

# The Impact of Having or Not Having a Fixed Classroom on the Academic Performance of College Students

Shenggang Liu \*

School of Foreign Languages, Qiqihar University, Qiqihar city, Heilongjiang, 161000, China

\* Corresponding author Email: shenggangl31@gmail.com

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**Abstract:** The thesis analyzes the data of majors with fixed classrooms and non-fixed classrooms, the credits and grades of their students, and the place of origin of the students, and uses the stata software to run the regression equation for analysis, and also adds the regional population and the rural students Grade point specifics are compared. In the end, it was found that the correlation between the two was not strong, but by comparing the means, the average grades of students from the South were only slightly better than those from the North. Finally, find the environmental factors that affect performance and provide data reference for future classroom changes.

**Keywords:** Fixed Classroom; Teaching Environment; College; Mean Comparison; Grade Point; Academic Performance.

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## 1. Introduction

With the country's emphasis on and development of education, higher education is becoming more and more popular, and more students can enter university campuses to receive education. According to the university admission rules in our country, there should be little difference in the quality and learning ability of students of each major in a school, but after a semester of study, there will be a big difference in grades, and the gap will become more obvious. This phenomenon is worth exploring. Why are there differences in the performance of different students under the same educational resources. This paper collects statistics on the grade points of college students through a questionnaire survey. Taking students from the School of Foreign Languages (with fixed classrooms) and the School of Economics and Management (without fixed classrooms) as examples, the p-value obtained through the regression equation Analyze to find out the reason for this phenomenon.

## 2. Literature Review

Griffith pointed out in the study of the relationship between student performance and the position of students sitting in the classroom: the students sitting in the front row have better grades than those sitting in the back row, and the academic performance decreases with the seat back. Wuff pointed out that students who sit in the fourth row get the highest grades, then those in the eighth row drop off sharply, and girls prefer to sit in the front row and get more grades [1,2]. Sommer and other scholars believe that as the distance between students and the center of the classroom becomes farther and farther away, the interaction between students and teachers will also decrease [3]. Domestic research on this aspect began in the early 21st century, and there are four types of arrangement of seats in the classroom: seedling field type, combined type, tandem type, and horseshoe type, among which the seedling field type arrangement is the most common [4]. The results of classroom studies at home and abroad generally believe that students sitting in the front row have better academic performance and higher interaction with teachers [5]. However, most of the research focuses on the arrangement of

seats in the classroom and the study of students' seat selection preferences, and there is little research on the type of classroom and whether it is a private classroom on student performance. To explore this question, we examined the effect of changing a classroom from a traditionally fixed classroom to one of the university's mobile classrooms on student academic performance.

## 3. Research Methods and Research Objects

### 3.1. Object

In order to explore the influence of the two factors of the classroom and the student's place of residence on the academic performance, this paper takes the third-year students of Qiqihar University and Jiamusi University as examples, and surveys 7 departments of English, Russian, Japanese, and Korean in the School of Foreign Languages of Qiqihar University in the form of a questionnaire survey. In the class, 38 students were selected as representatives of majors with fixed classrooms, and in the class of Jiamusi University School of Economics and Management, 33 students were selected as samples of majors without fixed classrooms. Among the 71 students, there are 64 students from the northern provinces and 7 students from the southern provinces.

### 3.2. Research Methods

The independent variable "whether there is a fixed classroom" is a categorical variable, and the dependent variable learning grade point is a continuous variable, so the unit linear regression model established by stata software is  $y = \beta_0 + \beta_1X_1 + \varepsilon$ , and then the factor of student origin is added to the regression equation to establish a multiple regression Equation  $y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \varepsilon$  Then calculate the p-value respectively (p-value > 0.05 indicates that there is no significant correlation between the two; p < 0.05 indicates that there is a significant correlation between the two; p < 0.01 indicates that there is a significant correlation between the two extremely significant correlation) and compare the averages of the grade points of the two groups of data to analyze the impact of classroom and area factors on the grade

points.

Among them,  $y$  is the relationship between the dependent variable (grade point) and the independent variable fixed classroom  $x_1$  and student source  $x_2$ ; let the constant term be  $\beta_0$ , the independent variable coefficients be  $\beta_1$  and  $\beta_2$ , and the error term be  $\varepsilon$

### 3.3. Research Hypothesis

H1: Fixed classrooms are positively related to student achievement.

### 3.4. Regression Analysis

Through the analysis of the unit regression model, the results are shown in Table 1.

**Table 1.** Stata regression result

variable	coefficient	standard error	t	p> t
y	-	-	-	-
x1	-0.002401	0.0805292	-0.03	0.976

The regression result can get p value = 0.976; the regression model can show that the student's grade depends on  $x_1$ ; under the condition that other conditions remain unchanged, every time a fixed classroom is added, the student's grade point will drop by 0.002; in order to ensure the rigor of the conclusion In this paper, under the verification of the multiple regression equation, the method of regional factors and mean value comparison is added to test the relationship between the two, as shown in Table 2 Table 3.

**Table 2.** Stata regression result (2)

variable	coefficient	standard error	t	p> t
y	-	-	-	-
x1	0.0189638	0.0854081	0.22	0.825
x2	-0.1041533	0.1354108	-0.77	0.444

Variable GPA

Students with fixed classrooms 3.018462

Students without fixed classrooms 3.016061

Southern students 3.10125

Northern students 3.006875

**Table 3.** GPA

Variable GPA	Average GPA
Students with fixed room	3.018462
Students without fixed classrooms	3.016061
Students from the south	3.10125
Students from the north	3.006875

The result of multiple regression analysis is p-value = 0.825. When other factors remain unchanged, each time a fixed classroom is added, the student's grade point will increase by 0.019; the results obtained by the method of mean comparison can be seen; In the case of decimal places, the scores of students with and without fixed classroom majors are the same; the scores of students from southern provinces are slightly higher than those of students from northern provinces.

## 4. Conclusion and Reason

### 4.1. Conclusion

From  $p_1$  (fixed classroom) = 0.976 > 0.05, it can be seen that there is no significant relationship between whether there is a fixed classroom and student performance when other

variables are controlled; similarly,  $p_2$  (student origin) = 0.461 is greater than 0.05. There was no significant correlation with student achievement. However, it can be seen from the mean comparison that the performance of southern students is slightly better than that of northern students.

### 4.2. Reasons

The sample size is too small, only 71, which may not be enough to see the obvious correlation. The grades of the sample students, since they are juniors, their grade points are the comprehensive income of multiple semesters, so there will be many other factors affecting their grades, such as the importance attached to the final exam, learning attitude, and whether they are interested in the course [6]. It is best to select first-year students, because the impact of classroom factors is most obvious when the transition from fixed high school teachers to university mobile classrooms is just faced. As for the slightly higher GPA of students in the south, in addition to the second factor, there is also a language-based factor. By 2023, the primary and secondary schools in the northern provinces (the northern provinces in this article take Heilongjiang as the theme) rarely pass the test. Less attention is paid to listening and speaking skills, and more are "dumb foreign languages"; but in southern provinces, because foreign language listening is involved in the college entrance examination, schools will put more experience in listening and speaking.

## 5. Suggestion

The professional knowledge learned in the university is very important, and it is closely related to the work that will be done after graduation; the fixed classrooms of the university are usually the same size and number of students as the middle and high school classrooms, and the teachers are easy to manage, so the phenomenon of "water" classes for students will be less; However, most of the majors are taught in the form of mobile classrooms. The classroom area is large and the number of students is large, which is not easy to manage. There are many cases of students not listening to lectures or even skipping classes. Therefore, it is suggested that when teaching in large mobile classrooms, instead of following the previous "first-come-first-served" method of "grabbing seats" in the back row, it should imitate the "row seat" method of middle and high schools, where students take turns sitting in the front and back rows.

## 6. Inadequacy

Majors with fixed classrooms account for a small number of universities and can be used as categorical variables for research; at the same time, a group of students with uniform grades and credit requirements is selected as a sample, and the control variables are good; but the negligence is that after three years, Most of the students have already adapted to the university environment, so at first the author thought that "students who have fixed classroom majors can reduce their attention to adapt to new environmental factors, and thus devote more attention to learning" will be weakened in the performance of the results, so the correlation between the two is not strong; if the grade points of freshman students, especially the grade points of freshman students in the first half of the semester, are used as a new sample, different results are likely to be obtained.

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