CHAPTER IV

DATA ANALYSIS AND RESULTS

Introduction

This chapter presents the analysis of data and results obtained based on the research questions. In the first part, the distribution of marks in the IAR scale and the grades obtained in science the year 5 final year examination is given. The following section focuses on the orientation of the locus of control and its correlation to gender and the grades obtained in the science subject.

The discussion on the locus of control is based on the total marks obtained in the IAR scale. High total marks indicate internal locus of control and low total marks indicate external locus of control. A total score of 17 and above is the criteria for internal locus of control.

Background of the subjects

In this study, 30 questionnaires were prepared for 30 subjects. However, only 28 subjects answered, bringing the sample size to 28. The characteristics of the subjects is as shown below in table 3.

Table 3: Gender and the grades obtained.

Characteristics	Percentage
<u>Sex</u>	
Male	46.4 (13)
Female	53.6 (15)
<u>Grade in science</u>	
A	7.1 (2)
B	39.3 (11)
C	39.3 (11)
D	14.3 (4)

From the table above, it can be observed that the sample consists of 46.4% (13) boys and 53.6% (15) girls. Only 7.1% (2) of the students obtained A. 39.3% (11) of the students obtained B and C respectively and 14.3% (4) students D in their science examination in year 5. The table below shows the subjects' achievement in science in their year 5 final year examination.

Table 4: Achievement in year 5 science examination.

Grades	Male	Female
A	50.0 (1)	50.0 (1)
B	72.7 (8)	27.3 (3)
C	27.3 (3)	72.7 (8)
D	25.0 (1)	75.0 (3)
Total	13	15

The table above shows that of those who obtained grade A, 50.0% (1) are boys and the other 50% (1) are girls. Of those who obtained grade B, 72.7 % (8) is boys and the other 27.3% (3) are girls. More girls obtained grade C in comparison to boys. Of those who obtained grade C, 27.3% (3) is boys and 72.7% (8) are girls. Of those who obtained grade D, 25.0% (1) is boys and 75.0% (3) are girls.

The locus of control

The IAR (Intellectual Achievement Responsibility) instrument, which consists of 34 items, was used to determine the orientation of the locus of control of the year six pupils. Each item has two answers; a and b. Each answer indicating the internal locus of control is given 1 mark. No mark is given otherwise. The marks are given

according to the scheme given by Crandall et al (1962). The table below shows the orientation of the locus of control of the subjects.

Table 5: Orientation of the locus of control.

Locus of control	Percentage
External	42.9 (12)
Internal	57.1 (16)
Total	100.0

Table 5 shows the orientation of the locus of control of the subjects. 42.9% (16) of the subjects were found to be internals and the other 57.1% (12) of the subjects were found to be externally oriented. This data shows that the subjects are almost evenly distributed between the internal and external locus of control. The table below shows the orientation of the locus of control according to gender.

Table 6: Locus of control according to gender.

Locus of control	Male	Female
Internal	50.0 (6)	50.0 (6)
External	43.8 (7)	56.3 (9)
Total	13	15

The table above shows that of those who are internals, 50.0% (6) are boys and the other 50.0% (6) are girls. Of those who were inclined towards the external locus of control, 43.8% (7) are boys and 56.3% (9) are girls. This shows that boys and girls are almost equally divided between the internal and external locus of control.

Table 7: Mean of IAR score according to grades.

Grade	Mean of IAR score
A	16.5
B	17.82
C	18.36
D	17.00

Table 7 shows the mean score of the IAR scale according to grades. Students who obtained grade A (n=2) in the year 5 assessment have a mean value of 16.5. Students who obtained grade B (n=11) have a mean value of 17.82. Students who obtained grade C (n=11) have a mean value of 18.36 and students who obtained grade D (n=4) have a mean value of 17.00. This indicates that on the whole, the mean score increased slightly from grade A to C. However, the mean value dropped to 17.00 for grade D.

Analysis of inferential statistics

The analysis of inferential statistics is used to test the null hypotheses in this study. Chi square analysis was done to test hypotheses 1 and 2; the t-test was used to test hypotheses 3 and 4. The table below shows the chi square analysis of the locus of control with achievement in science.

Table 8: Chi square analysis of the locus of control with achievement in science.

	Locus of control	
Grade	Internal	External
A	100.0 (2)	-
B	45.5 (5)	54.5 (6)
C	27.3 (3)	72.7 (8)
D	50.0 (2)	50.0 (2)

Chi square = 0.2757, not significant at $p < 0.05$

The data from table 8 shows that of the students who obtained grade A in year 5 science examination, 100% (2) of them is of internal locus of control. Of the students who obtained grade B, 45.5 % (5) of them is internals and 54.5 % (6) of them are externals. Of the students who obtained grade C, only 27.3% are inclined towards the internal locus of control whereas 72.7% (8) of the are externals. Of the students who obtained grade D, 50% (2) are internals and the other 50% (2) are externals.

The chi square analysis shows a non significant value of 0.2757 at $p < 0.05$. The result shows that the achievement in science in not dependent on the orientation of the locus of control. Therefore, hypothesis 1 is accepted. Thus, there is no significant correlation between the locus of control and achievement in science.

Table 9: Chi square analysis of the locus of control with gender.

	Locus of control	
Gender	Internal	External
Male	46.2 (6)	53.8 (7)
Female	40.0 (6)	60.0 (9)

Chi square = 0.7428, not significant at $p < 0.05$

The table above shows the chi square analysis of the locus of control with gender. The data show that 46.2% (6) of the boys are inclined towards the internal locus of control whereas 53.8% (7) are externals. 40.0% (6) of the girls are of the

internal locus of control and the other 60.0% (9) are inclined towards the external locus of control.

The chi square analysis shows a non significant value of 0.7428. This shows that the orientation of the locus of control is non-dependent on gender. Thus hypotheses 2 is accepted. Thus, there is no significant correlation between the locus of control and gender.

Table 10: t-test for mean of difference of the orientation of the locus of control between boys and girls.

Gender	N	Mean	Standard error	degree of freedom	t value
Male	13	17.4615	0.418	24.36	0.363
Female	15	18.1333	0.593		

not significant at $p < 0.05$

The table above shows the t test score for the mean of difference for the orientation of locus of control between boys and girls. The mean value for the IAR score in boys is 17.4615 and the mean value for girls is 18.1333. The t value shows a non- significant value of 0.363. This shows that there is no significant difference in the orientation of the locus of control between the boys and girls. Therefore, hypothesis 3 is accepted. Thus, There is no significant difference in the orientation of the locus of control between boys and girls of year six in this study.

Table 11: t-test for mean of difference for achievement in science between boys and girls obtained and gender.

Gender	frequency	Mean	Standard deviation	t value
Male	13	1.0769	0.277	
Female	15	1.2000	0.414	0.359

not significant at $p < 0.05$

The table above shows the t-test for achievement in science between boys and girls. A mean value of 1.0769 is obtained for boys and 1.2000 for girls in achievement in science. The t value shows a non-significant value of 0.359. This means that there is no significant difference in the achievement in science between boys and girls. Therefore, a hypothesis 4 is accepted.