

Data Analysis Model of the Correlation between Weekly Quiz and Teaching Effect

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Abstract: Whether the institute adopts basic courses weekly quiz is not unified, and there is no quantitative data analysis on its advantages and disadvantages. This study aims to explore whether the weekly quiz of basic courses has any influence on the final teaching effect through data model analysis. The combination of the weekly quiz of the students' final quiz results and the final quiz results of the students, SPSS statistical analysis and offline questionnaire found a positive correlation between the weekly quiz scores and the final quiz results, and the correlation coefficient was 0.976, which had a strong correlation. In addition, there were significant differences between their weekly exam scores and their corresponding final exam scores and their corresponding final exam scores ($p < 0.05$). That is, the weekly quiz of basic courses is significantly related to the teaching effect, which can inspire schools to carry out extensive weekly quiz to improve the teaching effect.

1. Introduction

Nowadays, more and more schools have cancelled the weekly quiz of basic courses. Although this kind of behavior can reduce student pressure, let them do they want to do, but also has disadvantages, cancel the quiz, unable to correctly judge students each stage of learning status, can lead to some unconscious students do not listen carefully in class, pass the hope of the exam before the raids and teachers, this is not conducive to colleges and universities to cultivate talents for the country. In addition, the basic course is accompanied by the college students in the whole university process of learning, it is equivalent to the foundation, not build a solid foundation, will lead to learning more and more difficult, behind some students repent want to study hard, but also can find yourself before owe too many things, these finally will become his way to success.

This paper aims to analyze the correlation analysis between the weekly quiz of the basic course and the teaching effect, and to obtain the analysis results to prove the feasibility of the basic course weekly quiz of this teaching reform.^[1] Finally, whether universities should carry out weekly quizzes and educational methods for different students.

2. Method

2.1. Research Methods and Objective

Because the concept of teaching effect is too general, this paper uses the final examination results of higher mathematics to embody the concept of teaching effect. Offline questionnaires and online experiments were randomly distributed in Wuhan Engineering University. A total of 835 questionnaires were collected, among which 800 questionnaires were valid questionnaires. The online experimental data are obtained from the final final exam results of two different colleges of Wuhan University of Technology. One college taking weekly quiz and the other one is not taking quiz every week. The final exam scores are the same in the two colleges.

2.2. Data Analysis

This paper uses SPSS software to input three groups of data^[2-4], one group is the weekly quiz results, the other group is the weekly quiz of students' final exam results, and the last group is the final quiz results of students without the weekly quiz. First, the correlation between the weekly quiz score and the final quiz score was analyzed to obtain the correlation relationship and the correlation coefficient between the two, and the strength of the correlation between the two was judged. Next to have a weekly quiz final exam results and no weekly quiz final exam results for comparative analysis, get which group between two groups is more excellent, finally concluded that whether affect the final exam results, and whether the colleges and universities should carry out weekly quiz and whether should adopt different education methods for different students.

3. Results

3.1. Questionnaire Analysis

Through the study of the questionnaire results, we can find that most students are willing to weekly quiz and think that weekly quiz for final exam scores is helpful, but for when weekly quiz, weekly time and weekly quiz results should be published, 80% of the students think weekly time should be put on Sunday night and quiz time should be in an hour, the rest of the people think weekly quiz on which day can be. Therefore, different schools should be arranged according to the actual situation.

3.2. Correlation Analysis

The correlation analysis of the weekly scores and the following data shows in table1 -5.

Table 1 Correlation analysis results.

		relativity	
		Weekly quiz results	Weekly quiz of the final exam results
Weekly quiz results	Pearson correlation	1	.946**
	Sig.(Double tail)		.000
	The number of cases	114	114
Weekly quiz of the final exam results	Pearson correlation	.946**	1
	Sig.(Double tail)	.000	
	The number of cases	114	114

Table 2 Results of the regression analysis.

		coefficients			t	conspicuousness
		Unstandardized coefficients	Standardization coefficient			
model		B	Standard error	Beta		
1	(constant)	39.141	1.339		29.228	.000
	Weekly quiz results	.592	.019	.946	30.970	.000

Table 3 F values.

		ANOVAa				
		quadratic sum	free degree	mean square	F	conspicuousness
1	regression	6996.071	1	6996.071	959.122	.000b
	residual	816.956	112	7.294		
	amount to	7813.026	113			

3.3. Comparative Analysis

The following data can be obtained by comparing the results of the final quiz and the results of

the students without the weekly quiz on SPSS platform^[5-6].

Table 4 T test.

		Paired sample statistics					
		statistics	bias in statistics	standard error	Self-service sampling ^a		
					The 95% confidence interval was used		
					lower limit	superior limit	
Paired 1	Weekly quiz of the final exam results	average value	79.8684	-.0300	.7629	78.3158	81.2537
		The number of cases	114				
		standard deviations	8.31516	-.07903	.69247	6.86124	9.57624
		Standard error mean value	.77879				
	No weekly quiz of the final exam results	average value	65.7281	.0739	1.5077	62.7290	68.7263
		The number of cases	114				
		standard deviations	16.04269	-.16110	1.42652	13.14523	18.78147
		Standard error mean value	1.50254				

Table 5 Paired sample quiz.

		Paired difference					t	free degree	Sig. (Double tail)
		average value	standard deviations	Standard error mean value	Difference value: 95% confidence interval				
					lower limit	superior limit			
Paired 1	Weekly Final quiz Results-No weekly final quiz results	14.14035	18.81812	1.76248	10.64856	17.63214	8.023	113	.000

4. Interpretation of Results

According to the correlation analysis results in Table 1, it can be seen that the correlation coefficient between weekly quiz scores and final exam scores is 0.946, indicating a strong positive correlation. It can be concluded that weekly quiz has a positive impact on the improvement of final exam scores^[7].

Results as an independent variable, the final final exam scores as a dependent variable and linear regression analysis, as can be seen from the Table 1, the model formula is, the final exam score =39.141 + 0.592 * weekly results, through the standardized residual histogram we can judge the standardized residual is subject to normal distribution, so the unary linear regression model can be used^[8] The R square value of the model is 0.895, indicating that weekly quiz scores can explain 89.5% of the changes in final quiz scores. The significance of p<0.05 also indicates a significant difference between weekly quiz scores and final quiz scores. According to Anovaa, the statistic of F is 959.122. The P-value of significance is 0.000, rejecting the hypothesis that the whole model value is not significant, and proving that the whole model is trustworthy^[9].

Pass the T quiz in Table 4. It can be clearly seen that the average final quiz score of the weekly quiz is 79.8684, and the average final quiz score without the weekly quiz is 65.7281. The difference between the two groups of variables is nearly 14 points, indicating that the final quiz score of the weekly quiz is better than the final quiz score without the weekly quiz. Moreover, according to Table 5, a sig <0.05 can be obtained from the data, indicating a significant difference between the two groups of variables, confirming the significant difference between the final exam scores of weekly quizzes and those without weekly quizzes.

5. Conclusion

Through the analysis of the results, we can conclude that the weekly quiz students' final exam scores are better than the students without weekly quiz, that the weekly quiz for the final exam scores is helpful, but for when the weekly quiz results should be published and testing time, also need to be considered by various colleges and universities according to their actual situation..

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