

## Chapter 4

### Results & Discussion

The findings of the study, “Impact of Using Language Games on English Vocabulary Development of Elementary Level Students,” are presented in this chapter, along with a thorough discussion of the results in light of the study's goals.

#### Reliability Analysis

This method's goal is to determine how much data is reliable or unreliable. The pre-test and post-test results for both the experimental and traditional groups, as well as the SEOC (Student Engagement Observation Checklist) questionnaire, were all evaluated using reliability analysis in this study.

Cronbach Alpha coefficient score	No. Of Items	Comments
0.734	17	Reliable

The internal consistency of the data gathering instrument was evaluated using reliability analysis utilizing the Cronbach alpha methodology. Typically, reliability values fall between 0 and 1, with higher values denoting better dependability or consistency. The findings of a reliability analysis performed on the study's components are shown in Table 4.1. Since the reliability of online interaction is close to 1, at 0.734, it can be said that the data is quite reliable.

#### Vocabulary Development Descriptive Statistics

Data can be summarized and described using descriptive statistics in an easy-to-understand method. They contain statistics like mean and standard deviation that aid in our comprehension of a dataset's primary properties. The results are accurate and trustworthy if the mean value is close to 0 and the standard deviation is close to 1, which gives a clear description of the data's central tendency and variability.

Table 4.2: Scores for Pre- and Post-Tests Using Descriptive Statistics

Groups	Mean Pretest	SD Pretest	Mean Posttest	SD Posttest
Experimental Group	10.22	2.38	25.22	5.61
Traditional Group	10.70	2.71	15.50	3.46

The descriptive statistics in Table 4.2 show how students in the Experimental and Traditional Groups developed their vocabulary. From the pre-test to the post-test, both groups' vocabulary scores increased. In contrast to the Traditional Group, the Experimental Group showed a significant improvement in vocabulary scores after being exposed to language games.

### Student's Engagement Level in Test

Descriptive Statistics for Student's Engagement Levels in Test by Gender

Gender	Effort	Effort	Initiative	Initiative	Disruptive	Disruptive	Inattentive	Inattentive
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Male	3.83	1.09	5.00	0.64	2.11	0.66	3.43	1.36
Female	5.34	1.07	3.48	1.58	1.52	0.77	3.65	0.75

Table 4.3 provides descriptive statistics on student engagement levels for both genders. These results show that there are gender disparities in degrees of involvement, with women showing higher levels of effort and initiative and lower levels of disruptive and inattentive conduct than men.

## T-Tests

### Language-related games for student's vocabulary development

#### Objective 1: Examine the effects of language games on students at the primary level.

A statistical test called the independent t-test is used to compare the means of two different groups to see whether they are statistically significantly different from one another. It aids scientists in figuring out whether any observed variations between the groups are most likely the consequence of a true effect or are just the product of chance. Simply put, it informs us of the likelihood that the variations between two groups are meaningful or random.

This study's first objective was to investigate the effects of using language games as a teaching strategy on elementary school students' vocabulary growth. To meet this goal, we thoroughly compared the vocabulary scores of two groups in the following ways: the Experimental Group, where the Traditional Group, which received traditional teaching techniques, and the Interactive Group, where language games were incorporated into the instructional strategy.

Table 4.4: Students Vocabulary Development Comparative Analysis

Groups	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	T-value	P-value
Experimental Group	10.22	2.38	25.22	5.61	10.48	0.000
Traditional Group	10.70	2.71	15.50	3.46	12.78	0.000

The Experimental Group students had a mean pre-test vocabulary score of 10.22 and a standard deviation of 2.38, as shown in table 4.4. The post-test mean vocabulary score after the intervention showed a striking increase to 25.22, with a standard deviation of 5.61. Notably, the t-value of 10.48 and corresponding p-value of 0.000 show that this improvement was not only significant but also statistically significant. These figures demonstrate how successful language games are in promoting vocabulary growth.

The mean pre-test vocabulary score for the Traditional Group, on the other hand, was 10.70, with a standard deviation of 2.71. The post-test mean vocabulary score increased to 15.50, with a standard deviation of 3.46, after using the traditional teaching methods. Although this group also

showed improvement, the t-value of 12.78 and the p-value of 0.000 highlight how substantial the advancement was.

Overall, both teaching strategies produced fruitful outcomes, demonstrating the effectiveness of each strategy. The crucial finding is that the Experimental Group, which was exposed to language games, saw a markedly larger improvement in vocabulary scores than the Traditional Group. This significant difference isn't a coincidence; rather, it's a result of the language games. As a result, we can state with confidence that including language games in the teaching strategy has a significant and statistically significant positive impact on the vocabulary growth of kids at the elementary level.

### **ANOVA (Analysis of Variance)**

#### **Differing Levels of Engagement**

#### **Objective 2: Determine the level of student engagement during Language Games**

ANOVA (Analysis of Variance) is a statistical method for examining how the means of various groups differ from one another. It aids in determining if variations in a dataset are the result of actual variations across groups or merely random fluctuations. When comparing the means of more than two groups, ANOVA is useful. It's also frequently used in research to evaluate the effects of various variables or treatments on a dependent variable.

The second goal was to evaluate the level of student engagement. In order to fully compare levels of involvement between two important groups such as the Experimental Group, which was exposed to language games, and the Traditional Group, which used traditional teaching techniques the analysis of variance (ANOVA) was used.

Table 4.5: ANOVA Results of Student's Engagement Level

<b>Groups</b>	<b>Effort Mean</b>	<b>Initiative Mean</b>	<b>Disruptive Mean</b>	<b>Inattentive Mean</b>
<b>Experimental Group</b>	3.8	4.0	1.9	2.6
<b>Traditional Group</b>	3.5	3.7	2.2	2.9

The results, as shown in Table 4.5, offer insightful information about student engagement. First off, students in the experimental group showed a mean effort of 3.8 and a mean initiative of 4.0. According to these data, the Experimental Group students showed noticeably more initiative and effort in their learning process. Additionally, they had less disruptive behavior (mean, 1.9) and less inattentive behavior (mean, 2.6).

The effort mean and initiative mean of the students in the Traditional Group, on the other hand, were marginally lower than those of their peers in the Experimental Group, at 3.5 and 3.7 respectively. They also had slightly higher mean levels of disruptive conduct (2.2) and inattentive behavior (2.9).

These results highlight the large engagement level between the Traditional and Experimental Groups. With the aid of language games, students in the Experimental Group demonstrated higher levels of effort and initiative while exhibiting lower levels of disruptive and inattentive conduct. These outcomes support language games beneficial effects on student engagement. These results show that when language games are used in the classroom as a teaching tool, students are more engaged and pay closer attention. This is a perfect match for the objective of determining how involved students are in their learning.

## **Chi-Square Test**

### **Students Gender Differences in Vocabulary Learning**

**Objective 3: To determine whether boys and girls learners differ significantly when it comes to learning vocabulary**

If there is a statistically significant association between two category variables, it can be found using the chi-square test. It aids researchers in determining whether discrepancies between categories that have been found are most likely caused by a real relationship or by pure coincidence.

The third goal was to look into potential language acquisition disparities between male and female pupils. To investigate this, we utilized the Chi-Square test.

Table 4.6: Chi-Square Test Results for Gender Differences in Vocabulary Learning

Chi-Square	Boys	Girls
$\chi^2$ -value	13.42	15.44
P-value	0.000	0.000

There is a statistically significant correlation between gender and vocabulary acquisition outcomes, as shown in Table 4.6 Chi-Square test findings. The girl's learner's chi-square value is 15.44, with a p-value of 0.000. This indicates that the vocabulary test results of the girl's students significantly improved. The boys' chi-square value is 13.42, with a p-value of 0.000, showing that although the boys' vocabulary scores increased, it was not as significantly as in the girls' group. Overall, the test findings show that there are disparities between male and female students when it comes to vocabulary development. Girls learners exhibited more progress overall, highlighting differences in vocabulary learning related to gender.

### Correlation Analysis

To investigate the connections between student engagement and vocabulary growth, correlation analysis is carried out. The Pearson correlation coefficient (r) was employed in this study to look at the directions of these correlations. The value of r lies between positive 1 and negative 1, with positive values indicating that both variables move in the same direction and negative values indicating the reverse.

### Relationship between Level of Engagement and Vocabulary Development Scores

Table 4.7: Correlation Analysis between Level of Engagement and Vocabulary Development Scores

Values	Vocabulary Score	Effort	Initiative	Disruptive	Inattentive
Correlation values	0.73	0.65	0.66	-0.44	-0.15
P-value	0.002	0.003	0.001	0.005	0.001

Table 4.7 shows the relationship between vocabulary scores and student involvement, offering light on how various engagement factors affect vocabulary growth. The correlation between students effort and vocabulary results is positively correlated ( $r = 0.73$ ). This implies that student's vocabulary scores tend to increase when they put more effort into their studies. The link between vocabulary scores and students initiative is also favorable ( $r = 0.65$ ). This indicates that students who take more initiative typically perform higher on vocabulary tests. There is a low correlation between vocabulary scores and disruptive conduct ( $r = -0.44$ ). Simply said, vocabulary scores tend to increase as disruptive conduct decreases. The correlation between language scores and inattentive behavior is also negative ( $r = -0.15$ ). Student's vocabulary scores typically rise as their level of inattention decreases. With a p-value of 0.001, this correlation is statistically significant. All of these relationships' p-values highlight their statistical importance.

Overall, the results indicate that greater effort and initiative are associated with higher vocabulary scores, suggesting that students who demonstrate these traits are more likely to achieve in vocabulary development. Additionally, disruptive and inattentive behavior is linked to poorer vocabulary levels. This suggests that students' vocabulary skills tend to improve as they become less disruptive and more focused.

### Summary of the Results

The main summary of the study on how language games affect elementary student's acquisition of English vocabulary. First, we were interested in determining if vocabulary learning was aided by language games. According to Table 4.3's findings, both the group that played games and the group that received traditional instruction improved their vocabulary.

However, the experimental group improves, demonstrating the effectiveness of games as a learning tool. We then considered how involved students were in their education. According to Table 4.4, the group that played games was more engaged. They worked harder, shown more

initiative, and were less disruptive and inattentive. Therefore, playing games while learning makes it more fascinating. Finally, we looked to see if language learning differed between boys and girls. Girls improved their vocabulary more than boys did, as shown in Table 4.5. The study's findings ultimately support the idea that employing language games in the classroom is a fantastic approach to increase vocabulary and engagement among elementary students. It also demonstrates that girls typically gain more from this strategy.

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