ENTRY LEVEL ACHIEVEMENT CHARACTERISTICS OF YOUTH AND ADULTS READING BELOW FIFTH GRADE EQUIVALENT: A PRELIMINARY PROFILE AND ANALYSIS

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Summary.—This study explored entry level achievement characteristics of 132 youth and adults who read below fifth grade equivalent who volunteered to participate in a tutorial reading project. Reading, self-esteem, listening comprehension, and verbal language levels were measured and analyzed to substantiate observed characteristics of adult illiterates and to examine a developmental reading model of adult beginning readers. Analysis demonstrated that subjects had low levels of listening comprehension and verbal language as well as reading. Contrary to reports from informal observations, self-esteem was not substantially below average or significantly related to reading, listening comprehension, or verbal language. However, verbal language was significantly related to both listening comprehension and reading. Listening comprehension and verbal language achievement appeared to be higher than reading achievement. Further research is needed to explore the extent to which low intellectual ability or specific language disabilities contribute to low levels of reading, listening comprehension, and verbal language. Results suggest that programs for adult illiterates should include instruction to develop listening comprehension and verbal language skills as well as reading ability.

Since the adult performance level study of 1975 estimated that some twenty-three million adults are functionally illiterate, numerous books have cited demographic data and programs pertaining to adult illiterates. Illiteracy in the United States has been associated with school drop-out, low levels of income, welfare, unemployment, and crime (Kozol, 1980). Adult literacy programs such as adult basic education classes and adult tutorial projects have had limited success. After an extensive national survey, investigators concluded that few statistical data are available on achievement or impact of adult literacy projects (Hunter & Harman, 1979). Available studies tend to focus only on pre-post assessments of reading skills (Elbers, 1980).

Research on adult literacy projects has been hampered by the fact that there are few standardized tests appropriate for adult illiterates. While these adults have a wide range of experiences and a variety of coping skills, such experiences and skills are not measured by standardized tests. Therefore, in adult literacy projects it is difficult to ascertain entry level skills so instructional programs can be planned accordingly.

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Most of what is written about illiterate adults comes from informal observation. Some illiterates may have accumulated wisdom from diverse life experiences, and the handicap of educational deprivation may have actually sharpened their senses so that they have cultivated shrewdness, the ability to think, and a high level of common sense (Ulmer, 1969). Illiteracy in adulthood, however, presumably leads to low self-esteem (Newman, 1980). The verbal deficiencies noted frequently have been attributed to idiosyncratic language patterns or anxiety rather than a lack of word knowledge or ability (Bowren & Zintz, 1977).

This article presents findings from a study conducted at The Johns Hopkins University Academy. The Academy provides tutorial instruction to adults reading below fifth grade equivalent. Entry skills were measured and profiled to examine possible relationships among these skills. It was assumed that such profiling and analyses would indicate instructional treatment and substantiate observed characteristics.

**Johns Hopkins University Academy**

Procedures employed at the Johns Hopkins University Academy are predicated on a language-based theory of reading. As defined by Johnson and Myklebust (1967), reading is "a visual symbol system superimposed on auditory language" (p. 148). Since language is a prerequisite for learning to read it should also be the basis of reading instruction.

Language includes not only verbal fluency, but audition (listening comprehension) as well. Sticht, et al. (1974) have described a developmental model of reading that proposes four major sets of processes in a developmental sequence: (a) the basic adaptive processes of seeing, hearing, cognition and motor movement, (b) the language precursors of listening and looking, (c) the language processes of audition and speaking, and (d) the literacy processes of reading and writing. Language is "a central, or common, component in the cognitive content of an individual despite the mode of information reception" (p. v). While much of the data supporting this model are based on studies of children, some preliminary studies show the model to be valid for adult beginning readers (Sticht, 1979).

Research at The Johns Hopkins University Academy provided the opportunity to collect additional data to determine if the developmental model is valid for adult beginning readers. Assessment measures took into account observed characteristics of the population of illiterate adults.

The study was designed to answer the questions: (1) What are illiterate adults' entry-level skills in reading, self-esteem, listening comprehension, and verbal language? and (2) Are there any significant correlations among these skills? It was hypothesized that there would be significant relationships between verbal language and each of the other skills. Moreover, age and grade completed would be significantly related to these skills.

**Method**

**Subjects**

Participants were drawn from the metropolitan Baltimore area and inmate populations at two penal institutions. They learned about the program through a variety of advertising strategies. A total of 132 volunteered. About 95% were male; consequently, sex differences were not examined. The group was racially heterogeneous, including blacks and whites, but preliminary statistical analyses showed that race was not associated with any of the variables under study. Participants' ages ranged from 13 to 71 yr. (mean age - 27.8 yr., SD = 11.8). The mean educational level of the group was 7.5 yr. (SD = 2.4). No socio-economic data were available on the participants.

**Procedure**

Testing.—Participants were pretested individually by Academy staff. The assessment battery included the Reading Subtests of the Wide Range Achievement Test (Jastak & Jastak, 1965), the Coopersmith (1967) Self-esteem Inventory, Reading Evaluation—Adult Diagnosis (Colvin & Root, 1976), and Verbal Opposites subtest of the Detroit Test of Learning Aptitude (Baker & Leland, 1967).

The Reading Subtest (Level II) of the WRAT measures word recognition. There are 74 words arranged in order of difficulty. Scores are reported in terms of grade level. Split-half reliabilities are generally high, averaging .93, and the validity of the test has been well-established (Jastak & Jastak, 1965).

The Coopersmith Self-esteem Inventory, Form C (Coopersmith, 1967) has 25 descriptive statements to which the subject responds "like me" or "unlike me." Statements were read aloud to the subject and the examiner recorded the answer. The 25 items are a subtest of 50 items used by Rogers and Dymond (1954) and correlate .86 with the longer form. No reliability data are available for the short form, but the reliability would be expected to be comparable though slightly less than for the long form (.88 test-retest; Coopersmith, 1967). Coopersmith (1967) has shown the scores on the test are related to a number of relevant variables including behavior ratings of esteem, creativity, and academic achievement.

The READ, an informal reading inventory developed by Colvin and Root (1976), was used to assess listening comprehension. Examiners followed directions for determining listening comprehension outlined by Stauffer, Abrams, and Pikulski (1978). Briefly, the examiners read passages aloud to the subject until the subject answered fewer than 75% of the questions correctly. The
The highest level at which the subject answered 75% of the questions correctly was the listening comprehension level. The use of the informal inventory employing standardized procedures was warranted since there is no standardized measure of listening comprehension appropriate for an adult population (Farr, 1969).

The Detroit Test of Learning Aptitude has a series of subtests that measure language, memory, and perception. The Verbal Opposites Subtest was used to assess verbal language. The test has 96 words arranged in order of difficulty. The words are pronounced by the examiner and the subject supplies the associated antonym. Scores are reported with reference to mental age norms. The test has acceptable validity and reliability according to Baker and Leland (1967).

Academy staff used data from the assessments to develop individual tutoring plans. These plans outlined strategies for integrating the participants' instructional needs and the Academy's procedures.

### Statistical Analyses

Mean scores on the reading, listening comprehension, and verbal language tests were computed. To facilitate comparison, verbal language scores were then converted from mental age to grade level by subtracting the constant five from each score. Mean scores on 90 complete cases were calculated to examine differences in achievement level.

Scores on the four entry level skills—reading, self-esteem, listening comprehension, and verbal language—were intercorrelated along with two demographic variables—age and grade completed. Null hypotheses of no relationship for all correlations were tested for significance (p < .001). Because not all subjects were tested on all variables, the degrees of freedom varied between 78 and 130.

The variables were then entered into forward stepwise inclusion multiple regression analyses, one for each entry level variable. To examine the contribution of each variable to the prediction, the criteria for inclusion in the equations were nonrestrictive. The alpha level was set at .001.

### Results

#### Entry Level Characteristics

Subjects entered the program reading at a mean grade level of 3.8 (SD = 2.5). The mean score on self-esteem was 60.6 (SD = 17.9). Subjects scored at 4.3 grade level (SD = 1.4) on the listening comprehension measure and at a mean mental age of 11.3 (SD = 2.6) on the verbal language measure. When verbal language scores were converted from mental age to grade equivalents, mean scores of 5.1, 4.3, and 3.8 were obtained for verbal language, listening, and reading, respectively (based on 90 complete cases).

#### Intercorrelations and Regression Analyses

The intercorrelations of the entry level characteristics ranged from -.49 to .48 (see Table 1). More than half of the coefficients were significant (p < .05). The maximum explained variance between any pair of variables was 23%.

The intercorrelations of the four pretests ranged from .09 to .48. Although many of these coefficients were statistically significant (p < .01), their magnitude suggests that there was appreciable unexplained variance between the different test pairs. Hence, the tests are assessing a variety of achievement characteristics.

### Table 1: Correlations Between Pretest Measures and Entry Level Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-49†</td>
<td>-24*</td>
<td>-13</td>
<td>.08</td>
<td>-16</td>
</tr>
<tr>
<td>Grades Completed</td>
<td>115</td>
<td>127</td>
<td>123</td>
<td>87</td>
<td>126</td>
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<tr>
<td>Reading</td>
<td>37†</td>
<td>.17</td>
<td>.17</td>
<td>.32†</td>
<td>.32†</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>117</td>
<td>114</td>
<td>79</td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>Listening Comprehension</td>
<td>.09</td>
<td>25*</td>
<td>.48†</td>
<td>.128</td>
<td>.131</td>
</tr>
<tr>
<td>Verbal Language</td>
<td>90</td>
<td>127</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .01, †p < .001.

The results of the multiple regression analyses are displayed in Table 2. These analyses show the relative power of the four achievement and two demographic variables in accounting for variance in achievement entry levels. The beta weights ranged from -.04 to .38 for reading, -.11 to .24 for self-esteem, .08 to .37 for listening comprehension, and -.04 to .34 for language.

In terms of explaining unique variance, verbal language appeared to be the strongest predictor, accounting for 23% of the variance in entry level reading and 19% of the variance in entry level listening comprehension. No other variable contributed a statistically significant (p < .01) amount of additional explained variance. With regard to predicting entry level language ability, reading accounted for 23% of the variance, and listening comprehension an additional 11%. None of the variables showed a significant relationship with self-esteem.

The simple correlations in Table 1 show that reading is associated significantly with age, grade completed, listening comprehension, and verbal language, but the regression analysis shows that the first three of these variables do not account for significant amounts of variance beyond what is explained by verbal language. Similarly, listening comprehension showed significant relationships with reading, self-esteem, and verbal language, but verbal language...
TABLE 2

<table>
<thead>
<tr>
<th>Order of Entry</th>
<th>Variable</th>
<th>r</th>
<th>R² Change</th>
<th>R²</th>
<th>F</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reading</td>
<td>.478</td>
<td>.228</td>
<td>.228</td>
<td>22.80</td>
<td>.375</td>
</tr>
<tr>
<td>2</td>
<td>Verbal Language</td>
<td>.367</td>
<td>.280</td>
<td>.052</td>
<td>14.79</td>
<td>.197</td>
</tr>
<tr>
<td>3</td>
<td>Age</td>
<td>-.238</td>
<td>.285</td>
<td>.004</td>
<td>9.94</td>
<td>-.094</td>
</tr>
<tr>
<td>4</td>
<td>Listening Comprehension</td>
<td>.254</td>
<td>.288</td>
<td>.003</td>
<td>7.48</td>
<td>.074</td>
</tr>
<tr>
<td>5</td>
<td>Self-esteem</td>
<td>.093</td>
<td>.289</td>
<td>.001</td>
<td>5.94</td>
<td>-.037</td>
</tr>
</tbody>
</table>

Self-esteem

1. Verbal Language: .253, .064, .064, 5.23, .239
2. Age: -.126, .086, .022, 3.56, -.111
3. Grade Completed: .170, .090, .004, 2.64, .078
4. Verbal Language: .174, .090, .001, 1.84, .049
5. Reading: .093, .092, .002, 1.48, -.047

Verbal Language

1. Reading: .478, .228, .228, 22.80, .340
2. Listening Comprehension: .438, .336, .107, 19.21, .328
4. Age: -.158, .353, .002, 10.11, -.045
5. Self-esteem: .174, .355, .001, 8.02, .035

Listening Comprehension

1. Verbal Language: .438, .192, .192, 18.29, .373
2. Self-esteem: .252, .224, .032, 10.98, .193
3. Age: .082, .254, .029, 8.49, .232
4. Grades Completed: .166, .263, .009, 6.60, .100
5. Reading: .254, .268, .004, 5.32, .076

accounted for most of the unique variance. Verbal language showed significant simple correlations with grade completed, reading, and listening comprehension, yet grade completed did not account for significant variance not already explained by reading and listening comprehension. In conclusion, the analyses demonstrated that (1) reading, listening comprehension, and verbal language are significantly interrelated; (2) associations between these skills and the two demographic variables (age and grade completed) seem to be a function of different level of skills at different ages and grades rather than age and grade completed per se; and (3) self-esteem is only weakly related to the other variables.

DISCUSSION

Entry-level Characteristics

As expected, subjects entering the program were reading at a mean grade level (3.8) substantially below the level estimated to be needed to function effectively in society. Self-esteem scores indicated subjects to be functioning only slightly below the 70 to 80 range (SD, 11 to 13) which was reported by Coopersmith (1967) as average. In addition to low levels of reading, subjects demonstrated low listening comprehension and verbal language skills. Listening comprehension was on a mean fourth grade level. For verbal language, the mean mental age of 11.3 equates roughly to a sixth grade level. It appears that despite the wide range of life experiences, adult beginning readers have difficulty with listening comprehension and verbal language as well as reading.

Speculation about the subjects' low listening comprehension and verbal language levels must consider the observations discussed previously. It is likely that, since subjects have completed fewer years of school, they are less comfortable taking tests and are not familiar with test-taking strategies. Therefore, test anxiety may have lowered their scores. In addition, the tests employed may not be appropriate for this population. As discussed previously, appropriate standardized tests are not presently available. The investigators selected the available measures based on their content, validity, and reliability.

A major question is raised with respect to the over-all intellectual ability of this population. Are the low levels of listening comprehension and verbal language a consequence of not learning to read rather than an indication of over-all intellectual ability? Studies have shown that verbal language development is greatest during the school years and that the vocabulary of most literate adults is acquired through reading (Smith, 1978). Therefore, the verbal language development of nonreading adults who have dropped out of school is likely to be low. In addition, it is thought that illiterates become outsiders and adapt for survival by forming a subculture of their own. The subculture further isolates and alienates them from the mainstream (Lyman, 1976). Therefore, the low verbal language scores could reflect general alienation from the mainstream of society. Recognizing that illiterate adults have demonstrated some intellectual functioning by the very process of surviving in a literate society, it is likely that low verbal language ability might be a consequence of fewer years of schooling, not being able to read, and possible alienation from the literate mainstream of society. Additional data are needed, however, before general low intellectual ability can be discounted as a factor.

Intercorrelations and Regression Analyses

Results of the intercorrelations and regression analyses indicated moderate relationships among scores for verbal language, reading, and listening comprehension. The magnitude of these correlations suggests that these are distinct but interrelated skills. Verbal language showed the largest and most frequent number of significant correlations with other variables, accounting for 19% of the variance in entry level listening comprehension and 23% of the variance in entry level reading. This supports Sticht, et al.'s (1974) proposal that language is a central cognitive component in an individual's information-processing system.
Since verbal language is significantly related to both reading and listening comprehension, it is plausible that poor verbal language ability is not only the consequence but also the basis for poor reading. Recognizing that the various components of language are of cardinal importance in learning to read, a growing number of researchers are investigating the verbal-deficit hypothesis of dyslexia (Kavanagh & Mattingly, 1972; Robbins & Hatcher, 1981; Vellutino, 1977). Moreover, some researchers estimate that 85% of adults reading at fourth grade equivalent and below have learning problems (Weisel, 1980). These problems may not only explain the onset of the reading difficulty but also reflect years of exacerbation as a consequence of the inability to read.

With regard to self-esteem, subjects did not score substantially below average. Nor did subjects with the lowest skills have the lowest self-esteem. Self-esteem, therefore, may be related to the ability to use coping strategies in a literate society rather than to acquired levels of listening comprehension, verbal language, or reading per se.

Conclusions

These results suggest that listening comprehension and language abilities are critical factors in the study of illiteracy in adults. The adults in this study showed low entry level skills in listening comprehension and verbal language as well as reading. Therefore, programs addressing the needs of illiterate adults should incorporate methods that develop these skills.

Because verbal language is important to reading and listening comprehension and low levels of these skills were observed, it would be important to continue to explore the characteristic language learning of the population. Specific semantic, syntactic, and phonological components of listening comprehension and language should be explored. In addition, a comparison of their verbal and performance abilities may lead to knowledge about their intellectual capabilities. Such studies may provide direction for the development of effective educational programs for illiterate adults.

REFERENCES


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