

Relationship between IQ scores, Educational Achievement Scores (Reading Comprehension) and Language Arts Performance (First Grading Period) among new students at Eagle Ranch School (Fall 2006)

Description

This study investigates the relationship between Full Scale IQ scores, reading comprehension scores as tested by the Kauffman Test of Educational Achievement II, and the Language Arts performance during the first grading period of the 2006/2007 school year, of newly enrolled students at the Eagle Ranch School. The study was performed during the first six week grading period of the 2006/2007 school year and involved a total of 16 students.

Methods

Students enrolled at Eagle Ranch School arrive with a full psychological evaluation which includes current IQ scores. Upon entering the program, Eagle Ranch School tests each student with the Kauffman Test of Educational Achievement II to determine academic strengths and deficits. For the purpose of this study, Reading Comprehension Grade Equivalent scores will be analyzed. Finally, the above two scores will be compared with the students' performance during the first six weeks of school in Language Arts to determine if any significant relationships exist between the three variables: IQ, achievement, and performance. IQ scores and Reading Comprehension scores will also be compared to determine if any correlation exists.

Results:

The descriptive statistics and the correlations are shown in the tables below:

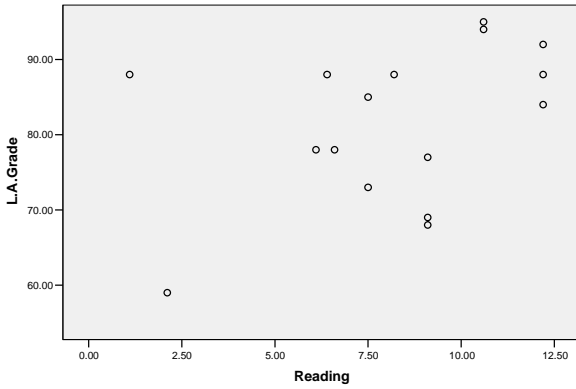
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IQ	16	74.00	113.00	93.8750	8.96568
Reading	16	1.10	12.20	8.1631	3.27227
L.A. Grade	16	59.00	95.00	81.5000	10.32150

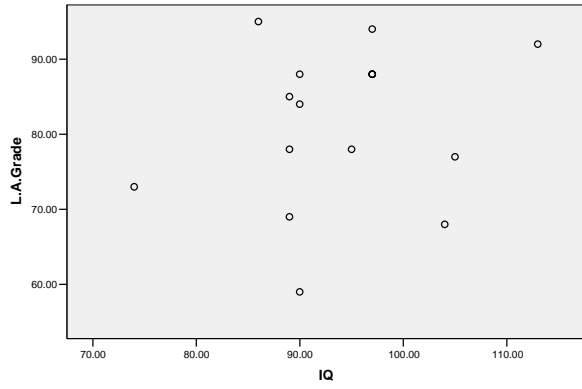
Correlations

		IQ	Reading	L.A. Grade
IQ	Pearson Correlation	1	.224	.206
	Sig. (2-tailed)		.405	.444
	N	16	16	16
Reading	Pearson Correlation	.224	1	.412
	Sig. (2-tailed)	.405		.113
	N	16	16	16
L.A. Grade	Pearson Correlation	.206	.412	1
	Sig. (2-tailed)	.444	.113	
	N	16	16	16

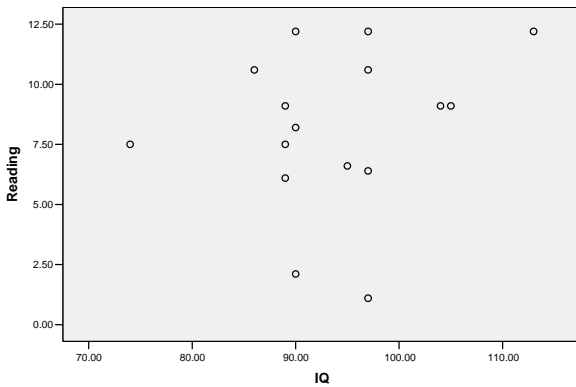
Language Arts Grade vs. Reading



Language Arts Grade vs. I.Q.



Reading Comprehension vs. I.Q.



Discussions/Conclusions

The strongest correlation was found between the reading comprehension score and the Language Arts grade ($r=+.412$). This correlation can be expected since a large part of the Language Arts grade is comprised of literature studies. Students who do well in Language Arts are usually those who read well. Interestingly, one of the students who has a very low reading comprehension score was able to score in the 90's in Language Arts. This is most likely due to a strong work ethic and modifications being made for her low reading ability. As illustrated below, if this outlier is removed the correlation between reading comprehension and Language Arts grade increases to a statistically significant level ($+.631$).

Correlations

		Reading	L.A. Grade
Reading	Pearson Correlation	1	.631(*)
	Sig. (2-tailed)		.012
	N	15	15
L.A. Grade	Pearson Correlation	.631(*)	1
	Sig. (2-tailed)	.012	
	N	15	15

*Correlation is significant at the 0.05 level (2-tailed).

A slight positive correlation is found between IQ score and Language Arts grade of $r=+.206$. Since the Language Arts grade is made up of assignments and tests which are based upon effort and work ethic this slight correlation is not surprising. In many cases, intelligent children choose not to complete work or to study, resulting in a lower grade. Additionally, students with lower IQ's often receive modified assignments which are designed to meet them at their intellectual level and, there again; the grade is based more upon work ethic than intellect.

Reading comprehension and IQ have a slight positive correlation as well ($r=+.224$). Quite frankly, I'm surprised this correlation was not more significant. This may be due to the fact that many of the students at Eagle Ranch have specific learning disabilities in reading and/or math. In fact, one of the measures used to determine a learning disability is a 15 point discrepancy between I.Q. scores (standard) and achievement scores (standard).

This study confirms that reading comprehension is an important factor with regard to Language Arts success. While I.Q. measures academic potential, it certainly does not predict success in school, particularly Language Arts. Based upon the research conducted it appears that I.Q. does not have a significant impact on Language Arts performance. However, it would be interesting to see if a correlation exists between students' *Verbal* I.Q. score and Language Arts performance. Further study needs to be conducted to determine what factors other than reading comprehension influence Language Arts performance. How much do student motivation, work ethic and organization enhance Language Arts performance? Based upon this study, students can be encouraged that intellectual deficits can be overcome in pursuing academic success. While high scores in Reading Comprehension account for around 16% and full scale I.Q. scores account for around 4% of success, the remaining 80% may well be in the hands of the students themselves.

EPRS 8530
Writing Project: Project One

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Raw Data:

		IQ	Reading	L.A. Grade
1		90.00	12.20	84.00
2		90.00	2.11	59.00
3		105.00	9.10	77.00
4		90.00	8.20	88.00
5		86.00	10.60	95.00
6		95.00	6.60	78.00
7		97.00	6.40	88.00
8		113.00	12.20	92.00
9		89.00	7.50	85.00
10		104.00	9.10	68.00
11		89.00	6.10	78.00
12		89.00	9.10	69.00
13		97.00	10.60	94.00
14		74.00	7.50	73.00
15		97.00	12.20	88.00
16		97.00	1.10	88.00
Total	N	16	16	16