecondary institutions, with 48% of the coded segments mentioning one or more institution or its programs, activities, and capacities. Although there were co-occurring codes, only one of them reached a level above r = .20: professional quality. A summary of codes that co-occurred with Institutions, at a significant level (all r values), are shown in the figure below.



It can be challenging to capture how an institution, with its complexities and bureaucratic structures, can have a direct effect on the post-secondary success of an individual. Participants in the focus groups and interviews noted infrastructure features in a number of places, some which surprised the Needs Assessment team.

For example, a woman who is DHH spoke about how the infrastructure of the U.S. education system helped her to develop her DHH identity. She indicated that the laws in place allowed her freedom to use services, and that there was flexibility in the way that she could interact with institutions, specifically postsecondary education. This flexibility led her to interactions with two very different postsecondary educational institutions, one in which has a high population of students who are DHH and the other primarily made up of hearing students.

> *"When I moved here, I was under the ADA law which means I'm not an American but I could still receive services under that law… (Name of Institution 1) was good for me because I grew a lot… Now that I am in grad school it's much different. (Name of institution 2) is obviously a bigger hearing school… The disabled services at (name of institution 2) is very good… But it's a challenge too because of being the only deaf person." (student)*

The assumption made in her interview is that the role of the institution can vary drastically on a case-by-case basis. For her, the choice in postsecondary setting was crucial to development of her DHH identity. The professionals that were interviewed had similar conversations about postsecondary placements. They indicated that the choice in institution is one that should be thought through fully, but that often is taken lightly by individuals who are DHH. The conversations with the professionals showed a trend suggesting that one of the most important aspects of choosing a postsecondary institution is if the institution has traditionally served a high proportion of DHH individuals.

> *"Typically they'll go to Gallaudet University or NTID or RIT. Some CSUN. They tend to go to the deaf schools. We do have some that will go to hearing schools, but that's more rare." (professional)*

Professionals tended to think that while the opportunities for individuals who are DHH are more ample outside of traditionally DHH institutions, that the challenges to success may be greater as well. Those challenges require additional time and training for individuals to successfully navigate them. They have found that finding postsecondary training has become harder in recent years, and that often means that their students are underprepared or give up on the some opportunities.

> *"It is so much more cumbersome to just come to campus and visit for most families… You have to call ahead, and then you get passed around to like 15 different people… and they are still telling you to go back to your starting place… I imagine that in some places that keeps students from following up, and they just give up on schools and places and find somewhere where it's a little more easy." (professional)*

> *"Well, one [student] sent me a complaint, during student orientation, she was hearing impaired, and that's how she identified herself. She said, 'I'm upset because I went to orientation and there were activities and it wasn't accessible, and it wasn't friendly for people who can't hear'. But my first thought was 'did you tell them? Because if you couldn't lip-read, did you say anything to them during that time?' And the people who run the organization, I passed it on to them and they said they had no idea. They said, 'Why didn't she let us know?' They could have changed it." (professional)*

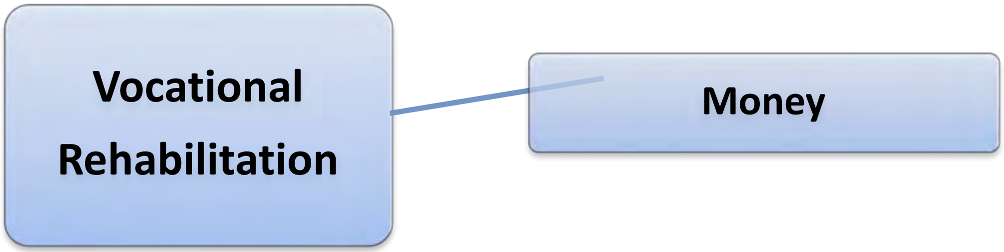
> *"We have less and less choices of programs that are like more training type programs… They've lost that option." (professional)*

> *[About} our students that don't register with disability services office, what we do is we have these table toppers set up on tables across campus that explain briefly about what our office does and what we provide. And there is a list of things saying, 'I can't focus,' or 'I am behind in class,' 'or I have a problem with this,' and then the number is there and they can call us." (professional)*

> *"We still have some students that here that are in their third year and they still don't have any services and they're not asking for it. And then finally it comes to their third year, they kind of do what [the other professional] mentioned. It's like, 'okay, I need help now'. But we do have students that will come back after the first day and say, 'look, I don't want to be identified, but do I have these needs'." (professional)*

Vocational Rehabilitation

Vocational Rehabilitation (VR) plays a unique role in providing funding for postsecondary training for individuals who are DHH. VR was discussed in 5% of coded segments in the conversations with interview and focus group participants. The only significantly co-occurring factor with VR was, perhaps obviously from the perspective of many of the participants, money. Transition was close, with r = .11, p = .03 but not significant enough to meet the cut off criteria.



The professionals we interviewed had a positive view of VR services and indicated that it was a crucial program for those students who require life skills training or are more academically challenged.

> *"But what a lot of people think of Vocational Rehab, they think 'oh, they can help me pay for school, or they can help me pay for assistive technology.' But I think it's a lot more than that, or it should and lot more than that. […] I think that Vocational Rehab can help those individuals out more so by providing more of a direction or counseling services." (professional)*

> *"For me, it all comes down to Vocational Rehabilitation {…} you know, we just have to find a place for those academically challenged students. I mean, they can do so good on academics to a point, but after graduation, they really need to have independent living skills and where are they going to learn those skills?" (professional)*

Unfortunately, one professional felt that some vocational programs deny students on the basis of their academic performance. Specifically, students who possess very low reading abilities aren't accepted into the exact programs from which they would most benefit. One professional commented:

> *"I have worked hard to reach out to other local schools systems to try to access their vocational or technical program for our deaf kids in areas that I have worked. The block is reading ability for these kids. They won't accept them, even if I could get that collaboration, that hand holding into these systems, because I could. But they won't take them because of their reading levels. So what we are struggling with at this point is really a lot of connections with their VR in their states, just to get them into some job training, but we don't have anything." (professional)*

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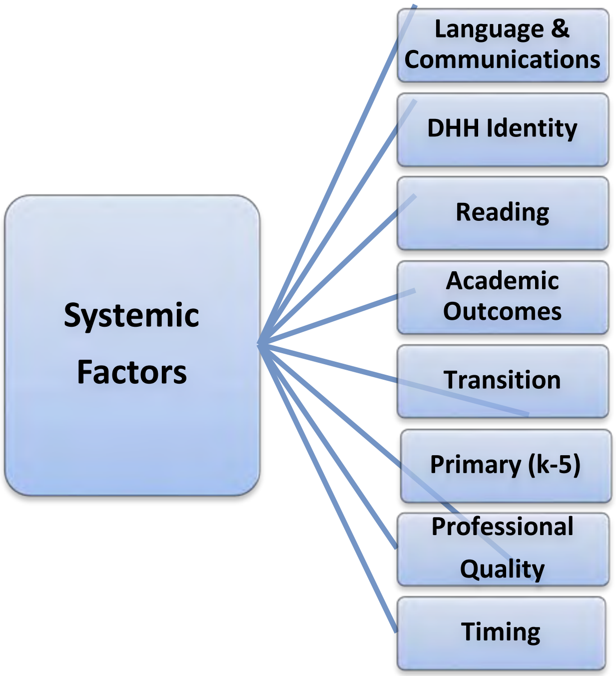
Systemic Factors

As we conducted this Needs Assessment we became increasingly aware of the larger, systemic factors that permeated our findings. Beyond specific activities at any one institution or characteristics of individuals and professionals, there are larger societal norms that shape educational and occupational outcomes for individuals who are DHH. Systemic factors were discussed in 30% of our coded segments, a high prevalence for factors that are often quite indirectly related to an individual's experience of transition or postsecondary outcomes. Some of the co-occurrences were quite significant, with correlations above r = .35. A summary of those codes that had at least a r = .20 correlation with Systemic factors is provided in the figure below.



The list of co-occurring factors are at the heart of the mission of pn2, both in terms of what we know are significant predictors of academic success as well as the central activities of pn2 objectives and goals. These findings emphasize how important it was to our participants that systemic factors be acknowledged and perhaps a part of how solutions are formed when looking at the focus of pn2.

There were some systematic factors that were found to be significant predictors of outcomes in statistical analyses shown in earlier chapters. The size and/or diversity of the setting, indicated by the number of DHH individuals served, and the number of types of DHH++ (DHH individuals with additional disabilities) served by the setting, were significant predictors of professionals' preparedness in working with co-occurring disabilities. These factors were also significant predictors of professionals' reports that a high percentage of DHH individuals would be well-prepared for the workforce, as was the reported quality of accommodations in the program.

Systemic factors are often quite complicated and difficult to pick out. Despite some positive movement towards increased access for all students, including those who are DHH, there are associated complications with the breaking down of societal barriers. For example, one DHH individual felt there were barriers to a wide variety of career choices, including those in computing and technology fields.

> *"Here are so many barriers, other than captioning which is what I focus on. The cultural, societal, sub-barriers. I guess I would be more curious about what you guys are doing there to break down those sorts barriers: attitudinal barriers. Build up expectations, not only of the students themselves so they cannot be limited but also of the environment, postsecondary environment in particular. Employers maybe. Erase some of the artificial constructs that stand in their way because of people's attitudes about deaf and hard of hearing." (professional)*

This quote highlights the perceived role of pn2 in raising awareness of the capabilities of students who area deaf or hard of hearing in a variety of settings. The qualitative data indicate that systems are difficult to navigate. Over 26% of our coded segments addressed issues related to self-advocacy as an important part of how individuals who are DHH can be successful. Yet whether they are in transition or have already entered postsecondary settings, navigation of the system has emerged as a common concern for these individuals. This experience is largely related to accommodations and self-advocacy in regards to the strategies used and the barriers that are encountered. One common barrier is that the resources are available but that there is an overall feeling of inconveniencing the system by utilizing those resources. As this individual shows it can be difficult to get what you need without feeling like you are a burden on the system.

> *"You have to be squeaky… Be squeaky because you will get what you need. Don't take no for an answer… Keep going up the chain of command until you get what you need." (professional)*

> *"I see it a little different because self-advocacy to me means that they're negotiating something, and I think that it shouldn't have to be all negotiated. I see a lot of students get into a situation and feel somehow guilty for expecting full access. And so they settle for something less." (professional)*

Another trend that professionals have noted as a concern is that it is difficult to determine who is paying for the resources available to students who are DHH. One focus group, discussed this in depth, and they tended to agree that the services requested by students are available, but that they are difficult to implement, because there are challenges to finding who would be financially responsible for the service. The professionals believed that the bureaucracy and lack of coordination between departments of the institution created difficulties in attaining financial support for services requested.

> *"I don't know how I am going to pay for that. I don't know how I am going to do that. And I think that there is this fear of a student wanting more than one thing." (professional)*

> *"I think something that frustrates me is when people start doing finger pointing as to who is responsible for providing this, who is paying for this… Is it the faculty? Is it the department? Is it the*

> *college? Is it I.T.? Is it disability services?... It would be nice if we could get past the finger pointing because it is the responsibility of the institution." (professional)*

In a much more general trend, professionals tended to believe that society as a whole needs more awareness on how to interact, communicate, and work with individuals who are DHH.

> *"…I started thinking also, you know, we have to stop this whole mindset of even waiting to be asked… You know, so that you don't have to wait to go into a situation or an environment and say, "Oh, I'm deaf. I'm going to need captions."" (professional)*

> *"…the challenge is my classmates are all hearing and they don't know anything about deaf people and I have to educate them. And again, the entire board is all hearing and I'd like to work with them all but I don't see how that is going to work." (professional)*

> *"…society in general needs to be more knowledgeable about the way that you work and communicate with these people." (professional)*

The professionals we interviewed described the importance of an on-campus culture which embraces inclusion, the difficulty of negative societal attitudes toward funding for education, what redefining the term 'success' can do for students, and an emerging attitude shift toward embracing multi-modalities of communication in DHH communities. Important quotes about on-campus culture included the following statements.

> *"I think that is the number one issue, though, is the culture. How do students feel? Do they feel comfortable about going to an instructor? And do they feel comfortable about approaching the [Office of Disabilities] a week or two before classes start? That's another barrier. […] They don't want to identify themselves, and they would like to see if they can make it through without having to register with our office. And some of them do. I mean, to their credit. It's really great, but sometimes really sad that as someone approaches graduation, they will share with you, you know, 'I made it even though I had this disability.'" (professional)*

> *"Certain cultures, even with the United States, are better at negotiating than other cultures. And it doesn't have anything to do with being smart. It has to be understanding how to present yourself in a way that is not confrontational, but assertive. And maybe that's the second thing that we have to do. [Students] have to be able to advocate for their aspirations. They need to be able to advocate in a assertive way for themselves in what they need." (professional)*

> *"If you are going to change the culture, it has to be a culture that focuses on overcoming whatever the barriers are." (professional)*

> *"I think if you have institutions requiring and making sure that faculty can get […] required orientation along with everything else, then you create a better culture, at least a better environment. I think a lot of faculty just don't -- just don't include that in their world view." (professional)*

For pn2's purposes, one professional we interviewed suggested that we needed to determine which institutions are successfully promoting and getting students to utilize disabilities services.

> *“You've got to look at schools that are very proactive [at promoting their services] compared to schools that aren't, but see if there a difference in the success rate of the students with disabilities. And I bet you that you will see something […] They may use the resources more. They may self-identify more. They may have better relationship with their instructors. I think that's one of the things that we all know is part of a college experience. The students who have the best experience with their instructors generally go on to graduate school. […] So you've got to find schools that do something to enable that relationship with faculty, with resource centers, and compare those to the schools that aren't doing that. Or doing it poorly.” (professional)*

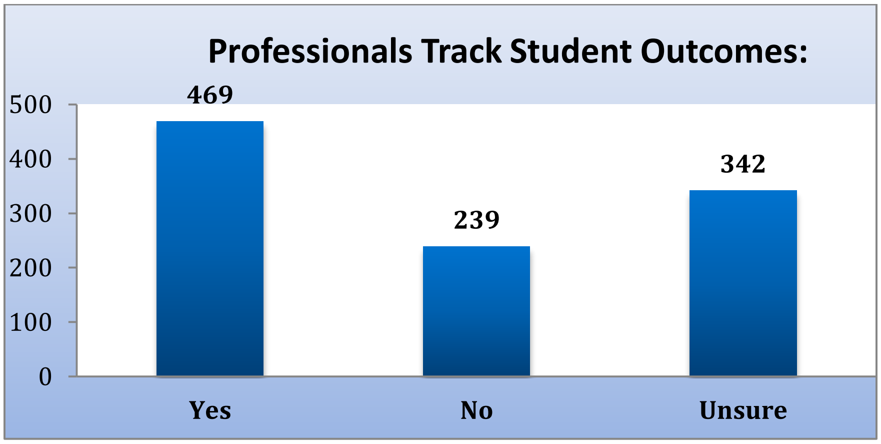
Finally, one professional left us with an inspiring quote about the future of communication modalities and infrastructure that helps to support individuals who are DHH on a national level:

> *“I may be just a little or a lot naïve, but I do see one teeny little glimmer of hope, as far as having raised a deaf child, I’m very familiar with having been pulled into camps, but I do see just a teeny glimmer of hope in that the Hands & Voices Organization has become so strong and national, and it truly does embrace all modalities. To me, there’s a little bit of attitudinal change.” (professional)*

Availability of Outcomes Data

We live in a data-saturated society, particularly in education. Professionals especially seek to use meaningful information to inform decisions and to implement evidence-based practices. One of the greatest challenges in understanding outcomes for individuals who are DHH is the severe lack of information about educational and occupational attainment and persistence. Part of our goal in the pn2 Needs Assessment was to begin the conversation about where we can find ways to increase the level of data available for decision-making related to transition and postsecondary outcomes for individuals who are DHH.

In the survey, we asked professionals whether or not their institution or programs tracked outcomes for individuals who are DHH.



On the issue of whether professionals track the outcomes of individuals who are DHH in their program, there was a large split. Those professionals whose programs track outcomes outnumbered those who reported that they did not by a ratio of nearly 2:1. However, many professionals were unsure whether tracking occurred, nearly a third of all who responded to the question. Data collection is an intensive experience, often one that is very expensive and difficult to maintain at a high quality for long periods of time. Professionals who addressed this topic discussed how attitudes toward funding and education become intertwined with the need to understand the impact of current practice:

> *"I think we strive daily to find resources and ensure that we are meeting the needs of our students As you said, the demographics are changing regularly and we are constantly assessing whether or not what was working last year is working this year and whether those needs have changed. I think we are constantly evaluating our resource bank. Do we always feel like we have it right? No. Do we sometimes think that we have it? We do, but not always and not consistently. So resources are always a concern. Budget is always a concern. Funding is constantly in conversation, but that's education, nationally." (professional)*
>
> *"If there was a good attitude in this country toward higher education, maybe we could have a source of funding that would provide that evaluation when it's needed, when there is not money for that. And the student when you hit this wall and feel like there is nothing that they can do. But I don't see that happening politically. There is no will to do that." (professional)*

Changing the political climate is a slow process, but still an area that participants strongly sought leadership from pn2.

Implications, Opportunities, and Limitations

Implications

- Individuals who are DHH may have experienced significant burdens in their educational placement prior to postsecondary training and education.
- Vocational Rehabilitation agencies are currently seen as primarily focused on financial issues, not on career development.
- There are pipelines and grapevines that DHH youth use to make decisions about postsecondary training and education.
- Attitudes on a campus and societal level are still inhibitory factors in the success of individuals who are DHH.
- The United States is an example that is viewed by others around the world.
- Transition planning needs to start earlier and address the broad range of skills including language and communication modalities, social skills, and study skills.

Opportunities

- There is an opportunity to build capacity in coordinating strong relationships between postsecondary institutions and regional Vocational Rehabilitation agencies.
- Programs to structure transition could be strengthened at both the high school and postsecondary levels.

- Role models can play an important part of programs designed to connect DHH youth with DHH adults.
- Postsecondary institutions' Office of Disabilities can be provided guidelines for accessible campus visits or orientation programs.
- Faculty at postsecondary institutions may require training modules on how to make their classes accessible to individuals who are DHH.
- There is an opportunity to collaborate with other institutions and agencies to continue to raise awareness about DHH identity, access, and outcomes.

Limitations

- Funding mechanisms may limit collaboration between institutions and agencies.
- It is difficult to measure and address attitudes towards DHH and campus culture.
- This sample did not include an in-depth look at issues related to individuals who attend schools for the deaf or other residential settings for 18-21 years of age to complete their high school training. This group will require further research and investigation in future years.

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Chapter Eight: Accommodations

This chapter focuses on a critical area within deaf education: student accommodations. Accommodations represent one way in which institutions and employers provide equal access for individuals, including those who are deaf or hard-of-hearing (DHH). While the need for accommodations is as much a function of the institutional context as it is the individual, most of the conversation around accommodations focuses on meeting an individual's disability-related needs. Accommodations play a significant role in the lives of the individuals served by pn2. Consequently, we felt a separate chapter focusing on the role accommodation plays in shaping transition experiences and post-secondary outcomes for individuals who are DHH [1] was warranted.

The Needs Assessment survey included several sections regarding accommodations. It focused on three key elements: the use of accommodations, the quality of accommodations, and the consistency of accommodations. Whereas previous research has mostly focused on use, we felt it was important to expand this focus to include perspectives on their utility and availability after a request had been made. All of the Needs Assessment participants (individuals, parents, and professionals) were asked questions regarding accommodations. Across all surveys, participants were asked to provide information about the following accommodations.

1. Sign language interpreter (e.g., for classes, meetings, exams, etc.)
2. Note-taking assistance
3. Sound amplification/FM system
4. Captioning/subtitling for media
5. Modified assignments, exams, or tasks (e.g., extended time, shortened, adapted).
6. Preferential registration for classes or services
7. Tutoring
8. Dictate/sign response for scribe or note taker
9. Waiving of exam requirements
10. Online text communication (e.g., IM, online chat)
11. Hardware for typed text communication (e.g., Ubi Duo, tablet computers)
12. Signaling devices (e.g., visual fire alarms, door buzzers, visual alarm clocks)
13. Telecommunications device (e.g., videophone, phone amplification, TTY)
14. One-on-one support person (e.g., independent living, classroom aide, job coach, etc.,)
15. Speech-to-Text services (e.g. CART, C-Print, TypeWell)
16. Remote Speech-to-Text Services (e.g. CART, C-Print, Typewell)
17. Video Remote Sign Language Interpreting

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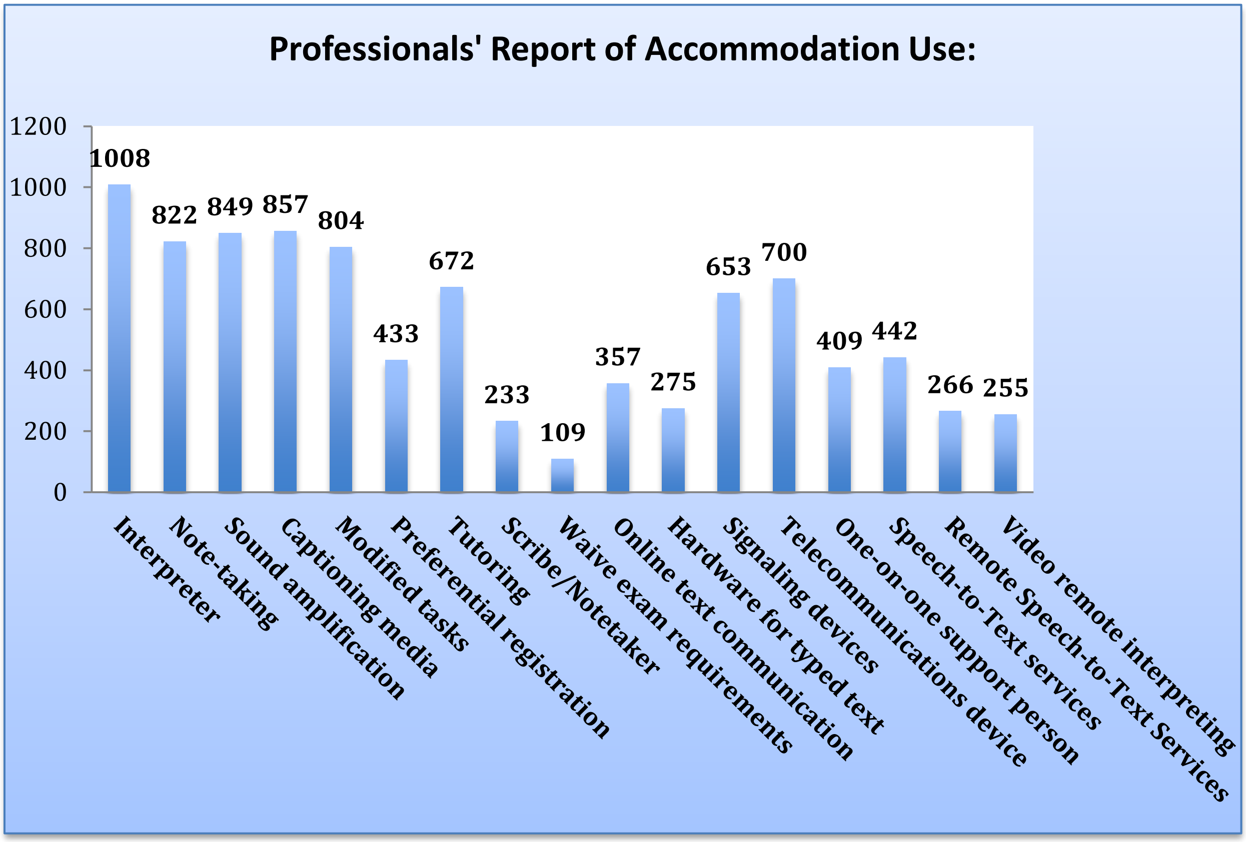
[1] As with previous chapter, all findings are significant unless otherwise noted. Significance is set at $p < .01$ for accommodations and all statistical tests are two-directional.

From this extensive list, we selected a smaller number of accommodations for further analysis. We focused on those accommodations related to language and communication, particularly those that are relevant to the technical assistance provided by pn2, more specifically interpreters, video remote interpreters, captioning, note taking, and Speech-to-Text (e.g., CART) services.

Accommodations Use

Professionals

As the largest participant group, professionals provided the broadest "big picture" of accommodations use overall. As noted in the figure below, professionals reported the use of a large range of accommodations across all settings.



As this figure above illustrates, the most commonly reported accommodation was an interpreter, closely followed by note takers, sound amplification, captions, and modified tasks (most commonly extended time). Telecommunication and signaling devices were also commonly mentioned, as well as student tutoring services. Less frequently used accommodations included those involving a registrar or administrative office such as preferred registration or waiving of exam requirements. Also less frequently used accommodations were remote services such as interpreters or speech-to-text.

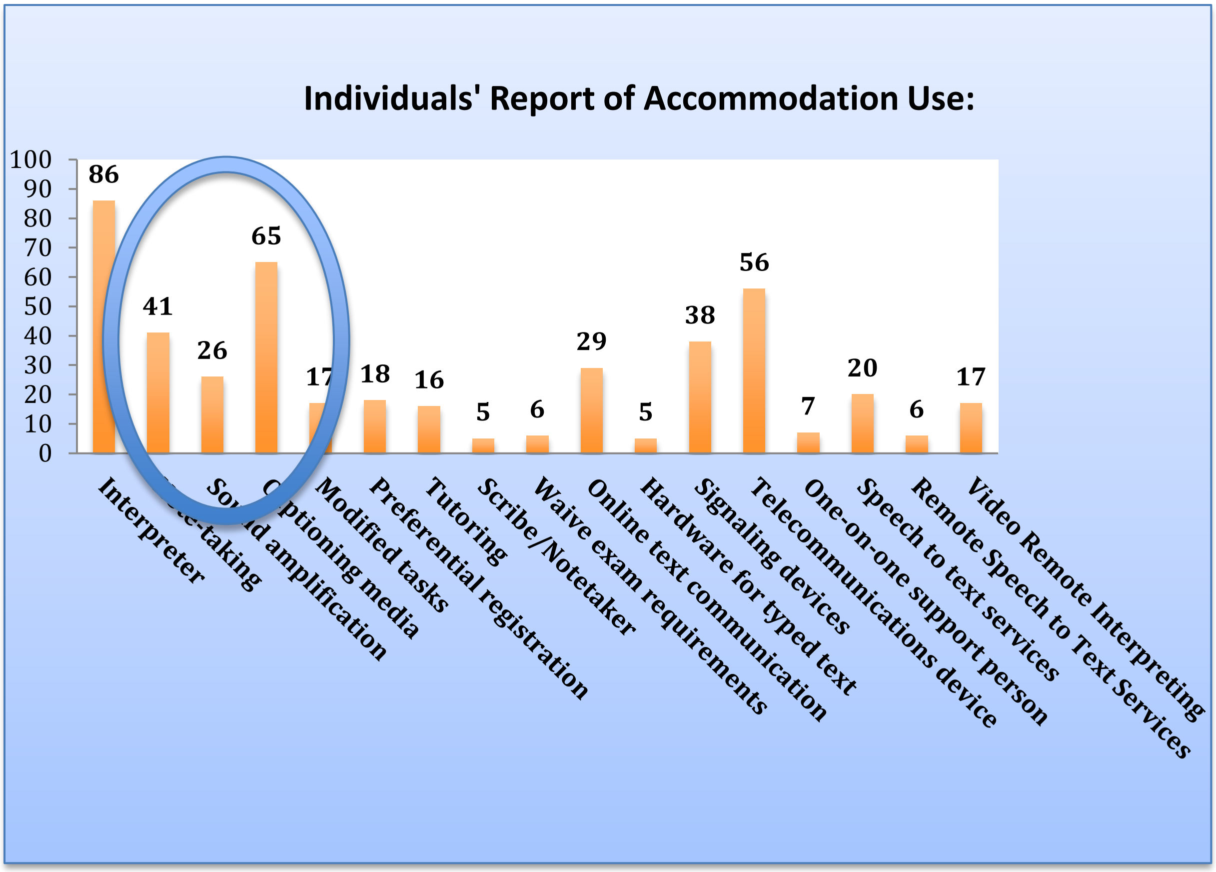
Professional settings were aggregated into four main categories for disaggregation and more sophisticated analyses. The table below shows the distribution of professionals by setting, and the five key accommodations use by their clients or students.

Professional Setting	Interpreter	Video Remote Interpreter	Captioning	Note taker	Speech-to-Text
Secondary	207 (81%)	15 (6%)	207 (82%)	146 (58%)	37 (15%)
Agencies	116 (91%)	47 (37%)	81 (64%)	70 (55%)	137 (39%)
Post-Secondary	355 (92%)	77 (20%)	292 (76%)	361 (93%)	42 (33%)
Multiple Settings	325 (93%)	114 (33%)	272 (78%)	241 (69%)	223 (58%)

Not surprisingly, interpreters are frequently used across all settings. Remote interpreters have a stronger presence in agencies and post-secondary settings (over 30% each) but not in secondary settings (under 6%). These findings may suggest that, as part of their transition experience, individuals will need to gain further information and practice using remote interpreting. Captioning is also frequently used (over 60%), though less often in agencies that provide support services than in educational or training settings. Note takers are a very strong presence (93%) in post secondary settings, with much lower frequency of its use across the other settings. Finally, Speech-to-Text (e.g., CART) is most often used by professionals who report serving students across multiple settings. Nevertheless, it is still one of the least used accommodations overall.

Parents and Individuals Who are DHH

Whereas the parents' reports of their children's use of accommodations showed a similar pattern as the professionals', individuals who are DHH had a slightly different distribution. Their responses for accommodations used are reflected in the figure below. The highlighted section, indicated in the circle, shows relatively fewer participants reporting the use of note taking and sound amplification than did professionals.



Professionals are reporting on behalf of a large group of individuals, whereas individuals are reporting only about their own use. We, therefore, might expect to see more variability in the patterns of responses in the individuals than in professionals. We should be cognizant that the responses of the professionals should not be taken as prescriptive findings for individuals. That said, the patterns otherwise are very similar between individuals, parents, and professionals, allowing us to draw some fairly robust conclusions from the data in this chapter.

We looked at the levels of accommodation use and how it might vary by individual characteristics such as ASL proficiency, additional disabilities, and use of a cochlear implant. There were no statistical differences between those with or without additional disabilities or those with or without a cochlear implant as it relates to the use of an interpreter, video remote interpreter, captioning, note taking or Speech-to-Text. Individuals who were fluent users of ASL were more likely to use interpreters than those who were somewhat fluent or not fluent in ASL ($F = 40.99$, $df = 2$), $p < .001$.

Parents provided perspective on how accommodations use may vary by the type of additional disability within a DHH ++ (individuals with additional disabilities) population. A total of 25 parents reported information for the table below. Because some of the numbers in each cell are very small, we provide counts of responses only (e.g., no percentages). Although these findings are very preliminary, they do provide some helpful context when looking at accommodations for DHH ++. For example, individuals who are DHH ++ with multiple additional disabilities appear to be users of a *variety* of language and communication accommodations, including interpreters, captioning, and note taking services. Moreover, there further appears to be a lack of information regarding autism as a secondary disability.

DHH ++ Type	Interpreter	Video Remote Interpreter	Captioning	Note taker	Speech-to-Text
ADD/ADHD	3	2	2	0	0
Autism Spectrum	1	0	1	1	0
Learning Disability	0	0	3	1	0
Multiple Additional	12	1	8	8	1

We further looked at the parent level of ASL usage and the parent's role in and understanding and of the accommodations used by their children in their most recent secondary, transition, or post-secondary setting. A total of 49 parents reported data for the table below. Parents were allowed to choose any and all accommodations that applied. Counts of parents whose children did receive each accommodation are provided below. The accompanying percentages are for all parents in each category of ASL proficiency. For example, of the 11 parents who are Expert/Native in this sample, nine, or 80% of them reported that their child used an interpreter in their most recent secondary/transition/post-secondary setting. In this particular table, the reader is encouraged to focus on percentages rather than counts to gauge relative differences between parent groups.

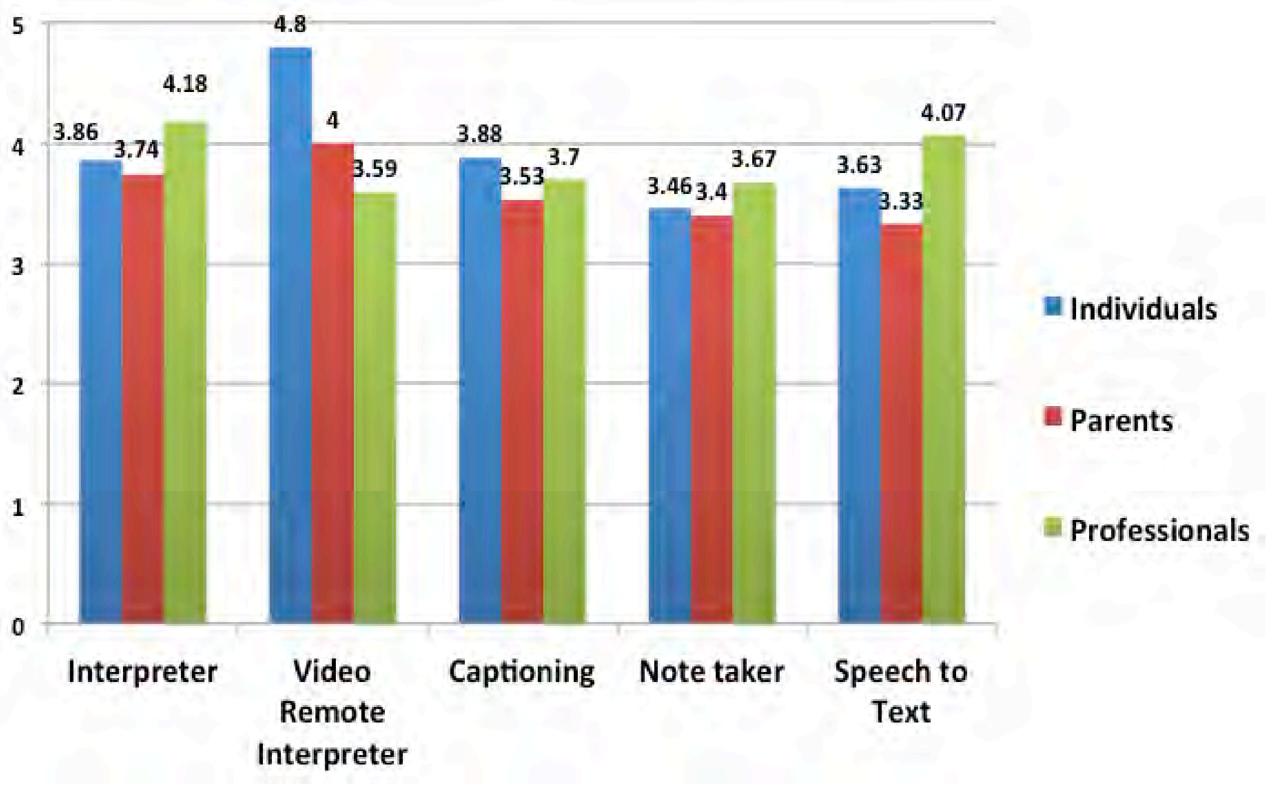
Parent ASL Proficiency	Interpreter	Video Remote Interpreter	Captioning	Note taker	Speech-to-Text
Expert/Native	9 (80%)	4 (36%)	9 (81%)	5 (45%)	1 (9%)
Some	21 (70%)	3 (10%)	18 (60%)	14 (47%)	1 (12%)
None	1 (12%)	0 (0%)	4 (50%)	4 (50%)	2 (7%)

From the table above, we can see that there is an interesting trend for children of parents with some ASL proficiency to use more accommodations than for those children whose parents little or no ASL proficiency. It is important to note that the majority of participating parents are hearing, particularly those in the "some" ASL category. Lastly, across the board, Speech-to-Text options are used relatively infrequently by children of participating parents.

Accommodations Quality

For each accommodation reported, participants provided a rating regarding consistency and of quality. For consistency, we asked participants to think about how often a requested accommodation was available at the time it was needed, ready and as seamless as possible, and able to facilitate communication in the needed setting. For example, if someone requested a note taker, were the notes available in a timely and complete fashion? For quality, we asked participants to think about the effectiveness quality of the accommodation, particularly in the realm of communication. In the case of interpreting, live or remote, was the interpreter a good match for the content or the environment? Did he or she follow professional best practices? Data findings revealed that these two scores were highly correlated, meaning that when a participant rated an accommodation as highly consistent, they also rated it as high quality. While not surprising, it is good to understand that both of these factors are a part of a person's perception around a good accommodation. In the analyses below, we average the two ratings (consistency and quality) as an overall "quality" score. This approach provides us with a more robust measure of quality than the single quality rating alone.

The reported quality of accommodations was remarkably consistent across accommodations type and source of information (e.g., individual, parent, and professional). Average quality ratings for the five key accommodations are provided the figure below.



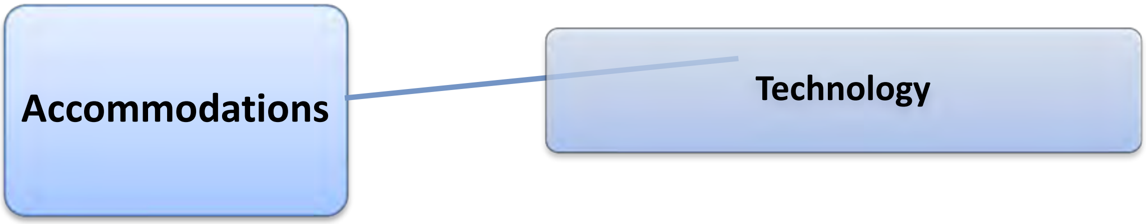
The average scores noted above were drawn from groups of very different sizes, making comparisons across them difficult. However, it is clear that all accommodations received quality ratings of at least 3 (or "sometimes"), with several averaging ratings of above 4 (or "often"). While it may not be possible to have a consistent "5" across the board, a "4" or higher likely represents an attainable goal for the quality of accommodations.

We explored this question further by looking at how individuals with different demographic characteristics rated key accommodations. More specifically, we compared the quality ratings of individuals who are DHH with those that are DHH ++. Across the board we found no significant differences between quality ratings for these two groups. In a similar analysis for individuals with cochlear implants, we found no significant differences in ratings between them and their peers without cochlear implants. And finally, we looked at the extent to which proficiency in ASL may have influenced individuals' and parents' ratings of accommodations regarding language and communication; in no case were there statistically significant different perceptions on the quality of interpreters, remote interpreting services, captioning, note taking, or Speech-to-Text services.

An important consideration when discussing the quality of accommodations can be found in the findings reported in an earlier chapter; accommodation quality as a predictor of success. Professionals' perceptions of the overall quality of accommodations correlate with their belief that higher percentages of the DHH individuals leaving their program will be well-prepared for the workforce. Or, in other words, the higher quality accommodations available in the program, the more likely DHH individuals will be well-prepared for the workforce upon completion of the program.

Accommodations and Access

Our qualitative work also provides some context for understanding the role of accommodations in shaping transition and post-secondary outcomes for individuals that are DHH. Accommodations were discussed in 30% of the coded segments in the interviews and focus groups. However, its discussion was largely diffused across a range of topics. The only category that showed a significant level of co-occurrence was technology, $r = .32$, $p < .0001$. This may be a result of the coding system that was more limited in how well it captured topics related to accommodations other than technology. The only other categories that came close, but did not meet the significance cut off, was assessment, $r = .10$, $p = .03$, and diversity, $r = .10$, $p = .04$.



One theme that did emerge from the analysis of the transcripts was the attitude of guilt that individuals who are DHH have when seeking accommodations. The professionals discussed how people did not utilize services available or only chose one service when multiple accommodations would be more effective. An individual who is DHH spoke about how it is difficult to understand if they are taking too many accommodations or being a burden on the system. The chief attitude of the interviewees indicated that there is never a time that individuals should feel as if they are burdening the system, but that guilt over using resources is a consistent problem among post-secondary students.

> *"I see a lot of students get into a situation and feel somehow guilty for expecting full access. And so they settle for something less." (professional)*
>
> *"And there is this fear of a student wanting more than one thing." (professional)*
>
> *"I just notice a lot of deaf and hard-of-hearing students being passive and not very assertive for their own needs." (professional)*

Similarly, professionals and the individual who is DHH tended to agree that individuals who are DHH are becoming more likely to deny that they have a need for accommodations. This poses implications for the development of a DHH identity as well as for the utilization of services. The general belief was that social pressures are guiding individuals who are DHH to form identities outside of the DHH community.

> *"And my experience is that often those students have kind of internalized this idea that speech is better, you know, the more they can appear like hearing students the better." (professional)*
>
> *"Too much may seem like you're babying them or spoon feeding them… And I know there are some deaf students too that get services and they're fine with that and they keep plugging away at it; it's not a big deal to them. But it is for me." (professional)*
>
> *"So they [deaf students] just seem to be a little more assertive in standing up for what their needs are. Where I see the hearing impaired and hard-of-hearing, and sometimes they're deaf, too, but they just seem more concerned about not getting it out, and they don't want to actually do anything to try to change." (professional)*
>
> *"I mean, when I grew up, I didn't realize I had the option of requesting interpreters or anything until much later. Then I found out my mom knew and she just didn't tell me. So I'm wondering how many of them [DHH students during K-12] are in the same boat. They had the legal meetings or whatever and they just weren't told. Or they decided they didn't need this [accommodation or service] in the IEP meeting". (professional)*
>
> *"They [hard-of-hearing students] never used CART before like they had this morning. That hasn't been a choice for them. The school [K-12] made the choices for them previously. I mean, they only had one option maybe. Maybe they had an oral interpreter but they didn't use it really. Maybe CART is a better answer to what the student needs. If they're used to oral interpreters; they don't really have another option for those who don't have any sign language skills. The problem with CART now is not only are they struggling with my teaching and [my] terminology and theory.." (professional)*

Making Accommodations Requests

Data from the qualitative work reflect the perspectives of indirect service providers who highlighted that the fact that the onus is on the student who is deaf or hard-of-hearing in the post secondary setting. They spoke about students having to disclose their status as deaf or hard-of-hearing in order to access the accommodations and services that they needed.

> *“I could probably find out we have how many who have identified themselves as deaf or hard-of-hearing. But there are people -- that's only a fraction of the actual number.” (professional)*

In addition to requesting these services and disclosing their hearing status, students also needed to provide proper paperwork to prove their eligibility for accommodations and services. The more information provided regarding student needs and specifics of their hearing loss, the more productive a conversation about the possible accommodations can be.

> *“so the more information we have particularly from a hard-of-hearing individual who is asking for accommodations specifically related to how they hear, because they have to listen to some part of the test.” (professional)*

These interviewees also spoke positively about the power of advocacy.

> *“…the researcher did work with test development and made sure that there were particular accommodations in place. Like she advocated for permitting interpreters, either sign language or oral, for testing instructions. That should never be an issue.” (professional)*

In short, without ever mentioning the word ‘self-advocacy’ these respondents voiced several components of self-advocacy as being important for students, including knowledge of their strengths and weaknesses, and disclosure and ownership of their needs and identity. Some professionals referred to help seeking in terms of ‘appropriateness,’ which seemed to indicate that other factors, such as timing, play a role. Specifically, the consequences of seeking help when it is too late are much more severe than asking for help when there is still time to make positive changes. One professional acknowledged how difficult this would be for students by saying:

> *“Students will put off anything they don't want to have to confront. This become as really difficult thing for students with disabilities. I think if you are going to build a program, most of it has to be with building an adult who can communicate in a conflicted situation.” (professional)*

Still, the theme of seeking help when it is too late pervaded through many of the interviews:

> *“A lot of individuals will wait and ask for request for help later rather than sooner. And sometimes it is too late. They're halfway or three-quarters into the class and they come and realize, ‘Hey, I am failing. I need some help whether it be assistive technology or I need some counseling or whatever. I need accommodations through the disability services office.’" (professional)*

> *“Students that don't register with the [Office of Disabilities] before the semester starts, they register late, are not likely to have a discussion with their instructor until after an event, a failing event usually, in the class.” (professional)*
>
> *“But still there are these situations where the student doesn't approach the [Office of Disabilities], waits until an event that's cataclysmic, and then there is this process they have to go through that delays getting services in place.” (professional)*

One professional stated that a lack of confidence, motivation, or assertiveness may not be the sole reason that for a student to seek help when it is too late. Rather, he suggested that a lack of awareness or knowledge about campus resources might contribute.

> *“It's amazing how many students show up at large publicly-funded institutions and don't have a clue about where the services are. I mean we can just talk about the general population. Many of them fail out their first year because they never went to the student academic center and got tutoring because they didn't know it was available.” (professional)*

Students expressed a very different perspective on how and why one might choose to access accommodations, one that is situated within hearing status and identity. Separate from negotiating a disability in the broad sense of identity formation and development in earlier years as youth and adolescents, hearing status and functioning within a hearing world takes a different shape in post-secondary years. For some, this difference entails identifying a member of the Deaf Community, or participating in the various structures held within this distinct community. For others, the desire to be viewed as close to “normal as possible” takes the center stage. A hard-of-hearing status depicts the individual, particularly of the participants in the focus groups and interviews, as only needing *some* accommodations or services, yet not actively seeking explicit identity-bound relationships based on their hearing difference. These distinctions demarcate those who identify themselves as Deaf, and those who consider themselves as hard-of-hearing. Participants provide useful understanding of these markers.

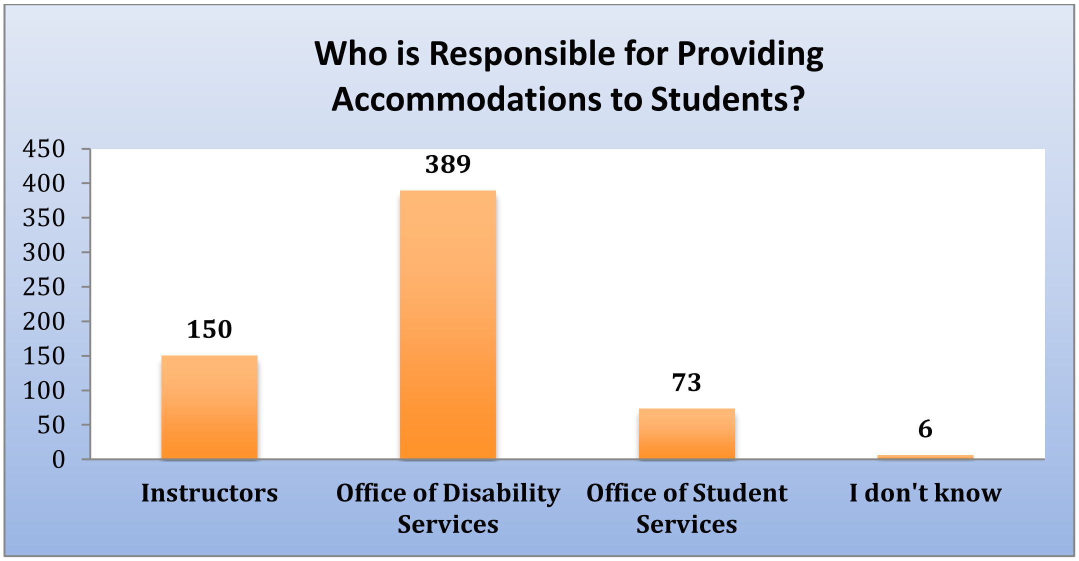
> *“When I went to take math, English, and science, that's when I went into the mainstream program with other hearing students. But I did not like it. I hated that experience. I just hated it. Always had to sit up in the front row. A lot of times the teacher would come up to me. I wanted to interact with the other kids. But I felt like this interpreter was with me 24/7. Always had to sit in the front of the room right next to me. It was a frustrating experience.” (student)*
>
> *“I could get the talking and stuff. I could get some things here and there. But I couldn't get clear speech. I knew when there was an activity, but I didn't really understand what it was. It wasn't until later when I finally got it, I realized I was different from hearing people. And I got to understand[ing] I can't communicate and understand what they're saying. They can understand each other, but I can't.” (student)*
>
> *“Ultimately, I struggled all through high school and elementary school and middle school, but I mean, to be even coming here feels weird because I never really considered myself as having a hearing loss because I'm so used to having to act like a normal kid and portray myself as a*

normal person, but I felt like coming here (a large postsecondary program for DHH) I could actually benefit from it whether than having to play what I'm not." (student)

"Because we had big schools and my school, it would be really hard to ask someone. . . most people took their sweet time and you most likely felt like you owed them something, they gave you something, and they'll do it when they're ready. Most didn't even bother. It would have been more frustrating trying to get help than just deal with not having it. Most people didn't believe me because I speak so well. I didn't start experiencing hearing loss until after I started speaking, so when I get tired, my speech patterns change and I start to slur words, but yeah, they didn't do it and didn't believe me so I just stopped trying." (student)

Institutional Factors

Accessing accommodations can often be a very different process from setting to setting. In this question we sought to better understand what parties are responsible for making sure that accommodations are provided (once they had been requested).

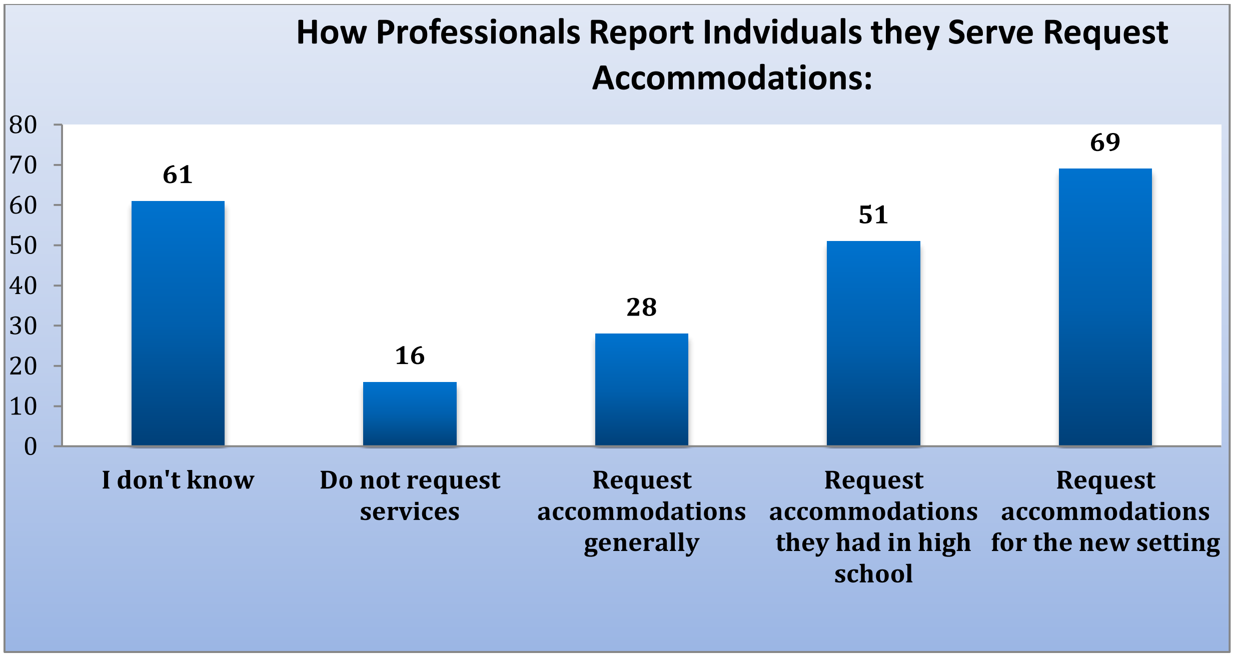


Professionals rated the Office of Disability Services as being the most likely source of providing accommodations to students. We then disaggregated these findings by type of professional setting to get a better sense of where these responsibilities may vary. Results are in the following table. Percentages are proportions of columns within the setting row; rows do not include reports of Other or Unknown.

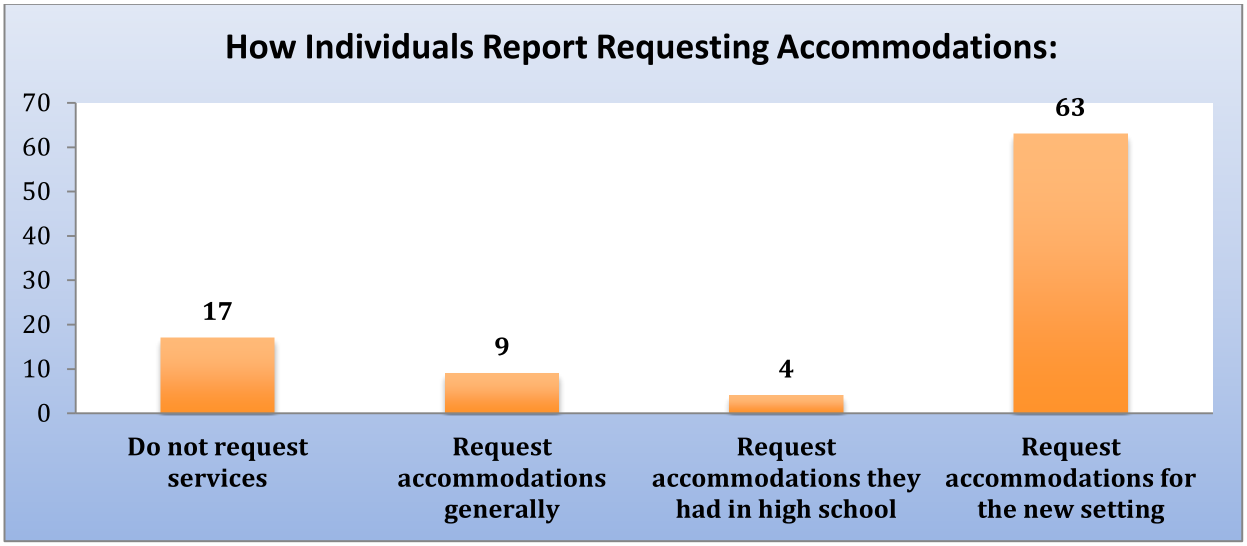
Professional Setting	Instructors	Disability Services	Student Services	Multiple
Secondary	20 (59%)	4 (12%)	1 (3%)	6 (18%)
Agencies	6 (32%)	2 (10%)	5 (26.3%)	3 (16%)
Post-Secondary	2 (.6%)	224 (69%)	10 (3%)	82 (25%)
Multiple Settings	18 (14%)	46 (35%)	11 (8%)	36 (28%)

The spread of responses across these categories was quite uneven (F = 3.71, df = 5, N = 507, $p < .01$). We can see from the table that secondary settings are most likely to have the teachers or instructors be responsible for implementation of accommodations, where in post-secondary settings, the responsibility falls mainly to an office of disability services. However, there were very few responses about responsibility for accommodations from the agency category. This is an area that will need further exploration for pn2 to know how best to support professionals that are outside of education and training programs.

We then asked professionals in post-secondary settings for more information about how individuals who are DHH make decisions about accommodations requests. For example, did students come to a new setting and request the same accommodations they had in high school, or did they adjust those requests to reflect the new context? The professionals' responses show a range of experiences, with most professionals reporting that students request accommodations for the new setting. However, there are still a proportion of individuals who come to the post-secondary setting and ask for accommodations in a general sense, without reference to their IEP or transition documentation, or who ask for what they had in high school without further consideration of the demands of the new context. Discussions or training modules about making these requests and how to integrate the new setting demands may be an area for further development by pn2.

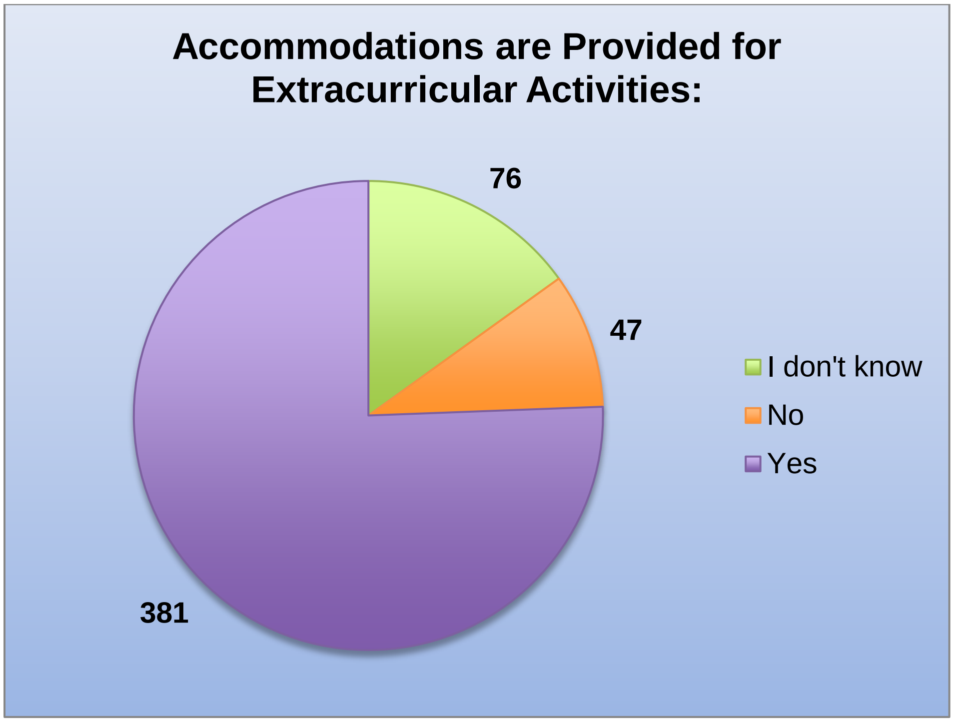


We noted a different perspective from individuals who are DHH**.** According to these individuals, they were most likely to consider their new setting and base their request for accommodations on that specific setting. This difference may be due to the sampling bias of individuals who would respond to a survey vs. professionals who serve a broader range of students and clients.



Accommodations for Extra Curricular Activities

We then asked whether extracurricular activities are a part of accommodations provided for individuals who are DHH. We obtained this information from a variety of perspectives, with the first coming from the perspective of professionals, a broad vantage point. The overwhelming majority said that extracurricular activities were included in accommodation provision at their site.

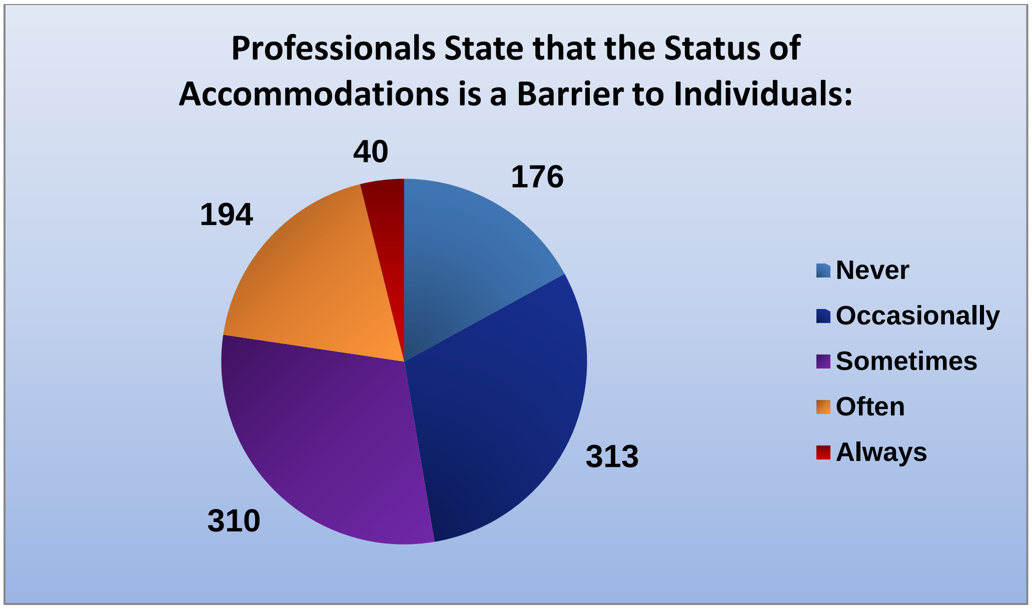


When looking across settings, professionals in post-secondary settings were far more likely to indicate that accommodations were available for extracurricular activities (83%) than professionals in agencies (63%), secondary settings (59%), or those who work across multiple settings (64%).

However, individuals who responded to the survey had a different perspective. According to these individuals, they were approximately evenly divided on the issue of whether accommodations were provided for extracurricular activities. Out of 106 respondents, 61 said that accommodations were not available for extracurricular activities where as 55 said yes.

Overall Perception of Accommodations

We asked professionals to share their thoughts about accommodations and whether or not their level of quality served as a potential barrier to successful completion of training or education program (ranging from never to always).



More than half of the professionals believe that accommodations are sometimes or occasionally a barrier to individuals who are D/HH. The next largest percentage endorsed the belief that accommodations are often a barrier to success. Fewer professionals believed it was never a barrier, and the fewest believed that accommodations are always a barrier.

We further explored this question by looking at the relationship between professionals' characteristics, program characteristics, and perception of accommodations as a potential barrier. A summary correlation table is provided below.

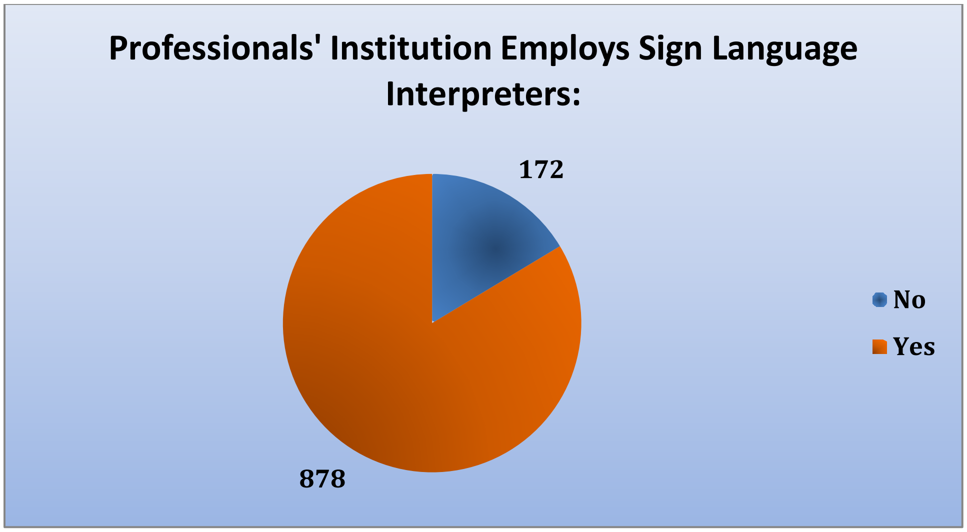
Factor	Accommodations Potential Barrier	Number of DHH	DHH ++	DHH Identity	ASL Proficiency
Accommodations	1				
Number of DHH	**.11****	1			
DHH ++	**.14****	**.38****	1		
DHH Identity	**.10****	**.15****	.054	1	
ASL Proficiency	**.14****	**.34****	**.19****	.045	1

** p < .01 two-tailed test

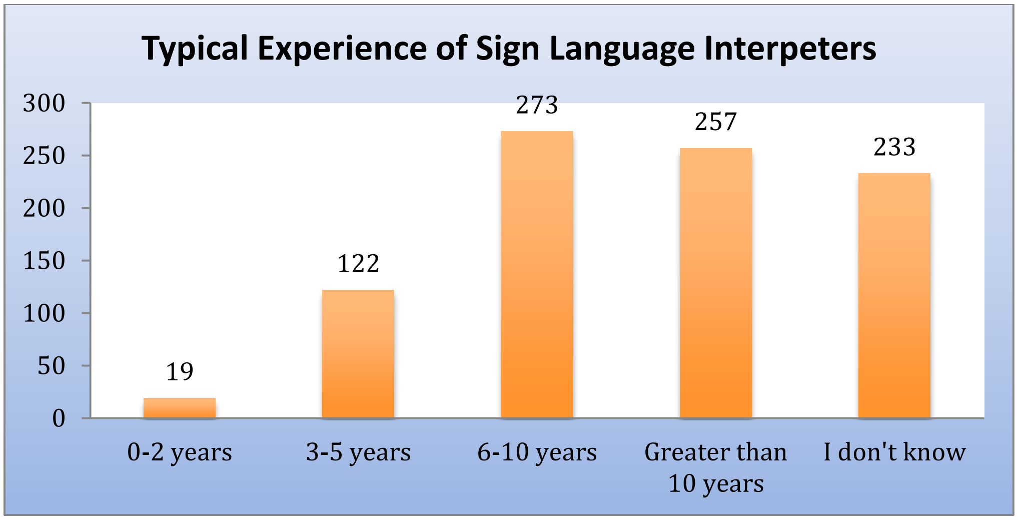
With sample sizes ranging from 800-1,000 participants depending on the variable, it is easy to find significance. The focus of this analysis is on the relationship between a professionals rating of accommodations as a potential barrier (the other variables we have looked at in previous chapters). We see that demographic characteristics (DHH identity and ASL proficiency) and program characteristics (number of DHH and DHH++ served) have a very small (r values less than .2) relationship with the professionals' perception that accommodations may serve as a barrier for individuals who are DHH. Professionals who identified as DHH and had higher levels of ASL proficiency had higher likelihood of believing that accommodations served as a potential barrier. Professionals working in settings with higher numbers of DHH individuals and more variation in the types of DHH++ served were also more likely to believe that accommodations served as a potential barrier.

Interpreters

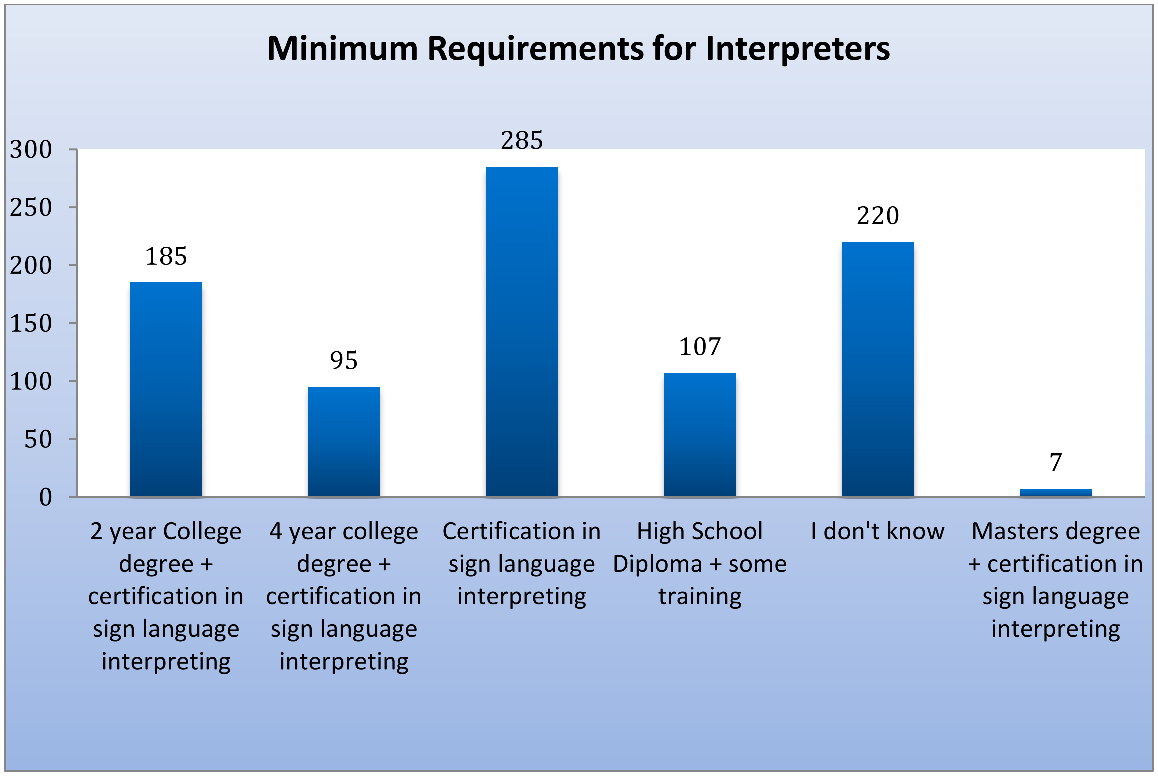
For those who work in post-secondary settings, we also asked more in-depth questions about interpreters. We first asked whether or not the institution employed its own sign language interpreters as part of its service provision.



We then asked these 878 participants for more information about the interpreters at their site. Our first question focused on the typical number of years of experience of interpreters at their site. These are rough figures because we asked individuals to estimate years of experience across the personnel at their site. Most of the professionals responded that interpreters had quite a bit of longevity, with most reporting 6-10 or 10 or more years of experience on their interpreting staff.



In addition to years of experience we asked for information about certification requirements at their site. The results of that question are in the figure below. There was quite a variety of minimum requirements across the post-secondary settings.



We explored this question further by looking at the relationship between the quality rating for interpreters, interpreter years of experience, size of DHH population served, and minimum certification level required.

Factor	Rated Quality of Interpreters	Years of Experience of Interpreters	Certification Requirements	Number of DHH Served
Accommodations	1			
Years of Experience of Interpreters	**.15****	1		
Certification Requirements	**.18****	.05	1	
Number of DHH Served	**-.10****	.01	.03	1

** p < .01 two-tailed test

In the above table we see that there are significant relationships between the quality rating of interpreters and years of experience (r = .15), as well as minimum certification levels (r = .18). As years of average experience of interpreters and certification requirements by the institution increased, professionals were more likely to report that the interpreter quality in the program was higher. There is a negative relationship between the number of DHH served and the quality rating of interpreters, meaning that the more DHH individuals that were served in professionals' setting, the lower their rating of interpreter quality at the setting. However, again, we must caution the reader that the sample sizes here are quite large, over 600 cases, making it very easy to find statistical significance. The effect size of these findings is still quite small overall with r values below .3.

As part of the further analysis, we conducted a regression on the above factors and their *predictive* value on interpreter quality ratings. The model accounted for .063 of the variance (R^2), and was statistically significant at p < .001 with F = 11.42 (df = 3, 511). Standardized Beta Coefficients, t statistics, and factors with significance for the model are shown in the table below.

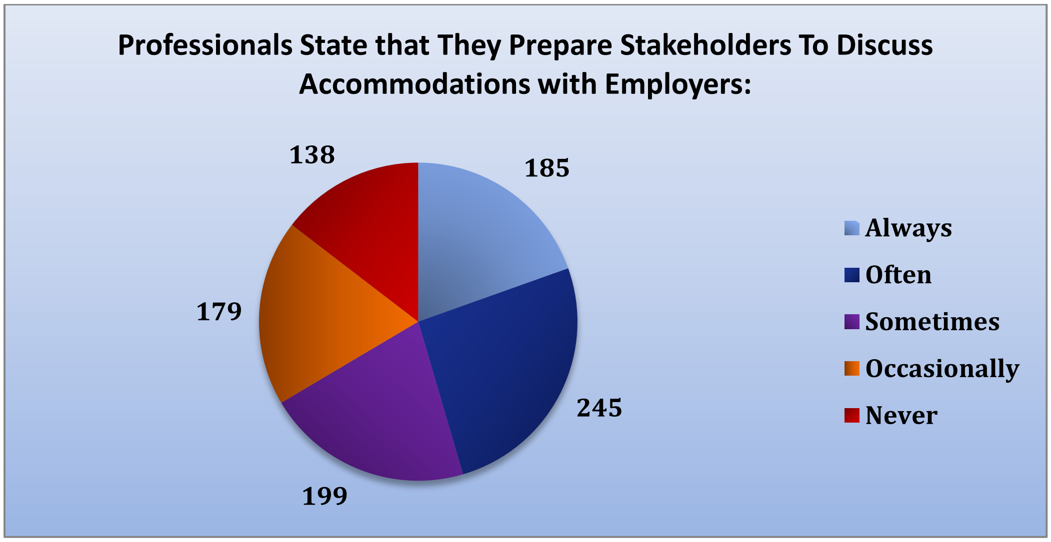
Model	Standardized Coefficient (Beta)	t test statistic
(Constant)	--	31.886**
Years of Experience of Interpreters	**.145**	**3.381****
Number of DHH Served	-.103	-2.397
Minimum Certification Requirements	**.174**	**4.062****

** significant at p < .01

The above model indicates that, when all three factors are taken into account, interpreter years of experience and minimum certification requirements are significant predictors of the quality rating of interpreters. While the number of DHH served approaches significance, it does not meet the cut off for the data analysis approach here.

Accommodations for the Workforce

As individuals who are DHH prepare to enter the workforce, it is important for professionals to prepare them for accommodation discussions with their future employers. We asked a question about the extent to which professionals do this as part of their own practice from a scale of 1 to 5(ranging from never to always). Overall responses are shared in the figure below, followed by a disaggregation of average scores by professional setting.



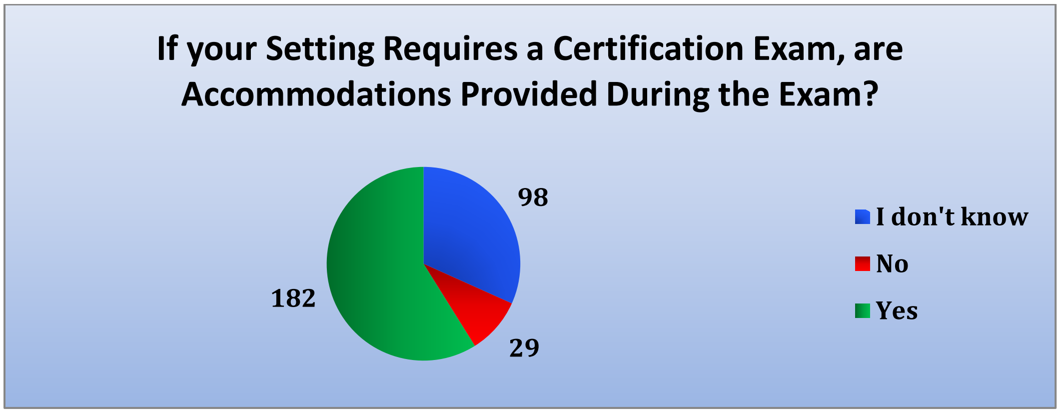
There was a fair amount of spread among the responses to this item. Professionals appear to be divided on the issue of whether they should prepare individuals to discuss issues surrounding accommodations with their potential employers. Average scores on this item, by professional setting, are located in the table below.

Professional Setting	Accommodations with Future Employers
Secondary	3.38
Agencies	3.53
Post-Secondary	**2.56**
Multiple Settings	3.54

Professionals rated the extent to which they discuss accommodations in employment ranging from ‘sometimes’ to ‘often’. There were significant differences in their reported level of discussion depending on professional setting (F = 37.59, df = 3, N = 940, p < .0001). Professionals from post-secondary settings were less likely to discuss accommodations in later employment than those in other settings. It may be that professionals in education or training settings do not have a structured opportunity to have these kinds of conversations, or that they are not familiar with what kinds of accommodations may be needed in a student’s future workplace. In either case, this is an opportunity for pn2 to help build the capacity of institutions that train students in their content knowledge and skills to also have the strategies they may need to successfully obtain accommodations on the job. For example, how does a student raise this issue during an interview? What research does a student need to do about available technologies at their potential workplace? Exploring these questions with students is a potential area of growth both for pn2 and for institutions that serve students who are DHH.

From statistical analyses reported in an earlier chapter, it was found that when professionals prepared DHH individuals to discuss accommodations with their employer, those professionals reported a higher percentage of DHH leaving their program would be employed full time. This supports the need for preparing DHH individuals to self-advocate for their accommodation needs when entering the workforce.

Accommodations may also be important for students who are sitting for certification exams that are needed for accreditation in their fields. In the survey, we asked professionals t o share their perspectives on whether their setting provides accommodations for certification exams (if relevant at their setting).



A total of 507 professionals answered this question on the survey. Of those 507, 199 indicated that their program did not require a certification exam, 29 said they had an exam but did not provide accommodations, 182 that they had an exam and did provide accommodations, and 97 that they did not know. Further investigation of this question would need to look at what kinds of accommodations individuals had, their effectiveness, and whether there were any barriers to taking the certification exams when accommodations were not available.

Implications, Opportunities, and Limitations

Implications

- Certification levels of interpreters may have a relationship with perceived quality.
- Remote interpreters are less utilized in secondary settings than in post-secondary settings.
- Student-level characteristics such as DHH ++ or having a cochlear implant was not a significant factor in the ratings of accommodations use or quality.
- Discussions around accommodations centered on those relative to language and communication such as interpreters, note takers, and Speech-to-Text services.
- Speech-to-Text (e.g., CART) was not used at the same level as other related services.
- Quality of accommodations was consistent across participants, with some room from improvement but, overall, relatively high ratings of effectiveness.
- Underutilization of resources may be due to a range of factors, including feelings of guilt or frustration about having to negotiate for access to accommodations.
- Identity development and perceptions of culture and hearing status may be an integral part of a student's perspective on accommodations choices.

Opportunities

- There is potential for increased use of remote interpreters for transition planning.
- Individuals may need to plan for different types of accommodations in post-secondary settings than they had used in secondary settings.
- Issues related to accommodations and technology will likely continue to be central to providing access for individuals who are DHH.
- Specific discussions about accommodations in the workplace are both needed and may have a positive effect on employment outcomes. These are least likely to happen in post-secondary settings, representing an area for growth.
- There was a difference of opinion between individuals and professionals on the availability of accommodations for extra-curricular activities. There is a potential here for clarity of policy around access support for activities outside of classes or training.
- Timing of accommodations request appears to be a major concern of professionals, with a desire to encourage individuals to be proactive and begin the process before an emergency occurs.
- Conversations about interpreter certification requirements are likely to intensify with the new regulations. Pn2 could be proactive in bringing these issues to the larger conversation about interpreters in a wide range of settings.

Limitations

- The needs assessment did not include direct observations of accommodations use or ratings of quality.
- The needs assessment did not interview interpreters: all of their perspectives were via the survey only.
- The needs assessment did not include employers or representatives from business.

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Chapter Nine: Moving Forward

The purpose of this chapter is to look at how the information gained from the Needs Assessment may be useful to pn2, both in its internal operations and in dissemination of information to the field. This chapter first covers findings about what pn2 Needs Assessment participants said about the information they would like to see from pn2 as well as the formats they reported would be useful to them. This chapter summarizes where the Needs Assessment aligns with the goals and objectives of the pn2 strategic plan. This chapter concludes with a description of planned dissemination activities and ways in which the community can continue to be involved in dialog with pn2.

Prioritizing Topics

We asked all of the survey participants the following question: *What topics should be a priority for pn2?* To aid answering in this question, we provided an extensive list of topics that had previously been captured in technical assistance and professional development activities of the previous grant cycles of PEPNet. Participants chose all topics that they felt pn2 should address in their activities.

Individuals who are DHH

Individuals who are deaf or hard-of-hearing (DHH) were asked to identify the topics they felt should be the top priorities for pn2 to address in its service provision. We disaggregated this information by the current or most recent transition or postsecondary setting experience. Whereas the top priority was Advocacy for most individuals, with the exception of those in a VR placement, the remaining priorities were quite diverse with little overlap across topics and settings.

Setting	Top Priority	Second Priority	Third Priority
Employment	Advocacy	Technology Options	Career
High School	Advocacy	Language Modes	Legal Issues
Postsecondary	Advocacy	Legal Issues	Accommodations
VR Placement	Vocational Rehabilitation	Advocacy	Technology Options

Parents

Parents were also asked to identify the topics they felt should be the top priorities for pn2 to address. The setting variable here represents the setting of their child who most recently went through or who is currently going through transition to postsecondary settings. Interestingly, the top priorities again focus on Advocacy, with some emphasis on Career for those whose children are already in postsecondary settings. The third priority for each of these parents aligns well with the responses of individuals in those same settings.

Setting	Top Priority	Second Priority	Third Priority
High School	Advocacy	Accommodations	Legal Issues
Postsecondary	Career	Advocacy	Accommodations
VR Placement	Advocacy	Career	Technology Options

Professionals

A summary of their top three priorities, by both setting and role, is provided in the grid below. Professionals were remarkably consistent in their responses. The top three priorities across the board for professionals were the following: Advocacy, Accommodations, Technology Options, Career, and Transition, roughly in that order.

Setting	Top Priority	Second Priority	Third Priority
Secondary	Advocacy	Transition	Career
Agencies	Advocacy	Accommodations	Career
Postsecondary	Technology Options	Accommodations	Advocacy
Multiple Settings	Advocacy	Accommodations	Career
Role			
Administrator	Transition	Career	Advocacy
Educator	Advocacy	Technology Options	Career
Interpreter	Advocacy	Accommodations	Career
Service Provider	Accommodations	Technology Options	Career
Multiple Roles	Advocacy	Technology Options	Transition

Best Contact Methods

We also wanted to find out from participants how they learned of pn2. This can help us know what entry points people have in learning about pn2 and its services. This question was limited to professionals answering the survey but it can give pn2 a sense of the inroads it is making in reaching new contacts. A summary of how professionals learned of pn2 by setting and by role is provided in the Table below.

Setting	Top Method	Second Method	Third Method
Secondary	Conference	Professional who works with DHH	Colleague
Agencies	Colleague	In a meeting	Forwarded Email
Postsecondary	Colleague	In a meeting	Advocacy
Multiple Settings	Colleague	In a meeting	Professional who works with DHH

Role	Top Method	Second Method	Third Method
Administrator	Colleague	In a meeting	Listserv
Educator	In a meeting	Professional who works with DHH	Colleague
Interpreter	Colleague	In a meeting	Professional who works with DHH
Service Provider	Colleague	In a meeting	Listserv
Multiple Roles	Colleague	In a meeting	Listserv

The top method by which participants learned of pn2 was through a colleague – the current database members are our best recruiting tool! The second highest method across most settings was in a meeting, presumably where information about pn2 was shared or where others were discussing pn2. Interpreters and Educators, particularly those in secondary or multiple settings, also learned of pn2 through another professional who works with individuals who are DHH. Electronic means of sharing information, such as email or listservs, are lower on the list of methods for finding out about pn2. While these are still viable means to spread information about pn2, it may be that we need to encourage colleagues to use social media or email to share information with their colleagues in addition to advocacy they might do in person.

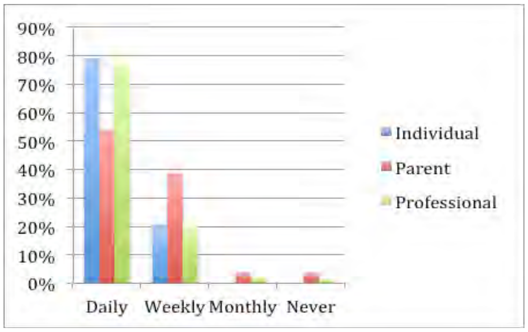
Newcomers to pn2

In the interest of learning more about recent newcomers to pn2, we looked more closely at the demographic characteristics of those for whom this was their first contact with pn2. We asked this question to all survey participants. A total of 45 people indicated that the Needs Assessment survey was their first experience of pn2: ten individuals, one parent, and 34 professionals. These are relatively small numbers given that over 1,500 individuals participated in at least a portion of the survey. The demographics of the professionals who were newcomers largely reflected the demographics of the overall survey sample: Caucasian females who were service providers across multiple settings. The majority of new professionals were from the South (n =16) and the Northeast (n = 7). Individuals who are DHH who were newcomers were about half female (n = 6), relatively equally distributed across current settings (e.g., in post secondary programs, using VR services, or employed), with a greater ethnic and regional diversity than the professionals (though with such a small sample these figures should be viewed with caution).

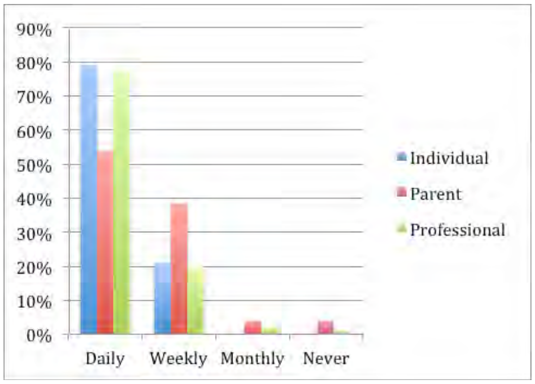
Access to Technology

Because technology, particularly web-based technology, is such a central way in which pn2 reaches its stakeholders, we asked participants to share with us their access to a range of technology tools. Because access is as much about frequency as availability, we asked participants to tell us how often they had access to the specific tool, ranging from daily, weekly, monthly, or never. The following graphs summarize technology access findings for individuals, parents and professionals. Individuals who are DHH reported having daily or weekly access to a desktop, laptop, tablet, and smartphone. Parents had the least amount of access, with a higher proportion of intermittent access (i.e., weekly or monthly) to all formats in the survey. Professionals also had high levels of access, with only a few individuals indicating they did not have daily or weekly access to the range of technology tools

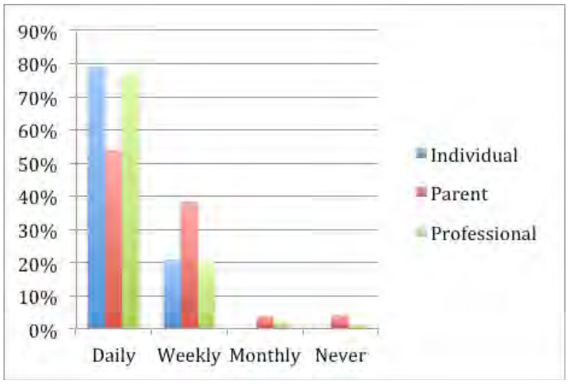
Access the Web via Desktop



Access Web via Laptop



Access Web via Tablet



Access Web via Smartphone

When looked at by whether the participant identified as DHH or as a hearing individual, there were very few differences in access patterns across platforms. It would likely be safe to assume that individuals who are DHH, across broader age ranges, have even greater access to these platforms than indicated here.

Alignment with Strategic Plan

The findings of the Needs Assessment, as well as the process itself, are integral to how pn2 will meet its strategic plan goals, objectives, and action steps.

Strategic Plan Goal	Action Steps	Needs Assessment Contribution
1: Maintain a program that is transparent and accountable.	Grant and Contract Administration	Identification of topics and content areas for development of materials and provision of technical assistance can inform hiring and contractual decisions.
	Technology and Media Support	Identification of technologies used by stakeholders can inform decisions made for pn2 internal and external use.
	Center Staff Responsibilities	Information in Needs Assessment reports as well as its process will be included in reports of pn2 activities to demonstrate attainment of goals.
	Website Maintenance	Needs Assessment findings will be a part of regular updates to the website.
	Participate in Social Media	Needs Assessment findings disseminated via social networks including Facebook and Twitter.
	Disseminate e-blasts	Needs Assessment findings disseminated via e-blasts.
	Create marketing materials	Needs Assessment findings may be useful for future marketing materials for pn2.
	Evaluation plan	Need Assessment process and documentation incorporated into annual evaluation plan.
2: Advance the field through research and evidence synthesis.	Advisory Committee input and influence	Preliminary findings presented to Advisory Committee in July 2012.
	At least two needs assessments.	This initial Needs Assessment lays the foundation for a follow-up in year four of the grant.
	Review and critique	Methods were reviewed by over 50 individuals as well as by OSEP.
	Mixed methods	Methods included interview, focus groups, and surveys.
	Systematic Factors	Systemic factors identified and discussed throughout the document, most especially in Chapter 7.
	Literature Review	References for main content areas incorporated into each chapter.
	Program Models	Needs Assessment findings include identification of potential model characteristics for further investigation.
	Dissemination	Needs Assessment findings will provide the foundation for journal articles and later publications.
	Presentations	Needs Assessment findings are scheduled to be a part of no fewer than 10 presentations in 2012-2013.
	ES Requests	Needs Assessment findings will be available to the rest of the pn2 staff for use in their own presentations and products.
3: Build capacity of individuals, professionals, and organizations.	Resource Development	Needs Assessment findings will be available to the rest of the pn2 staff for use in resource development.
	Evidence-based training materials	Needs Assessment findings can inform potential topics that are “ripe” for potential impact.
	Coordinated approach to conference activities	Needs Assessment findings can be a part of the larger array of materials and information at a pn2-intensive conference.
	Learning modules	Findings in Chapters 4-8 touch upon many factors that are related to proposed learning module topics.
	Online technical assistance resources	Needs Assessment findings can contribute to both the identification of important online resource topics and information for dissemination.
4: Build capacity at state and national level.	National Summits	Needs Assessment findings, particularly those from chapters 6-8, will be useful for state and national leaders in the field.
	Collaborators	Needs Assessment participants identified potential organizations and community groups that may serve as future collaborators.
	Communities of Practice	Needs Assessment participants are potential contributors to the Communities of Practice on research.
	Forum	Needs Assessment findings and perspectives can contribute to pn2 resources brought into the online forum.

Dissemination Plans

Pn2 seeks to share information from the Needs Assessment using formats that are accessible to a broad range of users. In addition to integrating findings into pn2 activities and materials, we have identified five key mechanisms for dissemination over the course of year two. These include the following outlets.

- **Pn2 website:** Both the entire document and smaller portions of the Needs Assessment will be available online via www.pepnet.org. Select portions will be translated into video with ASL presentations of findings.

- **Eblasts:** Significant findings will be highlighted in brief, one-paragraph articles in e-blasts sent via email to members within the database.

- **Social Media:** Significant findings will be highlighted in brief announcements via Facebook and twitter, both directing readers to the pn2 website

- **Conference presentations:** The RES team will present and discuss Needs Assessment findings with a range of stakeholders at national and regional conferences.

- **Published papers:** The RES team will write up Needs Assessment findings in the context of research literature and recommendations to the field. These papers will be submitted to a variety of journals in the field for publication.

Thank You

The staff of pn2 is deeply grateful for all who participated in the development, implementation, analysis, and review of this Needs Assessment. It was truly a remarkable experience to learn and journey with all of you. We hope that this document will serve as a catalyst for many further inquiries, discussions, and resources that will improve the lives of individuals who are DHH. Again, thank you.