

Research question:

Does the number of hours students' study per day influence their examination scores?

Scenario:

A researcher collects data from 10 undergraduate students. Each student's average daily study time and examination score are recorded.

Student	Study Hours/Day	Exam Score (%)
S1	1	48
S2	2	52
S3	2	55
S4	3	61
S5	3	64
S6	4	68
S7	4	72
S8	5	76
S9	5	81
S10	6	85

1. Calculate the mean, median, minimum, and maximum examination score.
2. Calculate the standard deviation.
3. Draw a scatter plot of study hours versus examination score.
4. Calculate the Pearson correlation coefficient.
5. Interpret whether there is a positive or negative relationship.
6. Prepare a short research report containing:
 - Objective
 - Method
 - Results
 - Interpretation
 - Conclusion

Research question:

Do two different teaching methods produce different test scores?

Student	Traditional Method	Active Learning
1	62	70
2	65	72
3	58	68
4	70	75
5	64	71
6	60	69
7	67	74
8	63	73

9	61	70
10	66	76

- Calculate the mean score for each method.
- Calculate standard deviation.
- Create a comparative bar chart.
- Perform an independent samples t-test.
- State the null and alternative hypotheses.
- Interpret the p-value.
- Write a 100–150-word results section.