Career Preparation and Accommodation Experiences of Deaf and Hard-of-Hearing Postsecondary Students in a Summer Employment Internship

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Presentation Objectives
1. Identify multiple barriers experienced by deaf and hard-of-hearing (DHH) postsecondary students and how this informs postsecondary service provision.
2. Identify multiple facilitative factors experienced by DHH postsecondary students.
3. Identify areas of confidence or new learning, as well as concerns of these students as they prepare for their employment future.

Study Goals and Demographics
Rationale

• This study examined outcomes from a 2021 summer internship for postsecondary students with hearing loss, as part of a larger pool of interns with physical and sensory disabilities
• The internship program was designed to provide career preparation services that they may not receive otherwise
• Ten DHH students were interviewed twice regarding their K-16 programs and internship experiences

Methodology: Recruitment - 1

• Internship Program
  • Over 100 students from 30 colleges to date, 52 in 2021
  • Paid, full-time work aligned with their academic pursuits, interests, and career goals
  • Accessible housing and transportation assistance offered as needed
• Recruitment
  • In-person or virtual campus visits, October – November
  • Meetings with disability and career services professionals
  • Hosting open houses or giving presentations to students
• Criteria
  • Current college student, physical or sensory disability, competitive GPA
  • Cover letter, resume, 3 letters of reference

Methodology: Recruitment - 2

• Program Timeline
  • 1/31/21 application deadline
  • February: staff interviews with each applicant & acceptance letters sent
  • March – April: internship placements confirmed
  • In-person, remote, or hybrid employment options
  • May 17 – June 1: start dates for internships
  • July 30 – August 6: end dates of internships
Interview Methodology

• Participants
  • Program identified DHH interns and obtained consent
  • Recruitment letter and consent described the study
  • All individuals were over 18 years
  • Program sent list of interns’ emails to PI with CC to interns.
    • Initial interviews scheduled and completed 6/22 – 6/30
    • Transcript editing completed 7/26/21 and sent to interns
  • Second interviews scheduled and completed 8/9 – 8/30/21
    • Transcript editing completed 9/8/21 and sent to interns

Interview Starter Questions & Probes

• What kinds of accommodation supports or services have you had in your college programs?
• How successful have your accommodation supports and services been in your program?
• What characteristics or factors will you look for in future employment based on your accommodation and internship experiences?
• What are your next steps for beginning your career?

Study Participants - 1

• 10 interns’ hearing loss levels
  • 1 = Profound/normal (unilateral loss)
  • 3 = Mild/Moderate
  • 4 = Moderate/Severe
  • 1 = MM & MS
  • 1 = MM and now Severe/Profound

• School status
  • 1 = graduated
  • 4 = seniors
  • 2 = juniors
  • 3 = sophomores
### Study Participants - 2

- **Majors**
  - 2 = Pre-Med (Psychology, Neurobiology)
  - 1 = Biomedical Engineering
  - 1 = Informatics and Healthcare Management
  - 1 = Healthcare Management, Informatics minor
  - 1 = Marketing & Supply-Chain Management
  - 1 = Marketing with Education minor
  - 1 = Development and Family Studies
  - 1 = Audiology

### Personal Accommodations

- 7 = Bilateral hearing aids (1 doesn’t wear at home, 1 no longer uses)
- 1 = Bilateral cochlear implants
- 1 = Cochlear implant and hearing aid with Bluetooth implant connection (occasional migraines from implant)
- 1 = Adheear—bone conduction system with an internal post—changes device weekly
- 2 also use a Roger Pen
- **ASL**
  - 4 know some, 3 enrolled
  - 1 uses in college, ½ time HS

### Postsecondary Instructional Barriers
Research Question #1: Postsecondary Instructional Barriers

- Teachers (across 7 students)
  - 4 = thick accents (1 screens new classes; 2 used class notes)
  - 1 = science faculty wrote on the board, never faced students
  - 1 = teacher with mask and thick accent
  - 1 = won’t accept Doctor’s appointments as excused
  - 1 = blamed captions for freezing online course
  - 1 = TAs that walk around the room while talking
  - 1 = wouldn’t allow interpreter in lab class (needed goggles but wouldn’t supply them, angry at student for this)
  - 1 = faculty don’t read accommodation letters (meets with each, provides reminders)

Research Question #1: Postsecondary Instructional Barriers (2)

- Accommodations
  - 3 = Real Time Captioning is difficult
    - time lag, then cognitive processing (hear some, wait, then process)
    - Multiple visual signals—videos, pictures, drawing on board (simultaneous)
  - 2 = poor notetakers
    - ask friends to help, text during class
  - 1 = disability services didn’t allow RTC at first
  - 1 = labs with masks and face shields
  - 1 = interpreters don’t know course content or signs
    - Meets with them before class, some are late & miss this

Research Question #1: Postsecondary Instructional Barriers (3)

- Class Structure
  - 3 = large group, Q&A sessions, soft-spoken lab partner
    - Can’t follow or keep up, get lost during class, can’t complete projects
  - 3 = difficulty hearing with masks and face shields
Research Question #2
Postsecondary Facilitative Factors (2)

• Accommodations
  • 5 = RTC with online videoconferencing during COVID
  • 4 = DS really helps
  • 1 chose her college based on their services
  • 2 = online videoconferencing helped: captioning & volume control
  • 2 = captions on videos
  • 1 didn’t realize it was an option at first
  • 1 = front row seating
  • Most received this accommodation
  • 1 = FM and microphones with wireless links to hearing aids
  • 1 = notetaker
Research Question #2
Postsecondary Facilitative Factors (3)

- Accommodations (cont.)
  - 1 = tailored her accommodators over the years, now needs less
  - 1 = MacBook has zoom to enlarge text
  - 1 = iPad with airpods for video sound control
  - 1 = iPad with PowerPoints from class
  - Takes notes, draws, writes, & searches
  - 1 = uses Otter.ai (RTC)
    - DS sends a link to faculty to connect with Zoom videoconferencing

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Research Question #2
Postsecondary Facilitative Factors (4)

- Class Structure
  - 1 = hands-on class
  - 1 = postsecondary students are less noisy in class

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Research Question #2
Postsecondary Facilitative Factors (5)

- Personal Advocacy
  - 1 = student gov't rep, freshman dorm rep, fraternity rep & academic chair, college mentor & group leader for local students, tutor at writer’s studio, encourages DS registration
  - 1 = regular presentations in her local area about disabilities
  - 1 = became a DS board member, worked in a VP's office & learned strategies
  - 1 = hosted/tran a UN high school conference
  - 1 = talking with TAs and faculty about her hearing loss
  - 1 = still developing her self-advocacy
  - 1 = doesn't want to make waves
    - Did successfully fighting DS to get an interpreter
Research Question #3

Next Career Steps

- **Strengths**
  - 2 = had meetings that established networking connections
  - Use future internships to expand this and make an informed position choice
  - 1 = presents his hearing loss as a positive opportunity
  - Understands the importance of sharing the same goals with others

- **Advocacy**
  - Substantial self-advocacy by many of the interns at the postsecondary level

Research Question #3

Current Areas of Career Confidence

- **Things Learned**
  - 1 = enjoys mentoring others
  - May prefer to work in a teaching hospital due to its openness to new ideas
  - 1 = enjoys jobs with less interaction with other coworkers
  - 1 = each hospital is different
  - Will use university relationships to find opportunities that fit him best
  - 1 = making her own decisions and appreciating that freedom
  - It is important to interact with coworkers so that they feel valued
  - 1 = discussed tips for successful interviewing (with PI)
  - She tends to become nervous and feels she makes mistakes, isn't perfect
  - 1 = how to control noise in future environments
  - Was reassured she can set this standard as she advances in her career
Research Question #3
Current Areas of Concern

• Concerns
  • 1 = dealing with diverse patients/customers with strong accents
  • 1 = doesn’t feel she accomplishes as much when working from home
  • 1 = enjoys interacting with others but her current major tends not to be highly interactive
  • 1 = when to disclose one’s disability still isn’t clear
  • 1 = interviews for Med school and facing job-related accommodation issues in the future
  • 1 = likes trauma but family feedback showed it was affecting her
  • 1 = knowing correct ASL medical signs for advanced coursework

Summary and Conclusions

Service Provision Challenges

• Individualized and unique accommodation challenges
  • Each student presents unique learning/accommodation strengths and challenges

• Comprehension difficulties
  • Classroom or setting noise
  • Lack of visual access to those speaking
  • Need people to be stationary and face them
  • Q&A sessions in large rooms or meetings
  • Following topics and presentation sequence
  • Outlines, notes, consistent organization is helpful
  • Masks and strong accents
    • Even clear masks often fog
Service Provision Challenges (cont’d)

• Large group settings and group work
  • Group members often ignore input and/or special needs
  • Groupings increase noise (can’t follow interactions/instructions)

• Notetaker quality
  • Often used friends
  • Volunteers may be more conscientious than those paid
  • Notetaker training is available: free and online (Captioned Media Program: https://dcmp.org/learn/501-online-notetaker-training-module)

• Faculty compliance with accommodations
  • Students often needed to self-advocate or explain

Facilitative Factors

• Disability sensitivity
  • Efforts at accommodating special needs are appreciated
    • Faculty, staff, and disability service coordinators

• Accommodations
  • Captioning, FM systems, wireless connections to hearing aids
  • Preferential seating, extra time, testing sites, and assignment modifications

• Increased self-advocacy skills
  • Difficulties often led to realizing that they had to act
  • Some are still developing the courage
    • They prefer “not to make waves” or create attention to their issues

Research-based Service Challenges

• Split visual attention
  • Difficulty in following captions with other visual content (texts, pictures, videos, drawings)
  • Integrating information across multiple sources and often with a time delay creates substantial cognitive overload (Ayres & Sweller, 2014; Luft & Brochu, under review; Mather & Clark, 2012)

• Exhaustion and fatigue
  • Split visual attention results in higher levels of fatigue
  • DHH students often must work harder and longer to acquire the same content (Ayres & Sweller, 2014; Luft & Brochu, under review; McGarigle et al. 2014; National Deaf Center on Postsecondary Outcomes, 2020; Rohalyn-Martin & Hayward, 2016)
Recommendations

• Individualized, team-based problem solving
  • Each individual brings unique hearing loss needs, learning profiles, and situational challenges
  • Many disability service providers follow a standardized list
  • Institutional or programmatic resistance to solutions may occur if these are not “research-based”
    • This occurs despite their being helpful to the individual
    • Students have had to cope with increased challenges and live with lower personal achievement levels or “fight the system”
  • Provide support to faculty for accommodating students in ways that they perceive as not compromising course content or delivery

Questions and Comments?

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