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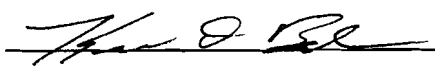
Abstract approved: 

This study investigated the relationships among the scores of the Wechsler Intelligence Scale for Children-Third Edition (WISC-III) and the Peabody Picture Vocabulary Test-Third Edition (PPVT-III). Thirty-two children, ages 6 to 8, were administered the WISC-III and the PPVT-III. For the total sample the mean WISC-III Verbal IQ, Performance IQ, and Full Scale IQ, Verbal Comprehension Factor Score, and Vocabulary subtest scores were 111.6, 108.9, 112.8, 108.7, and 10.8, respectively. The total sample mean for the PPVT-III Standard Score Equivalent (SSE) was 108.3. The Pearson product-moment correlation coefficients between the Full Scale WISC-III scores and the PPVT-III SSEs were .63 for the complete sample, correlations between the WISC-III Verbal IQs and the PPVT-III SSEs were .69, and correlations between the WISC-III Performance IQ and the PPVT-III SSEs were .38. The correlations between the WISC-III Verbal Comprehension Factor scores and the PPVT-III SSEs were .66 and correlations between the WISC-III Vocabulary subtest scores and the PPVT-III SSEs were .51. All of the correlations were significant except between the WISC-III Performance IQ scores and PPVT-III SSEs with the boys. The results of this study indicated that the PPVT-III may be used to estimate WISC-III Full Scale IQ, Verbal IQ, Verbal Comprehension, and Vocabulary subtest scores when used with 6 to 8 year olds.

CORRELATIONS AMONG THE SCORES OF THE WECHSLER INTELLIGENCE SCALE FOR CHILDREN-III AND THE PEABODY PICTURE VOCABULARY TEST-III

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CHAPTER 1

INTRODUCTION

The field of intelligence has been a significant topic in the psychological literature for decades, and encompasses a variety of domains within cognitive psychology, clinical psychology, psychobiology, behavioral genetics, school psychology, sociology, and neuropsychology (Kaufman, 1990). The assessment of intelligence is an important function of the outpatient mental health facility (Piotrowski & Keller, 1989). According to Vetterli and Furedy (1997), even for their faults, IQ tests still remain the best current method of estimating the intelligence of individuals. Children are often referred by parents and educators to mental health centers or school psychologists for an evaluation of intellectual functioning. Screening tests are brief assessments often used to gain an estimate of an individual's functioning. Screening tests can be advantageous to professionals needing an estimate of intelligence and not exact IQ scores. The purpose of these types of tests is to reduce the time of administering, scoring, and interpreting tests and utilize this time saved in other areas.

Verbal ability is often an important feature in determining intellectual functioning. The Wechsler Intelligence Scale for Children-Third Edition (Wechsler, 1991; WISC-III) measures verbal expression to a greater extent than several other intelligence tests (Kaufman, 1990). The Peabody Picture Vocabulary Test-Third Edition (Dunn & Dunn, 1997; PPVT-III) is a test intended to provide an estimate of intelligence through the measurement of receptive vocabulary. According to Lubin, Larsen, and Matarazzo (1984), the Wechsler scales and the PPVT series rank among the top seven most frequently used tests by psychologists in a variety of settings.

Intelligence testing began in 1905. The testing of intelligence has taken place in a variety of settings, such as schools, hospitals, and mental health centers. The intelligence quotient has been used to quantify a child's intellectual functioning and to qualify him/her for certain programs. Intelligence tests also give professionals an idea of a child's level of cognitive functioning and thought processes.

Comparing the Wechsler Intelligence Scale for Children-Third Edition (WISC-III) with the new Peabody Picture Vocabulary Test-Third Edition (PPVT-III) is a topic in research that is relevant to the field of psychology. The PPVT-III was recently revised and has not been extensively compared with other intelligence tests. The revision of any psychological test leads investigators to question the improvement of validity and reliability regarding the particular test. Because the PPVT-III is a recent revised publication and has not been thoroughly validated, there is a need to complete this study. The academic community and researchers often search for recent studies involving revisions of frequently used tests. Therefore, this study will be included in updated research regarding comparisons and correlations of these two popular and frequently used intelligence tests.

Review of the Literature

The assessment of individual skills and abilities is an ancient practice (Kamphaus, 1993). Intelligence testing is a type of individual assessment that has been widely used for many years. Since 1905, there have been many different tests developed to assess intelligence. Many of these tests have been modified throughout these years. The numerous tests and revisions of the intelligence tests indicate that the assessment of and definition of intelligence is one that is not fully agreed upon among psychologists and other

professionals. Reliability and validity are important factors of any psychological test, which verifies the need for research in comparing and examining assessment tools. This study compared assessment tools, therefore reporting the reliability and validity of these tests is essential. Because of the recency of the revision of the PPVT-III, there is virtually no research on this current test; therefore, it is important to be aware of the reliability and validity of the old PPVT-R. Comparisons of the various revisions of each of these assessment tools are needed to evaluate the correlations of this study. The background information on the WISC and the PPVT, as well as the importance of vocabulary are critical topics in understanding the significance of this study.

WISC-III. The genealogy of the WISC-III began when David Wechsler (1939) developed the Wechsler-Bellevue Intelligence Scale. Four revisions have been made since 1939. These revisions were made to update norms, to improve the quality of the items, and to simplify administration and scoring procedures. The WISC-III is a clinical instrument that is individually administered to assess the intellectual ability of children between the ages of six years and sixteen years, eleven months (Wechsler, 1991). The WISC-III has an administration time of between 50 and 70 minutes for the regular battery of ten subtests and an additional 10 to 15 minutes for the three supplementary subtests (Wechsler, 1991). According to Lubin, Larsen, and Matarazzo (1984), the WISC was ranked the sixth most frequently used test in the United States by psychologists.

The mean of the WISC-III Verbal, Performance, Full Scale IQ scores, and Verbal Comprehension score is 100, while the standard deviation is 15. The mean of the subtest scale scores is 10, while the standard deviation is 3. The subtests are organized into two groups, Verbal subtests and

Performance (perceptual-motor) subtests. There are six Verbal subtests. The Information subtest involves answering questions that assess the child's knowledge in a variety of areas. The Comprehension subtest asks the examinee to answer common sense questions. The Arithmetic subtest involves orally responding to mathematical story problems. The Similarities subtest entails explaining how objects and concepts are similar. The Vocabulary subtest requires the examinee to tell the meaning of words. Digit Span, which is a supplementary subtest, involves repeating numbers from memory.

There are seven Performance subtests, which test perceptual-motor abilities. Coding involves copying marks from a code in corresponding places. The Picture Completion subtest requires the examinee to tell what is missing in color pictures. Block Design involves arranging colored blocks to match printed or constructed designs. The Picture Arrangement subtest requires the examinee to arrange pictures in proper sequence to tell a story. Object Assembly involves arranging pieces of a puzzle correctly. Mazes, which is a supplementary subtest, requires the examinee to draw the path to find a way out of a maze. Symbol Search, also a supplementary subtest, involves scanning two groups of symbols and indicating whether or not a target symbol appears in the other group.

The Full Scale IQ score is found by using all of the subtests mentioned above, excluding the supplementary subtests. The Verbal Comprehension factor-based index score is calculated using the following subtests: Information, Similarities, Vocabulary, and Comprehension.

The WISC-III has enjoyed widespread use in clinical practice and research. However, it has been stated to have low interest level for early elementary-grade school children and that the instructions are too long and require too much verbal comprehension (Kamphaus, 1993). However, the WISC-III is used by a variety of professionals to assess intelligence. The popularity and frequent use of the WISC-III explains the large research base of the test. Reliability and validity are very important features of any psychological test. The WISC-III probably would not be as popular if this assessment tool had few confirmations of having high reliability and validity. The research supporting the reliability and validity of the WISC-III is ample. It is necessary to validate the findings from the standardization sample in clinical populations that frequently are administered the WISC-III (Tupa, Wright, & Fristad, 1997).

Reliability of WISC-III. Reliability refers to the consistency of a test. The split-half reliability coefficients for the Verbal, Performance, and Full scale IQs ranged from .91 to .95 (Wechsler, 1991). The reliability coefficients for the three IQ scores were slightly higher than the reliabilities of the individual subtests. Split-half coefficients for the WISC-III subtests are generally adequate (Kaufman, 1992). The Vocabulary and Block Design subtests had the highest reliability coefficient (.87) among the individual subtests. The reliabilities of the subtests and scales differ for each age. The average reliability coefficients for the subtests across ages ranged from .69 to .87; the Verbal, Performance, and Full Scale IQ coefficients were .95,.91,and .96, respectively. If it were possible to calculate the subtest reliabilities for the entire population at each age level, the reliabilities would most likely be more consistent among the ages (McGrew & Wrightson, 1997).

The test-retest coefficients for the WISC-III Full Scale IQs were between.87 and .97 (Kaufman, 1992). Canivez and Watkins (1998) found that long-term test-retest reliability coefficients in a sample of children enrolled in special education ranged from .55 to .78 for subtests and from .62 to .91 for the IQ and index scores. The interrater reliabilities for Verbal Scale subtests are all greater than .92 (Braden, 1995). The stability of intelligence test scores is an important characteristic because intelligence as a construct is presumed to be an enduring trait (Canivez & Watkins, 1998).

Validity of the WISC-III. Validity determines if the test is measuring what it is intended to measure. Studies support the ability of the WISC-III to predict relevant outcomes, most importantly academic achievement (Braden, 1995). According to the WISC-III manual (Wechsler, 1991), the correlation coefficients between the WISC-III IQ scores (Verbal, Performance, and Full Scale) and the Wide Range Achievement Test (WRAT) were .65, .47, and .65. The correlation coefficient of the WISC-III and school grades was .47. According to Sandoval (1995), there is no better measure of general intelligence than the ability to gain instruction in school. Many concurrent validity studies have been done with the WISC-III. Many of the tests such as the Wechsler Primary and Preschool Scale of Intelligence - Revised (WPPSI-R) and the Wechsler Adult Intelligence Scale - Revised (WAIS-R) highly correlate with the WISC-III. Kaufman (1992) reported that on a study of gifted children WISC-III IQs were lower than corresponding WISC-R IQs. The updating of the norms is one reason for the differences in the two scores.

Many of the studies relating to the validity of the WISC-III focus on the subtests, rather than the scales. The Verbal subtests generally correlate higher with each other than with Performance subtests, and Performance

subtests generally correlate higher with each other than with Verbal subtests (Wechsler, 1991). Tupa, Wright, and Fristad (1997) examined the criterion-related validity of the four WISC-III index scores (Verbal Comprehension, Perceptual Organization, Freedom From Distractibility, and Processing speed) and found scores correlated with the Woodcock-Johnson Test of Achievement - Revised (WJ-R) which includes Reading, Mathematics, Written Language, and Knowledge Achievement clusters, ranging from .23 to .81. The correlation between Verbal Comprehension and Knowledge was especially high (.81). The validity of the WISC-III has been supported regarding construct, criterion-related, and internal validity.

PPVT-III. The PPVT-III is an individually administered, norm-referenced test which measures receptive vocabulary of individuals age 2 1/2 through adult. This test has two parallel forms; IIIA and IIIB. Both forms include 204 test items preceded by four training items. Each item includes four black-and-white illustrations on a page. The examinee is to select the picture considered to illustrate the word presented orally by the examiner. The mean of the PPVT-III Standard Score Equivalents is 100, and the standard deviation is 15.

The original PPVT was published in 1959 and has been revised in 1981 and 1997. The PPVT-III was developed to update norms, review artwork for offensive or biased material, and to address any administration or scoring difficulties (Williams & Wang, 1997). The PPVT-III manual (1997) addresses reliability and validity. The alpha reliabilities are generally in the high .90s, the split-half reliabilities ranged from .86 to .97, and the test-retest reliabilities ranged from .91 to .94 (Williams & Wang, 1997). The manual also implies strong validity; however, more research is needed in this area as well

as reliability and usability because the PPVT-III was recently published in 1997. Further research is needed to support the manual and to provide information to professionals who use the test. Because the PPVT-III was recently developed and there is little research on it as of yet, it may be helpful to look at its predecessor, the PPVT-R, in depth.

PPVT-R. The PPVT-R (Dunn & Dunn, 1981) is an individually administered test, which consists of two forms ("L" and "M"), intended to provide an estimate of intelligence through the measurement of receptive vocabulary (Altepeter & Handal, 1985). The PPVT-R is conveniently administered, easy to score, simple to interpret, as well as being a very brief test (Carvajal, McKnab, Gerber, Hewes, & Smith, 1989). According to Wiig (1985) the PPVT-R provides a well-standardized test of standard receptive vocabulary applicable to a wide age range. The PPVT-R includes a history of being used as a screening device to measure intelligence (Kamphaus, 1993). Since the introduction of the first edition of the PPVT in 1959, it has been widely used despite noted psychometric and technical problems (Hollinger & Sarvis, 1984). However, many of the problems were addressed with the PPVT-R. According to Carvajal, Shaffer, and Weaver (1989) the PPVT-R does not sample a large enough set of skills to assess a client thoroughly. The PPVT-R Standard Score Equivalents should not be interpreted or used instead of intelligence tests, such as the Wechsler series (McCallum, 1985). The PPVT-R should not replace a complete and thorough assessment, but should be used for screening and rough approximations. The popularity of the PPVT series supports the need for continuing comparative research on the PPVT-III.

Reliability of the PPVT-R. There are twenty-three reliability studies of the PPVT-R mentioned in the PPVT-III manual. The five test-retest reliability studies resulted in coefficients that range from .69 to .92. The eighteen studies that assessed alternate-forms reliabilities resulted in coefficients that range from .54 to .91 (Williams & Wang, 1997). Bracken and Prasse (1983) found that there was a correlation of .87 between Forms L and M of the PPVT-R. Tillinghast, Morrow, and Uhlig (1984) found that alternate-form reliability coefficients compared favorably with those reliability coefficients reported in the PPVT-R manual. The coefficients of internal consistency ranged from .67 to .88 for Form L and .61 to .86 for Form M with children (Wiig, 1985). Split-half coefficients range from .61 to .86 with the most in the high .70s or low .80s (Jongsma, 1981). The research results from many of these studies indicate that the PPVT-R has significant reliability.

Validity of the PPVT-R. The PPVT-R correlates well with concepts that involve vocabulary such as, intelligence, achievement, and language. The PPVT-R can be a useful clinical instrument for screening specific populations (Williams & Wang, 1997). The concurrent validity coefficients suggest the PPVT-R scores correlate well with the Peabody Individual Achievement Test (Naglieri & Pfeiffer, 1983). Correlations up to .78 have been obtained from studies that examined the relationships between the PPVT-R Standard Score Equivalents and Wechsler Full Scale IQs, Stanford-Binet IQs, and McCarthy Scales of Children's Abilities (McCallam, 1985). The research reviewing the PPVT-R suggest it measures verbal comprehension consistently and reliably over time.

Comparisons of the WISC-R and PPVT-R. The popularity of both of these tests has contributed to the interest of many researchers. The PPVT-R

has a much shorter administration time than the WISC-R which has many advantages for individuals who use intelligence tests. The research gained from these comparisons can be very helpful when interpreting results and comparing recent revisions of these tests.

According to Hollinger and Sarvis (1984), findings suggest that the PPVT-R tends to underestimate WISC-R performance. The correlation coefficient between the PPVT-R and the verbal comprehension factor of the WISC-III was higher than the coefficient between the PPVT-R and the WISC-R Verbal Scale IQ. In this same study, they suggested the need to approach interpretation of the PPVT-R with recognition of the complexity of abilities involved in successful performance on the test. Smith, Smith, and Dobbs (1991) found a correlation of .81 between the PPVT-R and the WISC-R Verbal IQ score. Altepeter and Handal (1985) found that the PPVT-R standard score correlated significantly with the WISC-R Verbal Scale (.79). The PPVT-R correlated the highest with the Verbal IQ score. Worthing, Phye, and Nunn (1984) also studied the relationship between the PPVT-R and WISC-R and found a much lower correlation .52 for the Verbal IQ, although it was still the highest correlation. Finally, Naglieri (1982) revealed the PPVT-R correlated significantly with the subtests most influenced by verbal comprehension.

Comparisons of the WISC-III and PPVT-R. Since the revision of the WISC-III, there have been a few studies that have compared it with the PPVT-R. Carvajal, Hayes, Miller, Wiebe, and Weaver (1993) found strong correlations of all five of the Wechsler Verbal subtest scaled scores with the PPVT-R equivalents. The Vocabulary subtest scores had the highest correlation of any subtest, and the Verbal IQ score was the overall highest

correlation. Hodapp and Hass (1997) also compared the WISC-III and PPVT-R with 84 students and found that the highest correlation was between the Verbal IQ and PPVT-R (.65). The WISC-III and the PPVT-R assess similar constructs and therefore provide evidence for the criterion-related validity of the WISC-III and PPVT-R (Slate, 1995). The WISC-III and the PPVT-R seem to have at least moderate correlations in research overall. The moderate correlations between the PPVT-R and the WISC-III are sufficient to warrant the use of the PPVT-R as a brief screening test for children between grades three and five (Carvajal et al.).

Other Comparisons with the PPVT-R. The PPVT-R is a brief intelligence test that is often used as a screening test. Comparisons of other screening tests and intelligence tests are important to get the complete picture for this particular study. Vance, Kitson, and Singer (1983) compared the PPVT-R and McCarthy Screening Test (MST). They found all of the MST subtests correlated positively and significantly with the PPVT-R. Childers and Durham (1994) compared the Kaufman Brief Intelligence Test (K-BIT) with the PPVT-R. In this study, 58 children were given both the PPVT-R and the K-BIT. The .75 correlation between the tests' standard scores indicated a 56 percent shared variance between the tests. These two studies involved two different screening tests, which also showed strong correlations between them and the PPVT-R.

The PPVT-R can be used with children as young as 2 through adulthood. Wechsler also developed a test for younger children, known as the Wechsler Preschool and Primary Scale of Intelligence - Revised (WPPSI-R) and a test for adults, known as the Wechsler Adult Intelligence Scale - Third Edition (WAIS-III). Carvajal, Parks, Logan, and Page (1992)

compared the IQ and Vocabulary scores on the WPPSI-R and the PPVT-R. In this study, they found no significant correlations between the two tests. As a result of this study, it was concluded that more studies were needed in order to use the PPVT-R as a screening test in place of the WPPSI-R (Carvajal, et al.). The PPVT-R has been found to give an approximation of American College Test (ACT) scores for counselors when WAIS scores are unavailable (Carvajal, McKnab, Gerber, Hewes, & Smith, 1989).

Vocabulary. As mentioned earlier, the PPVT-III measures receptive vocabulary. Vocabulary is an important aspect of this study, especially because it provides a useful index of a child's general mental ability and vocabulary is the core of the PPVT-III (Sattler, 1992). The WISC-III also has a subtest that is called Vocabulary. The Vocabulary subtest is a measure of the student's verbal fluency, word knowledge, and word usage (Nicholson & Alcorn, 1994). The Vocabulary subtest is the subtest that is most highly correlated to Full Scale IQ. Vocabulary is a good measure of general intelligence (g). The Vocabulary subtest involves the highest measure of g (.80) among all the WISC-III subtests (Kaufman, 1994). Bornstein and Haynes (1998) stated that language is a critical part of intelligence and plays a role in many standardized tests, such as the PPVT-III and the WISC-III. In addition, the variance in comprehension that is not shared with vocabulary competence predicts both Verbal and Performance IQ scores. This statement emphasizes the importance of children understanding language, word usage, and verbal fluency in a testing situation.

The intense use and popularity of these tests necessitate a solid research base on the WISC-III and the PPVT-R. The research on both of these tests confirm their high reliability and validity. Of course, more research

is needed on the PPVT-III because of the recent revision to support the use of the PPVT-III as a screening tool for the WISC-III. The correlations between the PPVT-R and the WISC-III/WISC-R are very important to recall. The studies that were reviewed indicated the Verbal IQ having the highest correlation with the PPVT-R. The Vocabulary subtest also had the highest correlation among the subtests and the PPVT-R. These details are important in making assumptions and asking questions about future comparisons on the revisions of these two tests. In order to do this, research and studies will be needed to validate the correlations and comparisons.

Summary

When a psychological test is the essence of a study, a review of each test involved is necessary. The WISC-III and PPVT-R were both found to be highly reliable and valid assessment tools. The PPVT-R was reviewed intensively because there is virtually no research on the PPVT-III. The publication of the PPVT-III has led to questions of the test being similar to its predecessor, the PPVT-R. There have been several changes to the PPVT-III, which requires updating research on the PPVT. The PPVT-R has been compared with the WISC-III, and there were significant correlations found between these two tests. Past research has also shown significant correlations between the PPVT-R and a variety of screening, intelligence, and achievement tests. In order to further study the revision of the PPVT-III, this study will compare it with the WISC-III to determine concordance between the instruments.

Research Questions

Based on the past research involving the Wechsler series and the PPVT series, the following research questions were developed:

Research Question 1: What are the relationships between the WISC-III Verbal, Performance, and Full Scale IQs and PPVT-III Standard Score Equivalents?

Research Question 2: What is the relationship between the WISC-III Vocabulary Subtest scores and the PPVT Standard Score Equivalents?

Research Question 3: What is the relationship between the WISC-III Verbal Comprehension Factor Score and the PPVT-III Standard Score Equivalents?

Hypotheses

Based on these research questions, the following hypotheses were derived:

Hypothesis 1a: The relationship between the WISC-III Verbal IQs and PPVT-III Standard Score Equivalents will be significant.

Hypothesis 1b: The relationship between the WISC-III Full Scale IQs and PPVT-III Standard Score Equivalents will be significant.

Hypothesis 1c: The relationship between the WISC-III Performance IQs and the PPVT-III Standard Score Equivalents will not be significant.

Hypothesis 2: The relationship between the WISC-III Vocabulary subtest scores and the PPVT-III Standard Score Equivalents will be significant.

Hypothesis 3: The relationship between the WISC-III Verbal Comprehension Factor Score and the PPVT-III Standard Score Equivalents will be significant.

CHAPTER 2

METHOD

Participants

Target Population. The members of this group included six, seven, and eight-year-old boys and girls in a Midwestern town with a population around 26,000. The members of this population included those enrolled in two elementary schools.

Accessible Population. The individuals of this group were elementary school boys and girls between the ages of six and eight. The members of this population were volunteers from Butcher Elementary School and Sacred Heart Elementary School in Emporia, Kansas. These children were available to the examiner for the completion of this study and are comparable to the target population, including six, seven, and eight year olds from the Midwest.

Sampling procedures. Research involving children includes many precautions. Research studies involving school children must follow specific procedures that first begin with administration of the elementary schools and the parents of children. The principal of Butcher Elementary School was informed of the study and was asked for permission to use the children at the school for the research project. After this was approved, a letter and consent form was sent to the parents of the 6, 7, and 8-year-old children at Butcher Elementary. Parents of Sacred Heart Elementary School students between the ages of 6 and 8 were also given a letter and consent form by a university employee who was a member of Sacred Heart Church. The letter and consent form advised parents of the purpose of the study, the procedures involved, and requested permission to test their child (see Appendix B and C).

As the consent forms were returned to the examiner, each individual was given a number. A total of 32 children (16 boys, 16 girls) were chosen for this study. The 32 participants were chosen by numbering the parental consent forms in the order the forms were received. This volunteer method was used because in order to be included in the sample the parents of each child was requested to complete a consent form. Carvajal et al. (1993) also obtained their sample from the consent forms received from parents involving a similar comparison study. The ethics of research indicate that studies involving children must include a consent form signed by their parents or guardian. Consequently, this sampling procedure was necessary for the completion of this study.

Experimental Design

This study included intelligence testing of children, scoring of the tests, calculation of statistical analyses and interpretation of results. This section goes into detail about each of these steps. This study also compared previous research that involved completed comparisons of the WISC and PPVT.

Research method. This study is a type of research known as associational, which investigates relationships. Correlational research, an example of associational research, involves determining relationships among two or more variables. The purpose of this study was to determine if there were relationships between the scores of the WISC-III and the PPVT-III. Associational research is often used to predict future outcomes. In this comparison study, the purpose was to determine if scores obtained on the PPVT-III were comparable to the scores obtained by the use of the WISC-III.

Research involving testing requires a very controlled environment to obtain reliable scores. The researcher strived to find the best times and environment to test the children, which was determined by the parents and educators of children from Butcher Elementary School and Sacred Heart Elementary School. Time and setting are important factors in any testing situation. Therefore, each child was tested in a room with few distractions and times were agreed upon by the teachers, parents, and children.

The children were not given both tests in one session, in order to help avoid unmotivated, unwilling, and tired participants. The examiner allowed the child breaks if needed. The administration of the PPVT-III and the WISC-III was counterbalanced.

Instruments

The WISC-III and the PPVT-III Form A were the assessment tools that were utilized to complete this study. Scoring sheets for each of these tests were completed by the examiner to determine the WISC-III scores and the PPVT-III Standard Score Equivalents.

Procedure

Before the data were collected of the participants in this study, an application for permission to use human subjects was approved by Emporia State University's Institutional Review Board. The parents of the children age six, seven, and eight, of Butcher Elementary School and Sacred Heart Elementary School were notified about the study and were asked to sign and return the consent form, so that their children could participate in this study. The consent forms were sent home with each child on a Monday and the parents were asked to return the form by Friday. Twenty-one consent forms returned led to a second letter being sent to parents the following week. The

other 11 consent forms were received following this letter gaining the 32 participants needed for this study.

Once the preliminary data collecting procedures were completed each child was tested individually. The administration of each test strictly followed the procedures in the WISC-III and PPVT-III manuals. The WISC-III and PPVT-III were scored following the administration of each test. All of the data came from the scores of these two tests. The scores were converted to standard scores for statistical analyses.

CHAPTER 3

RESULTS

In this study, Person product-moment correlation coefficients were computed to determine the following relationships: WISC-III Full Scale IQ scores and PPVT-III Standard Score Equivalents, WISC-III Verbal IQ scores and PPVT-III Standard Score Equivalents, WISC-III Performance IQ scores and PPVT-III Standard Score Equivalents, WISC-III Verbal Comprehension Factor and Standard Score Equivalents, and WISC-III Vocabulary subtest scores and PPVT-III Standard Score Equivalents.

The means and standard deviations for the WISC-III Full Scale IQs, Verbal IQs, Performance IQs, Verbal Comprehension Factor scores, Vocabulary subtest scores, and PPVT-III Standard Score Equivalents for the entire sample are summarized in Table 2. These descriptive statistics were also summarized for the girls and boys in Tables 3 and 4. The correlations between these scores were computed for the complete sample and for girls and boys separately (see Table 1). All correlations except the boys' correlation between the WISC-III Performance IQs and the PPVT-III SSEs achieved statistical significance ($p < .05$ and $p < .01$).

Table 1

Pearson Product-Moment Correlations Between WISC-III Scores and PPVT-III Standard Score Equivalents (SSE)

	PPVT-III		
Wechsler Intelligence Scale for Children - III	Complete Sample	Girls	Boys
Full Scale IQ	.63**	.61**	.66**
Verbal IQ	.69**	.63**	.76**
Performance IQ	.38*	.45*	.28
Verbal Comprehension Factor Score	.66**	.58**	.77**
Vocabulary Subtest	.51**	.50*	.53*

*$p < .05$
** $p < .01$

Table 2

Means and Standard Deviations for the WISC-III and the PPVT-III for All Participants

Tests	M	SD
Full Scale IQ	111.59	10.09
Verbal IQ	108.88	9.28
Performance IQ	112.81	13.04
Verbal Comprehension Factor Score	108.69	8.54
Vocabulary Score	10.81	1.87
PPVT-III Standard Score Equivalent	108.31	7.50

Table 3

Means and Standard Deviations for the WISC-III and the PPVT-III for Girls

Tests	M	SD
Full Scale IQ	113.69	10.00
Verbal IQ	110.94	8.07
Performance IQ	115.06	13.23
Verbal Comprehension Factor Score	111.06	7.11
Vocabulary Score	11.25	2.02
PPVT-III Standard Score Equivalent	108.88	8.07

Table 4

Means and Standard Deviations for the WISC-III and the PPVT-III for Boys

Tests	M	SD
Full Scale IQ	109.50	10.06
Verbal IQ	106.81	10.09
Performance IQ	110.56	12.86
Verbal Comprehension Factor Score	106.31	9.39
Vocabulary Score	10.38	1.67
PPVT-III Standard Score Equivalent	107.75	7.10

CHAPTER 4

DISCUSSION

Hypothesis 1a stated there would be a strong relationship between the Verbal IQs and PPVT-III SSEs and Hypothesis 1b suggested a strong relationship between the Full Scale IQs and PPVT-III SSEs. The correlations calculated for this study suggest that these hypotheses were supported, although the strength of the relationships was not as high as expected. Hypothesis 1c stated that the relationship between the Performance IQs and the SSEs would be weak. This statement was also supported, as this correlation was the lowest for the total sample and for the boys and girls. The correlations between the Performance IQs and the SSEs for the boys was found to be not significant. Hypothesis 2 stated there would be a strong relationship between the Vocabulary subtest and PPVT-III SSEs. Moderate support was found for this hypothesis. The correlations were not as high as others calculated in this study, however, they were moderate in magnitude and statistically significant. Hypothesis 3 predicted that a strong relationship would be found between the Verbal Comprehension Factor Score and the PPVT-III SSE. This hypothesis was also supported. Overall, the hypotheses were supported. However, the relationships were not as strong as expected.

The mean Wechsler Intelligence Scale for Children-Third Edition (WISC-III) IQs and Peabody Picture Vocabulary Test-Third Edition were higher than the norms for the American population. Carvajal et al. (1993) had similar means (FS=112.6, V=113.2, P=110.2, SSE=112.4) for children ages 8 to 11. The standard deviations for the Verbal IQs, Vocabulary subtests, Verbal Comprehension Factor Scores, and PPVT-III SSEs were smaller than the national averages found in the manuals. The volunteer sampling procedure used

in this study may have contributed to the increased scores overall. Because the sample was not chosen randomly, the findings should be generalized with caution. Future studies should attempt to acquire a random sample from the area schools, which would allow the findings to generalize to the population. The number of participants in this study was very small, also indicating that this study should be generalized with caution. A minimum of fifty participants would be a preferred sample size.

This study verified the findings of Hollinger and Sarvis (1984) that PPVT underestimated WISC scores. The highest correlation found was between the Verbal IQ scores and the PPVT-III Standard Score Equivalents (.69). Hodapp and Hass (1997) compared the WISC-III and the PPVT-R and similarly found the highest correlation between the Verbal IQ and the PPVT-R (.65). Carvajal et al. (1993) also found the overall highest correlation with the PPVT-R was the Verbal IQ.

The Vocabulary subtest correlation with the PPVT-III was weaker than expected. Carvajal et al. (1993) found that the Vocabulary subtest had the highest correlation of any subtest. The scores of the Vocabulary subtest for this study were homogeneous and the standard deviations were much lower than the standardization norms in the WISC-III manual. The Vocabulary subtest range was 8 to 14, with one outlier (16). Most of the scores ranged from 10 to12. However, there were greater differences between the PPVT-III Standard Score Equivalents. It is of interest that the WISC-III Vocabulary scores did not have a stronger relationship. Future research may want to examine how age influences correlations between PPVT-III SSEs and Vocabulary subtest scores. The correlation between these scores were lower than other findings in the literature.

Both the WISC-III and the PPVT-III were administered and scored by the investigator of this study. Therefore, experimenter bias must be considered under these conditions. The examiner strived to reduce any bias by scoring each test within one day of administering it. Because the administration was counterbalanced, the second test was not administered until approximately one to two weeks had passed. Testing at different times and under different circumstances, such as a child having a "good" or "bad" day, may have an influence on the outcome of this study, and should be taken into consideration.

The PPVT-III proved to be a moderate estimate of the WISC-III. However, there are many differences between these two assessment tools. The PPVT-III administration time is much shorter than the administration time of the WISC-III. The WISC-III assesses a variety of abilities, it also allows the clinician to get a better understanding of the child's abilities and observe their behavior. When an assessment is needed of a child's cognitive or intellectual abilities, the clinician must decide if a screening or full intellectual assessment is necessary. In circumstances when the clinician needs an estimate of a child's intellectual functioning, the PPVT-III is acceptable as a screening test.

This study found the updated version of the PPVT series similar to correlations of earlier research between PPVT-R and WISC scores. This study supports using this revision as a screening tool for intellectual functioning. However, the test should not replace the scores of the WISC-III, as the assessment of the WISC-III measures a more complex and thorough array of verbal abilities.

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APPENDICES

APPENDIX A

PERMISSION LETTER

January 4, 1999

Dr. Michael Kasnic
Butcher Children's School
Emporia, KS 66801

Dear Dr. Kasnic:

Hello, my name is Iris Jirak. I am currently in the second year of the master's program in clinical psychology. I am beginning to prepare for my thesis. I am planning to do a study on the comparison of the Wechsler Intelligence Scale for Children - Third Edition (WISC-III), and the recently revised Peabody Picture Vocabulary Test - Third Edition (PPVT-III). The WISC-III is the most popular intelligence test for children and the PPVT-III is the most popular screening test. In completing this study, I would like to test a total of approximately thirty-two children between the ages of six and eight from Butcher Children's School. The administration of the two tests will approximately take about ninety minutes. I would like to begin this study, possibly in January.

After administering the tests, I will be scoring each of them. These scores would be available to you for your school records. The scores can also be available for parents who are interested. The administration and scoring of these tests can get very expensive. I will be paying for the materials for the tests and will be administering and scoring each of the tests. Therefore, this could be very beneficial to you and the parents of children attending your school as you will receive all of this information at no charge. All parents will be sent a letter explaining the purpose of the study and what would be involved. This letter will also include an informed consent form, which indicates whether or not they allow their child to be tested.

I would really appreciate your support and permission to test the children at your school. With your support, I will be able to complete a study that will be beneficial to professionals in education as well as psychology. I would like to meet with you to discuss the implications of the study and any questions you may have for me. Mr. Howard Carvajal is my sponsor for this study and would also be willing to meet with us if you would like. I will call you to arrange a time that is convenient for you to discuss the possibility of conducting this study. I greatly appreciate your time and consideration.

Sincerely,

Iris Jirak
Clinical Psychology student

APPENDIX B

PARENTAL CONSENT FORM

February 12, 1999

Dear Parents,

Hello, my name is Iris Jirak. I am currently in the second year of the master's program in clinical psychology. I am beginning to prepare for my thesis. I am planning to do a study on the comparison of the Wechsler Intelligence Scale for Children - Third Edition (WISC-III), and the recently revised Peabody Picture Vocabulary Test - Third Edition (PPVT-III). The WISC-III is the most popular intelligence test for children, and the PPVT-III is the most popular screening test. In completing this study, I would like permission to test your child using these two tests. The administration of the two tests will be given during the school day or if possible after school. The results of these tests will remain strictly confidential and will only be used to complete my research project.

You should be aware that even if you agree to allow your child to participate, you are free to withdraw you child at any time, and that if you do withdraw your child from the study, your child will not be subjected to any negative consequences. I would really appreciate your support and permission to test your child. With your support, I will be able to complete a study that will be beneficial to professionals in education as well as psychology. If you have any questions about the study, please feel free to contact me at 343-9419. Thank you.

Sincerely,

Iris Jirak
Clinical Psychology student

CONSENT

I give permission for Iris Jirak to administer a Wechsler Intelligence Scale for Children - Third Edition and Peabody Picture Vocabulary Test - Third Edition to my child _____ as a part of her training for the thesis requirement from Emporia State University. Of course, any information obtained through the administration of these two tests will be kept confidential.

_____ _____

Name Date

_____

Phone

APPENDIX C

PARENTAL CONSENT FORM #2

February 22, 1999

Dear Parents,

Hello, my name is Iris Jirak. I am currently in the second year of the master's program in clinical psychology. I am beginning to prepare for my thesis. I am planning to do a study on the comparison of the Wechsler Intelligence Scale for Children - Third Edition (WISC-III), and the recently revised Peabody Picture Vocabulary Test - Third Edition (PPVT-III). The WISC-III is the most popular intelligence test for children, and the PPVT-III is the most popular screening test. In completing this study, I would like permission to test your child using these two tests. The administration of the two tests will be given during the school day or if possible after school. The results of these tests will remain strictly confidential and will only be used to complete my research project.

I recently sent this letter home with your child, however I would like to gain more children for this study. If you didn't sign and return this form already, **I would appreciate your support in allowing your child to participate in this study**. You should be aware that even if you agree to allow your child to participate, you are free to withdraw you child at any time, and that if you do withdraw your child from the study, your child will not be subjected to any negative consequences. With your support, I will be able to complete a study that will be beneficial to professionals in education as well as psychology. If you have any questions about the study, please feel free to contact me at 343-9419. Please have your child return this form to their teacher as soon as possible. Thank you.

Sincerely,

Iris Jirak
Clinical Psychology student

CONSENT

I give permission for Iris Jirak to administer a Wechsler Intelligence Scale for Children - Third Edition and Peabody Picture Vocabulary Test - Third Edition to my child _____ as a part of her training for the thesis requirement from Emporia State University. Of course, any information obtained through the administration of these two tests will be kept confidential.

_____ _____

Name Date

_____

Phone

I, Iris M. Jirak, hereby submit this thesis/report to Emporia State University as partial fulfillment of the requirements of an advanced degree. I agree that the Library of the University may make it available to use in accordance with its regulations governing materials of this type. I further agree that quoting, photocopying or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves financial gain will be allowed without permission of the author.

Iris M. Jirak
Signature of Author

May 13, 1999
Date

Correlations Among the Scores of the Wechsler Intelligence Scale for Children-III and the Peabody Picture Vocabulary Test-III
Title of Thesis / Research Project

Signature of Graduate Office Member

May 13, 1999
Date Received