

Study on the Correlation and Group Differences between Boarding School and Middle School Students' Academic Performance

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Abstract: As a standard management system in the learning and life of junior high school students, boarding significantly impacts students' academic performance. However, there are substantial differences in academic performance between day and boarding students. This paper takes junior high school students as an example, selects data from the China Education Panel Survey to analyze the relationship between boarding and academic performance, and finds that day students have higher academic performance than boarding students. Furthermore, exploring the differences between these two groups of junior high school students finds that day students perform better than boarding students in many vital variables.

Keywords: Boarding school, Academic performance, Group differences.

1. Introduction

"Boarding" and "day" are two different ways of life for middle school students, profoundly affecting their physical and mental development and academic performance. Research on boarding schools in academia mainly focuses on rural areas. The research objects tend to be left-behind children, and the system's defects, and there needs to be more general research about boarding and academic performance in urban areas. This paper analyzes the correlation between boarding and academic performance and the differences between student groups in boarding schools.

Scholars such as Ye believe that students' academic performance reflects their intelligence level and the interaction of multiple factors, including psychological qualities [1]. Therefore, academic performance is the most intuitive indicator for evaluating students in the current education system. In addition, whether or not accommodation affects students' physical and mental conditions to varying degrees and thus has an impact on academic performance; scholar Dong pointed out that among the three dimensions of the learning environment, the school atmosphere is the main factor affecting the learning environment, followed by the dormitory atmosphere [2]. Finally, there is the influence of teachers. In 2017, Huang and Li proposed that accommodation is a crucial link that affects many aspects of students, including physiology, psychology, and grades [3]. For example, boarding has a significant positive impact on reducing student obesity, especially for boys [4].

Regarding the relationship between boarding schools and students' academic performance, existing research mainly focuses on the following aspects: some studies believe that boarding schools can save students' time on the way to and from school on the one hand and increase students' study time on the other hand. However, many scholars have also found that boarding schools need help regarding school conditions and management methods, making boarding schools not conducive to improving students' grades. On the contrary, according to Dong, the management style of some boarding schools that emphasizes "management" rather than

"education" and the excessive discipline of students in pursuit of high scores and high enrollment rates under exam-oriented thinking will lead to negative adaptation of students [2]. Furthermore, according to Behaghel et al., although boarding students may enjoy better studying conditions, only students with solid learning abilities can benefit from school [5]. This finding means boarding school is not adapted to every student, at least not the majority.

2. Research Design

2.1. Research Hypothesis

This study aims to explore how boarding will affect students' academic performance and to analyze the characteristics of the group. Previous studies have found that the boarding system can significantly improve students' performance. Under the management of the boarding system, students can save much time commuting to and from school. At the same time, many middle schools arrange morning and evening self-study for students, which increases the time spent on learning. There is a positive correlation. Based on this inference, a hypothesis is made that boarding has a significant positive impact on student achievement.

2.2. Data Sources

For analysis and comparison, this study is based on the China Education Panel Survey (CEPS) annual survey data for the 2014-2015 school year. The survey took eighth-grade students as the research object, covering 28 county-level units with a sample size of 10,750. According to the two criteria of living in school and academic performance, 9484 valid samples are obtained. Among them, the sample size of boarding students is 2884, and the sample size of day students is 6600.

2.3. Variable Setting and Analysis Method

2.3.1. Variable Settings

This study aims to explore the impact of boarding on academic performance, so the dependent variable is student achievement. CEPS counts the scores of eighth-grade

students in Chinese, Mathematics, and English. After data processing, the total score of the three subjects is used as the basis for students' grades. Regarding independent variables, accommodation is the core independent variable. Other independent variables such as household registration type, family economic situation, parental occupation, personal physical and mental health, and learning input are control variables.

2.3.2. Analysis Method

The core independent variable is accommodation, while other control variables are categorical. The dependent variable subject grades are numerical variables, so comparing means for descriptive statistics and cross-tabulation are mainly used to analyze the different characteristics of boarding and day student groups.

3. Results Analysis

3.1. Mean comparative analysis

After calculation and comparative analysis, the average score of day students is 233.39, the average score of boarding students is 220.83, and the sig value is less than 0.05. There is a significant difference between the two scores, and the scores of day students are higher than those of boarding students.

3.2. Analysis of differences between day students and boarding students

Cross-tabulation method is used to explore the respective characteristics of these two groups and find significant differences between day students and boarding students regarding household registration type, parental occupation, family economic conditions, and time spent on school and off-campus studies. Expect no noticeable difference.

The statistical results show that 24% of day students have residential registration, 35% non-agricultural registration, and 41% agricultural registration. 11% and 7% with non-agricultural hukou, respectively. Compared with day students, the hukou of boarding students is more concentrated in agricultural hukou.

In terms of family economic conditions, under the same proportion, about 26% of boarding students whose families have difficulties, and only 11% of day students. Among the commuting students, about 75% are from middle-income families, and about 13% are relatively affluent, both of which are higher than the corresponding proportions of boarding students. Hence, day students' family economic situation is better than boarding students.

Due to the impact of the two different lifestyles of commuting and boarding, there are significant differences in the time spent learning by these two types of students. However, overall, day students spend more time in on-campus academic study.

From Monday to Friday, according to the statistics of homework assigned by school teachers, day students spend 1-3 hours a day on tasks, and the same proportion is about 11%

higher than that of boarding students; on the contrary, no homework at all and homework time are shorter. Short students are more concentrated in the group of boarding students, which is about 10% higher than that of day students. On weekends, the proportion of boarding students who do not do homework or write homework for a short period is 10% higher than that of day students, and the ratio of day students who do homework for 6-8 hours or more is slightly higher than that of boarding students; 35% of boarding students study on weekends 2-4 hours, the corresponding proportion of day students is 44%; 14% of boarding students learn for 4-6 hours on weekends, and the corresponding value of day students is 18%.

According to another group of off-campus tutoring statistics, whether from Monday to Friday or on weekends, the proportion of day students participating in extracurricular tutoring is higher than that of boarding students. Regarding learning time, compared with resident students who tend to devote more energy to schoolwork and, at the same time, day students have more opportunities and awareness to participate in coursework-related tutoring.

4. Conclusion

Contrary to the common belief that boarding can improve student achievement, day students have significantly higher average grades than boarders. Although, in theory, boarding students may get more standardized management and more study time, in actual life, day students will spend more time both in and out of class. In addition, there is a significant difference in the distribution of the original family environment between day students and boarding students. Day students often have better family conditions, and their parents have higher occupational income, meaning they enjoy a better educational environment and resources and a healthier body and mind, which can positively impact academic performance.

References

- [1] Ye, M.Z., Zhang, J.B., & Wang, L. (1997) Discussion on the related factors affecting the academic achievement of middle school students, *Chinese Journal of Behavioral Medicine*, 04: 31-33.
- [2] Dong, F. & Zhou, J.T. (2016) Study on Influencing factors of boarding students' learning behaviour in Senior high School, *Chinese Journal of Education*, 01: 59-64.
- [3] Huang, S.P. & Li, Q.Q. (2017) The influence of boarding system on the academic performance of rural left-behind children, *Journal of Shanxi Agricultural University*, 09: 13-21.
- [4] Yu, L., & Chen, W. (2021) The Effect of Boarding on Obesity Among Middle School Students: Evidence from China. *American Journal of Health Promotion*, 2: 186-192.
- [5] Behaghel, L., De Chaisemartin, C., & Gurgand, M. (2017) Ready for boarding? The effects of a boarding school for disadvantaged students. *American Economic Journal: Applied Economics*, 1: 140-164.