

**ABLA Assessment of Training Tasks and Clients
In a Large Residence
for Persons with Developmental Disabilities
Lorraine DeWiele
University of Manitoba**

**A Thesis Submitted
in Partial fulfilment of the Master of Arts degree
at the University of Manitoba**



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ABLA ASSESSMENT OF TRAINING TASKS AND CLIENTS
IN A LARGE RESIDENCE FOR PERSONS WITH
DEVELOPMENTAL DISABILITIES

BY

LORRAINE DEWIELE

A Thesis submitted to the Faculty of Graduate Studies of the University of Manitoba
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MASTER OF ARTS

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Abstract

The purpose of this research was to examine the applicability of a behavioral assessment tool for developmentally disabled residents in a large provincial institution. The staff in such a facility face a daily challenge in selecting training tasks that are appropriate for the abilities of the developmentally disabled trainees. An assessment tool that has considerable predictive validity for selecting prevocational training tasks for developmentally disabled persons is the Assessment of Basic Learning Abilities test (ABLA: Kerr, Meyerson, & Flora, 1977). The present research examined three questions concerning the applicability of the ABLA test for use with developmentally disabled residents in a large provincial institution. First, can "experts" on the ABLA test reliably categorize routine daily tasks, that are typically presented to the developmentally disabled residents, according to the highest level of the ABLA test that the experts believe clients must pass in order to readily perform the tasks. The results indicate that there was 100% agreement between three experts on 63% of the tasks, agreement between two of the three experts on 33% of the tasks, and no agreement on 4% of the tasks. The second question asked was - What is the ABLA level of the training tasks that are typically presented to the clients? Classification of institutional tasks according to the levels of the ABLA necessary to perform those tasks with relative ease revealed a disproportionate distribution of tasks across the 6 ABLA levels

with an abundance of Level 2 tasks and a paucity of tasks classified at Levels 5 and 6. The third question asked was - What is the distribution of the highest ABLA level passed among developmentally disabled residents in a large institution? In a random sample of 10% of the residents in such a facility, 35% were untestable, 25% passed all six ABLA levels, and 15% passed only up to Level 3. The results suggest that appropriate use of the ABLA test could considerably improve the extent to which staff are able to match training tasks to the abilities of a significant group of residents in a large institution.

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Introduction

In the field of developmental disabilities, professionals have often noted that certain individuals may learn one task with relative ease while displaying repeated errors when attempting to learn another task that seems similar (McDonald & Martin, 1991). Kerr, Meyerson and Flora (1977) suggested that such individuals may be deficient in their ability to make relatively simple position, visual, and auditory discriminations which are prerequisites for learning various self-care, educational, and vocational tasks. Because each individual is only able to complete a task class based on their repertoire of pre-requisite skills, training tasks involving more advanced skills than that which the individual demonstrates are not practical tasks to request of that person. Thus, Kerr et al. (1977) recognized that a need existed to provide an assessment instrument to measure an individual's behavioral repertoire of pre-requisite skills in order to determine realistic training tasks for that individual.

In an attempt to assess basic discrimination acquisition or learning-to-learn skills Kerr et al. (1977) developed a practical, easily-implemented testing instrument to measure broadly based-basic discrimination skills applicable for severely and profoundly mentally retarded persons. Formerly referred to as the AVC Discrimination Test, the test is now called Assessment of Basic Learning Abilities: A Developmental Test (ABLA).

The ABLA is comprised of six two-choice discrimination tasks which are presented to a subject in an attempt to assess the

tasks (e.g., left glove from right glove), or the client's inability to successfully complete a Level 5, auditory discrimination (e.g., being able to discriminate between the spoken words stop vs. go).

Before the ABLA is widely adopted for practical use by teachers of the developmentally disabled, however, several questions need to be addressed. First, can individuals familiar with the ABLA examine typical training tasks and reliably categorize them according to the ABLA levels that clients must pass in order to readily learn those tasks? A positive answer to this question would enable training staff to select training tasks that clients could readily learn by matching the task characteristics to the ABLA performance of a client. Second, if tasks were to be classified according to the highest ABLA level necessary for clients to readily perform them, what is the distribution of ABLA levels across typical training tasks that are characteristic of the various training departments at a large residential facility for developmentally disabled persons? If the great majority of training tasks in a typical residential facility require an individual to pass Level 4 on the ABLA test in order to perform the tasks readily, for example, then assessing all clients on the ABLA test would provide valuable information for determining whether or not the staff are appropriately matching the abilities of clients to the tasks that are provided. Third, what is the typical distribution of the highest ABLA levels passed among developmentally disabled persons

at a large residential facility? If a large proportion of residents at a typical institution pass only up to Level 2, position discrimination, for example, then it would be unwise for staff to select training tasks that require auditory discriminations (Levels 5 and 6). The proposed research examined these questions. Knowledge of the task demands (in terms of ABLA levels) of typical training tasks across all program areas (e.g., recreation, vocational training, etc.) in a large residential facility, combined with knowledge of the distribution of skill level (in terms of ABLA levels) displayed by residents in such a facility should help practitioners determine the potential merits of widespread adoption of the ABLA as an assessment and training tool. Before describing the details of the present research, previous research on the ABLA test will be briefly reviewed.

Description of the ABLA

The ABLA is an assessment procedure which assesses discrimination acquisition or learning-to-learn skills. When Kerr et al. constructed this two-choice assessment tool they considered two factors: 1) the ease of its administration; and 2) the similarity of its discrimination levels to training tasks in applied settings (Yu et al. 1989). To administer the ABLA, the experimenter uses items that can easily be made at home. The materials necessary to implement the procedure include a round yellow can and a square red box with dark red stripes. The manipulanda are: a piece of irregularly shaped rubber foam; a small yellow cylinder; and a small red cube with dark red

stripes. Further, the ABLA is a particularly viable measuring tool because it involves a testing procedure that is easily mastered.

The ABLA is comprised of six separate, two-choice, discrimination tests (or levels) which are administered in a specific order. Each learning task involves a non-verbal motor response. The six levels were chosen because they were thought to reflect all the two-choice discrimination tasks encountered in curricula for severely mentally handicapped individuals.

Prior to the subject's attempt at the first discrimination level, the trainer demonstrates the required response. Following this demonstration, the trainer requests the response of the subject while concurrently providing hand-over-hand physical guidance for the correct response. Following this guided response, the subject is given an opportunity for an independent response. The testing of each level begins after the subject has demonstrated an ability to perform the task without assistance.

Clients are reinforced for each correct response with praise, and on an intermittent basis with edible reinforcement contingent upon correct responses. Error trials are followed by a physical prompt and an opportunity for an independent response. This correction procedure is repeated as necessary until the client demonstrates an independent correct response.

Mastery criteria for a particular level is achieved after eight consecutive correct responses (not including a correct response during error correction). A subject is failed on a

level if he/she fails to respond correctly on eight cumulative independent responses (including errors on an independent-response trial after error correction). Following a pass or fail, testing on that level is terminated. In considering a passing criterion, Kerr et al. wanted a stringent criterion. The passing criterion was chosen by Kerr et al. because the probability of eight consecutive correct responses occurring in a two-choice discrimination task by chance alone is only 4 times in 1,000 trials.

During the testing of Level 1 (Imitation), the teacher demonstrates the correct response which involves placing the foam in the yellow can, which is located directly in front of the client. Following physical guidance, the teacher provides an opportunity to the client for an independent response. After two consecutive correct trials, the teacher demonstrates the same response with the exception of replacing the foam with the yellow cylinder. Following two additional, consecutive, correct trials the procedure is repeated with the red box in place of the yellow can, and the subject is provided with the foam and then the red cube, until two correct responses are demonstrated with each of the two manipulanda. Level 1 is therefore mastered if the client can demonstrate four correct responses with the yellow can (two with the foam and two with the cylinder) and four correct responses with the red box (two with the foam and two with the cylinder).

For Level 2 (Position Discrimination), both containers, the

yellow can and the red box, are placed before the client. The containers remain in the same left-right position and the client is required to place the foam in the same container for each trial. An error trial is defined as placement of the foam into the incorrect container.

Level 3 (Visual Discrimination) is similar to Level 2 with the exception that the containers randomly change positions. The client must place the foam into the same container each time regardless of its position.

In Level 4 (Match-To-Sample Discrimination) the containers are placed in random positions for each trial as in Level 3. However, during this level, the manipulandum is the cylinder which must be matched to the can, or the cube which must be matched to the box. A correct match involves the placement of the manipulandum into the respective container.

Level 5 (Auditory Discrimination) consists of placement of the two containers in stable positions with the foam used as the manipulandum. The trainer verbally requests the client to place the foam into either the yellow can, which is stated in a long, drawn out fashion, or the red box, which is stated in a short, staccato manner. The requests are alternated randomly.

The final discrimination, Level 6 (Auditory-Visual Combined Discrimination) is identical to the previous Level 5 with the exception that the containers are randomly alternated from left to right. The client must respond to the verbal cue as well as attending to the location of the container.

The test is administered in the order described above. Testing is usually conducted for all six levels in approximately 30 minutes or less. For certain individuals, testing may be conducted over several sessions as required, with only a few levels assessed during each session.

The ABLA has been demonstrated to have test-retest reliability in the absence of formal training (Martin et al., 1983; Kerr et al., 1977). Martin et al. (1983) tested 42 mentally handicapped individuals on the ABLA and retested the same individuals three months later. The results demonstrated no changes in the assessment of the client's ABLA level from the initial test to the retest. The results of Martin et al. (1983) also suggest intertester reliability. This information was informally provided as several individuals administered the test to the clients. In all cases there was complete agreement between the classification of the client by one tester on the first assessment, and the classification of the client by another tester on the second assessment.

Research on the ABLA

Hierarchical order of the ABLA. The six levels of the ABLA have been demonstrated to have a hierarchical pass-fail order as indicated above. In other words, those individuals that pass a certain level on the ABLA have demonstrated mastery at the lower levels, and those individuals that have failed one level of the ABLA, have been unsuccessful at higher levels of the test. Kerr et al. (1977) demonstrated this consistent hierarchical pattern

with 117 mild and profoundly mentally handicapped children and adults. They found only a few exceptions to this pattern. Martin et al. (1983) replicated these findings with 135 clients ranging from 17 to 60 years of age. The majority of these clients were reported to function at severely or moderately retarded levels. All but two of the clients conformed to the hierarchical sequence of the six levels. Wacker, Kerr, and Carroll (1983) demonstrated this same consistency with 12 clients, ranging from 19 to 55 years. Six clients were functioning in the moderate range of mental retardation, five in the severe range, and one in the profound range. Wacker et al. (1983) concluded that the ordering effect held constant in the sample studied, and remained stable across subsequent assessment trials.

Predictive validity with some educational and vocational analogue tasks. The ABLA has also been used to predict discrimination skill performance on other tasks requiring similar discrimination skills. Meyerson (1977) determined that if a particular level of discrimination was demonstrated by a client in the ABLA, tasks thought to involve similar discrimination skills were easily mastered by that client. Conversely, tasks that involved failed discrimination levels on the ABLA were difficult to teach, often requiring hundreds of trials. Tharinger, Schallert, and Kerr (1977) studied the use of the ABLA tasks to predict classroom learning in mentally retarded children. Participants were 11 children, 4 to 14 years of age,

who had been classified as mildly to profoundly retarded. The study revealed that 83% of a total of 72 predictions were confirmed. Almost 50% of the remaining predictions were disconfirmed as a result of one child who acquired the relevant ABLA discrimination skill part way through the study. In another study Wacker et al. (1983) assessed ABLA discrimination skills as a predictor of performance on analogue tasks with prevocational institutionalized mentally retarded clients. Of the nine clients who participated, the results of assessment errorlessly predicted the performance of each client during every condition.

Research on the ABLA in an applied setting. Stubbings and Martin (in press) examined the degree to which prevocational training tasks in an applied setting could be reliably classified according to the basic discriminations assessed on the ABLA test. The subjects included a rehabilitation counsellor, a psychologist with a Master's degree, and a graduate psychology student, all of whom had extensive experience working with developmentally disabled persons. Each of the subjects were classified as experts regarding the ABLA by meeting a certain set of criteria including: a minimum number of hours studying descriptions of each of the ABLA tasks and scoring criteria; a minimum number of hours observing clients being assessed on the ABLA; and having a minimum amount of personal experience administering the ABLA.

Training tasks were selected and defined from a prevocational program at a residential training centre for developmentally disabled individuals. Tasks were chosen which the experimenter

assumed adequately represented all the discrimination levels within the ABLA. The study consisted of one session. The ABLA test was briefly reviewed with each of the experts; following which, the experimenter began describing each of the selected tasks. The judges individually and privately recorded what they believed was the highest discrimination level necessary for a developmentally disabled client to learn to perform the task with little difficulty.

Results indicated that there was 100% agreement between judges on 16 of the 19 tasks. Thus, experts in administration of the ABLA were able to reliably classify tasks from an applied setting according to ABLA levels that clients would be expected to pass in order to readily perform the tasks.

The second study conducted by Stubbings and Martin (in press) investigated whether performance on the ABLA test could reliably predict the ease with which clients could learn to perform various prevocational tasks. Participants included nine clients with an age range of 7 to 36 years old, and with diagnoses from mildly to profoundly retarded. Three of the subject's highest ABLA level passed was Level 2 (motor group), three of the subject's highest ABLA level passed was Level 4 (visual group), and three of the subject's highest ABLA level passed was Level 6 (auditory group). From the list of tasks studied in the initial study, 6 of the 19 were chosen for training. For each of these six tasks, the staff had shown 100% agreement regarding the predicted level of the ABLA that would be

necessary for easy acquisition of that training task. The six selected tasks consisted of: two tasks which required motor discriminations; two tasks that required visual discriminations; and two tasks that required auditory discriminations. Each subject received training on each of the six tasks. Training sessions were conducted twice a day, three days a week, and were administered in the sequence as indicated in the ABLA. The training procedure approximated the testing procedure of the ABLA, with the exception that the failure criterion adopted was much more stringent (120 unsuccessful training trials). This stringent failure criterion was followed to provide a convincing demonstration of the difficulty encountered when attempting a task involving a failed discrimination level. Results supported the predictive validity of the ABLA with 50 of the 54 (or 92.5%) predictions confirmed. That is, subjects who passed only up to Level 2 were only able to learn the motor tasks; subjects who passed only up to Level 4 were able to learn the motor and visual tasks; and, subjects who passed up to Level 6 were able to learn all the tasks.

Statement of The Problem

The above results clearly suggest, for the limited number of clients who have been studied, that a client's performance on the ABLA test can reliably predict the ease or difficulty that clients will experience in learning various training tasks. However, before the ABLA test is widely adopted for use by staff in a large training facility for developmentally disabled

persons, we need to know more about both the ABLA characteristics of typical training tasks and the distribution of ABLA levels passed by residents in such a residential facility. This knowledge would enable us to judge whether or not it might be economically viable to use the ABLA test on a large scale to match residents to appropriate training tasks in order to facilitate task achievement and learning. The following research addressed these needs.

The first study replicated and extended the Stubbings and Martin (in press) research. This study assessed the extent to which individuals familiar with the ABLA can reliably classify typical training tasks from a large institution according to ABLA levels. Additionally, the results were used to examine the demands of typical training tasks, in terms of the ABLA levels needed for clients to perform them, across various departments in a large residential facility. The second study examined the distribution of the highest ABLA level passed among a random sample of developmentally disabled people in a large residential facility.

Study 1

Classification of Typical Training Tasks

According to ABLA Levels

Setting and Subjects

This study was conducted at the Manitoba Developmental Centre (M.D.C.), a large provincial institution with approximately 560 residents. M.D.C. provides both care and

training for mentally handicapped individuals. The Centre includes 19 residential areas as well as various other service buildings.

The subjects included two individuals in addition to the author, each of whom met minimum established criteria with regard to experience with the ABLA. The inclusion criteria were based upon those used by Stubbings and Martin (1992), specifically: a minimum of 20 hours studying descriptions of each of the ABLA tasks and scoring criteria; a minimum of 10 hours observing clients being assessed on the ABLA; and having a minimum amount of 30 hours of personal experience administering the ABLA. Although no formal measures were taken, each of the experts reported that they met these criteria.

Procedure

In order to determine if individuals familiar with the ABLA can reliably classify typical training tasks according to ABLA levels, tasks were examined in each of the 6 programming areas at the M.D.C. which include: Behavior Therapy; Vocational Training Department; Recreation; Communication; Physiotherapy; and the Motivational Craft Centre. In addition, tasks were examined in the 18 residences of the M.D.C. to represent the nursing population. Initially each of the 24 areas were visited by the author, and/or a behavior technician, who met with employees from the respective areas and together formed a broad checklist with multiple categories e.g., hygiene, dressing, feeding, social skills, toy play, mobility, sorting, etc. (see Appendices A-F).

From this general checklist, 20% of the total tasks from each of the 6 programming areas, and 20% of the total tasks from the residences, were randomly chosen to form a checklist with 71 tasks. Because many of these tasks were quite complex, a number of them were broken down into subcomponents. The final number of tasks rated by the experts was 194.

When the broad checklist of tasks from the residences was completed, it was evident that there was a disproportionately greater number of tasks appropriate for "high functioning" individuals than there were tasks which would be appropriate for multiply handicapped individuals. This was a result of the fact that a higher functioning individual has a more extensive behavioral repertoire, and thus contributed more tasks to the broad checklist. To ensure that the sample of tasks from the residences included both tasks appropriate for borderline and profoundly handicapped individuals, the sample was randomly chosen with two exceptions: i) it included a minimum number (5) of tasks described as being appropriate for the profoundly handicapped; and ii) tasks that were too advanced for residents were eliminated. The first exception resulted in all five of the tasks identified within the residence task list as appropriate for the profoundly handicapped individuals being included in the final sample. When the remaining tasks were selected from the residence task list the author randomly chose a task, and then randomly chose the residence which would be re-visited to obtain a more detailed description of that task. The second exception

is relevant in the event that the task selected was considered by the nursing staff working in the selected residence, to be too advanced for the highest functioning individual living in that residence to complete. When this occurred, task selection was repeated until a suitable task for the selected residence was chosen. Once these tasks were selected, the areas from which they were sampled were re-visited, and a more detailed description of the tasks was outlined.

Following completion of the final checklist, the first study was conducted. The list of tasks was mailed out to each of the experts. Similarly to the Stubbings and Martin (in press) research, the author also provided an overview of the ABLA test including: discussion of the materials for each level; a review of the instructions given to the client; the correct response required at each level; and a review of the discriminations involved at each level of the ABLA (Kerr et al., 1977). For each of the tasks, the experts read a task description that included the materials involved, the position of the materials, the prompts given to the client and the appropriate response. Following the reading of each task description, the experts recorded what they believed to be the highest ABLA discrimination level necessary for a client to successfully complete that task with relative ease. An individual would be described as being capable of task completion with relative ease if that individual was able to meet the passing criterion of the ABLA within 25 training trials (Kerr et al., 1977). Specifically, this would

involve eight consecutive correct responses of the task without exhibiting eight cumulative errors. If the individual is unable to pass the level within 25 trials, and if they exhibit 8 cumulative errors, research has demonstrated that the individual is unlikely to pass that level within 125 training trials and will likely require many more trials (Stubblings & Martin, in press). The experts were requested not to discuss their answers with anyone participating in the research project.

Following the first task classifications by the experts, it appeared that some of the tasks were rated differently by the experts based upon certain assumptions made by them. For example, one task involved an array of objects on a table with their positions remaining stable. The trainer instructed the resident to pick up the crayons and pass them to a person seated at his/her right. When rating the tasks, one expert may have assumed that in previous trials the resident was requested to pass other objects, which would involve an auditory discrimination. On the other hand, another expert may have rated the task as though the resident was always asked to pass the crayons, which would involve a position discrimination. In an attempt to clarify the task demands, additional information was provided to the experts with respect to the circumstances of preceding trials, as well as the necessary information for the current trial (see Appendix G). The experts were then asked to reconsider their ratings of those tasks on which there was not 100% agreement. Other than the author, the experts were unaware

of whether or not there was any agreement on the tasks which they rated a second time.

Reliability

In study 1 interobserver reliability (IOR) was determined between the experts with regard to classification of each of the 194 tasks, according to ABLA levels. Agreement was determined regarding the number of tasks all three experts agreed upon, the number of tasks only two experts agreed upon, and the number of tasks all three experts disagreed upon. Reliability was calculated with respect to the initial ratings by the experts, and again on the second ratings by the experts following the provision of additional information.

Results of Study 1

Results indicated that there was 100% agreement on 47.4% (92 of 194) of the tasks. Two of the experts agreed on 41.2% (80 of 194) of the remaining tasks, and there was no agreement on 11.3% (22 of 194) of the tasks. However, following the provision of additional information to the experts, reliability was significantly increased. Results of the second ratings by the experts indicated that there was 100% agreement on 62.9% (122 of 194) of the tasks. Two of the experts agreed on 33.5% (65 of 194) of the remaining tasks, and there was no agreement on 3.6% (7 of 194) of the tasks. Upon examination of the distribution of tasks according to the ABLA levels there was complete agreement among experts when classifying Levels 4 and 6 tasks. However, the agreement reached for classification of Levels 1 and 5 tasks

(38.6% and 16.7% respectively) were significantly lower (see Table 1). Analysis of the distribution of tasks according to programming and residential areas illustrated variable percentages of agreement among the areas (see Table 2). Particular difficulty is evident when rating communication and nursing tasks (33.3% and 38.2% respectively) .

Insert Tables 1 & 2 about here

To examine the demands of typical training tasks, in terms of the ABLA levels needed for clients to perform them, the number of tasks (n = 122) upon which all three experts agreed subsequent to the provision of the additional information were graphed as a percentage across the levels of the ABLA (see Figure 1). It can be seen that the great majority of tasks provided to residents require only up to ABLA Level 3 to readily perform them.

Insert Figure 1 about here

The demands of typical training tasks within the Vocational Training Department, in terms of the ABLA levels needed for clients to perform them, were also examined. The number of tasks (n = 69) upon which all three experts agreed subsequent to the provision of the additional information were graphed as a percentage across the levels of the ABLA (see Figure 2). Like the tasks provided across all areas of the institution, the great

Table 1

Distribution of Tasks According to ABLA Level as Classified By the Experts

ABLA Level	Total # of Tasks Rated by Expert A	# of Tasks on which both other Experts Agreed	# of Tasks on which 1 Expert Agreed with Expert A	% Total Agreement between all 3 Experts
Level 1	44	17	35	38.6
Level 2	73	59	73	80.8
Level 3	54	28	48	51.9
Level 4	10	10	10	100
Level 5	6	1	3	16.7
Level 6	7	7	7	100

Table 2

Distribution of Tasks According to Programming and Residential Areas

Area	Total # of Tasks	# of Tasks 3 Experts Agreed	# of Tasks 2 Experts Agreed	# of Tasks with No Agreement	% Total Agreement Between all 3 Experts
Behavior Therapy	14	10	4	0	71.4
V.T.D.	100	68	28	4	68.0
Recreation	5	4	1	0	80.0
Communication	6	2	4	0	33.3
Physiotherapy	4	2	1	1	50.0
Motivation & Craft Center	26	19	7	0	73.1
Nursing	34	13	18	3	38.2
Nursing Profound	5	3	2	0	60.0

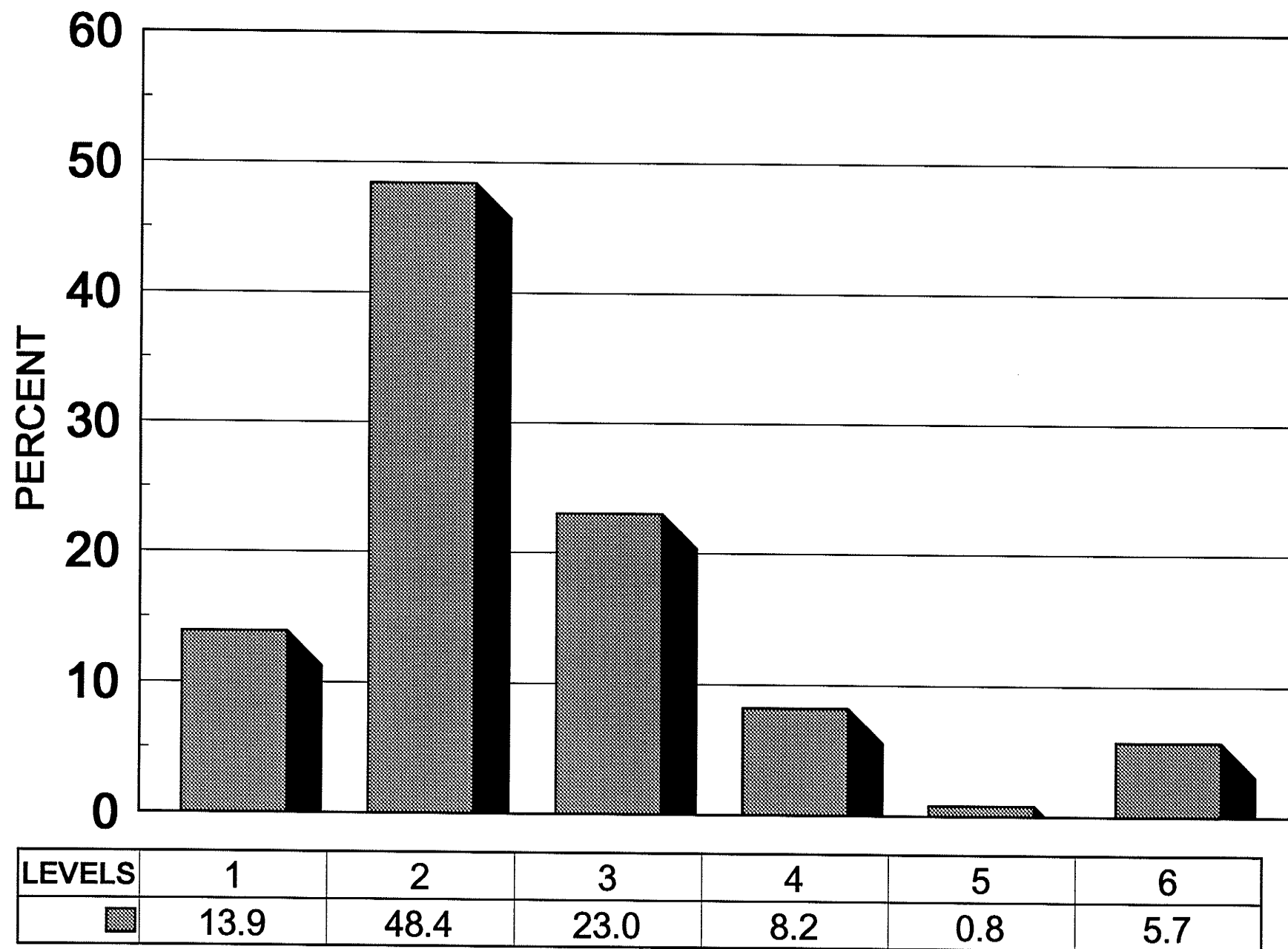


Figure 1. Classification of institutional tasks according to the levels of the ABLA (n=122).

majority of tasks within this training department require only up to ABLA Level 3 to readily perform them.

Insert Figure 2 about here

Study 2

Distribution of Residents Across ABLA Levels

Study 2 investigated the typical distribution of residents in a large training facility across the levels of the ABLA.

Setting and Subjects

The second study was conducted at the M.D.C. The subjects consisted of a random sample of approximately 10% of the entire population of residents living in the M.D.C. at the time of the research. The residents living in the M.D.C. have a diagnostic range from borderline to profoundly retarded. Similarly, the random sample involved 54 individuals with a diagnostic range from borderline to profoundly retarded (see Figure 3).

Insert Figure 3 about here

Procedure

To investigate the typical distribution of the highest ABLA level passed among developmentally disabled people in a large residential facility, a random sample of 10% of the residents from the 18 residential areas were tested on the ABLA by the author. The procedure used was the one described by Kerr et al.

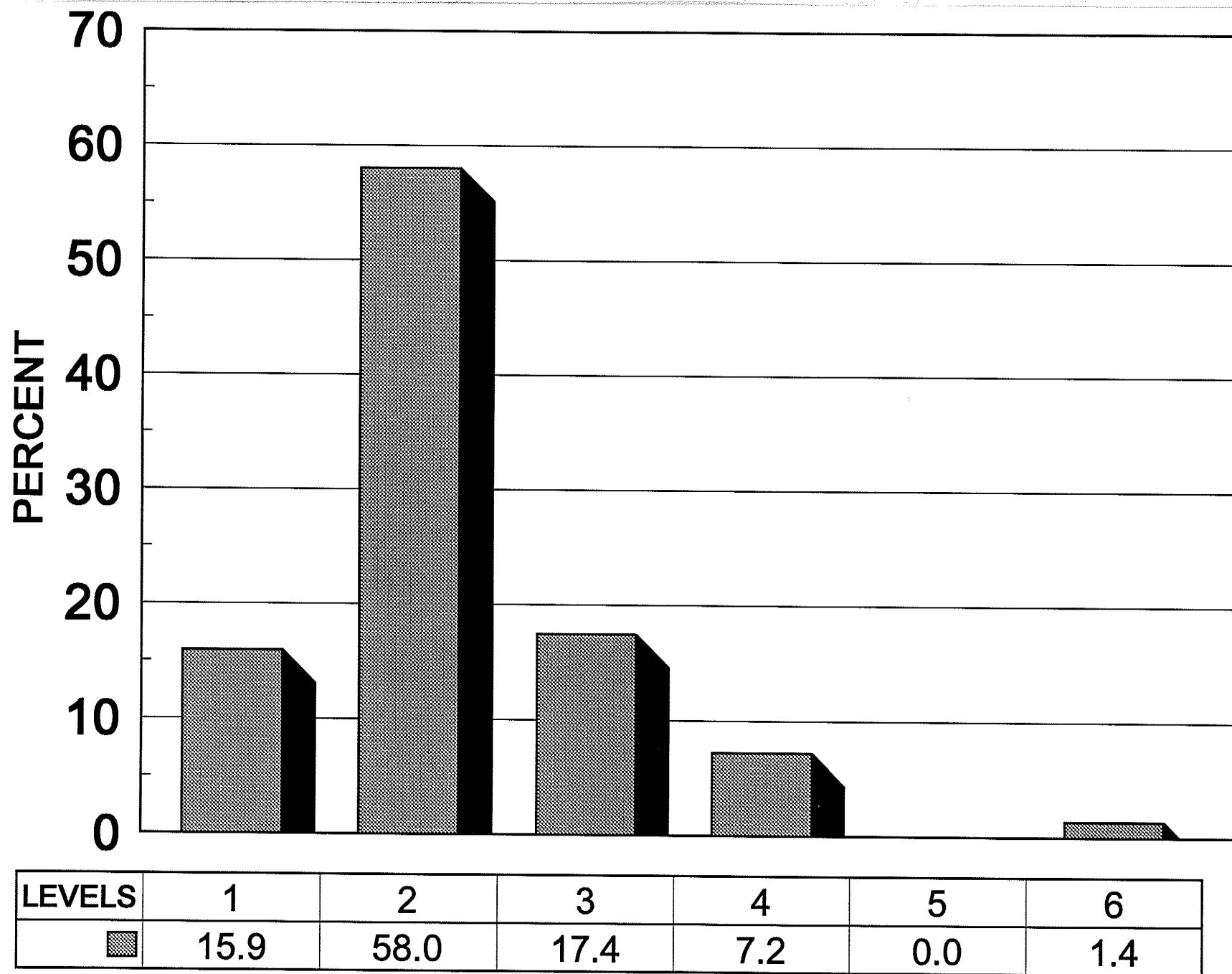


Figure 2. Classification of VTD tasks according to the levels of the ABLA (n=69).

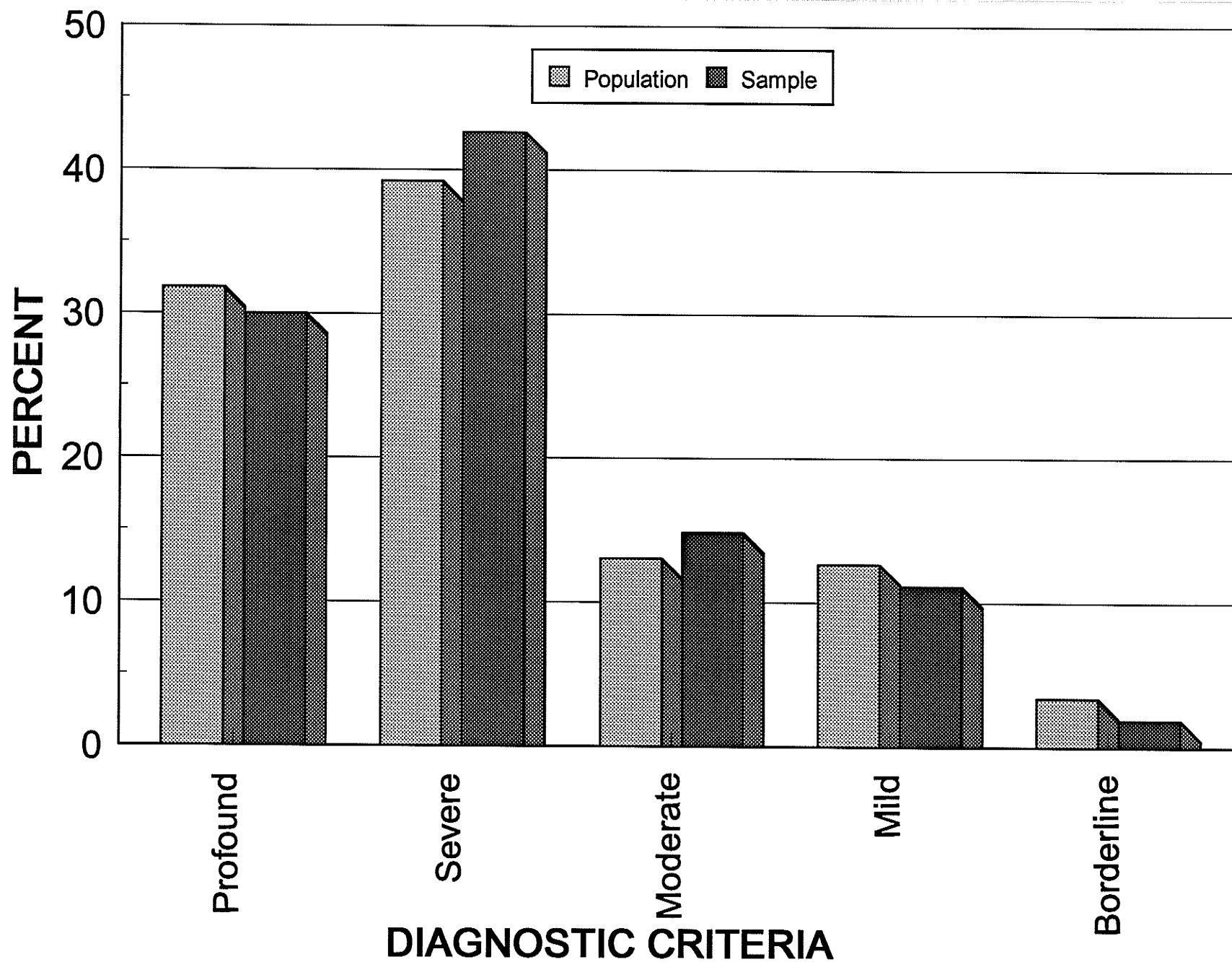


Figure 3. Institutional population (N=548) and sample (n=54) categorized by diagnostic level.

(1977).

Reliability

In study 2, interobserver reliability (IOR) regarding the subjects' score on the ABLA was determined by comparison of the score assessed by the author with the score independently assessed by at least one other observer of that client's performance during an ABLA assessment. IORs were conducted on 24 of the 54 assessments (44%). To calculate the IOR both the author and an additional observer recorded each trial that the client completed as either correct or incorrect. Following administration of the test, the total number of trials upon which the observers agreed was divided by the total number of trials and multiplied by 100.

Results of Study 2

IOR was computed to be 100% in 21 of the 24 assessments conducted. For the remaining three assessments reliability was computed to be 56.8%, 68.6%, and 81.5%. However, in each case, these percentages reflect the fact that one of the observers did not mark a trial and was therefore out of sequence with the other observers for the remainder of that Level, rather than an actual disagreement on the observed response.

The results of Study 2 indicate that out of the 54 residents tested: 35.2% were untestable; 5.6% failed Level 1; 1.9% passed Level 1; 7.4% passed Level 2; 14.8% passed Level 3; 9.3% passed Level 4; 0% passed Level 5; and 25.9% passed Level 6. The majority of the individuals who were untestable demonstrated an

extremely low level of functioning. The percent of residents' scores as indicated by the highest ABLA level passed is shown in Figure 4.

Insert Figure 4 about here

Most of these untestable individuals (68%) were diagnosed as profoundly retarded. The remaining untestable individuals were diagnosed as severely and moderately retarded (26% and 5% respectively). Therefore, to examine the typical distribution of the highest ABLA level passed among developmentally disabled people for whom the ABLA may be appropriate, Figure 5 illustrates the percent of residents' scores as indicated by the highest level passed across the levels of the ABLA excluding the individuals diagnosed as profoundly retarded.

Insert Figure 5 about here

As Figure 5 illustrates, following the omission of the individuals diagnosed as profoundly retarded, 15.8% of the sample remained untestable and 2.6% failed to pass Level 1. The typical distribution of residents across the levels of the ABLA were also examined within the Vocational Training Department. As indicated in Figure 6, 70.6% of these individuals passed ABLA Level 6.

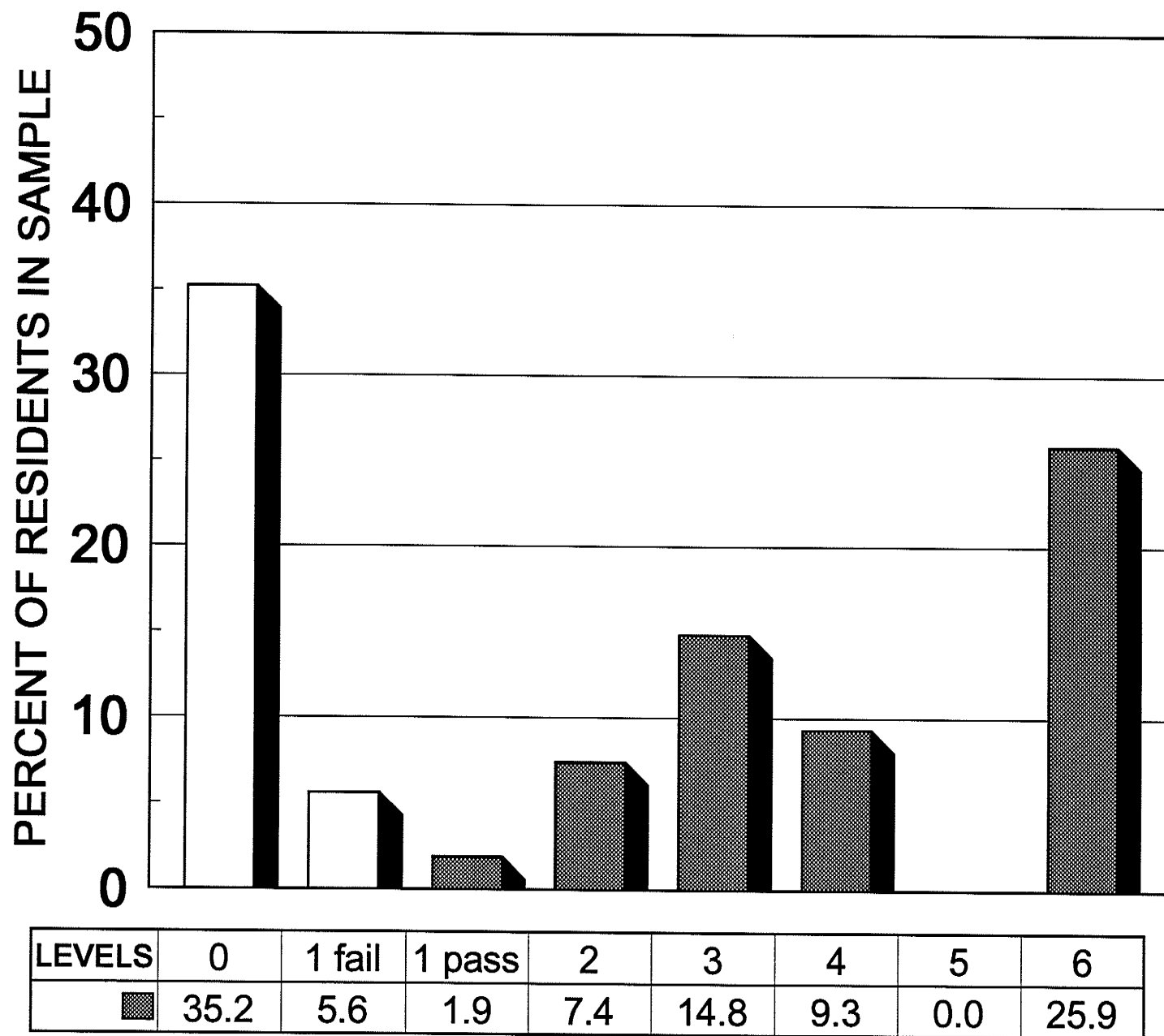


Figure 4. Percent of residents classified at each ABLA level (n=54).

40.7% of the residents failed to pass Level 1 (see end bars).

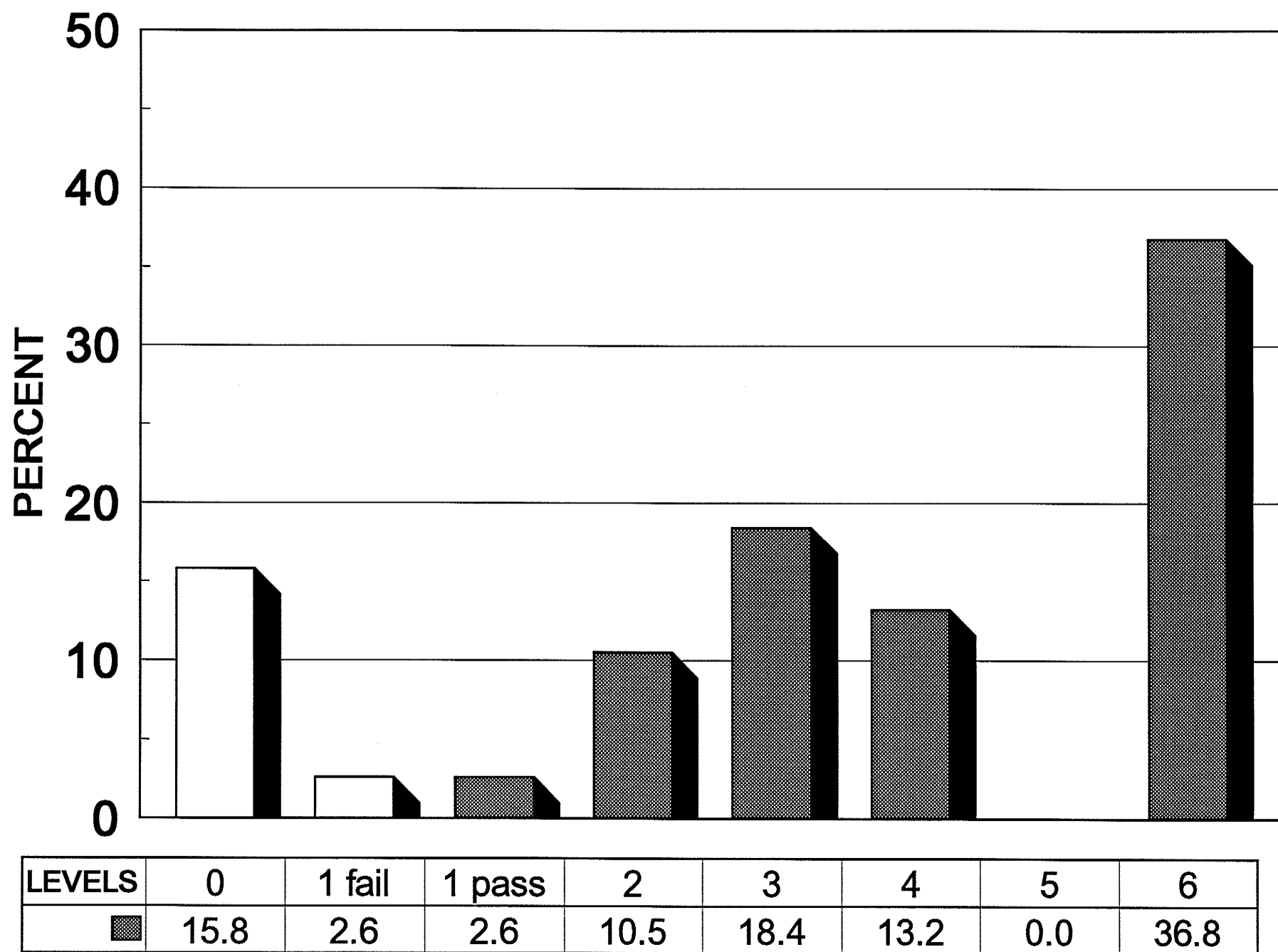
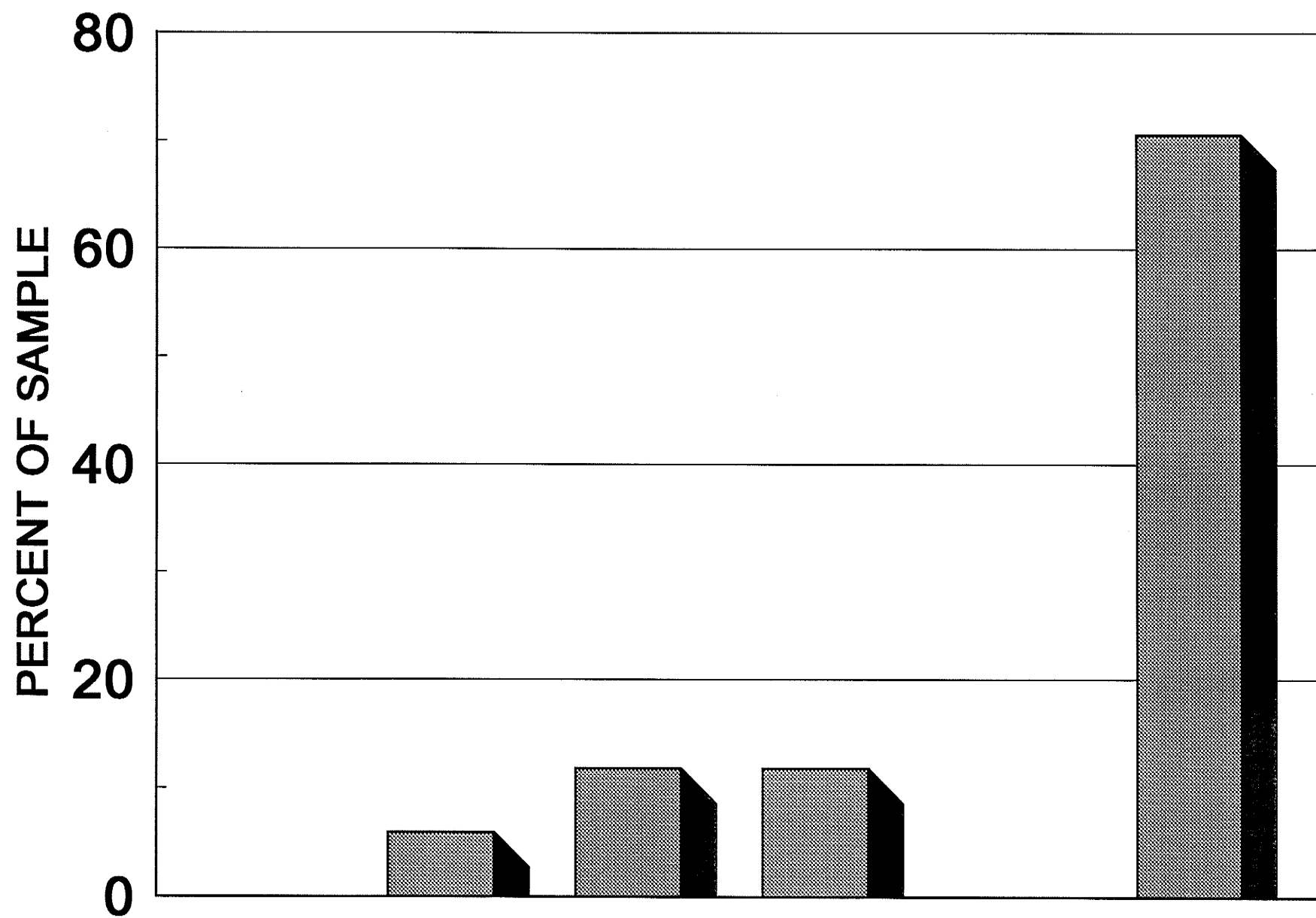


Figure 5. Percent distribution according to ABLA level passed (n=38).

The individuals diagnosed as profoundly retarded are omitted.

18.4% of the residents failed to pass Level 1 (see end bars).




LEVELS	1	2	3	4	5	6
	0.0	5.9	11.8	11.8	0.0	70.6

Figure 6. Percent of residents classified at each ABLA level in a sample of residents working in VTD (n=17).

Insert Figure 6 about here

Discussion

From the initial research of Stubbings and Martin (in press) it appears that staff familiar with the ABLA can reliably classify tasks according to the levels of the ABLA. Their results indicated 100% agreement between the judges on 16 of the 19 (84%) prevocational training tasks. The present research attempted to replicate this finding with a broader range of tasks. During the initial classification of a wide variety of daily institutional tasks, the experts reached agreement on 92 of the 194 tasks (47%) and had no level of agreement on 22 tasks. However, following the provision of additional information regarding the tasks and the context within which they were requested, the experts level of agreement increased to 122 of the 194 tasks (63%), with no agreement on only 7 tasks. The remaining discussion will be based upon the results obtained from the data utilizing this higher level of agreement. Based on these results it is evident that reliable classification of daily tasks by experts with the ABLA must be improved. Perhaps the reliability of the experts' classifications is considerably attenuated when tasks other than vocational training tasks are assessed. This difficulty may be a result of alternative tasks having much less structure than tasks in a vocational setting.

Future research should investigate the development of guidelines with respect to task classification, to facilitate the reliable categorization of all kinds of tasks according to the levels of the ABLA. Thus, applicability of the ABLA to everyday tasks should be explored.

When examining the demands of typical training tasks within the residential institution, it is evident that only a small proportion of the tasks require the resident to perform more complex discriminations. Less than 6% of the tasks required a Level 5, auditory discrimination, or Level 6, auditory-visual combined discrimination ability. Conversely Level 2 tasks were significantly more common, comprising almost one-half of the total tasks. Upon examination of the typical tasks required within one of the programming areas, VTD, similar results were evident with an absence of Level 5 tasks, few Level 6 tasks, and over one-half of the tasks which required Level 2 discriminations. These results indicate an unbalanced distribution of tasks classified across the ABLA. These results are surprising considering that the large majority of the clients at the VTD are functioning at a Level 6 or higher. Why should we be concerned about where the tasks and clients are classified in terms of the ABLA? Attention to these issues might avoid two fundamental problems. First, clients who are presented with tasks which are much too easy for their skill level may become bored and exhibit more off-task behaviors. Second, clients who are presented with tasks which are too complex may become

frustrated and discouraged, and therefore exhibit more inappropriate behaviors. The ability to reliably classify both tasks and clients would allow front line training staff to develop programs and daily tasks appropriately matched to each client's ability level. Ideally the clients would be provided with a small number of tasks which are below their ability, some tasks which are slightly above their level of functioning to provide a challenge and opportunity for learning, with the vast majority of tasks appropriate for their current level of functioning. Further research should examine the possible benefits of improved matching by staff of the ABLA level of tasks to the ABLA performance of clients.

When testing the random sample of residents on the ABLA, to investigate the distribution of residents classified at each level of the ABLA, 35% of the sample was assessed as untestable. The residents assessed as untestable were classified as follows: a) sixteen percent of the individuals were noncompliant (e.g., attempted to eat the manipulandum or ran out of the testing area); b) fifty-three percent of the individuals were functioning at an extremely low developmental level; and c) thirty-two percent of the individuals were physically impaired (e.g., 16% had severe flexion contractures in their hands and arms), or sensory impaired (e.g., 16% were blind). As the majority of these individuals were diagnosed as profoundly retarded, an examination of the distribution according to the highest ABLA level passed was conducted following the omission of the

profoundly handicapped from the sample. This examination illustrated that no individuals were classified at Level 5, only one resident was classified at Level 1, and 14 of the residents were classified at Level 6 (see Figure 5). Additional analysis of only the residents that were capable of being tested yielded a similar pattern (see Figure 5). In the random sample of 54 residents approximately 65% (35 individuals) were capable of being assessed on the ABLA. The diagnoses of these individuals (with one exception) ranged from severe to borderline levels of retardation. Thus, the ABLA appears to be most suited for this population. Future research needs to further examine the functioning levels of developmentally disabled clients for whom the ABLA test is most applicable. Further utility of Level 5 of the ABLA should be explored.

Upon examination of the percent of residents classified at each level of the ABLA in a sample of residents working within one of the programming areas, VTD, there were no residents assessed at either Level 1 or Level 5. Once again, over two-thirds of the residents were determined to be discriminating at a level consistent with Level 6.

When considering the two studies together, certain issues become clear. Specifically: 1) It is essential for experts to improve the reliability of their task classification to enhance the predictive validity of the ABLA; 2) As the majority of testable residents are classified as functioning at a Level 6 or higher, there is a need for more training tasks which require

Level 6 discrimination skills; and 3) As there was no representation of Level 5 with respect to the residents' abilities and only minimal tasks classified as requiring Level 5, the practical utility of this particular level should be examined.

Although the ability to classify daily tasks according to the basic discrimination level necessary to perform these tasks, in conjunction with ABLA test results with clients, provides trainers with a potentially powerful easy-to-use tool, more research is needed to clarify the applicability of the ABLA to specific training areas in a typical institution for the developmentally disabled. Effective guidelines must be developed to increase the reliability with which "experts" on the ABLA test reliably categorize routine daily tasks, that are typically presented to developmentally disabled residents, according to the highest level of the ABLA test that the experts believe clients must pass in order to readily perform the tasks. Classification of institutional tasks according to the levels of the ABLA necessary to perform those tasks with relative ease, in addition to an examination of the distribution of the highest ABLA level passed among developmentally disabled residents in a large institution revealed disproportionate distributions with respect to the levels of the ABLA. The ABLA test was shown to be appropriate for a significant portion of the residential population, however future research should explore the necessity of each ABLA level. Appropriate use of the ABLA test may

considerably assist staff working with developmentally disabled individuals match the abilities of the clients to the demands of the task.

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Appendix A

Preliminary Checklist of Basic Learning Abilities: Nursing

Check off the items which you have requested the resident to do.

A. Basic hygiene

1. Toileting activities
2. Brushing teeth
3. Washing and drying hands and face
4. Bathing and showering

B. Advanced hygiene

1. Caring for nails
2. Caring for hair
brush, wash, comb
3. Caring for skin

C. Optional hygiene

1. Approaching toilet independently
2. Requesting permission to go to the toilet
3. Using deodorant
4. Using a sanitary napkin
5. Shaving

D. Basic dressing and undressing

1. Putting on clothing
2. Taking off clothing
3. Closing fasteners
4. Opening fasteners

E. Advanced dressing

1. Selecting clothes

F. Basic feeding

1. Using utensils
2. Using drinking containers

G. Meal preparation activities

1. Preparing grocery list
2. Shopping for groceries
3. Storing bought items
4. Opening/closing containers
5. Using a can opener
6. Using stove
7. Using oven
8. Using microwave
9. Measuring ingredients
10. Making a breakfast
11. Making hot beverages
12. Making and wrapping sandwiches
13. Making soup from a can
14. Cooking following a recipe
15. Packing a lunch
16. Preparing a snack

H. Food serving activities

1. Setting a table
2. Transporting food
3. Transferring food

I. Housekeeping Skills

1. Cleaning a kitchen

- a) clears dining room tables after meal
- b) cleans general kitchen area
- 2. Cleaning a bathroom
- 3. Cleaning a bedroom
 - a) cleans bedroom
 - b) making a bed
- 4. Cleaning a living room
 - a) cleans living room
 - b) using a vacuum cleaner
 - c) removing refuse
 - d) washing windows

J. Laundry

- 1. Identifying laundry symbols
- 2. Sorting clothes
- 3. Hand laundering and drying
- 4. Using the washing machine
- 5. Using the dryer
- 6. Folding and storing clothes
- 7. Ironing clothes
- 8. Using dry cleaning services

K. Social Skills

- 1. Social interpersonal skills
 - a) dressing appropriately
 - b) greeting others appropriately
 - c) asking for assistance
 - d) conversing appropriately

- e) mailing a letter
- f) displaying basic manners
- 2. Telephone skills
 - a) making a phone call
 - b) using a pay phone
 - c) taking a message
 - d) leaving a message
 - e) using directory assistance
- 3. Money management skills
 - a) adding and subtracting
 - b) identifying coins
 - c) identifying bills
 - d) reading price tags/labels
 - e) giving amount requested and receiving changes
 - f) making a bank deposit
 - g) making a bank withdrawal
 - h) writing a cheque
 - i) balancing a cheque book
 - j) paying utility bill
 - k) budgeting
- 4. Time management skills
 - a) telling time
 - b) using an alarm clock
 - c) using a calendar
- 5. Travel skills
 - a) crossing street at controlled intersection

- b) crossing street at uncontrolled intersection
- c) using elevator
- d) using escalator
- e) buying tokens/tickets for public transit
- f) using a bus
- g) using a taxi

6. Safety skills

- a) verbalizing own name, address, and phone number
- b) verbalizing name and phone number of a contact person
- c) reacting to an emergency situation
- d) dealing with a stranger at home
- e) locking windows and doors
- f) dealing with approaching stranger on the street
- g) identifying danger symbols on products
- h) identifying danger signs in the environment
- i) following directions for medications

7. Leisure skills

- a) operating radio and tape player
- b) operating TV
- c) ordering at fast food counter
- d) ordering from waiter
- e) operating vending machine
- f) interacting in group activities
- g) displaying sharing behavior

Profoundly handicapped individuals:

Check off the items which you have requested these residents to do.

1. blow their nose
2. swallow
3. open mouth
4. reach for an object, e.g. passive movement for flexion
contraction
5. name recognition

Appendix B

Preliminary Checklist of Basic Learning Abilities: Behavior Therapy

Check off the items which you have requested the resident to do.

A. **Mobility**

1. following along
2. pushing chair into position
3. pulling chair away from table
4. remaining seated properly
5. reaching for objects
6. playing ring-around-the-rosy
7. playing hide-and-seek

B. **Social Skills**

1. recognizing own name
2. speaking quietly
3. staying on topic
4. eye contact
5. ignoring other's business
6. waiting for turn
7. responding vocally to simple questions
8. waving goodbye
9. displaying basic manners
10. being aware of others in room
11. repeating instructions

1C. **Toy playing**

1. listening to music
2. pressing correct buttons on tape recorder

3. singing along to music
4. playing piano
5. putting objects into a container - random
6. matching shapes e.g. form-fitted puzzle, shape box
7. putting together puzzles
8. finger painting
9. coloring
10. clapping

D. Miscellaneous

1. wiping hands and face
2. eating finger foods
3. independently opening door knobs
4. opening and closing container tops
5. drinking from a glass
6. brushing hair
7. reading
8. writing

E. Housekeeping skills

1. sweep floor
2. removing refuse to appropriate container
3. straightening up room e.g. put away toys
4. wiping off tables

Appendix C

Preliminary Checklist of Basic Learning Abilities: VTD

Check off the items which you have requested the resident to do.

A. F-24 Assembly

1. Strip Hose
2. Plug Hose
3. Clamp Hose
4. Gasket F-Cap
5. Airline (F - Cap to Hose)
6. Hose to Rack
7. Bag over Clamps

B. FAC or HD Assembly**C. Solar Spray Packages**

1. Fold rope
2. Strip Hose
3. Tie Hose
4. Assemble Funnel
5. Assemble HD
6. Package Components
7. Seal Package

D. Water Pak Assembly

1. Assemble faucet
2. Gasket into cap
3. Faucet into cap

E. Carded Tent Pegs - All Sizes

1. Strip Card

2. Pegs into Card
3. Glue Card
4. Assemble shipper
5. Completed cards into shipper at 24
6. Shipper sealed

F. 6 Inch Tent Pegs Bagged at 12 per bag

1. Cut Bag
2. Fold Header
3. Pegs into Bag
4. Staple Header to Bag
5. Assemble Shipper
6. Completed Bags to Shipper at 48
7. Seal shipper

G. 9 Inch and 12 Inch Tent Pegs Bagged at 6 per bag

1. Fold Headers
2. Pegs into Bag
3. Staple Header to Bag
4. Assemble Shipper
5. Completed Bags to Shipper 9 inch - 24 bags
 12 inch - 72 bags
6. Seal Shipper

H. Western Canteens

1. Blanket to canteen (Done at ARC)
2. Clips to ring
3. Ring to Canteen
4. Canteen Clamped and Crimped

5. Strap to Canteen
6. Buckle to Strap
7. Tether to Cap
8. Cap to Canteen
9. Inner Shipper Assembled
10. Canteen into Inner Shipper
11. Outer Shipper Assembled
12. Inner Shipper into Outer Shipper at 12
13. Outer Shipper sealed

I. Camouflage Canteen

1. Canteen into Cover
2. Tether Cap
3. Cap to Canteen
4. Assemble Inner Shipper
5. Canteen into Inner Shipper
6. Assemble Outer Shipper
7. Inner Shipper into Outer Shipper at 12
8. Outer Shipper Sealed

J. Bio Blue

1. Assemble Inner Shipper
2. Package into Inner Shipper
3. Outer Shipper Assembled
4. Inner Shipper into Outer Shipper
5. Outer Shipper Sealed

K. Archery Targets

L. Cutlery

M. Maintaining Work Station

1. Managing raw materials and finished products
2. Cleaning the work area

N. Dealing with Supervisors

1. Responding to requests to change tasks
2. Arrival time and on-task assessments

O. Miscellaneous

1. Coffee Break Tasks
 - a) getting a cup of coffee
 - b) sitting quietly during coffee break
 - c) putting their cups away
2. Taking work to the storage room
3. Taking work from the storage room to the workshops
4. Toileting activities

Appendix D

Preliminary Checklist of Basic Learning Abilities: Recreation

Check off the items which you have requested the resident to do.

A. Dressing

1. putting on winter garments e.g. hat, coat, boots, mitts
2. taking off winter garments
3. putting on skates
4. taking off skates

B. Mobility

1. getting into van
2. getting out of van
3. fastening seatbelt
4. remaining seated
5. walking in appropriate area to and from rink
6. getting onto the ice
7. skating
 - a) away from boards
 - b) using the boards for support
 - c) backwards
 - d) stopping
 - e) on the ice
 - f) hockey sticks

C. Miscellaneous

1. requesting permission and assistance for toileting
2. responding to questions e.g. are you tired? do you want to garden?
3. responding to requests to leave the ice

4. finding their flower or plant
5. using tools to weed/water the garden
6. looking at various objects
7. describing visual sights

Appendix E

Preliminary Checklist of Basic Learning Abilities: Communication

Check off the items which you have requested the resident to do.

A. Basic feeding

1. Drinking from a cup/glass
2. Eating finger foods
3. Choosing condiments e.g. sugar, milk

B. Social Skills

1. Displaying basic manners e.g. thank you
2. Putting refuse into appropriate container e.g. garbage into staff's hands
3. Displaying eye contact when spoken to
4. Turn taking
5. Displaying a greeting of some form e.g. gesture, vocally, through song
6. Being aware of others
7. Being aware of home environment e.g. where they live
8. Being aware of body parts - function and purpose
9. Telling time
10. Using a clock
11. Using a calendar
12. Initiating interaction independently
13. Vocalizing appropriately e.g. loudness
14. Recognizing own name

C. Miscellaneous

1. Sitting at the table

2. Answering questions verbally or with gestures
3. Answering by pressing correct button
4. Using voice machines
5. Reaching for objects
6. Choosing between objects e.g. "yes"/"no" button,
chocolate vs. cookies, instruments
7. Attending to visual material
8. Clapping hands
9. Playing instruments
10. Playing hide-and-seek
11. Choosing songs requiring memory
12. Identifying common objects in everyday routines
13. Describing concepts e.g. numbers, weather, colors,
special events - Valentines, New Year's.

Appendix F

Preliminary Checklist of Basic Learning Abilities: Education

Check off the items which you have requested the resident to do.

A. Life Skills Area

1. Stir ingredients using a spoon
2. Pour in water, milk, to the ingredients
3. Grease cookie sheet or muffin tins
4. Pour batter into pans
5. Press switch to activate blender or popcorn maker
6. Set the table with cups, plates, spoons
7. Place dishes in sink
8. Wash dishes
9. Dry dishes
10. Place laundry in washer
11. Fold laundry
12. Turn vacuum switch on
13. Vacuum

B. Bowling

1. Pick up bowling shoes
2. Put on bowling shoes
3. Place ball on bowling aid
4. Push ball down the lane
5. Take off bowling shoes
6. Return them to the counter

C. Gym - Physical Education

1. Walk on treadmill

2. Run laps
3. Peddle stationary bike
4. Bounce on air flow mat
5. Jump on trampoline (with staff)
6. Toss ball

D. In Classroom

1. Manipulate or play an instrument (musical)
2. Listen to a story
3. Label and identify pictures

E. Art Class

1. Color
2. Glue objects on paper
3. Paint (finger) and (brushes)

F. Community Outings

1. Hair cut
2. Sit in the chair
3. Take the money to the cashier

G. In the Restaurant

1. Choose their menu
2. Pay the cashier (eat their meal)
3. Clean off the table

Appendix G

Preliminary Checklist of Basic Learning Abilities: Physiotherapy

Check off the items which you have requested the resident to do.

A. Chest Physio Respiratory Therapy

1. follow instructions for position transfer
2. follow instructions to cough to remove obstruction in airways
3. remain still during suction of nasal and oral airways
4. follow breathing exercises
5. follow instruction for using spirometer monitor

B. Prosthetic & Orthotic

1. assume instruction on maintenance and application of special devices.

C. Rehabilitation

1. follow instruction on active movement eg. stand
2. peripheral neuromuscular facilitation (PNF patterning)
3. follow instruction on individual exercises for affective areas of concern
4. receive instruction for muscle and neurological testing
5. follow instruction during walking exercise e.g. balance, standing exercises

D. Safety Issues

1. being able to apply brakes to the wheelchair
2. making certain their walker is close before standing
3. tie their shoelace
4. pick up a toy and place in a container

5. reach for a ball and throw a ball
6. use a communication board eg. where is John?

Appendix H

Preliminary Checklist of Basic Learning Abilities:Motivational Craft Centre

Check off the items which you have requested the resident to do.

A. Dexterity

1. coloring with crayons
2. coloring with pencil crayons
3. doing crafts
4. stringing beads
 - a) small beads with needle onto thread
 - b) large beads onto shoelace
 - c) button onto wire
5. playing lite brite
 - a) bulbs
 - b) golf tees
6. gluing objects onto paper
7. cutting with manual scissors
8. cutting with battery operated scissors
9. stamping
 - a) self stamper
 - i) on paper
 - b) unaided stamper
 - ii) onto lines
 - c) press stamper
 - iii) onto bingo cards
10. using pegboards with different sizes of pegs, different amounts needed

B. Sorting

1. putting objects into a container

2. removing beads from a sequence
3. sorting
 - a) by color
 - b) by shape
 - c) by size
 - d) by feel e.g. if blind

C. Matching

1. doing dot-to-dot pictures
2. searching for objects in a magazine
3. doing puzzles
 - a) form fitted
 - b) free form
4. following (completing) a sequence of beads
5. typing on a manual typewriter e.g. type a given group of letters
6. putting letters on a magnetic board
7. packaging golf tees
 - a) random colors
 - b) one color
 - c) designated colors
8. placing poker chips into carousel
 - a) random
 - b) by color
9. letter search e.g. find a particular letter in word search, color all the same color.
10. finding objects hidden in another picture e.g. Waldo

searches

D. Miscellaneous

1. solving arithmetic problems to grade 3
2. drawing
3. using calculator to solve mathematical problems
4. painting
5. displaying basic manners
6. finding their spot and beginning work independently
7. using a buzzer or vocalizing to ask for assistance
8. turning on and off faucet taps
9. wiping hands with towel
10. asking to use toilet
11. choosing type of beverage
12. brushing fleeces
13. reaching for objects
14. listening to story tapes and answering questions later
15. reading a story and answering questions later
16. viewing magazines
 - a) on own
 - b) staff assistance
 - c) page turner
17. using a switch e.g. for a coffee perc., sensory stimulation, computer, rock tumbler, page turner, vibrating pillow

Appendix I

Tips for Task ClassificationAccording to the Levels of The ABLA

1. Before determining the Level of any task or even a subcomponent of the task, imagine that you have just provided the client with a demonstration and a guided trial of the subcomponent. Imagine that for every trial that exact sub-task is requested. For example, if the client is seated at a table and there is a number of fruits on the table and the task request is "pick up the orange", then you should rate the task as though the trainer **ALWAYS** requests the orange unless **EXPLICITLY** stated that sometimes the trainer asks for an orange and sometimes the trainer asks for an apple.
2. When rating the V.T.D. tasks, a general description is given of the surroundings to place each task into context. When you rate the tasks of the V.T.D. the bins containing the raw material and completed products should only be considered immediately salient when the client is removing raw material from the bins, or placing the completed product away. In other words, the client does not refer back to the completed product while they are actually completing the task. Only the specific raw material should be considered immediately salient.

3. A task should be rated as Level 1 - Imitation discrimination only if there is no discrimination involved. The response is considered a "Go" "No Go" type of response. As in Level 1 of the ABLA, the client either places the foam in the container or does not. There are no other salient features in the environment. To determine if this Level is an appropriate rating, review the environment described before each task and ask yourself, "are there other salient features present that would be considered an option, or does this response appear to be the only option?"
4. In order for a task to be considered Level 4 - Match-to-Sample, the sample stimulus must match with the comparison stimulus on some dimension e.g. shape, color.
5. A task should be rated as Level 5 - Auditory discrimination only if the content of the trainer's verbal instruction is necessary to complete the task. For example, if the description of the task **Explicitly** describes the trainer requesting one task sometimes and another task other times.
6. Similarly, the task should only be rated as Level 6 - Auditory-Visual Combined if the above conditions are described in addition to describing the position of the materials as variable.

7. Some tasks may be completed by attending to a variety of dimensions within the stimuli. For example a client who functions at a Level 4 - Match-to-Sample may use these skills to complete the task. However, another client who only functions at a Level 3 - Visual Discrimination may also be able to complete the task by attending to a different cue using visual discriminations. Please try to analyze the task in a variety of ways and determine the Level based upon the minimum Level necessary. For instance, if you believe the task is a Level 4 task, before making your final rating ask yourself "Is there any method of doing this task using Level 3 skills?"
8. Finally, some tasks may be rated as Level 6 if you believe that at least a Level 6 would be necessary to perform the task. For example tasks which require higher cognitive functioning such as reading. Please examine the description of the correct response and determine only from that overt behavior whether higher functioning is necessary, i.e. do not base your rating on the implicit expectations that the staff may have of the client.