The lack of appropriate assessment tools designed for deaf adolescents and young adults making the transition from educational programs to adult life is cited as one of the most glaring deficits in the field of deafness. The Transition Competence Battery (TCB) is being developed as an assessment tool that will guide individual training decisions and measure overall program impact. The TCB is being designed to be appropriate for adolescents and young adults with deafness, to include content that is clearly relevant to this population, to be easy to administer and score, and to retain strong psychometric properties. Development of the TCB began when 18 professionals in the field of deafness generated a list of 27 employment competencies and 28 independent living competencies and rated their importance and their presence in the target population. A national survey of 307 professionals then prioritized the importance of the competencies. Test items within each content domain were developed, and a pilot test was administered. Subsequent plans involve standardizing the TCB on a national sample, finalizing it, and disseminating it. (JIM)
The purpose of this newsletter is to share with you our activities and projects. Each issue features a different project or activity. This issue describes the Development and Validation of the Transition Competence Battery for Adolescents and Young Adults with Deafness and was prepared by John Reiman, Ph.D., and Michael Dullis, Ph.D.

A list of our demonstration sites and those who manage them follows:

**Services for Persons with Moderate and Severe Handicaps**
- Classroom Supervisor: Torry Templeman
- Parent Training Clinics: Carol Runge
- Toddler Program: Kim Udell
- Integrated Preschool: Tom Udell
- Day Care/Kindergarten: Dianna Rogers, Nancy Mozaki
- Elementary Classroom for Students with Severe Handicaps, Independence: Patty Binder
- Training Staff: Torry Templeman, Carol Runge, Joyce Peters, Gary Glassman, Lari Dode
- Vocational Program for Middle and High School: Cameron Covey, Constance Leham (Chehalis-Parkway School)
- Supported Work Training for Adults: Kirk Hendrickson, Cindy Olson, Susan Hanbeck, Sandy Bird, Miriam Waintrup, Kathy Egner-Parker
- Residential Supervisors: Eric Karliger and Judy Smith
- Alternative Foster-Placement, Marion County: Barbara Southard
- Group Home for Adolescents with Severe Handicaps, Polk County: Eric Karliger
- Group Home for Adolescents with Multiple Handicaps, Washington County: Rande Smith
- Group Home for Adolescents with Profound Handicaps, Clackamas County: Sue Tuft

**Services for Students With Mild Handicaps and Severe Behavior Disorders**
- Classroom and Vocational Supervisor: Vicki Evans
- High School Resource Room, Salem Public Schools: Laura Daniels
- Teaching in Classroom Services: Vicki Evans
- Vocational Program for Adolescents, Marion County: Dennis Gifford
- Residential Supervisors: Debbi Kraus
- Group Home and Apartments for Adolescents, Marion County: Kerl Johnson, Pat Farley
- Foster Parent Training: Debbi Kraus
- Marion County Children's Project: Barbara Southard, Kate Deegan

**The Development and Validation of the Transition Competence Battery for Adolescents and Young Adults with Deafness**

**Introduction**

Persons with deafness and hearing impairment in the United States number in the hundreds of thousands (Schein & Delk, 1984). Unemployment estimates for this group run as high as 50%, and an additional 15 to 20 percent of this population who do work can be classified as chronically underemployed and/or underpaid (Passmore, 1983). To compound these problems, it is known that persons with deafness are frequently encounter difficulties in living independently in the community. In school, a significant number of these individuals experience difficulties in keeping and maintaining appropriate employment and living independently.

In recognition of these problems, educational programs designed to train the skills necessary for adolescents and young adults with deafness to transition successfully into the community have been initiated in many residential schools, public/day schools, post-secondary schools, and community-based facilities (Kjellands & Nettles, 1985; Quellette & Dyer, 1985). Although most of these programs have a high rate of success, it has lacked a cohesive thrust to ensure that the impact of these programs has been assessed. Clearly, if transition training programs for this population are to be truly effective, they must be examined critically: a) ascertain program strengths and weaknesses, b) make correct and necessary program revisions, c) document the effect of the training program on the individual student, and d) tailor training programs... "PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
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to fit the unique strengths and weaknesses of individual
students.

One of the most glaring deficits in the field of
deafness is the lack of appropriate assessment tools
designed specifically for this linguistically, and at times
culturally, different population. In response to this
difficulty, two assessment alternatives to traditional
measurement procedures have been suggested. One option
includes a variety of psychometric properties and the
inability to use such measures across geographical settings
to compare programs. In sum, these two alternatives
possess serious weaknesses for practical individual and
programmatic applications.

It is apparent, then, that what is needed to guide
individual training decisions and to measure overall
program impact is an assessment tool that: a) is
developed uniquely for adolescents and young adults with
deafness, b) includes content that is clearly relevant to
this population, c) is easy to administer and score, and d)
retains strong psychometric properties.

The goal of this project, supported by a grant from the
Office of Special Education and Rehabilitation Services,
is the development and validation of a test specifically for
use with adolescents and young adults with deafness. The
instrument will be constructed so that it is easy to
administer and use by teachers/service providers. It will
be relevant to the needs of the individual, be practically
appropriate and effective, and retain strong psychometric
properties. The instrument will be called the Transition
Competence Battery (TCB).

This article will report on the construction of the TCB.
A brief description of a relevant, empirically-based
literature review will be followed by a summary of the
project's key objectives, associated activities, and
outcomes to date.

Review of the Literature

The Project Coordinator and Project Director conducted a
literature review of empirically based studies (1970-
1986) relating to the development, adaptation or evaluation
of instruments and procedures used to assess persons with
deafness. Neither descriptive (e.g., "How to . . .") studies
nor those focusing on assessment particular to individuals
with deafness and multihandicapped conditions were
included. Less than 60 empirical studies investigating the
mechanics of assessment were located and abstracted. No
studies relating to the measurement of transition or
independent living skills for persons with deafness could
be located. The 60 identified studies related to
assessment in the following six areas: communication,
personality, intelligence, psychometrics, education, and
vocational/employment. The abstracts are incorporated into
an annotated bibliography, Research on Measurement
Procedures with Individuals with Hearing Impairments
(Reiman & Bullis, 1987), available from Teaching Research.

Summary of Objectives, Activities and Outcomes

Objective 1: To define the content sub-domains that
comprise the area of transition for deaf
adolescents/young adults.

In February, 1987, eighteen professionals in the field of
deafness from Oregon and Washington were identified and
brought to Teaching Research. The purpose of the workshop
was to examine professional opinion on the most important
employment and independent living skills for persons in
the target population to possess.

In general, members of the target population are devoid
of a seriously complicating secondary disability, but some
may present mild secondary conditions (e.g., wear glasses,
heart murmur, etc.). Further, members of the target
population possess limited academic ability (e.g., perform
between the third to fourth grade on academic measures). The
target population does not include persons who go on
to a 4-year college or university, but may include persons
who attend community college or vocational/technical
training centers. More than likely, members of the
sample are those persons who either drop-out of high
school, seek employment immediately upon leaving high
school, or go on to some type of rehabilitation or
community-based training program. Finally, members of the
target population have little experience and/or training
in employment and independent living skills.

A modified Nominal Group Technique (NGT) (Delbecq, Van
de Ven, & Gustafson, 1973) was utilized in the workshop. The
NGT structures an interaction to ensure that a pre-
specified product, usually an answer(s) to a particular
question, is completed by a group in a set period of time.
Two questions provided the focus of each exercise:

1. What are the five most important employment-related
skills for a member of the target population?

2. What are the five most important employment-related
skills for a member of the target population?

The list of skills generated by the participants in
relation to the first question are presented in Table 1.
The list of skills generated by the participants in
relation to the second question are presented in Table 2.

Table 1. Employment Competencies and
Grand Mean Ratings from Five Respondent Groups
on Importance (I) and Presence (P)

<table>
<thead>
<tr>
<th>Question</th>
<th>Grand Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The individual should be able to use an</td>
<td>1-3.6</td>
</tr>
<tr>
<td>interpreter appropriately and effectively</td>
<td>P-2.9</td>
</tr>
<tr>
<td>in a job interview</td>
<td></td>
</tr>
<tr>
<td>2. The individual should be able to accept</td>
<td>1-3.6</td>
</tr>
<tr>
<td>criticism from work supervisors.</td>
<td>P-3.0</td>
</tr>
<tr>
<td>3. The individual should be able to obtain</td>
<td>1-3.3</td>
</tr>
<tr>
<td>training opportunities that are available</td>
<td>P-3.3</td>
</tr>
<tr>
<td>through the current job.</td>
<td></td>
</tr>
<tr>
<td>4. The individual should have an awareness</td>
<td>1-2.6</td>
</tr>
<tr>
<td>of the role of trade unions in the work</td>
<td>P-3.9</td>
</tr>
<tr>
<td>place.</td>
<td></td>
</tr>
<tr>
<td>5. The individual should be able to manage a</td>
<td>1-3.5</td>
</tr>
<tr>
<td>work schedule to meet deadlines.</td>
<td>P-2.9</td>
</tr>
<tr>
<td>Table 1 continued</td>
<td>Grand Mean</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------</td>
</tr>
<tr>
<td>6. The individual should be able to evaluate and identify job interests.</td>
<td>I-3.2</td>
</tr>
<tr>
<td>7. The individual should demonstrate appropriate dress and hygiene in the work place.</td>
<td>I-3.5</td>
</tr>
<tr>
<td>8. The individual should be able to understand and follow the work supervisor's instructions.</td>
<td>I-3.8</td>
</tr>
<tr>
<td>9. The individual should demonstrate job-related mathematics skills.</td>
<td>I-3.3</td>
</tr>
<tr>
<td>10. The individual should have knowledge of the pay and benefits that can be expected for the job.</td>
<td>I-3.5</td>
</tr>
<tr>
<td>11. The individual should be able to communicate effectively with the work supervisor.</td>
<td>-3.7</td>
</tr>
<tr>
<td>12. The individual should have knowledge of work safety rules.</td>
<td>I-3.6</td>
</tr>
<tr>
<td>13. The individual should be able to demonstrate appropriate procedures for quitting a job.</td>
<td>I-3.2</td>
</tr>
<tr>
<td>14. The individual should be aware of legal rights in getting a job and in terms of job advancement.</td>
<td>I-3.2</td>
</tr>
<tr>
<td>15. The individual should be able to evaluate and establish long-range career goals.</td>
<td>I-3.0</td>
</tr>
<tr>
<td>16. The individual should display appropriate dress and hygiene when interviewing for a job.</td>
<td>I-3.7</td>
</tr>
<tr>
<td>17. The individual should be aware of the language and terms that are used in the job application and in the interviewing process.</td>
<td>I-3.6</td>
</tr>
<tr>
<td>18. The individual should be able to respond to and ask appropriate questions in the job interview.</td>
<td>I-3.5</td>
</tr>
<tr>
<td>19. The individual should display appropriate assertiveness on the job towards co-workers.</td>
<td>I-3.1</td>
</tr>
<tr>
<td>20. The individual should be able to work without direct supervision when appropriate.</td>
<td>I-3.6</td>
</tr>
<tr>
<td>21. The individual should have knowledge of resources and agencies to use for help in finding a job.</td>
<td>I-2.8</td>
</tr>
<tr>
<td>22. The individual should be able to keep personal concerns and worries under control in the work place.</td>
<td>I-3.4</td>
</tr>
<tr>
<td>23. The individual should display appropriate assertiveness in searching for a job.</td>
<td>I-3.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2. Independent Living Competencies and Grand Mean Ratings From Five Respondent Groups on Importance (I) and Presence (P)</th>
<th>Grand Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The individual should demonstrate independent living-related mathematics skills.</td>
<td>I-3.5</td>
</tr>
<tr>
<td>2. The individual should be able to demonstrate effective comparative shopping skills (e.g., groceries, auto, clothing).</td>
<td>I-3.3</td>
</tr>
<tr>
<td>3. The individual should demonstrate independent living-related reading skills.</td>
<td>I-3.6</td>
</tr>
<tr>
<td>4. The individual should be able to express anger appropriately toward family, friends, and service providers.</td>
<td>I-3.2</td>
</tr>
<tr>
<td>5. The individual should be able to maintain personal rights with roommates in an appropriate and effective fashion.</td>
<td>I-3.1</td>
</tr>
<tr>
<td>6. The individual should have knowledge of leisure/recreational options in the community.</td>
<td>I-2.8</td>
</tr>
<tr>
<td>7. The individual should be able to communicate effectively with community workers (e.g., mail carriers, maintenance workers).</td>
<td>I-2.9</td>
</tr>
<tr>
<td>8. The individual should demonstrate appropriate skills in money management, budgeting, and bill paying.</td>
<td>I-3.8</td>
</tr>
<tr>
<td>9. The individual should be able to search effectively for housing.</td>
<td>I-3.2</td>
</tr>
<tr>
<td>10. The individual should be able to use public transportation.</td>
<td>I-3.4</td>
</tr>
<tr>
<td>11. The individual should have an awareness of safety hazards in the home and community.</td>
<td>I-3.3</td>
</tr>
<tr>
<td>12. The individual should have a knowledge of insurance needs (e.g., auto, health, life, home).</td>
<td>I-3.2</td>
</tr>
</tbody>
</table>
Table 2 continued

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competency</th>
<th>Grand Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.</td>
<td>The individual should demonstrate appropriate self advocacy skills within the educational setting (e.g., at IEP meetings).</td>
<td>I-2.9 P-3.4</td>
</tr>
<tr>
<td>14.</td>
<td>The individual should be able to clean and maintain his/her home.</td>
<td>I-3.1 P-2.1</td>
</tr>
<tr>
<td>15.</td>
<td>The individual should be able to use TDD and technical signaling devices that are available in the community.</td>
<td>I-3.5 P-2.3</td>
</tr>
<tr>
<td>16.</td>
<td>The individual should be able to maintain and care for personal belongings.</td>
<td>I-3.3 P-2.0</td>
</tr>
<tr>
<td>17.</td>
<td>The individual should demonstrate appropriate self advocacy skills with community service agencies (e.g., DVR).</td>
<td>I-3.3 P-3.1</td>
</tr>
<tr>
<td>18.</td>
<td>The individual should be able to access emergency services (e.g., ambulances) in the community.</td>
<td>I-3.7 P-2.9</td>
</tr>
<tr>
<td>19.</td>
<td>The individual should have knowledge of appropriate parenting skills.</td>
<td>I-3.6 P-3.1</td>
</tr>
<tr>
<td>20.</td>
<td>The individual should have knowledge of family planning and sex education.</td>
<td>I-3.7 P-3.1</td>
</tr>
<tr>
<td>21.</td>
<td>The individual should be able to maintain accurate financial and personal records (e.g., taxes, warranties, medical).</td>
<td>I-3.3 P-3.4</td>
</tr>
<tr>
<td>22.</td>
<td>The individual should demonstrate appropriate cooking skills.</td>
<td>I-3.0 P-2.3</td>
</tr>
<tr>
<td>23.</td>
<td>The individual should demonstrate appropriate health related skills (e.g., nutrition, exercise, hygiene).</td>
<td>I-3.2 P-2.5</td>
</tr>
<tr>
<td>24.</td>
<td>The individual should be aware of legal rights in the community.</td>
<td>I-3.2 P-3.3</td>
</tr>
<tr>
<td>25.</td>
<td>The individual should have knowledge of how contractual agreements work (e.g., rental contracts).</td>
<td>I-3.3 P-3.5</td>
</tr>
<tr>
<td>26.</td>
<td>The individual should be able to access and use mental health services.</td>
<td>I-3.2 P-3.5</td>
</tr>
<tr>
<td>27.</td>
<td>The individual should be able to schedule and maintain a daily living routine.</td>
<td>I-3.2 P-2.4</td>
</tr>
<tr>
<td>28.</td>
<td>The individual should have knowledge of drug and alcohol abuse.</td>
<td>I-3.4 P-2.9</td>
</tr>
</tbody>
</table>

- Per comparison alpha level set at .0018
- * Denotes a statistically significant difference in the rating between the five respondent groups
- † Denotes a skill identified as critical

Objective 2: To prioritize the content sub-domains identified in Objective 1.

After the skills in the employment and independent living areas were identified, the relative importance of those areas was examined through a national survey of professionals in the field of deafness. There were two goals for this part of the study: a) to examine and compare the perceptions of different respondent groups to each skill; and b) to identify, based on professional opinion, the most critical transition competencies for a member of the target population to possess. Identification of these competencies was designed to assist in the development of a content blueprint for the TCB.

An initial draft of a survey instrument composed of the transition skills identified in the workshop was constructed. Each skill area in the employment and independent living domains was randomly assigned a number (for employment 1-27, and for independent living 1-28), and listed in that order on the instrument. Two, 4-point Likert Scales were placed opposite each skill. The directions called for the respondent to rate each skill in terms of importance (its importance to the ultimate employment or independent living success of members of the target population): 1-not important, 2-somewhat important, 3-important, 4-very important; and on presence (the percentage of persons in the target population possessing the competency): 1-10% to 25%, 2-26% to 50%, 3-51% to 75%, 4-76% to 100%.

Four groups of respondents were developed: Mainstream Rehabilitation Program (n=210), Independent Living and Rehabilitation Program (n=220), Postsecondary Education Program (n=43), and Rehabilitation Agency Coordinators for the Deaf (n=54).

A total of 307 questionnaires were returned for a total response rate of 54%. The response numbers and rates for each of the five groups of respondents were: Expert (n=27 (77%); Mainstream and Residential School Programs, n=106 (51%); Independent Living and Rehabilitation Programs, n=114 (50%); Postsecondary Education Programs, n=28 (65%); and Rehabilitation Agency Coordinators for the Deaf, n=32 (59%). There was no set pattern to the returns (e.g., no area of the country was over or under represented) and response rates were at a generally acceptable level (Dillman, 1978).

Two sets of statistical analyses were conducted. First, ANOVAs were conducted comparing the responses of the five groups for each skill in the employment and independent living domains on both the importance and presence dimensions. In calculating the ANOVAs, a correction for the unequal sample sizes of the five groups was employed (Keppell, 1982). As multiple ANOVAs were calculated, the chance of making a Type I error was inflated (Keppell, 1982). Consequently, a modified Bonferroni correction (Keppell, 1982, p. 147-150) was utilized to adjust for this problem. Individual alpha levels for the 27 comparisons made in the employment domain, on both importance and presence, was set at .002 (.05 divided by 27). Individual alpha levels for the 28 comparisons made in the independent living domain, on both importance and presence, was set at .0018 (.05 divided by 28). Statistically significant differences in ratings between the five respondent groups are indicated in Table 1 and Table 2.

A second level of analysis was structured to identify the most critical transition competencies, based on professional opinion, for an individual in the target population to possess. For a competency to be selected, the aggregate importance rating of a skill by all groups (Grand Mean) had to be 3.0 or higher and the aggregate presence rating by all groups (Grand Mean) must also be 3.0 or higher. Skills identified as critical are noted in Table 1 and Table 2.

Results of the first analysis indicated overall
agreement between the five respondent groups with a few statistically significant differences on specific skills. These results suggest that when planning transition programs for deaf students with input from a broad spectrum of rehabilitation and education professionals, consideration must be given to their varying perspectives; i.e., it is incorrect to assume that members of different agencies will share exactly the same view of important content to include in these efforts.

The second analysis identified 12 skills in the employment domain and 10 skills in the independent living domain. These skills not only provided a general blueprint from which transition interventions might be focused, but also offered an initial content map for development of the TCB.

Objective 3: To generate a number of test items within each content domain identified in Objective 2.

After the prioritization of content domains was completed, a second group of professionals in the field of deafness from Oregon and Washington was identified and brought to Teaching Research for a one day workshop in the fall of 1987. The purpose of this workshop was to teach the participants to write test questions in each of the content areas identified in Objective 2. Individuals were paid expenses and a fee for attending the workshop. In addition, for writing test items after leaving the workshop, they were paid a fee upon satisfactory completion of the task.

Based on our literature review and the available data, a simply worded, 3-option multiple choice format was adopted for the test. The test items generated by the workshop participants were written at the third grade reading level. In the workshop, project staff trained participants in the correct way to write these items. An initial compilation of over 800 items was edited and rewritten yielding an item pool of less than 200 items.

Objective 4: To integrate test items from each of the content domains into a practical testing format with a written and videotaped version.

A subset (n=30) of the test items generated above was produced in both a written and manually signed, videotaped pilot format. The pilot test was administered to a small number (n=36) of community college, residential and mainstream students with deafness. At this writing, statistical analyses and process evaluations are being reviewed to assess the prototype's psychometric properties and administration format efficacy.

Objective 5: To standardize the TCB on a national sample.

The TCB will be standardized on a national sample of subjects. It will be sent to teachers and service providers across the country, many of whom have already agreed to participate. At this time it is impossible to estimate accurately the number of subjects who will be involved in this step; however, between 5-10 subjects will be secured per each sub-test item. Third-party evaluators will complete a parallel rating form on each of the subjects in the standardization.

Objective 6: To conduct item analyses of items in the sub-tests, to identify and discard psychometrically unsound items, to establish the internal consistency reliability of the TCB and its sub-tests, and to establish the concurrent validity of the test battery.

Item characteristics (item-total correlations and item difficulties) will be calculated and weak items will be discarded. Reliability estimates will be calculated for each sub-test of the TCB and concurrent validity of the TCB will be established by correlating subject test scores with the scores achieved on the rating scales.

Objective 7: To finalize the TCB manual and to generate professional publications and presentations.

The TCB booklet, videotape, answer sheets, and technical manual will be finalized and various dissemination activities will be conducted. This objective should be completed late in 1989.

FROM TEACHING RESEARCH:
Two Annotated Bibliographies

1. Research on the School-to-Community Transition of Adolescents and Adults with Hearing Problems by Bruce Bull, Michael Bullis Ph.D., Joseph Sendelbaugh Ph.D. $3.00

2. Research on Measurement Procedures with Individuals with Hearing Impairments by John Reiman Ph.D., Michael Bullis Ph.D. $3.00

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Monmouth, OR 97361
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MATERIALS LIST
The following is a list of materials developed by Teaching Research with prices and publishers from whom they may be purchased.

Associated work skills: A manual. The Teaching Research Special Education Department Staff. Teaching Research Publications, Monmouth, Oregon 97361, 1984. $10.00
Integrated educational service delivery models for severely handicapped children and/or youth materials: Implementation strategies for integration: An administrator's manual. $3.50
A teacher's manual for developing effective integration between students with severe handicaps and their peers. $7.50
Communication placement assessment for children and students with severe handicaps. $3.00
Communication curriculum for children and students with severe handicaps. $22.50
Signs of the time: Sign Language lessons for the Elementary grades. $4.50
Resources for parents' questionnaire. $2.00


Teaching expressive and receptive language to students with moderate and severe handicaps. Fredericks, H. D., Makohon, L., and the Staff of the Teaching Research Infant and Child Center. PRO-ED, Austin, Texas, 1985. $23.00


Toilet training the handicapped child (4th ed.). Fredericks, H. D. and Staff of the Teaching Research Infant and Child Center. Teaching Research Publications, Monmouth, Oregon 97361, 1981. $4.75

Transition for Persons with Deaf-Blindness and other Profound Handicaps. Fredericks, H. D., Covert, A. Teaching Research Publications, Monmouth, Oregon 97361, 1987. $10.00


A recommended Reading
Friends. Edrington, M. Instructional Development Corp., P.O. Box 361, Monmouth, Oregon 97361, 1979. $6.75

To purchase the above or to obtain further information about the publication, please contact the publisher listed for each document.