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Employment and Independent Living Skills of Public School High School Deaf Students: Analyses of the Transition Competence Battery Response Patterns

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Abstract

The Transition Competence Battery was used to study employment and independent living skill preparation of 38 of Deaf and Hard of Hearing (D/HH) students from four public high school programs. Participants demonstrated substantial needs in performing standard computations, in recognizing common terminology and across several independent living competencies. Repeated measures ANOVA showed significant improvements in two subtest scores for employment subtests with none for independent living. Poor overall competency levels suggest that vocational rehabilitation counselors should expect some skill and training needs. This assessment may assist in identifying needs that impact career success.

Keywords: transition assessment, rehabilitation, deaf, hard of hearing, employment, independent living.

Introduction

Vocational rehabilitation counselors have an increasingly important role in supporting public school programs in providing adequate employment and adult living preparation. The 2001 No Child Left Behind Act requirements for academic grade-level and graduation achievement testing has created conditions that often minimize transition services (Kocchar-Bryant & Bassett, 2002). In addition, special education teacher preparation programs frequently offer inadequate training in transition services (Blalock, Kochhar-Bryant, Test, Kohler, White, Lehmann, Bassett, & Patton, 2003). Wandry, Webb, Williams, Bessett, Asselin, and Hutchinson (2008) found that most entry-level special educators had little transition preparation. Carlson, Chen, Schroll, and Schein (2003) examined instructional practices finding a reduced focus and infrequent use of best practices in transition compared to other areas.

The rehabilitation counselor's participation is particularly important at Deaf and Hard of Hearing (D/HH) students' Individualized Education Program (IEP) meetings. At age 16, IEPs must plan for post-school outcomes (IDIEA, 2004). Yet, public school programs typically are less knowledgeable about specific transition challenges and successful strategies appropriate for D/HH students when compared to residential and special day schools. These programs tend to provide disability-specific transition

preparation coursework, on-site vocational rehabilitation counselors, work experiences and training, and targeted career and academic-preparation programs (Stinson & Kluwin, 2003). Bull & Bullis (1991) found that residential schools implemented more desirable transition practices and that their students had more positive post-school activities. Punch, Hyde, and Creed (2004) also reported that D/HH students who attended public school rarely received the specialized or relevant career and adult-life knowledge and skills preparation that they needed.

With service economies increasingly focused on numbers of clients, the lack of specialized personnel and services in public school programs is understandable: D/HH students represent merely 0.11% of the K-12 student body and 1.19% of those receiving special education services (U.S. Department of Education, 2010). Prior to the 1970s and 1980s, most D/HH students attended residential schools (Moores, 2001). However, VR counselors should expect the majority of their young adult D/HH consumers to have attended public school programs with only 13.27% enroll in residential or special schools (U.S. Department of Education, 2010).

Dettmar (2007) has suggested that transition cannot occur in a vacuum. With many public school teachers inadequately prepared in transition services and with few programmatic supports, rehabilitation counselors provide crucial expertise and guidance to ensure that transition planning is not subverted by academic pressures. Because the majority of D/HH individuals with prevocational losses attend public school programs, many of these future consumers will exhibit transition knowledge and skill gaps (Luft, Bonello, & Zirzow, 2009; Luft & Huff, 2011). Many will require vocational rehabilitation supports or services to acquire foundational employment and independent living skills. Specific needs are described in the next two sections.

Academic and Employment Outcomes

The D/HH population is a relatively small, heterogeneous, and potentially challenging population. Although representing just 1.19% of the special education population, they comprise 5% of the eligible vocational rehabilitation consumers (Boutin, 2009; U.S. Department of Education, 2010). Prevocational hearing loss often results in substantial literacy and academic learning deficits, with a majority of D/HH students graduating high school with elementary-level skills. The median reading comprehension

score for D/HH 18-year-olds is fourth grade, with mathematics problem solving near the fifth grade and mathematics procedures near the sixth grade (Traxler, 2000). D/HH students also have poor academic results when compared with other disability groups of secondary and post-high school individuals. Reading comprehension and social studies scores ranked D/HH as seventh for both areas across twelve disability categories (Wagner, Newman, Cameto, & Levine, 2006). They ranked third in mathematics calculation and fifth in applied mathematics problems, but ninth in science. Overall, the D/HH students did not perform among the higher-achieving groups of students with disabilities. In comparison, scores for students with visual impairments had two rankings as first and second.

Poor academic outcomes impact graduation rates, opportunities for entering and completing postsecondary programs, and in meeting typical academic workplace expectations. D/HH young adults often have difficulty in entering and completing postsecondary training, as well as later competing in the job market (Allen, Rawlings & Schildroth, 1989; Bullis et al., 1995; Schildroth et al., 1991; Valdes et al., 1990). As adults, literacy challenges create difficulties that may result in misunderstandings when presented with contracts for renting, purchasing, or getting credit; when registering to vote, and with many text-based and content-specific skills needed as employees and participating citizens.

Preparation for Daily Living

Inadequate independent living skills can impact abilities to maintain employment positions. Wheeler-Scruggs (2002) identified issues with domestic tasks, accommodations, transportation, and finances that impacted lower-achieving D/HH individuals. In terms of post-school activities, Bullis, Bull, Johnson, and Peters (1995) found that D/HH young adults were less likely to be involved in productive activity (work, school, homemaking) after leaving high school in addition to earning substantially less than their normal-hearing peers. Wagner, Newman, Cameto, Garza, and Levine (2005) found that two years after leaving high school, 89.1% of D/HH young adults were living with their parents, a rate which dropped to 81.7% two years later, which was a nonsignificant change. This small drop (-7.4%) in living with parents ranked 10th in comparisons across 11 disability groups, suggesting that D/HH young adults are less independent than most other young adults with disabilities. Decreases for four of the disability groups were statistically significant, ranging from -19.2 to -21.4% for those with

emotional disturbance, other health impairments, learning disabilities, and orthopedic impairments, respectively.

Several additional concerns arise related to independent living. For D/HH young adults living with a spouse or partner, Wagner et al. (2005) found that 74.6% had an annual household income of \$5,000 or less, which is far below the poverty level. Wagner et al. (2006) also found that 68.3% of the D/HH population was more than two standard deviations below the mean in measures of independence and 25.4% scored more than six standard deviations below the mean. These data indicate substantial independent living concerns and limited financial self-sufficiency suggesting that D/HH young adults face significant challenges in becoming successful adults.

The D/HH secondary and post-high school population presents a challenging profile of needs they will bring to the vocational rehabilitation setting. This study used the Transition Competence Battery (TCB) to identify specific transition needs of this population. The research questions examined the (1) the overall patterns of competency between and within employment and independent living subtests, and (2) patterns of competency within subtests using the TCB assessment of public high school D/HH students.

Method

Participants

The participant pool was drawn from high school programs for D/HH students within a Midwestern state. A total of 38 high school students and their parents agreed to participate and between Fall 2002 and Fall 2003, representing urban and suburban schools. The schools employed a variety of communication signing methodologies ranging from American Sign Language (ASL) to conceptually-based Manually Coded English to sign-supported speech, representing the range of sign communication used by schools in this region. Because the test uses sign language, the one oral high school program in the region was not included.

Instrument

The Transition Competence Battery was developed to assess the transition knowledge of D/HH individuals. The pilot-testing and standardization was performed across 14 different sites within the U.S., utilizing between 181 and

230 subjects depending upon the subtest (Bullis & Reiman, 1992; Reiman, Bullis, & Davis, 1993.). The target population was D/HH individuals with mild secondary disabilities, reading near the third-grade level, and not likely to attend a four-year postsecondary institution. The developers used Nominal Group Technique with D/HH professionals to identify important items that were compiled and evaluated by 307 service providers. The resulting items were pilot tested and revised using item analyses. Internal consistency ranged from .668 to .864, and test-retest reliability ranged from .613 to .896 across the six subtests (Bullis & Reiman, 1992; Reiman et al., 1993)

The TCB is presented on videotape for the six subtests. Item presentation is via a certified interpreter communicating in Pidgin Signed English (PSE). Signs are standardized based on pilot field test comments. Each item presents a question or statement in PSE, students refer to the accompanying written item in test booklets, and write their responses on an answer sheet. Items are written at a third-grade level and consist of a stem with a three-answer, multiple-choice format. Some assess abilities to read and understand critical information such as job descriptions or instructions. Reading-based items are not signed in their entirety. Other items assess general knowledge or behavioral responses and are signed accordingly. The videotapes include a measured time delay for each item to provide sufficient time to respond.

The first three subtests target employment skills with the second three subtests addressing independent living skills. The video play time for the subtests ranges from 35 to 45 minutes. The following three items are examples from the Job Seeking Skills for Employment (subtest #1), Money Management (subtest #4), and Community Awareness (#6), respectively.

2. You are at a job interview with an interpreter. You want to know how much money you will earn for your work. You should:

A. ask the interpreter how much money you will earn

B. use the interpreter to ask the boss how much money you will earn

C. leave the room and let the interpreter ask the boss how much money you will earn

Assessment Procedure

Testing followed standardization procedures with test items presented by video, a booklet for item reading, and responses marked on an answer

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sheet. Participants were tested in their typical classroom over several days to ensure maximum attention. Testing was scheduled as best fit the teachers' and participants' class schedules. The participants took one test per class period and most completed all subtests within one to three weeks. Absent participants were tested as was convenient upon their return to the classroom. Some participants did not complete all of the tests due to the approaching end of the year or semester, or due to extended absences.

During the testing process, several modifications were made to accommodate particular participant needs. A number of participants were allowed to write their answers directly onto the test booklets in order to reduce potential errors. Teachers or assistants also translated the PSE video sign into local signs in cases with substantial discrepancies. In some instances, the time allotted between items on the videotape was shortened if all participants were finished, in order to maintain their focus on the task. All of these accommodations were determined to be appropriate according to assessment documentation (Reiman et al., 1993).

Analytical Procedures

Analyses utilized a descriptive and quantitative analyses of responses. Subtests for each participant were scored and entered into SPSS 15 coded as 1/0 (correct/incorrect). Descriptive statistics compared means and standard deviations for each subtest, and generated a list of high-to-low scoring items across participants. The test developers recommended an 85% competency level for each subtest (Reiman et al., 1993). Therefore, items answered correctly by 85% of the participants were categorized as high-competence items. Low-competence items were as answered correctly by 50% or fewer participants. Repeated measures analysis of six individuals was performed to identify potential improvement after one year.

Results

Quantitative Analyses

Descriptive analyses. The recommended 85% criterion level was not achieved by any participant across all six subtests on their first assessment, with the highest number being four. Twenty participants passed none of the subtests, five passed one subtest, eight passed two subtests, three passed three subtests, and two passed four subtests. Descriptive statistics within

subtests revealed wide variation in item competency at the 85% criterion level. Subtest comparisons used percentages due to unequal numbers of items. Subtest 4 had the fewest items reaching criterion (5%) and Subtest 2 had the most (25.8%) suggesting these as low- and high-performance subtests, respectively.

Table 1 compares means and standard deviations, with results again indicating Subtest 4 as a low-competence subtest. Subtest 4 had the lowest mean, 10.84 out of 20 items or 54.2%, and the least variance in scores (SD = 3.02) suggesting consistently low scoring across participants. Subtests 1 and 5 had means below 70% with Subtests 2, 3, with 6 having higher means. Subtest 3 had relatively low variance (SD = 3.75) and the highest mean (75.8%). Across comparisons of means and standard deviations, Subtest 4 was the lowest and most consistent subtest with Subtest 3 as the highest and most consistent.

Table 1.

Descriptive Comparison of Subtests

	Subtest 1	Subtest 2	Subtest 3	Subtest 4	Subtest 5	Subtest 6
Items per subtest	33	31	26	20	29	24
Number of participants	35	36	34	32	35	29
Missing	3	2	4	6	3	9
Mean number correct	23.00	23.28	19.71	10.84	17.80	17.10
Mean percentage correct	69.7%	75.1%	75.8%	54.2%	61.4%	71.3%
Standard Deviation	4.863	5.433	3.754	3.017	4.310	3.922

Subtests with means below 70% included subtests #4 Money Management, #5 Health and Home Skills, and #1 Job Seeking Skills. Subtests with 20% or fewer items reaching criterion included #4 Money Management, #1 Job

Seeking Skills, #3 Job Related Social and Interpersonal Skills, and #5 Health and Home Skills. In comparing low means and the fewest items reaching criterion, three subtests (#1, #4, and #5) appeared in both lists suggesting another pattern of difficulty.

ANOVA procedures. Six participants took the TCB in two successive years allowing for an evaluation of growth and program impact. One participant had five missing scores, rendering her results unusable. The remaining five participants' scores showed general improvement, with significant improvements for Subtests 1 and 3 (see Table 2). Effect sizes were calculated using partial eta squared, with some large effects in part due to small group size. Subtest 1 was significant at the $p < .001$ and explained 97.5% of the variance. Subtest 3 was significant at $p < .005$ and explained 76.0% of the variance.

Overall, results suggest that the participants' high school programs resulted in areas of improvement, but with concerns regarding Subtest 4. None of these participants met the 85% criterion on any subtest for their first assessment, although several did in their second assessment: all five participants for Subtest 2, four for Subtest 3, three for Subtest 1, and none for Subtests 4-6. The independent living skills portion of the TCB was an area of lower competence and minimal gain. Subtest 4 again was the most difficult with declining scores across four of the five participants from two different high schools.

Table 2.
Repeated Measures ANOVA

Subtests	df	MS	F	P value	Effect Size
1	1	102.4	157.538	.000**	.975
2	1	36.100	3.488	.135	.466
3	1	36.100	12.667	.024*	.760
4	1	12.100	2.951	.161	.425
5	1	14.400	2.667	.178	.400
6	1	1.125	1.421	.319	.321

* $p < .05$

** $p < .001$

In preparation for the cross-subtest analysis, items were listed within each subtest from high-to-low based on participant scores. This was summarized by listing items at high competence ($\geq 85\%$) or low competence ($\leq 50\%$) for each subtest. Table 3 summarizes this listing for Subtest 1 showing four high-competence items consisting of work behaviors, newspaper information, and terminology; and four low-competence items that were work-related terminology. Subtest 2 had eight high-competence items across work behaviors, equipment, communication access, and an abbreviation; and three low-competence items including two terms (one abbreviation) and a calculation (see Table 4). Subtest 3 had four high-competence items comprising responses to interactions with one's superior and access to the lunch bell, and no low-competence items (see Table 5). These three employment subtests had 16 high-competence items and 7 low-competence items.

Table 3.

Subtest 1, Job Seeking Skills: High- and Low-Competency Items Across Participants

Item No.	Participants Correct	Percent Correct	Test Item Description
Items \geq 85%			
16	32	94.1	Response to start time of 7:00 A.M.
10	31	91.2	Meaning of job "qualifications"
11	30	88.2	Why one receives overtime pay
36	29	85.3	Part of newspaper that lists job openings
Items \leq 50%			
4	15	44.1	Meaning of "job promotion"
13	15	44.1	Meaning of "marital status"
35	15	44.1	Meaning of "gross pay"
24	12	35.3	Meaning of "permanent, part-time"

Table 4.
Subtest 2, Work Adjustment Skills: High- and Low-Competency Items
Across Participants

Item No.	Participants Correct	Percent Correct	Test Item Description
Items ≥ 85%			
10	34	97.1	Boss gives you a job and then leaves (work ethics)
25	33	94.3	Reporting a work injury
5	32	91.4	Type of shoes for heavy loading and unloading
29	32	91.4	Do not understand boss' explanation
9	31	88.6	Purpose of safety glasses
6	30	85.7	Attending special training but there is no interpreter
17	30	85.7	Boss gives instructions then leaves; you do not understand
20	30	85.7	Meaning of "ASAP"
Items ≤ 50%			
16	17	48.6	Meaning of "deduction"
30	17	48.6	Total work hours across two days (varying hours)
26	8	22.9	Meaning of "F.I.C.A."

Table 5.

Subtest 3, Work Adjustment Skills: High- and Low-Competency Items Across Participants

Item No.	Participants Correct	Percent Correct	Test Item Description
Items ≥ 85%			
4	31	93.9	Response to boss when told that clothes are not appropriate
23	31	93.9	How to request a vacation day from work
5	29	87.8	Response when boss refers to "deaf and dumb" worker
8	29	87.8	Response to not hearing the lunch bell
No Items ≤ 50%			

The independent living subtests (4-6) had fewer high-competence items (11) compared to low-competence items (22). Subtest 4 (see Table 6) had one high-competence item for calculating a tip, and nine low-competence items across vocabulary, reading bills, and calculations. Subtest 5 (see Table 7) had five high-competence items that addressed safety, laundry, medical, cooking and newspaper use; and ten low-competence items including vocabulary, foods and cooking, safety, and car maintenance. Subtest 6 had five high-competence items addressing communication issues and schedules, and three low-competence items including terminology, interpreter payment and TTY use (see Table 8).

Table 6.
Subtest 4, Money Management Skills: High- and Low-Competency
Items Across Participants

Item No.	Participants Correct	Percent Correct	Test Item
Items ≥ 85%			
7	29	90.6	Calculating a 15% tip for a restaurant bill of \$10.00
Items ≤ 50%			
10	16	50.0	Coupon for in lbs. for item in oz.
3	15	46.9	Calculating a 10% discount on clothing
	20 15 46.9		Meaning of “non-refundable cleaning fee”
17	13	40.6	Checkbook register: Balance after writing a check
9	12	37.5	Calculating overtime pay of time + ½
23	12	37.5	Reading bills: minimum payment, past due, new balance
2	8	25.0	Meaning of “beneficiary”
16	8	25.9	Rent of \$300/mo. with a 15% increase
22	7	21.9	Comparing sugar prices across 2 lbs. and 3 lbs.

Table 7.

Subtest 5, Health and Home Skills: High- and Low-Competency Items Across Participants

Item No.	Participants Correct	Percent Correct	Test Item Description
Items $\geq 85\%$			
16	33	94.3	When you should dial 911
32	32	91.4	Using bleach on clothing
5	31	88.6	Timing of cold medicine taken every 4 hours
3	30	85.7	Newspaper section for apartment rentals
17	30	85.7	Baking for 30 min. with a start time of 2:40 p.m.
Items $\leq 50\%$			
6	16	45.7	Meaning of medicine label, "Not for Internal Use"
11	15	42.9	Meaning of "mother's maiden name"
12	15	42.9	How to put out an oil fire on the stove
14	14	40.0	Vitamins in vegetables if they are boiled, raw, or frozen
24	14	40.0	How often to change oil in a car
29	14	40.0	Cooking a turkey at 20 minutes/lb.
25	12	34.3	Foods that contain iron
15	11	31.4	Meaning of "protein"
9	10	28.6	Meaning of "stimulant"
23	9	25.7	Meaning of "simmer"

Table 8.
Subtest 6, Community Awareness Skills: High- and Low-Competency
Items Across Participants

Item No.	Participants Correct	Percent Correct	Test Item Description
Items ≥ 85%			
1	26	89.7	Response when police show a card you do not understand
12	26	89.7	Using a TTY to show taking a turn
27	26	89.7	Finding out which bus to ride
28	26	89.7	Response if your VR counselor doesn't know sign language
20	25	86.2	Response if you misunderstand a waitress with 3 repetitions
Items ≤ 50%			
10	14	48.3	Meaning of "double occupancy"
13	14	48.3	Who should pay for an interpreter at a movie
24	13	44.8	Meaning of a blinking light on a TTY call

Examination of Tables 6–8 show that participants had somewhat more high-competence items on the employment subtests compared to the independent living subtests (17.78% vs. 15.07%) and much fewer low-competence items (7.78% vs. 30.14%). Most items were between the high and low criteria: 74.44% for employment and 54.79% for the independent living subtests. The great majority of the employment subtest items were above the 50% criterion (92.22%) compared to the independent living subtests (69.86%). Those items scoring at or below levels of chance also indicate important potential misunderstandings by participants. The three-item multiple choice format and 33.33% rate of chance resulted in seven items scoring at or below this level: one in Subtest #2, three in Subtest #4, and three in Subtest #5. Six of these seven were independent living items, again suggesting reduced competencies for this area.

Discussion

This study examined (1) the overall patterns of competency between and within employment and independent living subtests, and (2) patterns of competency within subtests using the TCB assessment of public high school D/HH students. Several analyses addressed the first question and found a number of patterns. Based on the number of items reaching the 85% criterion, the Work Adjustment (#2) and Community Awareness (#6) subtests had the most high-competency items. Comparison of means indicated that Work Adjustment (#2) and Job Related Social Skills (#3) had overall higher competence levels. Work Adjustment (#2) was a high competence subtest in both of these comparisons, although Job Related Social Skills (#3) had the highest mean and the least variance in scores. ANOVA results identified significant improvements in Job Seeking Skills (#1) and Job Related Social Skills (#3) subtests with 12 of the 15 second assessments for employment reaching the 85% criterion. Subtests with lower competency comparisons across number of items at criterion and percentage correct included Money Management (#4), Job Seeking Skills (#1) and Health and Home Skills (#5). Money Management (#4) had the lowest mean and the least variance.

ANOVA results showed two significant comparisons as well as nonsignificant improvements for Subtests 2, 5, and 6 with a nonsignificant decrease in Subtest 4 Money Management. This decline occurred across four of the five participants and suggests that money management instruction is not currently effective. The lack of improvement across all three independent living subtests indicates a consistent area of need. Across the full set of participants, only 8 of the 98 (8.2%) independent living subtests met the 85% criterion, and only one test did so for Money Management. In contrast, across the 38 participants' 99 employment subtest scores, 30 (30.3%) met the 85% criterion.

The second question identified nearly equal rates of high-competence items across employment and independent living, but indicated far more low-competence items for independent living with six subtest items answered correctly at levels below chance. This again suggests that independent living topics are a greater area of need in secondary programs for D/HH students.

The low competency levels in this study are somewhat surprising in that the sample included 12 participants who read at levels higher than the third

grade norming levels, with several participants expecting to attend four-year colleges (also see Luft & Huff, 2011). Yet none of these individuals reached criterion for more than four subtests, and none did so for Money Management. Therefore, despite having higher identified academic abilities, these participants did not demonstrate markedly superior outcomes. This suggests that even college-bound and more academically skilled D/HH students may have substantial transition needs.

Implications

This study across four high schools suggests that vocational rehabilitation counselors working with D/HH young adults should expect both employment and independent living skill needs. The generally better scores for employment subtests suggest more effective secondary school instruction for job-related skills. This also was the area of greatest improvement for those retested on the TCB. However overall, only 30 of the 99 employment subtests reached criterion so that although this was a stronger area, there also were substantial needs.

In contrast, independent living skills were generally lower and perhaps less emphasized in school programs. IEP teams may need to ensure that D/HH students have access to high-quality home economics and functional math classes to address these needs. Two of the high schools had specially-designed transition courses for their D/HH students; yet did not consistently achieve subtest criterion.

Each of the programs in this study enrolled at least 20 D/HH students and employed trained and licensed deaf educators. Each also offered a range of self-contained through inclusion/mainstreaming classroom options with interpreting, assistive technology, and other supports. Yet, less than half of the participants (18) achieved the 85% competency criterion on one or more subtests. This supports prior research results that have identified challenges with transition instruction due to reduced emphasis, limited use of best practices, and/or inadequate teacher preparation (Blalock et al., 2003; Carlson et al., 2003; Wandry et al., 2008).

Limitations

The small study size limited the statistical analyses that could be performed. This population was drawn from a single region in a Midwestern state, <https://repository.wcsu.edu/jadara/vol45/iss3/3>

which also limits potential generalization. However, participants included all available high schools in the region that were willing to participate, across urban and suburban districts. A proportion of the participants also resided in other districts that contracted with larger schools for D/HH services, thereby representing a broader regional population.

Small numbers also impacted ANOVA results, although two subtests were statistically significant even with five participants. Of concern is that Subtest 4 showed a decrease in scores for four of the five participants, across two high school programs. Subtest 4 also was the lowest scoring test in the test development (Reiman et al., 1993) and in another investigation (Luft & Huff, 2011). Greater numbers would likely have resulted in significant results for this and other subtests due to greater statistical power (Pedhazur, 1997).

This study focused on public school D/HH students; however, residential and special day schools often provide more specialized services (Stinson & Kluwin, 2003). Future research that assesses the transition competencies of students at these schools would provide an important comparison of transition outcomes across facilities. At this time, residential and special school enrollment represents the minority (13.27%) of the D/HH population (U.S. Department of Education, 2010). Objective information on student TCB outcomes could be very helpful in making appropriate placement decisions for D/HH students and to examine effective interventions that could be utilized by all programs.

Conclusions

This study found that D/HH students attending public high school programs appeared to have stronger employment skills in comparison to independent living skills, as measured by the Transition Competence Battery (TCB). These results were consistent with a pattern of poor independent living skills found by other researchers (Newman et al., 2009; U.S. Department of Education, 2002; Wagner et al., 2005; Wagner et al., 2006). Participants also demonstrated general weaknesses in transition with no participant achieving competency across all six subtests. This included those who took the assessment one year later, and those with higher academically achievement levels. The extent of these weaknesses is evidence in that slightly over half of the participants (20, or 52.6%) did not reach the 85% competency criterion on any subtest. Therefore, despite attending programs

with licensed deaf education teachers, a range of classroom placement and curricular options, and available supports and accommodations these participants were not competent in transition.

Given the current academic focus of public schools, rehabilitation counselors' attendance at IEP meetings is of increased importance. They may be the only team member with a strong focus on ensuring the acquisition of skills for successful employment and independent living. Although IEP documents require transition planning to be part of each D/HH student's instructional plan, the testing results from this study suggest that these plans are not addressing foundational transition skills.

Use of the TCB to guide IEP and transition planning could be increase transition planning effectiveness in several ways. The TCB meets the IDIEA 2004 requirements for use of age-appropriate transition assessments for each student's IEP. It also could be used as an annual assessment or as a pretest-posttest tool to evaluate program services and to track student progress. Vocational rehabilitation counselors could ask schools to include the TCB as part of the final summary of performance to help with eligibility determinations.

For the 85% or more of D/HH students who attend public school (U.S. Department of Education, 2010), this study suggests that they are unlikely to graduate from high school with the foundational transition skills that they will need as adults. Through attendance at IEP meetings and collaboration with secondary school programs, vocational rehabilitation counselors have an opportunity to improve this situation. In addition, the TCB provides counselors with a tool for documenting these needs and for assisting school personnel with developing appropriate and sufficient transition plans and secondary school programs.

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