

Studying the tutoring effect on students

Madina Nurpeissova

CONTENTS

01

ABOUT STUDY

02

DATA ANALYSIS

03

RESULTS

ABOUT STUDY

The current study aimed to find out the effect of buddying system in school where older students tutor younger ones.

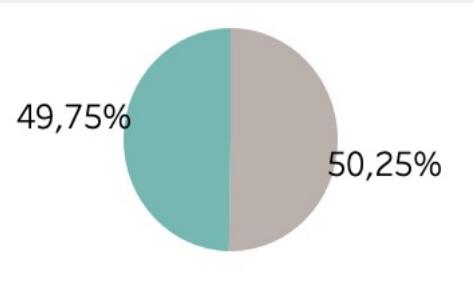
All students were tested at the beginning of the academic year and at the end. For all students, their attendance in regular classes was monitored and is given in the 'absences' variable as a proportion of class time that was missed.

In order to achieve the main purpose of the study, the following research questions were posed:

1. Is there a significant difference in pre-test and post-test scores for students who received tutoring and who did not.
2. Is there a significant difference between pre-post (and then post-test) scores of students who were tutored and non tutored.
3. Was there any effect of absences on the change in scores.



The number of students in groups almost identical. Here we see the general picture: the number of students for each group and the means of our values (absences and scores). So, on average the post-test scores are higher than pre-test scores. Now we need to check if the increase in scores is statistically significant.



Group	Count of students	Average of absences	Average of pre-test	Average of post-test
Non-tutored	101	6,31	52,995	53,924
Tutored	100	6,79	54,788	58,553
Grand Total	201	6,55	53,89	56,227

1. Is there a significant difference in pre-test and post-test scores for students who received tutoring and who did not.

Pre-test scores

Independent t-test results		
0	Difference (Tutored - Non-tutored) =	1.7922
1	Degrees of freedom =	199.0000
2	t =	0.9993
3	Two side test p value =	0.3188
4	Difference < 0 p value =	0.8406
5	Difference > 0 p value =	0.1594
6	Cohen's d =	0.1410
7	Hedge's g =	0.1404
8	Glass's delta1 =	0.1473
9	Point-Biserial r =	0.0707

Post-test scores

Independent t-test results		
0	Difference (Tutored - Non-tutored) =	4.6289
1	Degrees of freedom =	199.0000
2	t =	1.8596
3	Two side test p value =	0.0644
4	Difference < 0 p value =	0.9678
5	Difference > 0 p value =	0.0322
6	Cohen's d =	0.2623
7	Hedge's g =	0.2613
8	Glass's delta1 =	0.3367
9	Point-Biserial r =	0.1307

To check the significant difference between sample groups the independent t-test was conducted. Even the means of pre- and post-test scores were higher for tutored than for non-tutored, our test results showed it does not differ significantly. But for post-test scores its more (p-value is 0.06) closer for truth that tutored groups have increase in scores, maybe more students need to be studied and more variables to take into account.

Hence, it can be stated that the tutoring younger students by older ones did not differ significantly.

2. Is there a significant difference between pre-post and post-test scores of students who were tutored and non tutored.

Tutored group



Non-tutored group



	score.t1	score.t2
Mean	54,78752547	58,553152
Variance	148,0393796	188,975665
Observations	100	100
Pearson Correlation	0,890915373	
Hypothesized Mean Difference	0	
df	99	
t Stat	-6,030880352	
P(T<=t) one-tail	1,41157E-08	
t Critical one-tail	1,660391156	
P(T<=t) two-tail	2,82314E-08	
t Critical two-tail	1,984216952	

	score.t1	score.t2
Mean	52,99532085	53,9242575
Variance	175,0528378	432,488169
Observations	101	101
Pearson Correlation	0,7069833	
Hypothesized Mean Difference	0	
df	100	
t Stat	-0,63158942	
P(T<=t) one-tail	0,264548179	
t Critical one-tail	1,660234326	
P(T<=t) two-tail	0,529096358	
t Critical two-tail	1,983971519	

The test for both groups is not significant at $p > .05$, we ascertain that the pre- and post-test differences are not statistically different.

Later we need to check if the absence value affected on the result

The impact of absence variable

The average of proportion of missed class time



OLS Regression Results

Dep. Variable:	difference	R-squared (uncentered):	0.027
Model:	OLS	Adj. R-squared (uncentered):	0.022
Method:	Least Squares	F-statistic:	5.497
Date:	Sun, 26 Feb 2023	Prob (F-statistic):	0.0200
Time:	19:34:14	Log-Likelihood:	-775.75
No. Observations:	201	AIC:	1554.
Df Residuals:	200	BIC:	1557.
Df Model:	1		
Covariance Type:	nonrobust		

	coef	std err	t	P> t	[0.025	0.975]
absences	0.2575	0.110	2.345	0.020	0.041	0.474

Omnibus:	339.371	Durbin-Watson:	1.895
Prob(Omnibus):	0.000	Jarque-Bera (JB):	77572.063

Skew:	8.235	Prob(JB):	0.00
Kurtosis:	97.821	Cond. No.	1.00

Prob of F-statistic is 0.02 that is less than 0.05 means that there is a statistically significant relationship between our variable of absence and difference in scores.

Meaning that when the absence value increases (students do not attend school) their score's difference decreases (getting worse scores after tutoring)

After the analysis of our study we can summarize our results of different tests.

1. Even with the average increase in scores after tutoring for two groups: tutored and non-tutored, the tests showed that there is no such statistical difference between pre-and post-test scores for both groups.
2. Moreover, there is no statistical difference in post-test scores between both groups and in pre-test scores.
3. But there is a statistically significant relationship between the variable of absence and increase in scores. Meaning that when the absence value increases (students do not attend school) their score's difference decreases (getting worse scores after tutoring)

Results

03