

# The relationship between double reduction policy and secondary school students' learning anxiety—the mediating role of academic burden

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**Abstract:** This paper investigates the relationship between the double reduction policy and secondary school students' learning anxiety by surveying some secondary school students in Beijing about the implementation of the double reduction policy and the academic burden and learning anxiety under the double reduction policy, and makes relevant suggestions for learning anxiety. The conclusions are as follows: (1) The quantifiable academic burden has been effectively relieved, while the psychological level of academic burden is still heavy, and the psychological level of academic burden is more likely to cause students to have learning anxiety. (2) Academic burden plays a partly mediating role in the double reduction policy and secondary school students' learning anxiety. (3) Students' subjective perceptions of academic burden differed among grade levels.

**Keywords:** double reduction policy; academic burden; learning anxiety; academic performance; family education

## 1. Introduction

### 1.1 Definition of academic burden

The concept of academic burden is very richly defined, but mostly points to the stress and burden that elementary and secondary school students experience because of academic and related issues. Specifically, they can be broadly classified into three kinds. One of the ideas is that academic burden is an objective existence that can be quantified. Different schools have different curricula and assessment methods, different teachers have different teaching styles and assignments, and other factors that can be controlled artificially, so the pressure and burden on students also vary. Secondly, the academic burden is limited to a single subjective feeling. Different students have different feelings about the same learning task due to their different learning abilities, study habits, physical fitness and stress resistance, and the academic burden is the subjective expression of such feelings. Third, it combines objective existence and subjective feelings, and considers academic burden as a product of combining subjective and objective factors.

This paper broadly adopts a third perspective in exploring the intrinsic role of academic burden between the double reduction policy and learning anxiety, defined as covering students' psychological perceptions of burden at the subjective level and the carrying of learning tasks at the objective level [1].

### 1.2 Factors influencing learning anxiety

#### 1.2.1 Personal factors of students

Students commonly experience varying degrees of learning anxiety due to factors such as academic ability, attitude toward learning, academic performance, and academic load. Among them, research proves that academic performance is the most important factor affecting learning anxiety. Scholars Aiping Wang and Hongsheng Che believe that there is a significant negative correlation between learning anxiety and test scores, while academic performance also affects learning anxiety to a certain extent [2]. Learning anxiety interacts with academic performance to a certain extent and can have some influence on academic burden at the subjective level.

### **1.2.2 External factors**

External factors such as family education, school education and social environment have an important impact on students' psychology. Family education is the primary factor that affects students' psychology. Studies have shown that excessive parental intervention and denial of children's learning can bring about a certain amount of anxiety and affect children's psychological health. [3] Also, excessive parental expectations are likely to have a negative effect on the child's psychology, which in turn affects academic performance [4]. Moreover, an unsatisfactory result may also bring about a psychological imbalance in the parents, thus bringing about more educational anxiety; in school education, the pull between teacher authority and student autonomy also tends to induce teacher-derived learning anxiety [5], and teacher-student relationships and feelings can affect learning efficacy and learning anxiety levels [6], all of which pose new challenges to teachers' teaching. The social environment shows a significant negative correlation between social support and learning anxiety [7], which has an impact on students.

### **1.3 The relationship between the "double reduction" policy and learning anxiety**

The double reduction policy affects parents' educational anxiety, and parents' educational anxiety affects students' academic anxiety. The implementation of the double reduction policy has partially alleviated educational anxiety, but the effect is not significant at the level of educational outcomes. The double reduction policy has de-marketized education and returned education to the schools, contributing to the equitable distribution of educational resources. But it also makes parents with insufficient time, literacy and economic power unable to fully take care of their children's learning, and education supervision widens the education gap between classes. At the same time, it is difficult to improve the quality of school teaching in the short term, and parents inevitably equate "reducing the burden" with "reducing the quality" and have certain doubts about the effectiveness of education. Parents pay a lot of money and energy for their children, which increases their own financial burden and time pressure, and parents gradually transfer the burden to students in the process of "increasing the burden" and "being increased the burden". [8]

The double reduction policy presents new challenges for schooling. On the one hand, after-school services have increased teachers' working hours, and the shift in thinking about teaching and assignment has increased teachers' work pressure. On the other hand, the contradiction between students' achievement requirements for higher education and the purpose of the double reduction policy has brought new pressure to schools. The school is the main site of student learning, and the anxiety of the school and teachers can also be subtly transferred to the students, bringing new anxiety.

Since the double reduction policy makes parents and schools worry about the results of education, it leads to educational anxiety, which in turn affects children (students). So, under the double reduction policy, will students also have some doubts and anxiety about the effect of education? The following hypotheses can be made.

Hypothesis 1: Students will have doubts about the effectiveness of the implementation of the double reduction policy, and will then experience learning anxiety.

Hypothesis 2: The double reduction policy can influence learning anxiety by affecting academic burden, and academic burden plays a mediating role between the double reduction policy and learning anxiety.

## **2. Research Methodology**

### **2.1 Questionnaire design and its data sources**

The questionnaire is divided into three parts, which are about the implementation of the double reduction policy, students' academic burden and learning anxiety. The independent variable is the double reduction policy, and since the double reduction policy is prevalent nationwide, this questionnaire assumes that all schools implement the double reduction policy, and only the degree of implementation of the policy varies; the dependent variable is academic anxiety. The dependent variable is learning anxiety. Learning anxiety is reflected in physical quality, sleep, emotion, social and other aspects; the mediating variable is academic burden. The academic burden variable is reflected in parental supervision of students' learning, interpersonal relationships, academic performance, homework volume, and class structure. The relevant control variables are mainly grade level and the degree of implementation of the double reduction policy.

A total of 712 questionnaires were collected from 712 Beijing secondary school students, including 169 first-year junior high school students, 360 junior high school sophomores, and 183 third-year junior high school students, excluding 90 invalid questionnaires with short response time.

## **2.2 Data analysis**

### **2.2.1 Common method deviation**

In this study, common method deviation is controlled by adopting a procedural control approach (H. Zhou, L. R. Long, 2004), and common method deviation is tested by the Harman one-way method. The data shows that there are 14 factors with eigenvalues greater than one, and the variance explained by the first factor is 13.529%, which is less than the critical criterion of 40%. Therefore, there is no serious common method deviation in the data of this study.

### **2.2.2 Descriptive statistics and correlation analysis**

The statistics show that the implementation of the double reduction policy is good, but the students' adaptation to the double reduction policy needs to be improved. Among them, 86.98% of students think that the implementation of the double reduction policy is high, 84.41% of students think that the teachers' class format is innovative after the double reduction policy, 83.76% of students think that the double reduction policy is helpful to expand knowledge, and 87.62% of students think that the double reduction policy has improved educational fairness, which indicates that the implementation of the double reduction policy has helped students' learning situation. However, 61.09% of the students thought that the double-reduction policy was confusing to the new teaching methods, 90.84% of the students thought that parents' concern about grades increased after the double-reduction policy, 65.76% of the students thought that parents' concern about grades would cause students' anxiety, and 62.06% of the students still attended some tutoring classes or hired tutors under the double-reduction policy, indicating that the implementation of the double-reduction policy also brought some This shows that the implementation of the double reduction policy has also brought some negative effects.

Analyzing the sources of academic burdens, 72.19% of the students think that academic achievement is a factor that brings about academic burdens, and 68.01% of the students think that excessive parental supervision is an important factor that brings about academic burdens. Among them, academic performance as a manifestation of learning achievement is a direct factor of academic burden and one of the sources of excessive parental supervision.

According to the analysis of the questionnaire, 91.16% of the students thought that the implementation of the double reduction policy had reduced the academic burden, 86.01% of the students thought that the double reduction policy had reduced study anxiety, and 56.27% of the students also thought that the double reduction policy had reduced the academic burden and study anxiety at the same time.

In terms of the sources of academic burden, the highest proportion of students, 84.24% of the total number of students, considered the unbalanced structure of teaching as the source of academic burden, followed by the amount of homework, 81.51% of the total number of students. It is believed that the way teachers attend classes is the lowest proportion of the source of academic burden, accounting for 62.06% of all students. Combining the different grades, the highest proportion of affirmative responses for each source of academic burden was found among eighth grade students, followed by ninth grade students, and the lowest proportion was found among seventh grade students.

## **2.3 Intermediary model testing**

The data analysis was conducted using a mediating effect test procedure with academic burden as the mediating variable by controlling for factors such as grade level and the degree of implementation of the double reduction policy. It analyzes the linear relationship between the implementation of the double-reduction policy and learning anxiety (Table 1), the linear relationship between the implementation of the double-reduction policy and the academic burden (Table 2) and the intermediary effect of the academic burden between the implementation of the double-reduction policy and learning anxiety (Table 3), and explores the relationship between the academic burden, the double-reduction policy and learning anxiety.

According to the data analysis, academic burden played a partially mediating effect between the degree of implementation of the double reduction policy and academic anxiety, and the results of the

stratified regressions are shown in Tables 1, 2, and 3. Regression equation 1 indicates that the degree of implementation of the double reduction policy has a significant positive predictive effect on academic anxiety. Regression equation 2 indicates that the degree of implementation of the double reduction policy has a significant positive predictive effect on academic burden. The regression equation 2 shows that after adding the mediating variable academic burden, the degree of implementation of the double reduction policy still has a significant positive predictive effect on the dependent variable academic anxiety. Also, the mediating variable can positively predict the dependent variable significantly.

The goodness of fit of all three sets of models passed the significance test. In Model 1, the standardized regression coefficient of the independent variable of the degree of implementation of the double reduction policy on the dependent variable of learning anxiety is 0.425, corresponding to a t-statistic of 11.689, which passes the test at the 0.01 level of significance, indicating that the double reduction policy is still significantly positive for learning anxiety. However, the regression coefficient has been reduced from 0.393 in the first step of the mediation test to 0.260, and the standardized regression coefficient of academic load on learning anxiety is 0.327, corresponding to a t-statistic of 8.165, which also passed the significance test, indicating that academic load also has a significant positive effect on learning anxiety, which was verified in the third step of the mediation test. Therefore, it can be judged that academic burden plays a partially mediating role between the double reduction policy and learning anxiety. The internal relationship structure between the double reduction policy and learning anxiety is shown in Figure 1.

*Table 1: Linear relationship analysis between the degree of implementation of the double reduction policy and learning anxiety*

| Models  | Unstandardized coefficient                                  |                | Standardization factor | t    | Significance |      |
|---|---|----------------|------------------------|------|--------------|------|
|   | B   | Standard error | Beta                   |      |              |      |
| 1   | (Constant)  | .630           | .050                   |      | 12.663       | .000 |
| 1   | The extent of implementation of the double reduction policy | .493           | .042                   | .425 | 11.689       | .000 |
| a. Dependent variable: changes in learning anxiety brought about by the double reduction policy |   |                |                        |      |              |      |

*Table 2: Linear relationship analysis of the degree of implementation of the double reduction policy and academic burden*

| Models   | Unstandardized coefficient                                  |                | Standardization factor | t    | Significance |      |
|--|---|----------------|------------------------|------|--------------|------|
|  | B   | Standard error | Beta                   |      |              |      |
| 1  | (Constant)  | .552           | .042                   |      | 13.093       | .000 |
| 1  | The extent of implementation of the double reduction policy | .521           | .036                   | .505 | 14.570       | .000 |
| a. Dependent variable: changes in academic burden due to the double reduction policy |   |                |                        |      |              |      |

*Table 3: Analysis of the mediating effect of academic burden between the degree of implementation of the double reduction policy and learning anxiety*

| Models  | Unstandardized coefficient                                  |                | Standardization factor | t    | Significance |      |
|---|---|----------------|------------------------|------|--------------|------|
|   | B   | Standard error | Beta                   |      |              |      |
| 1   | (Constant)  | .427           | .053                   |      | 7.987        | .000 |
| 1   | The extent of implementation of the double reduction policy | .302           | .047                   | .260 | 6.486        | .000 |
| 1   | Double reduction policy brings changes in academic burden   | .368           | .045                   | .327 | 8.165        | .000 |
| a. Dependent variable: changes in learning anxiety brought about by the double reduction policy |   |                |                        |      |              |      |

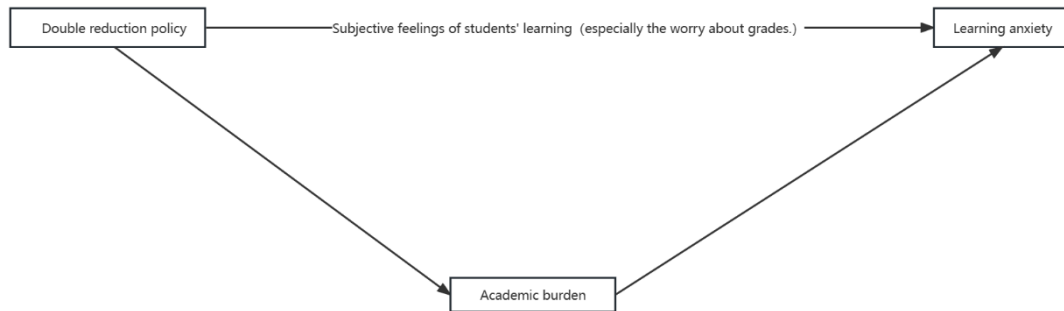


Figure 1: Structure of the internal relationship between double reduction policy and learning anxiety

### 3. Results and Discussion

First, the quantifiable academic burden has been effectively alleviated, but the psychological level of academic burden is still heavy. At the same time, the psychological level of academic burden is more likely to bring about study anxiety, and it is more difficult to control this anxiety. The vast majority of students believe that the double reduction policy can alleviate academic burden and study anxiety, but specifically in their academic life, 61.09% of students say that they are more anxious about their academic performance after the implementation of the double reduction policy, and the psychological level of academic burden cannot be effectively controlled, and hypothesis one holds.

Then, academic burden has a mediating role. As shown in Table 1, Table 2 and Table 3, the mediating variable reflects the internal relationship between the double reduction policy and learning anxiety, and through the process of testing the hypothesis, it was found that academic burden plays a partial mediating role between the double reduction policy and academic burden, and the double reduction policy affects academic burden and thus learning anxiety, and hypothesis two holds.

Finally, students' subjective perceptions of academic burdens vary by grade level. Students in the transitional grade of junior high school are more sensitive to academic burdens and are easily affected by them. The second year of junior high school is the transition period between the new school confusion stage and the sprinting stage of the midterm examination, and some students are prone to academic slackness, coupled with increased academic difficulty, academic performance tends to decline, and the degree of students' academic anxiety rises.

### 4. Recommendations

#### 4.1 Students find the right way to regulate their stress

This study shows that up to 89.53% of students have suitable ways to regulate their emotions to relieve study anxiety when they have study problems. When the bad competition in learning becomes a utilitarian comparison among classmates, students' expectations of themselves are too high, they cannot find their own position, and they feel confused and blinded when they are prone to breed learning anxiety. Appropriate regulation of study stress and study anxiety and reduction of academic burden can enhance students' learning efficiency, which in turn can play a positive role in guiding academic performance.

#### 4.2 Teachers and parents reverse their educational philosophy

Teachers and parents continue to be important sources of influence on academic burden after the implementation of the double reduction policy. Teachers and parents need to reverse their educational concepts, establish correct educational values, and reduce their own educational anxiety and the contagion of anxiety on students (children). At the same time, teachers and parents should also help students (children) to find their own position and provide positive motivational guidance so as to reduce stress.

#### 4.3 Students develop a wide range of interests

By cultivating a wide range of interests, students can stimulate and develop motivation to learn,

enhance their interest in learning, strengthen their self-confidence, and reduce learned helplessness. Moreover, students can cultivate their interests to explore their potential, cultivate vocational skills, shape a skill, provide assistance in choosing their future study and employment direction, and reduce their psychological burden and learning anxiety.

## 5. Conclusion

The double reduction policy can influence learning anxiety through academic burden, and academic burden plays a partly mediating role in the double reduction policy and learning anxiety. Although the implementation of the double reduction policy has alleviated some objective burdens, students' psychological burdens have not been relieved due to the influence of academic performance and the pressure of further education on students and their parents, and students need to find their own psychological adjustment methods to avoid entering a "dead end". Parents should change their educational philosophy, communicate more with their children, and stimulate the development of their children's hobbies to reduce their psychological burden and provide a purely positive environment for their children's growth.

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