Does ABLA Test Performance on the ABLA Test Predict Picture Receptive Name Recognition with Persons with Severe Developmental Disabilities?

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Research has shown that performance on the *Assessment of Basic Learning Abilities* (ABLA) test correlates with language assessments for persons with developmental disabilities. This study investigated whether performance on ABLA Level 6, an auditory-visual discrimination, predicts performance on a receptive language task with persons with severe developmental disabilities. Five participants who passed ABLA Level 6, and five who failed ABLA Level 6, were each tested on five 2-choice discriminations that required them to point to pictures of common objects after hearing their names. Four of the five participants who had failed ABLA Level 6 failed all of the receptive name recognition tasks. All five participants who had passed ABLA Level 6 passed all of the name recognition tasks. The practical implications of these results are discussed.

Key words: verbal behavior, receptive communication, auditory-visual discriminations

The Assessment of Basic Learning Abilities (ABLA) test is a dynamic assessment during which a tester, using standardized prompting and reinforcement procedures, attempts to teach a testee to learn a simple imitation and five two-choice discriminations, called levels (Kerr, Meyerson, & Flora, 1977). When testing level 6, an auditory-visual discrimination, a student is required to place a piece of foam into a red box or a yellow can when the tester says “red box” or “yellow can.” In this task, the left/right position of the containers, and the words spoken by the tester, are randomly alternated from trial to trial. A correct response requires an individual to discriminate between the two spoken requests and between the two visually presented alternatives. The present study investigated whether performance on this auditory-visual discrimination predicts performance on receptive name recognition tasks

with persons with severe developmental disabilities.

The six levels of the ABLA test include: Level 1, a simple imitation; Level 2, a two-choice position discrimination; Level 3, a two-choice visual discrimination; Level 4, a two-choice visual quasi-identity match-to-sample discrimination; Level 5, a two-choice auditory discrimination; and Level 6, a two-choice auditory-visual combined discrimination. The ABLA test assesses an individual’s ability to learn the six discriminations that comprise the test. The testing of a level is preceded by a demonstration trial, a guided trial, and an opportunity for an independent response at that level. Following a correct independent response, testing of that level begins. Correct responses during testing are reinforced with praise and an edible, and incorrect responses are followed by an error correction procedure (a demonstration, a guided trial, and an opportunity for an independent response). Testing of a level continues until the participant achieves eight consecutive correct responses (pass) or eight cumulative errors (fail). Detailed testing procedures for administering the ABLA test were described by Martin, Yu, and Vause (2004).

Research on the ABLA test with persons with developmental disabilities has shown that: a) the 6 levels are hierarchically ordered in terms of difficulty (Kerr et al., 1977; Martin, Yu,

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Quinn, & Patterson, 1983; Wacker, Steil, & Greenebaum, 1983); b) that failed ABLA levels are difficult to teach using standard prompting and reinforcement and may require hundreds of trials before the discrimination is learned, if it is learned at all (Meyerson, 1977; Stubbings & Martin, 1995, 1998; Witt & Wacker, 1981; Yu & Martin, 1986); and c) that performance on the ABLA test is predictive of the types of tasks that an individual is able to learn, for example simple imitation tasks or match-to-sample tasks (Martin, et al., 2004).

Several recent studies with persons with developmental disabilities have suggested that an auditory-auditory identity matching (AAIM) task may be a worthwhile addition to the ABLA test. On the AAIM prototype task, a tester says a word (e.g., "pen") on some trials and a different word (e.g., "block") on other trials, while one assistant says "pen" and a second assistant says "block." Across trials, the assistants randomly alternate as to who says which word and who speaks first. On each trial, the correct response is to point to the assistant who spoke the word that matched that of the tester. When the AAIM task was administered using the ABLA testing procedures, the results showed that the AAIM prototype task: a) is more difficult than ABLA Level 6; b) has good test-retest reliability; c) has good predictive ability for other types of AAIM tasks; and d) is correlated with other language skills (Harapiak, Martin, & Yu, 1999; Marion et al., 2003; Vause, Martin, & Yu, 2000).

Research on the ABLA Test and Language

Research has shown that performance on the ABLA test correlates with language assessments. Casey and Kerr (1977) reported that 42 typically developing children who were able to pass the two auditory discriminations (Levels 5 and 6) of the ABLA had significantly higher scores on mean length of utterance, upper bound longest utterance obtained (according to rules described by Brown, 1973), and vocabulary sample than age-matched children who failed those two auditory tasks. In another study (Ward, 1995), individuals with autistic-spectrum disorders who passed ABLA Levels 5 and 6 communicated using two or more words, while individuals who failed Levels 5 and 6 communicated using simple words or signs. Barker-Collo, Jamieson, and Boo (1995)

assessed individuals with developmental disabilities and found that their ABLA performance was significantly and positively correlated with the receptive and expressive communication subscale scores on the Vineland Adaptive Behavioral Scales (Sparrow, Balla, & Cicchetti, 1984) and with the Communication Status Survey (Barker-Collo, 1996). Finally, Marion et al. (2003) examined the performance of persons with developmental disabilities on the ABLA and on tests of echoics, tacts, and mands. Only 2% of the verbal assessments were passed by participants who failed ABLA Level 6, while 36% of the verbal assessments were passed by individuals who passed ABLA Level 6. Thus far, however, no one has examined whether performance on ABLA Level 6 might predict the ability of persons with severe developmental disability to recognize the spoken names of pictures of common objects. The purpose of this study was to examine that possibility.

METHOD

Participants and Setting

Ten adults (7 males and 3 females) with severe mental retardation were recruited from the St. Amant Centre, a residential and community resources facility for persons with developmental disabilities. The mean age of the participants ranged from 23 to 49 years. Participants were divided into two groups, *visual* and *auditory*, with five per group based on their ABLA performance. Participants in the visual group had passed the ABLA visual discriminations (Levels 3 and 4) and failed the auditory discriminations (Levels 5 and 6) and the AAIM prototype task described previously. Participants in the auditory group had passed the ABLA auditory discriminations (Levels 5 and 6), but failed the AAIM task.

Materials

The materials for the ABLA consisted of a red box and a yellow can, a beige irregularly shaped piece of foam, a small red cube, and a small yellow cylinder. For the name recognition assessment, 20 common objects were chosen arbitrarily from the living and work environments of the participants. Staff members who work with the participants were asked to

subjectively rate on a five-point scale how frequently the spoken names of the items might be encountered by the participants, ranging from “never” (rated 0) to “7 or more times a day” (rated 4). Ten items that were encountered at least three to four times a day (rating of 2 or higher) were identified for each participant. Each item was then photographed on a dark, solid background, and printed in color on 20 cm by 28 cm paper and laminated. For each participant, five pairs of pictures were created by drawing randomly from the 10 items that had been selected for that participant.

Procedures

At the start of each session, participants were given a choice of six edibles (or activities for participants with diet restrictions or who were uninterested in food) that staff had suggested to be preferred items. The selected item was used as the reinforcer for that session.

The testing procedures for each pair of photographs followed the ABLA procedures for testing Level 6. The experimenter placed a pair of photographs on the table in front of the participant. The participant was then given a demonstration, a guided trial, and the opportunity for an independent response with each of the two pictures. Following a correct independent response to each picture, testing of that pair began. On a test trial, the experimenter stated the name of one of the pictures. For example, if the pair of pictures consisted of a cup and a plate, the experimenter either said “cup” or “plate” and the correct response was to point to the appropriate picture. Following a correct response a participant was given the reinforcer and praise. After an incorrect response the experimenter said “no” and then proceeded with a demonstration, a guided trial, and an opportunity for an independent response. The location (e.g., left or right side) of the two pictures and the words spoken (e.g., “cup” or “plate”) were randomly alternated across trials. For each pair of pictures, testing continued until eight consecutive correct responses (pass) or eight cumulative errors (fail) had occurred. The five pairs of pictures were assessed in a random order across participants.

Reliability Assessments

Interobserver reliability checks were con-

ducted for 42% of the sessions across participants and tasks. During reliability checks, an observer independently recorded the participant’s response on each trial. A trial was defined as an agreement if both the observer and tester recorded the same response; otherwise, it was defined as a disagreement. Percent agreement per session was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%. The mean agreement score per session across participants was 99%, ranging from 90-100%.

Procedural integrity checks were conducted for 42% of the sessions. During these sessions, an observer used a checklist to record whether the experimenter correctly presented the steps of each trial using a checklist. A trial was scored as delivered correctly if no errors were made by the experimenter. The mean percentage of trials that were correctly delivered per session averaged 99%, ranging from 95-100%.

RESULTS

Four of the five participants in the visual group failed all of the name recognition tasks, whereas the fifth participant passed all of the name recognition tasks. All five participants in the auditory group passed all of the name recognition tasks. A one-tailed independent samples *t*-test showed that the difference between number of recognition tasks passed by the two groups was statistically significant ($t[8] = 4.43, p < .05$, one-tailed).

DISCUSSION

In this study, ABLA Level 6 performance predicted receptive name recognition performance. That is, a person who passed Level 6 was likely to pass a receptive name recognition task, while a person who failed Level 6 was not likely to succeed at receptive name recognition. As indicated previously, passing or failing of ABLA Level 6 is positively correlated with communication scores on the Vineland Adaptive Behavior Scales. This study assessed the more specific relationship between passing or failing Level 6 and the ability to recognize pictures of objects. The results cannot be accounted for in terms of diagnosis in that all participants were diagnosed with severe mental retardation, according to agency records.

How can we account for the one participant in the visual group who passed all of the name recognition tasks? Further assessment with this participant indicated that he was able to perform a number of tasks comparable to ABLA Level 6, even though he had failed ABLA Level 6. Upon completion of the study, he was tested for receptive name recognition using six common three-dimensional objects (different from the ones used in the photographs) and passed with few errors. Furthermore, in many of his daily activities this participant has been given vocational tasks that would be require auditory-visual discriminations, including "take this to (name of staff)"; and "bring me the plates (or spoons)." It may be that the tasks that this participant passed involved stimuli that were more familiar to him than the standard box and can used in the ABLA test, thereby making the discriminations between the stimuli easier.

A limitation of the present study is that the object contact questionnaires given to staff relied on subjective estimates of the frequency with which each participant encountered and heard the name of a common object, and the same staff did not rate all the objects for all the participants. However, given that 9 of 10 participants consistently performed as predicted, potential inconsistencies between estimated and actual frequency of exposure to the test objects do not appear to have seriously affected the results.

The small number of participants (five in each of the Level 4 and Level 6 groups) who were tested on the name recognition tasks also limits the generality of the study. On the other hand, it is again important to note the high consistency of the data across 9 of the 10 participants.

These results indicate that the ability to pass ABLA Level 6, an auditory-visual discrimination, is a good predictor of receptive name recognition. Expressive naming behavior (i.e., tacting) might also be conceptualized as requiring an auditory-visual discrimination when tacting is vocally manded by someone. For example, if a tester says "what is that?" as opposed to "show me the," then the participant must discriminate the statements and then look at and name the designated object. Because vocally manded tacting appears to include an auditory-visual discrimination, the ability to pass ABLA Level 6 may make it easier to learn such behavior. Future research should examine that possibility.

These results have implications for front line staff regarding teaching communication skills to individuals with developmental disabilities. Previous research has demonstrated that mismatching the ABLA test level of persons with developmental disabilities with the ABLA difficulty of training tasks is likely to result in increased aberrant behavior (Vause, Martin, Cornick, et al., 2000; Vause, Martin, & Yu, 1999). Thus, knowing a person's ABLA level will allow staff to identify which persons are likely to readily learn a receptive object name recognition task, thereby decreasing the likelihood of aberrant behavior by attempting to teach receptive name recognition to persons who have not yet learned auditory-visual discriminations characteristic of ABLA Level 6.

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