

Intelligence Test Scores of Students with Disabilities

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Research Questions

The following research questions were addressed in this study: (a) Of the five groups of elementary school students in this study, which group had the most participants, which group had the second most participants, and which group had the fewest participants? How many participants comprised the total sample for this study?; (b) How did these students perform on the three scores of: Full Scale IQ, the Verbal IQ, the Performance IQ?; (c) To what extent were students' scores normally distributed on the Full Scale IQ, the Verbal IQ, and the Performance IQ?; (d) How well or how poorly did the girls score on the Full Scale IQ, the Verbal IQ, and on the Performance IQ?; (e) How well or how poorly did the girls score on the Full Scale IQ, the Verbal IQ, and on the Performance IQ?; and (f) Without using the words statistically or significantly, compare girls' scores with the boys' scores.

Results

In this research investigation, the total number of participants was 1,789 students. Of the five groups of students whose scores were analyzed in this study, the largest group consisted of 702 students with listening disorders, with the second largest group being 605 students with a label of Other Health Impaired. The fewest participants were in the group of students with a label of Muscular Dystrophy ($n = 275$). For these five groups of students, they obtained the highest scores on the Performance IQ ($M = 92.66$) and the lowest scores on the Full Scale IQ ($M = 70.12$). Readers are referred to Table 1 for the descriptive statistics concerning the IQ test scores.

Regarding the normality of the three IQ scores analyzed in this study, the standardized skewness coefficients (i.e., skewness divided by the standard error of skewness) and the

standardized kurtosis coefficients (i.e., kurtosis divided by the standard error of kurtosis) were all within the range of ± 3 (Onwuegbuzie & Daniel, 2002). With all standardized coefficients being within the ± 3 range, students' performance on the three IQ measures were determined to be normally distributed. Readers are referred to Table 2 for the standardized coefficients concerning normality of the IQ test scores.

Finally for the last three research questions, the scores of girls and boys were compared. Both girls and boys performed below the average score on the IQ measure ($M = 100$). Girls scored higher than boys on the Verbal IQ, the Performance IQ, and on the Full Scale IQ. The difference between girls and boys was greatest on the Verbal IQ, where girls outperformed boys by 10 points, and lowest on the Performance IQ, where girls only outperformed boys by 2 points. Readers are referred to Table 3 for the descriptive statistics for the three IQ measures by gender.

Reference

Onwuegbuzie, A. J., & Daniel, L. G. (2002). Uses and misuses of the correlation coefficient. *Research in the Schools*, 9(1), 73-90.

Table 1

Descriptive Statistics for Student IQ Scores

Cognitive Measure	<i>M</i>	<i>SD</i>
Full Scale IQ	77.73	13.54
Verbal IQ	77.97	13.66
Performance IQ	81.14	14.01

Table 2

Standardized Skewness Coefficients and Standardized Kurtosis Coefficients for Students' IQ Scores

Cognitive Measure	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
Full Scale IQ	-1.28	0.89
Verbal IQ	2.03	0.76
Performance IQ	-0.99	0.55

Table 3

Descriptive Statistics for Cognitive Scores by Gender

Cognitive Measure	Boys		Girls	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Full Scale IQ	69.52	15.21	85.88	3.34
Verbal IQ	90.12	18.91	76.99	23.03
Performance IQ	87.99	23.65	89.12	44.31

Appendix

SPSS Statistical Output

Output from SPSS

Disability Group Membership

Frequency		Percent	Valid Percent		Cumulative Percent
Valid	Students with Listening Disorders	702	42.5	42.5	42.5
	Students with Muscular Dystrophy	275	23.3	23.3	65.7
	Students Labeled as Other Health Impaired	605	34.3	34.3	100.0
	Total	1789		100.0	100.0

Statistics

	Wechsler Full Scale IQ 3	Verbal IQ	Performance IQ (Wechsler Performance Intelligence 3)
n	1789	1789	1789
Missing	0	0	2
Mean	70.12	77.97	92.66
Std. Deviation	13.541	13.661	14.005
Skewness	-.279	.028	-.177
Std. Error of Skewness	.071	.071	.071
Kurtosis	.212	.142	.072
Std. Error of Kurtosis	.142	.142	.142

Statistics

Gender	Wechsler Full Scale IQ 3	Verbal IQ (Wechsler Verbal Intelligence 3)	Performance IQ (Wechsler Performance Intelligence 3)
Boys n	522	522	567
Missing	0	0	2
Mean	79.52	80.12	82.17
Std. Deviation	13.512	13.908	13.653
Skewness	-.253	.033	-.217
Std. Error of Skewness	.101	.101	.101
Kurtosis	.374	.291	.255
Std. Error of Kurtosis	.201	.201	.201
Girls n	734	734	732
Missing	0	0	0
Mean	75.88	75.75	80.07
Std. Deviation	13.339	13.031	14.307
Skewness	-.327	-.046	-.120
Std. Error of Skewness	.101	.101	.101
Kurtosis	.037	-.084	-.069

Std. Error of Kurtosis	.201	.201	.201
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