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EDG500: Educational Research and Statistics

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Lab 11 & 12

Group Statistics					
Unit Testing		N	Mean	Std. Deviation	Std. Error Mean
Weekly Testing	Weekly Testing	11	88.3636	7.89015	2.37897
	Unit testing	11	79.8182	9.73466	2.93511

Independent Samples Test											
		Levene's Test for Equality of Variances				t-test for Equality of Means				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Weekly Testing	Equal variances assumed	.614	.442	2.262	20	.018	.035	8.54545	3.77815	.66438	16.42653
	Equal variances not assumed			2.262	19.178	.018	.036	8.54545	3.77815	.64267	16.44824

The aim of this study was to investigate whether weekly testing or unit testing was more effective in enhancing math achievement among third-grade students. The study involved 22 students who were randomly assigned to two groups: weekly testing and unit testing. The math achievement of both groups was measured using a standardized test, and the scores were compared to determine the effectiveness of the two testing methods.

The null hypothesis for this study is that there is no significant difference in math achievement between the weekly testing group and the unit testing group.

To test the hypothesis, a t-test was conducted to compare the mean math achievement scores of the weekly testing group and the unit testing group.

Weekly Testing: $n = 11$, Mean = 88.3636, SD = 7.89015, SEM = 2.37897

Unit Testing: $n = 11$, Mean = 79.8182, SD = 9.73466, SEM = 2.93511

Independent Samples Test: Levene's Test for Equality of Variances: $F = .614$, $p = .442$

t-test for Equality of Means: $t = 2.262$, $df = 19.178$, $p = .036$ (two-tailed) Mean Difference: 8.54545 Standard Error Difference: 3.77815 95% Confidence Interval of the Difference: .64267 to 16.44824

The results of the t-test indicate that there was a significant difference in math achievement between the weekly testing group and the unit testing group, $t(19.178) = 2.262$, $p = .036$ (two-tailed). The mean math achievement score for the weekly testing group ($M = 88.3636$, $SD = 7.89015$) was significantly higher than the mean math achievement score for the unit testing group ($M = 79.8182$, $SD = 9.73466$), with a mean difference of 8.54545 ($SE = 3.77815$). The 95% confidence interval of the difference ranged from .64267 to 16.44824.

Result.

The results of the study suggest that weekly testing was more effective in enhancing math achievement among third-grade students than unit testing. The mean math achievement score for the weekly testing group was significantly higher than the mean math achievement score for the unit testing group. These findings have implications for educators and policymakers in designing effective testing strategies for math education in elementary schools.

Reference

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