

The Effect of Teaching Methods and Teacher Characteristics on Academic Performance with motivation as the Moderating Variable

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Abstract: This study investigated the multifaceted factors influencing the academic performance of secondary school students in Shanghai, China. It places particular emphasis on teaching methods, teacher characteristics, and their interactions with student motivation. This study is motivated by the unique educational landscape of Shanghai, characterised by a diverse student population and a high-stakes examination, the “Gao Kao”, which determines students’ future prospects. A quantitative research approach was employed utilising structured questionnaires to collect data from a stratified random sample of 384 secondary school students. The questionnaires encompassed motivation assessment scales, evaluation of teaching methods, and assessment of teacher characteristics. Data analysis involved descriptive statistics, correlation analysis, multiple regression analysis, and moderation analysis to uncover the intricate relationships among the variables. Preliminary findings revealed a complex interplay between teaching methods, teacher characteristics, and student motivation in shaping academic performance.

Key Words: Teaching Methods; Teacher Characteristics; Secondary School Students

1.INTRODUCTION

1.1 Background of the Study

Academic performance is a crucial aspect of a student's educational journey and future prospects. Different teaching methods can impact students' learning outcomes and engagement. Teachers' qualities, including expertise, teaching styles, and interpersonal skills, impact student motivation and academic achievement. Various factors influence academic performance, such as teaching methods, classroom environment, curriculum design, and teacher characteristics. Student motivation is a critical factor in determining their willingness to engage in the learning process and achieve academic goals. Motivated students tend to exhibit better academic performance and persistence.

1.2 Problem Statement

Teaching Method Challenges in China: The effectiveness of specific teaching methodologies within the educational context of China, particularly in secondary schools in Shanghai, presents a notable challenge. There is a lack of clarity on which teaching methods are most suitable and effective in the Chinese educational system.

Unexplored Factors Influencing Teaching: Other critical factors, such as the Classroom Environment, Curriculum Design, and Teacher Characteristics, as underscored by Hake (2017), hold the potential to significantly impact teaching effectiveness in Shanghai’s secondary schools. However, a comprehensive understanding of how these factors contribute to the variability of teaching methods in China is lacking.

Cultural and Contextual Adaptation: The adaptation of teaching methods to diverse cultural and educational settings, an idea emphasized by previous scholars (e.g. Du & Wang, 2023), remains insufficiently explored within the specific cultural and educational landscape of Shanghai, China.

Student Motivation’s Critical Puzzle: Liao et al. (2020) have illuminated the moderating role of student motivation in shaping academic outcomes. However, the intricacies of how student motivation interacts with teaching methods and the classroom environment, particularly in the context of Shanghai’s secondary schools, require thorough investigation.

Holistic Understanding Gap in China: Within the Chinese educational context, there is a significant gap in comprehensively understanding how the interplay between teaching methods, classroom environment, student motivation, and academic achievement functions to impact secondary school students in Shanghai.

1.3 Research Hypothesis

H1: There is a significant relationship between Teaching Methods and Academic Performance among high school students in Shanghai, China.

H2: There is a significant relationship between Teacher Characteristics and Academic Performance among high school students in Shanghai, China.

H3: Motivation moderates the relationship between Teaching Methods and Academic Performance among high school students in Shanghai, China.

H4: Motivation moderates the relationship between Teacher Characteristics and Academic Performance among high school students in Shanghai, China.

2. LITERATURE REVIEW

2.1 Theoretical Framework

The theoretical framework for this research is based on Social Learning Theory. Social Learning Theory posits that learning occurs through the observation and modeling of the behaviors, attitudes, and emotional reactions of others, particularly authority figures such as teachers.

In this framework, teaching methods, classroom environment, curriculum design, and teacher characteristics are all important factors that can influence student learning and academic performance through the process of observational learning.

Observational learning occurs when students observe and model the behaviors and strategies of teachers, which can lead to improved academic performance.

The impact of teaching methods, classroom environment, curriculum design, and teacher characteristics on academic performance is mediated by students' observations and interpretations of these factors.

Motivation also plays a role in the Social Learning Theory framework, as it can influence the extent to which students engage in observational learning and the impact of the observed behaviors on academic performance.

2.2 Teaching Methods and Academic Performance

Teaching methods have a significant impact on student learning and academic performance.

Different teaching methods may be effective for different subjects and student populations.

The effectiveness of teaching methods may depend on various factors, such as the subject being taught, the level of students, and cultural context.

Studies have found that interactive and student-centered teaching methods can have a positive effect on academic performance compared to traditional lecture-based instruction.

Recent studies have emphasized the importance of adopting student-centered teaching methods to enhance critical thinking and problem-solving skills in China.

Project-based learning and technology-based teaching methods have gained popularity in China and have been found to improve academic performance and motivation.

Research gaps include the need for more studies that focus specifically on the impact of different teaching methods on academic performance in both developed countries and China, the interaction between different teaching methods and student motivation and learning strategies, and the impact of teacher training and professional development on the implementation and effectiveness of different teaching methods.

H1: Teaching methods are significantly correlated with academic performance in Shanghai, China.

2.3 Teacher Characteristics and Academic Performance

Teacher characteristics include personal and professional qualities that can influence teaching effectiveness and impact student learning outcomes.

Positive teacher characteristics such as strong content knowledge, effective instructional strategies, and good communication skills can lead to improved student outcomes.

Teacher characteristics have a significant impact on academic performance in various educational settings.

In China, teacher expertise, experience, qualifications, and teacher-student relationships have been found to be associated with better student academic performance.

There is a need for further research to explore the relationship between specific teacher characteristics and academic performance, particularly in the context of different educational settings and cultural contexts.

Research gaps include the lack of consensus on the most influential teacher characteristics, the need for more research on the role of teacher-student interactions, and the mechanisms through which teacher characteristics influence academic performance.

H4: Teacher characteristics are significantly correlated with academic performance in Shanghai, China.

2.4 Moderating Effect of Motivation

Motivation is a critical factor that affects academic performance, and it can be categorized into intrinsic and extrinsic types.

Studies have shown that motivation can moderate the relationship between teacher characteristics and academic performance.

Recent research has also focused on the moderating effect of motivation on the relationship between teaching methods and academic performance, with several studies showing that highly motivated students benefit more from certain teaching methods.

Studies in developed countries and China have examined the impact of student motivation on academic performance, with higher levels of motivation leading to better academic outcomes.

However, there is a gap in research regarding the moderating effect of motivation on the relationship between independent variables and academic performance.

H5: Motivation moderates the relationships between teaching methods, classroom environment, curriculum design, teacher characteristics, and academic performance in Shanghai, China.

3. RESEARCH METHODOLOGY AND CONCLUSION

3.1 Research Design

The Quantitative Approach: The research design primarily adopts a quantitative approach to investigate the effects of independent variables on students' academic performance.

Structured Questionnaire: Data will be collected using a structured questionnaire specifically designed to measure variables

Large Sample Size: The questionnaire will be administered to a large sample of students in Shanghai, China, allowing for a representative and diverse participant pool.

Statistical Analysis: Quantitative data collected through the questionnaire will be subjected to statistical analysis techniques, including correlation analysis and regression analysis, to examine the relationships between variables and test research hypotheses.

Objective Data Collection: The focus is on collecting objective, measurable data that can be analyzed statistically, providing empirical on students' academic performance.

3.2 Population and Sample

3.2.1 Population:

This study focuses on secondary school students in Shanghai, China. The decision to focus on secondary school students is rooted in the pivotal phase of academic and personal development during these years.

The secondary schools students are more motivated due to the "Gao Kao" exam, which determines their life destiny. According to the website Study in Shanghai, there are about 1,322,800 students in secondary schools in Shanghai, China. This includes both public and private schools.

Shanghai was selected as it offers a large and diverse population, with a strong emphasis on education.

3.2.2 Sample:

The study will employ stratified random sampling to select participants from the target population. Stratification will be based on pertinent characteristics such as grade level, school type, and academic performance.

By doing so, the study aims to capture the diversity within the population and provide more accurate insights into how different factors impact academic performance.

Employing Krejcie and Morgan's theory, the sample size will be calculated to ensure both statistical robustness and practical feasibility.

The anticipated sample size for this study is 384 participants (population more than 1 million), enabling meaningful analysis of group differences and substantive outcomes.

3.3 Conclusion

This study, guided by the framework of social learning theory and self-determination theory, aimed to examine students' academic performance, with motivation as the sole moderating variable.

Additionally, drawing upon self-determination theory, the study investigated the moderating role of motivation in shaping the relationship between independent variables and academic performance.

The practical implications of this study are relevant for educators, as they provide insights into optimizing instructional practices to improve student academic performance. Additionally, recognizing the moderating role of motivation enables educators to create a supportive environment that fosters student engagement and intrinsic motivation.

From a policy perspective, the findings have implications for education policymakers. Prioritizing effective teaching practices based on the study's results can lead to improved educational quality. Policies that promote student motivation and autonomy align with the findings of this study and can contribute to educational improvement.

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