

## **Audiology Services in Hawaii's Public Schools: A Survey of Teachers of the Deaf and Speech Language Pathologists**

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**The Hawaii public school system employs one audiologist for approximately 178,000 students ages 3 through 21. The American-Speech-Language-Hearing Association and the Educational Audiology Association contend that there should be one audiologist for every 10,000 students to adequately deliver services. The purpose of this study was to determine what audiology services are currently being provided in Hawaii's public schools and who, besides audiologists, are performing them. Speech language pathologists (SLPs) and teachers of the deaf (TODs) were identified as the most likely professionals to be providing audiology services to students in the absence of audiologists, and were therefore asked to respond to an online survey of audiology services in the schools. A total of 128 SLPs and TODs completed the survey. Survey results indicated that SLPs and TODs are performing duties that fall under the scope of practice of audiologists. It was determined that employing more audiologists in the Hawaii public school system would improve access to appropriate audiology services to students. Further research in this area could help determine if Hawaii is unique, or if, out of necessity, SLPs and TODs have taken over audiology duties in school systems with less than the recommended 1:10,000 audiologist-to-student ratios.**

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### **Introduction**

Classroom management for a child with a hearing loss or listening difficulties starts with quantification of the hearing loss or listening problem, assessment of the student's academic performance, assessment of the student's functional skills in the classroom, and determination of individual student and teacher willingness to work together to implement the Individual Education Plan (IEP) recommendations. Audiologists are uniquely qualified to provide important assessment and classroom information to an IEP team for children with hearing loss and listening problems in the public school system. Flexer (1991) states that the ultimate goal of an educational audiologist is to enable children with hearing loss and auditory processing disorders to derive educational benefit from academic instruction. She further states that in order for this to occur, auditory function must be maximized for those students with adequate residual hearing to allow access to language, learning, and life events, as appropriate.

Access to information is essential to learning. In

most classroom settings information is presented in an auditory verbal environment (Johnson, 2000; Flexer, 1991). Since the early 1970s, with the passing of major legislation aimed at aiding school students with disabilities, the need for audiological services in the schools has been documented in PL 94-142 and all reauthorizations. Furthermore, studies have demonstrated the need for support services, even for those children with minimal hearing loss, in order to learn and communicate in a mainstream setting (Bess, Dodd-Murphy, & Parker, 1998). It has been stated, "A child's ability to hear influences the development of communication and behavioral skills that affect educational experience and relationships with other people" (Niskar, Kieszak, Holmes, Esteban, Rubin, & Brody, 1998, pg. 1071). There have been numerous studies that put the prevalence of hearing loss in children from 1.9% to over 16%, depending on the criteria used for defining hearing loss. Niskar et al (1998) reported that information obtained through the Third National Health and Nutrition Examination Survey (NHANES III) indicated that the prevalence

of hearing loss of 16dBHL in one or both ears among US children was 14.9% . The majority of the hearing loss was unilateral and slight in severity (16-25dBHL). Even children with these minimal levels of hearing impairment need support in order to access language and learning in the classroom (Bess et. al., 1998; Flexer, 1991).

The issue of minimal hearing loss has increased the expected numbers of children in need of audiological services and support in school populations (Niskar et.al., 1998; Bess et. al., 1998). Only those with the greatest hearing losses in the severe to profound hearing loss range fall in the 1% to 3% that has resulted in the label of hearing impairment as a low incidence problem. In Hawaii's public school population of approximately 178,000, a prevalence of 14.9% would mean that there are 26,522 students that could be supported in the classroom by an audiologist.

Much of the educational management for children with hearing loss is dictated by federal law under the Individuals with Disabilities Educational Act, and Section 504 of the Rehabilitation Act of 1973. The IDEA has undergone several reauthorizations since the law first passed in 1975 as the Education of all Handicapped Children Act. The most recent reauthorization took place in 2004 as Public Law 108-446.

The Electronic Code of Federal Regulations is reviewed here in relation to audiology services under IDEA 2004. The general definition of eligibility for special education is a child that has been evaluated according to IDEA and been found to have a disability (in this case hearing loss or deafness) who requires, because of this disability, special education and related services to benefit from a free and appropriate public education (Section 300.8[a][1]). Deafness is defined as "a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without hearing amplification that adversely affects a child's educational performance" (Section.8 [5]). Hearing impairment is defined as "an impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under deafness" (Section 300.8[3]).

In the case of a child who meets eligibility requirements for special education, audiology services would be available under related services. IDEA (Section 300.34c[1]) states that:

(1) Audiology includes:

- (i) Identification of children with hearing loss;
- (ii) Determination of the range, nature and degree of hearing loss, including referral for medical or other professional attention for the

- habilitation of hearing;
- (iii) Provision of habilitation activities, such as language habilitation, auditory training, speech-reading (lip-reading), hearing evaluation, and speech conservation;
- (iv) Creation and administration of programs for prevention of hearing loss;
- (v) Counseling and guidance of children, parents, and teachers regarding hearing loss; and
- (vi) Determination of children's needs for group and individual amplification, selecting and fitting an appropriate aid, and evaluating the effectiveness of amplification.

IDEA further states that each school must ensure that hearing aids worn in school by children with hearing impairments, including deafness, are functioning properly (Section 300.113 [a]). FM systems fall under assistive technology. Under this section of the law (Section 300.5), the school must ensure that assistive technology devices (FM systems in this case) are made available to a child if it is required as part of the child's special education, or related services, or supplementary aids and services in the Individualized Education Plan (IEP). There are also services under assistive technology, which include any service directly assisting a child with a disability in the selection, acquisition, or use of any assistive technology (Section 300.6).

A child not eligible for special education services may be entitled to services under the Rehabilitation Act of 1973, subpart D that relates to preschool, elementary, and secondary education programs. The Rehabilitation Act, or Section 504 as it is usually referred to, is an access law with the purpose of preventing discrimination due to disabilities. In general, this Act states that no person who qualifies as handicapped can be excluded from participation in any program or activity which receives federal financial assistance on the basis of their handicap. Under Section 504, a handicap is defined as "any person who has a physical or mental impairment which substantially limits one or more major life activities, has a record of such impairment, or is regarded as having such an impairment" (Section 104.3[h][3][j]). All students who fall under special education will also fall under this act, but not necessarily the other way around.

Services provided under Section 504 include the provision of regular or special education and related aids and services that are designed to meet individual educational needs of handicapped students as adequately as the needs of non-handicapped students are met. The school must ensure that no handicapped student is denied benefits because of

the absence of educational auxiliary aids for students with impaired sensory, manual, or speaking skills. Auxiliary aids may include taped texts, interpreters or other effective methods of making orally delivered materials available to students with hearing impairments, readers in libraries for students with visual impairments, classroom equipment adapted for use by students with manual impairments, and other similar services and actions (Section 104.44 [d][2]). Fiscally speaking, the difference between Section 504 and IDEA is that there is no additional funding to support Section 504 services. It is for this reason that many schools will make a student eligible under IDEA whenever possible. Both laws cover a student in extracurricular activities that are sponsored by the school, such as sports. Students with hearing loss or auditory problems that do not qualify for special education services under Hawaii criteria, could receive support from an educational audiologist under the Section 504 law.

Hearing loss is not the only auditory disability assessed by audiologists. Auditory Processing Disorder (APD) refers to the difficulties in processing auditory information in the central nervous system (ASHA, 2005b). APD can result in or be associated with difficulties in learning, speech, language, attention, and social function. APD affecting a child's ability to learn requires comprehensive assessment and intervention by a multidisciplinary team that includes an audiologist. The audiologist can provide information about a student's auditory strengths and limitations and possible learning and teaching strategies for the classroom (EAA, 1997).

There are also the emotional affects of all degrees of hearing loss and processing difficulties. The "hearing aid effect" is used to describe the negative impressions people who see hearing aids have toward the individuals who wear them. In the educational setting this would include teachers, friends, and classmates (Clark & English, 2004). Davis, Elfenbein, Schum, & Bentler (1986) demonstrated that children with hearing loss, especially those who wore hearing aids, were more likely to show aggressive tendencies than their normal hearing peers. They are also more likely to express physical complaints. Parental reports indicated that children with hearing loss were more likely to demonstrate behavioral difficulties and develop social problems of isolation and adjustment to school. This was true of those children with even milder degrees of hearing loss. These reports indicate that there is a need for service provision in the area of psychosocial adjustment for children with hearing aids and hearing loss. Audiologists are trained to work with individuals of all

ages who wear hearing aids to overcome some of the issues related to the hearing aid effect, and to educate the professionals who work with children who wear hearing aids in the classroom (Clark & English, 2004).

The acoustical environment in a classroom can have an effect on the academic, psychoeducational, and psychosocial development of children with normal hearing, as well as with children with hearing loss and other disabilities such as APD, learning disabilities, and attention deficits. Children with hearing and listening difficulties are most affected by noise and reverberant listening conditions, the conditions that exist in most classrooms (ASHA, 2005a; Bess, 2001; Berg, Blair, & Benson, 1996; Flexer, Wray, & Ireland, 1989). Even children with mild levels of hearing loss have demonstrated delays in vocabulary development, reading achievement, and problems in behavior and the ability to make friends (Davis et. al., 1986). Children in classrooms for students who are deaf and hard of hearing are likely to utilize amplification devices and FM systems that allow for direct access to the teacher's voice above the background noise. Children with minimal hearing loss are not as likely to have the benefit of an FM system or personal amplification.

A study of noise levels in Hawaii classrooms was recently published (Pugh, Miura, & Asahara, 2006). The study found that Hawaii classrooms are predominantly composed of concrete/hollow tile walls, jalousie windows, tile floors and ceilings with acoustic tiles. Most classrooms do not use HVAC systems, but rely on open and closed windows and fans to control the temperature. The study revealed that the average ambient noise level in empty classrooms was 51.6dBA. The American National Standards Institute (2002) recommends that ambient noise levels not exceed 35dBA. The high classroom noise level reported raises the concern that for children in Hawaii's schools with hearing loss (including minimal hearing loss), APD, and listening problems associated with other disabilities, difficulties in hearing and learning in a typical classroom, without support, likely exist. An educational audiologist is the professional trained to work on solutions to improve classroom learning environments that will provide these children more opportunity to succeed.

National prevalence of noise induced hearing loss (NIHL) in children between the ages of six to nineteen is estimated to be 12.5% (Niskar et. al., 1998). Other studies have documented NIHL in children and adolescents (Peppard & Peppard, 1992; Montgomery & Fujikawa, 1992). Folmer (2006) states that over the last 30 years numerous experts have recommended that hearing loss prevention programs be implemented

in the schools. In a study by Chung, Des Roches, Meunier, & Eavey (2005) they concluded many young people are unaware of the hazards of excessive noise exposure and that once educated, children are more willing to take steps to protect themselves. With evidence that even mild hearing losses can have deleterious affects on academic achievement, it is necessary to monitor learning profiles of these students with NIHL. Therefore, the implementation of hearing loss prevention programs is another area where educational audiologists are uniquely qualified to present programs to children in the schools, and/or to support health curricula taught by others.

Hawaii has a Comprehensive Student Support System (CSSS) that identifies five levels of intervention for students (<http://www.doe.k12.hi.us/programs/csss>). Level One applies to all children that are succeeding in school without any supports. Level Two addresses those students who require some support such as remedial reading, but do not yet require a formal plan of intervention. Level Three applies to those students who require a written plan, such as a 504 or behavioral support plan. Levels Four and Five apply to those students requiring services and supports under IDEA. There are ways to document all service provision needed by students to assist them in succeeding in the classroom. Services from speech language pathologists (SLPs) and teachers of the deaf (TODs) are not likely to take place before a child reaches at least Level Three. Students needing some kind of support service, due to hearing loss or an auditory processing disorder, could receive support from an educational audiologist under the CSSS system at all levels, including Levels One and Two.

In 1991, Johnson surveyed departments of education in 48 of 50 states and the District of Columbia, to determine the number of audiologists serving students, the credentials required of those audiologists, and the criteria for determining if students with hearing loss were eligible for special education services. Johnson found a wide range of educational audiologists employed by school districts in each state, ranging from 0 to 67. At that time there were 529 audiologists employed in 38 states. Johnson also determined that only 13 states were providing audiological services in accordance with IDEA. The data demonstrated that in 1990, only a small percentage of educational audiologists were employed by school systems to provide the services mandated by federal law.

In 2000, Bone reported that the average number of audiologists employed in all 50 states had increased from 13 audiologists per state in the Johnson survey (1991) to 40 audiologists per state. Although this

represented a significant increase in the number of educational audiologists serving students in the public schools, it was far short of the estimated 3000 audiologists needed to meet the number recommended by professional organizations (ASHA, 1993; EAA, 1997). However, Bone did conclude that there was a general move in the direction of hiring more educational audiologists, at least in some states.

In 2007, Smiley, McCormick Richburg, & Fullington again surveyed the school systems across the country to determine the current status of audiology services in the schools. They continued to find extreme variability in the roles of educational audiologists and the availability of audiology services in the schools. They were able to report on data from 45 states and the District of Columbia. Their results showed that 468 school districts directly employed at least one audiologist with an average per district of 13 audiologists. An additional 248 districts contracted with audiologists. Although there was some movement in the direction of an increase of the number of audiologists employed by school districts, the ratio of audiologists to the student population fell far short of the 1:10,000 students recommended by ASHA except in five states where the ratio was documented to be 1:10,000 to 1:14,000 students. This information indicates that the mandated audiology services under IDEA are either not being carried out, or they are being carried out by individuals other than audiologists.

The United States Department of Education, Office of Special Education Programs (OSEP) makes annual reports to Congress regarding the services provided under IDEA. Much of the information from this report is available online. A review of the data comparing the number of full time equivalent audiologists (OSEP, 2005a) with the census of school-aged (6-17) children in each state (OSEP, 2005b) provides additional information regarding the ratio of audiologists employed in this country to school-aged children. Four states (Delaware, North Carolina, Iowa, and Maine) employed 1 audiologist for every 10,000 children aged 6-17. An additional three states (New Mexico, Arizona, and Utah) employed one audiologist for every 15,000 children of school age. Four more states (Colorado, Minnesota, Wyoming and Alabama) employed 1 audiologist for every 16,000 children of school age. The average ratio of audiologist to students for all 50 states and the District of Columbia was 1:33,877. Connecticut, Rhode Island and the District of Columbia were reported as not employing any audiologists. Hawaii is listed as employing 1 audiologist for 193,917 children of school age. Only Mississippi had a worse ratio of audiologists to

children at 1:248,251.

The Department of Education in Hawaii employs one educational audiologist for the 178,000 students in the school system. The primary responsibility for this audiologist is the assessment of children suspected or known to have hearing loss that may qualify for special education services. This includes students suspected of having auditory processing problems affecting learning. Other audiological roles that are specified in special education law are being carried out by individuals who are not audiologists and have little or no training in audiology. The purpose of this study is to identify the IDEA-mandated audiological services that are provided in Hawaii's public schools, and to determine who is providing these audiological services in the schools.

### **Method**

#### ***Subjects***

This project included 251 SLPs, 36 classroom TODs (including the teachers at the Hawaii Center for the Deaf and the Blind ASL immersion program), and nine itinerant TODs, all employed by the State of Hawaii, Department of Education. These professionals were identified and surveyed (see Appendix A for complete survey) about the extent to which they are providing IDEA-mandated audiology services. These services are recognized under the scope of practice for an audiologist (ASHA, 2004). Educational levels and continuing education activities of the professionals were a part of the survey. The survey was implemented online at *surveymonkey.com*, which assured anonymity by removing identifying information. The individual SLPs and TODs were contacted via the Hawaii school system e-mail and invited via cover letter to participate in the survey.

#### ***Survey Instrument***

The first contact letter was e-mailed on November 19, 2007. The survey was available online between November 19, 2007 and December 3, 2007. A reminder e-mail was sent at the beginning of the second week encouraging those that had not finished the survey to do so.

There were three identical surveys separated by the professions of SLPs, classroom TODs, and itinerant TODs, in order to better identify who was providing mandated audiological services. It should be noted that one of the itinerant TODs is also a certified and licensed audiologist.

### **Results**

Responses to the survey were received from 107 (42.6%) of the SLPs, 14 (38.8%) of the classroom TODs, and 7 (77.7%) of the Itinerant TODs, for a total of 128 complete responses, or a 43.2% response rate. Three surveys from SLPs and two surveys from

classroom TODs were not completely filled out and therefore are not reported in these final results. Of the total number of respondents, two hold a doctoral degree, 121 (94.5%) hold a master's degree, and 5 (3.9%) hold a bachelor's degree. The bachelor-level respondents were all TODs, while the doctorate level respondents were SLPs.

The total number of respondents performing hearing screenings sometimes or always was 107 (83.5%). The majority of these individuals, 97.0%, were SLPs. The number of respondents that sometimes or always determine the frequency range, degree, and type of hearing loss was 18 (14.0%). The majority were SLPs, with one classroom TOD reporting that s/he sometimes does this. The number of respondents who reported that they are sometimes or always asked to perform auditory processing assessments was 81 (63.2%). The majority of these individuals were SLPs, but five individuals were itinerant TODs. The number of respondents who reported that they sometimes or always assess students for APD was 45 (35.0%). One of these respondents was a classroom TOD and the rest were SLPs.

Only 76 (59.3%) of the respondents reported that they sometimes or always provide habilitative services to deaf and hard-of-hearing students. Of the 52 (40.6%) who reported that they never provide habilitative services to deaf and hard-of-hearing students, five were classroom TODs. The number of respondents who reported that they sometimes or always provide habilitative services to children with APD was 85 (66.4%), with the majority being SLPs (92.9%). A large percentage (68.0%) of SLPs reported that they provide consultation to classroom teachers, IEP teams, or schools several times a year.

The number of respondents who reported that they sometimes or always evaluate, select and fit individual or classroom assistive amplification devices was 31 (24.2%). Only one of the itinerant TODs stated that they never do this; however, 100% of the Itinerant TODs stated that they are responsible for the purchase and maintenance of FM or assistive listening devices in their district. One classroom TOD and 12 (11.2%) SLPs stated that they are sometimes or always responsible for the purchase and maintenance of FM or assistive listening devices. For daily listening checks, 69 (53.9%) of the respondents stated that they sometimes or always perform them or supervise someone who does. Of the classroom TODs, 12 (85.7%) reported that they sometimes or always do this, but two stated that they never do this. Only 35 (27.3%) respondents reported that they perform functional listening assessments sometimes or always, and the majority (85.7 %) were SLPs.

A small group of respondents, 32 (25.0%), the majority of which were SLPs, indicated that they sometimes provide a hearing loss prevention program in the school or district. A little over half of the respondents, 73 (57.0%), stated that they sometimes or always provide consultation to DOE personnel regarding the acoustic environment in a school, district, or classroom. Concerning counseling to students regarding their hearing loss and feelings about hearing loss and amplification, 72 (56.2%) of the respondents reported that they sometimes or always provide this service.

The majority of respondents (53.0%) have not had continuing education in the areas of amplification, minimal hearing loss, or auditory processing disorders in over 2 years. Figures 1-3 detail continuing education by intervals of 0-6 months, 7-12 months, 1-2 years and more than 2 years for SLPs, TODs and Itinerant TODs.

Figure 4 illustrates the caseload ranges and averages for each discipline. There was a wide range of caseloads for the different disciplines, ranging from none to 57. SLP caseloads ranged from 0-25, classroom TOD caseloads ranged from 3-29, and Itinerant TOD caseloads ranged from 15-57.

Of all respondents, 41 (32.0%) reported that they always receive adequate support from the DOE audiologist, 65 (50.7%) reported that they sometimes receive adequate support, and 22 (17.0%) reported that they never receive adequate support. The majority of respondents (84.3%) agreed that there is a need for additional audiologists to be employed by the DOE to improve audiological services to students with hearing loss and auditory processing disorders. Only 3 (.02%) disagreed that additional audiologists were needed, while 17 (13.2%) were neutral.

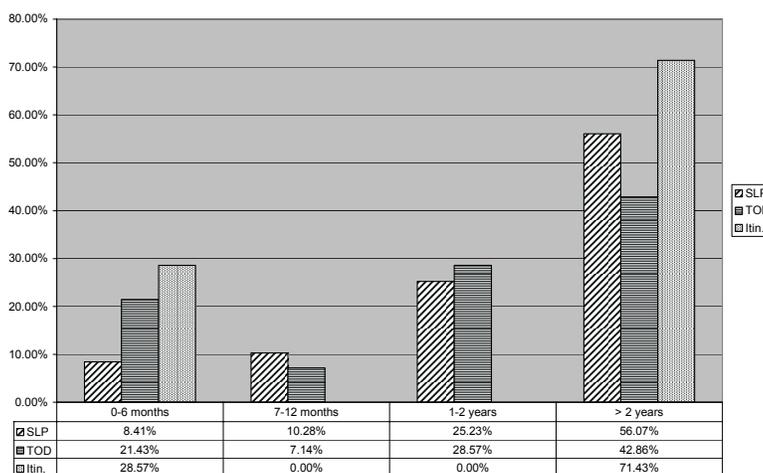
**Discussion**

There were some problems with the survey in this study. First, some of the questions could have been interpreted in different ways by different respondents. For example, question #3 regarding the determination of frequency range, degree and type of hearing loss could be answered in terms of the interpretation of audiological results provided by an audiologist. The intent of the question was whether or not non-audiologists were conducting comprehensive audiological evaluations on students. In addition, there were two questions regarding the selection and fitting of amplification, one for APD and one for hearing loss. After the review of the individual responses, it was determined that for the most part the same professionals answered these questions the

same way. One question regarding the selection and fitting of amplification would have been appropriate. The responses regarding the adequate support by the audiologist could have been affected by the knowledge that the information would be seen by the audiologist. Although no personal information was available to identify respondents, a halo effect in the responses may be present, since 67.0% indicated that they never or only sometimes receive adequate services from the audiologist, and 32.0% indicated that they always receive adequate support. In contrast to this, 84.0% of the respondents stated that there was a need for more audiologists in Hawaii’s DOE. If 32.0% feel that they always receive adequate support, then it would be expected that responses from those individuals would be neutral or in disagreement that more audiologists are needed.

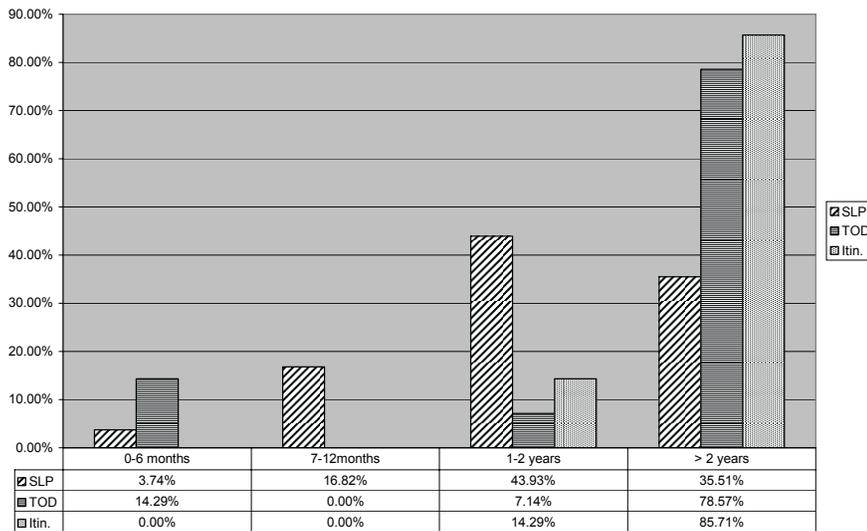
Results of this survey indicate that many SLPs in the Hawaii public schools have assumed the role of an audiologist in the determination of hearing loss in students (question 3), the determination of APD in students (question 5), and also in the selection and

Figure 1. Continuing Education on Minimal Hearing Loss



fitting of amplification for students in the classroom (questions 8 and 12). These practices are clearly outside of the ASHA Scope of Practice for Speech Language Pathologists (2007), which limits a SLP to “the screening for hearing loss or middle ear problems, intervention and support for children with APD; and visual inspection and listening checks of amplification devices”. Furthermore, this document specifically states that a SLP’s scope of practice does not include “...the selection or fitting of sensory devices used by individuals with hearing loss or other auditory perceptual deficits, which falls within the scope of

Figure 3. Continuing Education on APD



practice of audiologists” (ASHA 2007, pg. 7). TODs also perform these activities, and their educational background in audiology is usually even more limited than that of SLPs.

It is clear from the results that SLPs and TODs are performing duties that fall under the scope of practice of an audiologist. ASHA states that the practice of audiology includes: “The conduct and interpretation of behavioral, electroacoustic and/or electrophysiologic methods to assess hearing, auditory function, balance, and related systems...”. The scope of practice further states that it is the audiologist who “...evaluates, selects, fits, and dispenses hearing assistive technology devices...” (ASHA 2004). This level of expertise helps in the appropriate identification of children with disorders in auditory function, and in the prevention of over-amplification and noise-induced hearing loss in students, or under amplification and the loss of learning opportunities for students who are deaf and hard-of-hearing and students with APD.

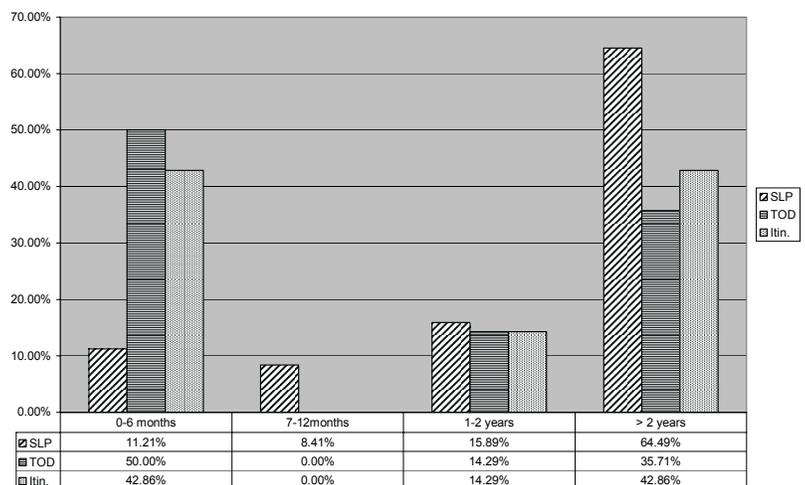
As a result of these survey findings, it is clear that Hawaii’s public school children with auditory dysfunction are not receiving audiology services from appropriately qualified professionals (i.e. audiologists) in their school settings. Though the intention is laudable, the individuals who are providing these services are doing so because there is no one else to provide them. Most are not properly trained and, by conducting these services, are violating their professional association’s codes of ethics and policies. These SLPs and TODs are providing services

outside of their scope of practice. Their administrators are backing them into a corner and forcing them to provide services they are not trained for and should not be doing. By not employing more educational audiologists in the Hawaii school system, the administration is putting employees into a difficult situation, as well as condoning unprofessional and unethical practices. In addition, a significant portion of the IDEA-mandated services are not being provided or are being provided inconsistently. For example, very few respondents reported that they are counseling children about hearing loss and amplification, and less than 25.0% were providing education about the prevention of hearing loss.

The increase in the number of children in the school system with cochlear implants, the increase in the awareness and focus by parents on APD, and the rapid technological changes in amplification devices for the classroom are just a few reasons why audiological expertise is required to assure proper services. In addition, the dwindling resources to pay for services, necessitates that unnecessary or unsuccessful service be avoided. More audiologists in the Hawaii school system would improve access to appropriate audiology services to the students who need them.

In light of all of the IDEA-mandated audiological services that should be provided in the schools, adequate support cannot possibly be provided by one individual for 178,000 students in Hawaii. SLPs and TODs have taken over some of these services, even

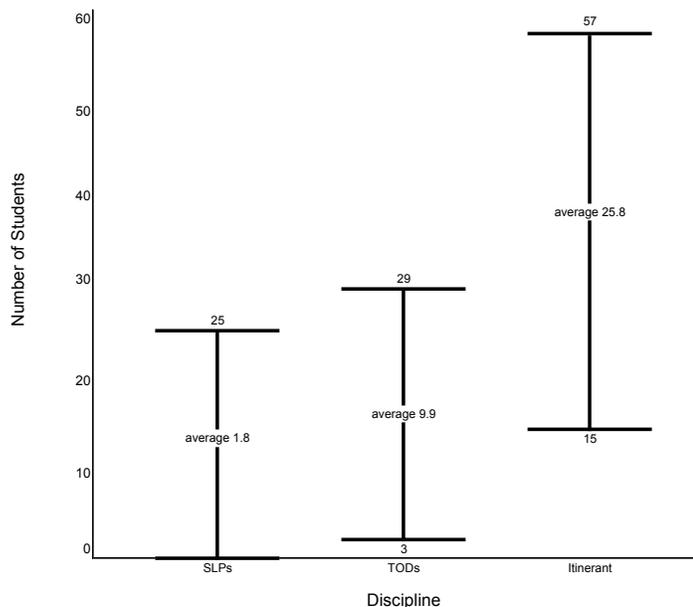
Figure 2. Continuing Education on Amplification Devices



though they are not properly trained to do so. Hawaii needs to consider employing, or contracting with, a more appropriate number of audiologists for the student population in order to meet the mandates of IDEA.

In conclusion, while there have been several studies looking at the number of audiologists in the schools, and demonstrating a lack of professionals (Johnson, 1991; Bone, 2000), this is the first study to look at the professionals who are providing the services audiologists should be providing, at least in one state. There is a need for further investigation to determine how this information may be relevant to other states. Is the Hawaii trend toward having SLPs and TODs perform audiological services true in other states and districts as well? If so, what can be done to help meet the gaps in service provision reported? Should audiologists be teaching non-audiologists, such as SLPs and TODs how to perform audiology functions in the schools? These issues need to be addressed by each state to provide the most appropriate services for the students in their school systems.

Figure 4. Caseloads by Discipline



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## Appendix A

**Survey of Mandated Audiology Services for Children with Hearing/Listening Difficulties**

My current position with the DOE is

Speech Language Pathologist (Classroom based Teacher of the Deaf and Hard of Hearing, Itinerant Teacher for the Deaf and Hard of Hearing)

If this is not your current position please contact Kristine Takekawa.

1. What is your highest level of education?

- Bachelors Degree
- Masters Degree
- Doctorate

2. Do you screen the hearing of students?

- never
- sometimes
- always

3. Do you determine the frequency range, degree, and type of hearing loss in students?

- never
- sometimes
- always

4. Do you provide habilitative services for Deaf and Hard of Hearing students such as auditory training and speech reading?

- never
- sometimes
- always

5. Do you provide assessments for auditory processing disorders in students having difficulties in the classroom?

- never
- sometimes
- always

6. Are you ever asked to provide assessments for auditory processing disorders?
- never       sometimes       always
7. Do you provide habilitative services for children diagnosed with auditory processing disorders?
- never       sometimes       always
8. Do you select and fit FM systems to children diagnosed with auditory processing disorders?
- never       sometimes       always
9. How often are you asked to consult with a school, classroom teacher, or IEP team regarding auditory processing disorders?
- never       several times a month       several times a year
10. Do you perform formal functional listening evaluations for students?
- never       sometimes       always
11. Do you determine a child's need for classroom amplification?
- never       sometimes       always
12. Do you select and fit classroom or individual assistive amplification devices?
- never       sometimes       always
13. Are you responsible for the purchase of FM systems for your school or district?
- never       sometimes       always

14. Are you responsible for the maintenance and repair of assistive amplification devices in your district, school, or classroom?

- never       sometimes       always

15. Do you perform daily checks to determine if a student's hearing aids are working in school on a daily basis, or do you supervise someone who does?

- never       sometimes       always

16. Do you provide a hearing loss prevention program including such things as the anatomy of the ear, noise induced hearing loss and prevention, and other related topics for students in your district, school, or classroom?

- never       sometimes       always

17. Do you provide counseling to students with hearing loss regarding their hearing loss, feelings about hearing loss, need for amplification in the classroom, etc.?

- never       sometimes       always

18. Do you provide consultation to DOE personnel regarding the acoustic environments in classrooms in your district or school?

- never       sometimes       always

19. What is your current case load of students with hearing loss? \_\_\_\_\_

20. When was your most recent participation in a continuing educational in-service or training on minimal hearing loss and the effects on classroom achievement?

- 
- 0-6 months      6 months to 1 year      1-2 years      greater than 2 years

21. When was your most recent participation in a continuing educational in-service or training on hearing aids and amplification devices and their use with children in the classroom?

0-6 months  
years

6 months to 1 year

1-2 years

greater than 2

22. When was your most recent participation in a continuing education activity on auditory processing disorders?

0-6 months

6 months to 1 year

1-2 years

greater than 2 years

23. Do you receive adequate support from the Hawaii DOE audiologist?

never

sometimes

always

24. Do more audiologists need to be employed by the Hawaii DOE to improve the services to students with hearing loss and auditory processing disorders?

agree

neutral

disagree