CHAPTER IV

FINDING AND DISCUSSION

This chapter the writer present about The Description of Data, Hypothesis Testing, and Discussion.

A. The Description of Data

In this chapter, it will be discussed and explained about the score of Intelligence Quotient and the result of students' English Achievement which have been collected. To find out whether there is significance correlation between Intelligence Quotient (IQ) and Students' English Achievement.

1. Data of Students' Intelligence Quotient

From the table, it can be seen the total score from 29 respondents is 3339 . the minimum score is 94, Maximum score is 133, mean is 115.13, median is 115, mode is 121.

In this case, students' IQ score is as independent variable (X). the IQ score of X science 1 students that held by Pusat Layanan Psikologi Univesitas Muhammadiyah Malang on February 24th 2013, as follows:

Table 4.1

The score of Students' IQ

N	Name	Score of Students' IQ (X)
1	AR	107
2	AM	97
3	AAL	121
4	AD	113
5	AH	126
6	AS	123
7	ALR	130
8	AF	100
9	DAT	109
10	DASD	103
11	EN	115
12	HKW	121
13	INH	108
14	KN	129
15	KAI	133
16	KAA	113
17	LN	120
18	MFAP	121
19	NDC	113
20	NRFJ	110
21	NN	94
22	NI	115
23	NA	126
24	REK	117
25	RFM	114
26	RFR	119
27	SPA	131
28	SM	115
29	WPD	96
∑ 29		**∑ 3339**

2. Data of Students' Achievement

From the table, it can be seen the total score from 29 respondents is 2348, the minimum score is 70, Maximum score is 90, mean is 80.96, median is 82, mode is 86.

In this case, students' achievement is as dependent variable (Y). the writer took the students' English score from the result of students' test. The data is described on the following table:

Table 4.2

The score of Students' Achievement

N	Name	score of Students' Achievement (Y)
1	AR	80
2	AM	70
3	AAL	86
4	AD	87
5	AH	86
6	AS	76
7	ALR	86
8	AF	74
9	DAT	76
10	DASD	72
11	EN	82
12	HKW	86
13	INH	76
14	KN	84
15	KAI	90
16	KAA	84
17	LN	86
18	MFAP	82

Continue to the next page

19	NDC	80
20	NRFJ	78
21	NN	74
22	NI	86
23	NA	86
24	REK	76
25	RFM	84
26	RFR	78
27	SPA	87
28	SM	80
29	WPD	76
		∑2348

3. The Correlation Between Intelligence Quotient and Students Achievement

After achieving the data of the IQ score as variable X and score of English learning achievement as variable Y, the next step is determine the calculation table, which is to be used as the calculation for the index score correlation of product moment.

In this case, both of students' IQ score and English score are correlated by using Person's Product Moment formula. The data describe on the following table:

Table 4.3

Coefficient Correlation Variable X and Variable Y

N	X	Y	X . Y	X2	Y2
1	107	80	8560	11449	6400
2	97	70	6790	9409	4900

Continue to the next page

3	121	86	10406	14641	7396
4	113	87	9831	12769	7569
5	126	86	10836	15876	7396
6	123	76	9348	15129	5776
7	130	86	11180	16900	7396
8	100	74	7400	10000	5476
9	109	76	8284	11881	5776
10	103	72	7416	10609	5184
11	115	82	9430	13225	6724
12	121	86	10406	14641	7396
13	108	76	8208	11664	5776
14	129	84	10836	16641	7056
15	133	90	11970	17689	8100
16	113	84	9492	12769	7056
17	120	86	10320	14400	7396
18	121	82	9922	14641	6724
19	113	80	9040	12769	6400
20	110	78	8580	12100	6084
21	94	74	6956	8836	5476
22	115	86	9890	13225	7396
23	126	86	10836	15876	7396
24	117	76	8892	13689	5776
25	114	84	9576	12996	7056
26	119	78	9282	14161	6084
27	131	87	11397	17161	7569
28	115	80	9200	13225	6400
29	96	76	7296	9216	5776
	∑3339	**∑2348**	**∑271580**	**∑387587**	**∑190910**

After calculation of the whole data from variable X and variable Y, the next step is to insert the data from the table into the Pearson's product moment formula to find the correlation index as follow:

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{N\sum X^2 - (\sum X)^2\}\{N\sum Y^2 - (\sum Y)^2\}}}$$

$$r_{xy} = \frac{29 \text{ x } 271580 - (3339)(2348)}{\sqrt{\{29 \text{ x } 387587 - (3339)^2\}\{29 \text{ x } 1909910 - (2348)^2\}}}$$

$$r_{xy} = \frac{7875820 - 7839972}{\sqrt{\{11240023 - 11148921\}\{5536390 - 5513104\}}}$$

$$r_{xy} = \frac{35848}{\sqrt{\{91102 \text{ x } 23286\}}}$$

$$r_{xy} = \frac{35848}{\sqrt{2121401172}}$$

$$r_{xy} = \frac{35848}{46058{,}67}$$

$$r_{xy} = 0{,}778$$

The last step is determining Degree of freedom (d*f*)

df = N-1 = 29 – 1 = 28

df = 28 (see table of ”r” values of degree of significance 5% and 1%)

At the degree of significance 5% = 0,361

At the degree of significance 1% = 0,463

5% = ro : rt = 0,778 : 0,361

1% = ro : rt = 0,778 : 0,463

Table 4.4
Interpretation of "r" Value Correlation Product Moment Person for Variety of d*f*

D*f* (Degree of Freedom)	"r" Values of Degree of Significance	
	5%	1%
1	0.977	1.000
2	0.950	0.990
3	0.878	0.959
4	0.811	0.917
5	0.754	0.874
6	0.707	0.834
7	0.666	0.789
8	0.632	0.765
9	0.602	0.735
10	0.576	0.708
11	0.553	0.684
12	0.532	0.661
13	0.514	0.641
14	0/497	0.623
15	0.482	0.606
16	0.468	0.590
17	0.456	0.575
18	0.444	0.561
19	0.433	0.549
20	0.423	0.537
21	0.413	0.526
22	0.404	0.515
23	0.396	0.505
24	0.388	0.496
25	0.381	0.487
26	0.374	0.478
27	0.367	0.470
28	0.361	0.463
29	0.355	0.456
30	0.349	0.449

Continue to the next page

35	0.325	0.418
40	0.304	0393
45	0.288	0.372
50	0.273	0354
60	0.250	0.325
70	0.232	0.302
80	0.217	0.283
90	0.205	0.267
100	0.195	0.254
125	0.174	0.228
150	0.159	0.208
200	0.138	0.181
300	0.113	0.148
400	0.098	0.128
500	0.088	0.115
1000	0.062	0.021

After the writer proceeded the formula, as it had been found out about the result of correlation, the next step is to give the interpretation of "r" score (r_{xy}).

1. From the data of students' IQ score and their English score, it appeared that the correlation index between variable X and variable Y is 0,778. It means there is positive correlation between two variables. To give simple interpretation toward the correlation index "r" Product moment (r_{xy}) can be done by following table:

Table 4.5
Interpretation of Product Moment Score

"r" Score of Product Moment (r_{xy})	**Interpretation**
0.0 – 0.20	There is no correlation (Very low)
0.20 – 0.40	There is low correlation (Low)
0.40 – 0.70	There is medium correlation (Enough)
0.70 – 0.90	There is strong correlation (High)
0.90 – 1.00	There is very strong correlation (Very strong)

Looking at the score r_{xy} = 0.778 that the score approximately between 0.70 – 0.90 is strong correlation or high correlation or it means there is significance correlation between variable X and variable Y.

2. The writer used interpretation with table of value "r" : d*f* = N – 1 =29 – 1 = 28. Looking at the table of significance of 5% in r_{table} = 0.361, and 1% = 0.463 because r_{xy} on the table of significance of 5% is bigger than r_{table} (0.778 > 0.361), so on the table degree of significance of 5% the null hypothesis (Ho) is rejected but the alternative hypothesis (Ha) is accepted. So, it means on the degree of significance 5% there is a significance correlation between variable X and variable Y. Then, because on the degree of significance 1% r_{xy} is bigger than r_{table} (0.778 > 0.463) so on the degree of significance 1% the null hypothesis (Ho) is

rejected but the alternative hypothesis (Ha) is accepted. So, it means on the degree of significance 1% there is a significance correlation between variable X and variable Y.

From the calculation of estimation above, it concludes that there is strong correlation between students' Intelligence Quotient and their achievement in learning English, and hypothesis of the research is accepted. It means that between both variables is correlations.

B. Hypothesis Testing

To prove the result of hypothesis, the writer calculates the obtained data by using Pearson's coefficient of correlation or "Product Moment" as follow:

1. Formulation the alternative hypothesis (Ha): There is a significant correlation between variable X and variable Y.
2. Formulation the null hypothesis (Ho): There is not a significant correlation between variable X and variable Y.

From the formulation above, the writer followed some assumption as below:

1. If the result of calculation r_o is lower than r_t (r table) $r_o < r_t$, the null hypothesis (Ho) is accepted, and alternative hypothesis (Ha) is rejected.

2. If the result of calculation r_o is bigger than r_t (r table) $r_o > r_{t,}$ (0.778 > 0.361 < 0.463) the null hypothesis (Ho) is rejected, and alternative hypothesis (Ha) is accepted.

Based on description of calculation above, the result of this research is r_o is bigger than r_t (r table) $r_o > r_t$ (0.778 > 0.361 < 0.463), the null hypothesis (Ho) is rejected, and alternative hypothesis (Ha) is accepted.

C. Discussion

This study is conducted to find out the correlation between Intelligence Quotient (IQ) score and English achievement. As stated in a book by Slameti (56:2003) in a same situation the students has a high level of intelligence could be more successful than the students has a low level of intelligence. Eventhough the student was has a high level of intelligence not definitively success in their learning.

From the description above, it can conclude that the research could say the same from Slameti there is significance correlation between students' Intelligence Quotient and their achievement in learning English, where the intelligence quotient give contribution 0.778 from 1.00 score of interpretation of product moment. It means that the student who has high IQ score will get high score in English. Although not all of them get good score but the average of them will get good score.