STABILITY, CONCURRENT AND PREDICTIVE VALIDITY OF THE PPVT-R[1]

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Explored the relationship between the Peabody Picture Vocabulary Test-Revised (PPVT-R) and the Peabody Individual Achievement Test (PIAT), and pretest PPVT-R standard scores administered about 7 months earlier for a sample of 29 mentally retarded children between the ages of 5-5 and 12-7 ($\bar{X}$ = 9-6, SD = 1-11). Pretest PPVT-R scores correlated moderately with PIAT standard scores (Median r = .43) and with posttest PPVT-R scores (r = .81). There was no significant difference between the mean pre and post PPVT-R scores (60.3 and 58.5, respectively). The PPVT-R and PIAT Total Test Score administered in the same session correlated .71 (Median r with the PIAT's subtests = .64). Implications are discussed in light of the stability and predictive and concurrent validity of the PPVT-R for this sample.

Dunn and Dunn (1981) state that the PPVT-R "is designed to measure a S's receptive (auditory) vocabulary for Standard American English [p. 2]" and to "provide a quick estimate of scholastic aptitude [p. 65]." At present, verification of the effectiveness with which the PPVT-R meets these goals has been based on PPVT research findings. In the PPVT-R Manual, for example, Dunn and Dunn report that the PPVT correlated moderately with school achievement as measured by the Peabody Individual Achievement Test (PIAT) (Dunn & Markwardt, 1970), Wide Range Achievement Test, California Achievement Test, and the Metropolitan Achievement Test. They report median correlation coefficients that range from .29 to .68 and conclude that the PPVT correlates with school achievement about as well as the Binet and Wechsler Intelligence Scale for children. Current PPVT-R research reports significant positive correlations with the PIAT (r = .53) and the McCarthy Scales of Children's Abilities (McCarthy, 1972; median r with the five Scale Indices = .76) for a sample of randomly selected normal children (Naglieri, 1981). Significant PPVT-R correlations with the Wechsler Intelligence Scale for Children—Revised (Wechsler, 1974) also are reported by Naglieri and Yazzie (1983) for Navajo children and for mentally retarded students (Naglieri, 1982). There exist only a handful of concurrent validity studies and no predictive validity studies that use the PPVT-R.

The stability of the PPVT-R has been investigated in a well-designed study conducted by the test's authors and reported in the Manual. A sample of 962 standardization Ss were administered Forms L and M in counterbalanced order over a 9- to 31-day interval. The reliability coefficients for the various age groups ranged from .54 to .90 (Median = .77), which indicates good stability over a short time interval. However, no such study for mentally retarded children was conducted. Because there is a paucity of research that investigates the stability, predictive and concurrent validity for the PPVT-R using mentally retarded children, the present study was conducted.

METHOD

Subjects

The sample of 29 students were identified previously as mentally retarded and placed in special educational programs by district committees on the handicapped. These

children resided in two communities with populations of about 20,000 and 40,000, located in northern Arizona. There were 12 males and 17 females, aged 5-5 to 12-5 ($\bar{X}$ = 9-6, SD = 1-11), of which 60% were white, 25% Mexican American and 15% black. These children comprised a portion of a previously studied sample (Naglieri, 1982). The mean WISC-R Full Scale IQ (FSIQ) for the sample was 56.7 (SD = 11.2); 90% of the sample had FSIQs in the Mentally Deficient range, and 10% had FSIQs in the Borderline classification (Wechsler, 1974, p. 26).

Procedure

Each child was administered the PPVT-R in the spring of 1981 and then the PPVT-R and Peabody Individual Achievement Test in the fall of 1981 in one session by 4 certified examiners (2 males and 2 females). The mean interval between testings was 7.0 months (SD = 1.1 months; range = 5-9 months). The PPVT-R and PIAT administered in the fall were presented in a counterbalanced order so that half of the sample was given the PPVT-R followed by the PIAT, and half given the PIAT followed by the PPVT-R. Pearson product-moment correlations were obtained between the PIAT and the PPVT-R standard scores. The significance of the difference between the mean pre and post PPVT-R Standard Score Equivalent was determined using a t-test for the difference between correlated means.

RESULTS AND DISCUSSION

Means, SDs, and correlation coefficients for the pre and post PPVT-R and PIAT subtests are presented in Table 1. These means reveal that this sample of mentally retarded children performed quite poorly on all the achievement tests as well as on the PPVT-R's assessment of verbal comprehension. These data also indicate that the standard deviation of every variable was smaller than would be expected from an unrestricted

TABLE 1

Means, SDs, and Correlations Among Pre and Post PPVT-R and PIAT Subtests for Mentally Retarded Children

| | | | PPVT-R | | | |
| | | | Pretest | | Posttest | |
	$\bar{X}$	SD	Uncorrected r	Corrected r	Uncorrected r	Corrected r
PIAT						
Mathematics	67.9	6.1	.33	.75**	.47	.85**
Reading Recognition	74.5	12.4	.27	.40*	.28	.40*
Reading Comprehension	74.4	12.3	.37	.53**	.15	.21
Spelling	71.7	9.4	.14	.27	.39	.64**
General Information	71.2	8.4	.20	.43*	.47	.76**
Total Test	68.1	6.8	.17	.43*	.35	.71**
PPVT-R						
Pretest	60.3	11.7			.66	.81**
Posttest	58.5	12.3				

Note.—N = 29.
*p <.05.
**p <.01.

population. Such restriction in range leads to correlation coefficients that underestimate the correlational relationship among the variables, and therefore the obtained coefficients were corrected (Guilford & Fruchter, 1978).

The corrected correlations between the pretest PPVT-R and the PIAT revealed that the PPVT-R Standard Score Equivalent exhibited a moderate correlation with the PIAT's Total Test (.43, $p = .05$) over a 7-month interval. The PPVT-R correlated best with the Mathematics and Reading Comprehension subtests (both rs significant at $p = .01$) and least well with the Spelling subtest ($p > .10$). These findings parallel those reported by Dunn and Dunn (1981) for the PPVT. As expected, a stronger correlation was evident between the PPVT-R and PIAT when the two tests were administered in the same session, with most of the corrected correlations significant beyond $p = .01$. These coefficients suggest that for this sample of mentally retarded children, the PPVT-R predicted future PIAT scores about as well as previous PPVT research with normal children would suggest.

The pre and post PPVT-R standard scores revealed that there was only a 2-point difference between the mean scores over the 7-month interval. Obviously, this difference was not significant ($t = .95$, $p = .25$) and clearly indicates that the PPVT-R scores were stable over time. On an individual basis, 83% of the S's pre- and posttest scores differed by 10 or less standard score units. Further evidence of the PPVT-R's stability was obtained from the correlation coefficient between the two PPVT-R administrations. The coefficient of .81 ($p = .01$) indicates that there was considerable similarity between the ordering of individuals by the two measures. Therefore, these data confirm that the PPVT-R was quite stable for this sample of mentally retarded children.

In summary, the present findings indicate that the PPVT-R predicted achievement as measured by the PIAT about as well as previous research findings for the PPVT earlier revealed, only moderately. In contrast, concurrent validity coefficients suggest that the PPVT-R scores are likely to correlate well with achievement test scores. Finally, the PPVT-R yielded very similar standard scores when the same mentally retarded children were tested twice over a 7-month interval, and the correlation between these testings was quite high. This suggests that the PPVT-R is measuring verbal comprehension consistently and reliably over time.

REFERENCES

DUNN, L. M., & DUNN, L. M. *Peabody Picture Vocabulary Test—Revised.* Circle Pines, Minn.: American Guidance Service, 1981.

DUNN, L. M., & MARKWARDT, F. C. *Peabody Individual Achievement Test.* Circle Pines, Minn.: American Guidance Service, 1970.

GUILFORD, J. P., & FRUCHTER, B. *Fundamental statistics in psychology and education.* New York: McGraw-Hill, 1978.

McCARTHY, D. *Manual for the McCarthy Scales of Children's Abilities.* New York: Psychological Corporation, 1972.

NAGLIERI, J. A. Concurrent validity of the Revised Peabody Picture Vocabulary Test. *Psychology in the Schools,* 1981, *18,* 286-289.

NAGLIERI, J. A. Use of the WISC-R and PPVT-R with mentally retarded children. *Journal of Clinical Psychology,* 1982, *38,* 635-637.

NAGLIERI, J. A., & YAZZIE, C. Comparison of the WISC-R and PPVT-R with Navajo children. *Journal of Clinical Psychology,* 1983, *39,* 598-600.

WECHSLER, D. *Wechsler Intelligence Scale for Children—Revised.* New York: Psychological Corporation, 1974.