

# The Predictive Role of Materialistic Values on Learning Burnout by Pre-service Teachers: A Parallel Channel Model

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## Abstract

This study set out to explore the relationship between materialistic values (MVS), ontological security threat (OST), gratitude, and learning burnout (LB) among pre-service teachers enrolled in the Free Teacher Education program in China. MVS, adolescent student burnout, gratitude, and OST questionnaires were administered to 801 pre-service teachers. Data processing was conducted using IBM SPSS 26.0 and AMOS 24.0. The SPSS macro program Model 4 was used to identify mediating mechanisms. Study findings were as follows: (1) MVS was positively correlated with both OST and LB, but negatively correlated with gratitude. (2) OST was positively correlated with LB, while gratitude was negatively correlated with LB. (3) The impact of MVS on pre-service teachers' LB was simultaneously mediated by OST and gratitude. MVS not only directly predicts pre-service teachers' LB, but also influences LB through the independent mediators of OST and gratitude.

**Keywords:** materialistic values, learning burnout, ontological security threat, gratitude, pre-service teachers

## 1. Introduction

Globally, the shortage of teachers undermines the quality of rural education (Biddle & Azano, 2016). In China, continuous shortage of teachers in rural schools hampers the balanced development of rural basic education (Liu et al., 2022). Outmigration of teachers is the biggest challenge limiting the balanced development of education in rural areas. For example, China has a highly unbalanced school system in both its urban and rural regions, as highlighted by studies such as Gao et al. (2016) and Li et al. (2020). In 2007, China initiated the Free Teacher Education program (FTE) that offers participants tuition waivers, career prospects, and a stipend to address this problem. However, there is low vocational identity and teaching willingness among pre-service teachers enrolled in the FTE program. Research shows that over 80% of FTE pre-service teachers break their recruitment contracts (Zhou et al., 2010), and many fail to fulfill their obligations (Hong et al., 2015; Wu, 2020; Russell et al., 2020). It is possible that pre-service teachers who received public funding for their education and training may have encountered various problems, such as low satisfaction with the curriculum and excessive emphasis on formal course skill training which could contribute to the development of learning burnout (LB). Learning burnout refers to a decrease in interest, enthusiasm, and motivation towards learning, as well as negative attitudes and emotional experiences towards learning tasks and goals. (Zhang & He, 2012; Engin, 2019). The dissemination of knowledge and information through the implicit curriculum is of great significance for pre-service teachers: it helps them comprehend the correlation between the societal context and their prospective careers failure to which pre-service teachers' LB can exceed that of regular college students (Billings et al., 2011; Ortega et al., 2022; Gonzalez-DeHass et al., 2017; Tang et al., 2021).

Research studies have provided explanations for the burnout phenomenon. Families of lower social status usually to provide fewer resources. Therefore, pre-service teachers' family and societal conditions are not guaranteed. This uncertainty can damage not only pre-service teachers' tangible resources but also their intangible resources impeding their acquisition of materialistic values (MVS) (Baker et al., 2013) and contributing to learning burnout (Li et al., 2019; Luo et al., 2020; Yu et al., 2021; Wang et al., 2016). Therefore, this study set out to explore the factors that lead to LB, and provide ideas and references for resolving the problems faced by publicly funded pre-service teachers.

## 2. Theoretical Foundations and Hypotheses

### 2.1 *Materialistic Values and Learning Burnout*

Materialism pertains to the realm of social ethics that promotes the pursuit of worldly pleasures and the evaluation of others' achievements through their wealth. Prior studies have shown that materialistic values, which are highly influenced by tangible resources, have an impact on subjective well-being, mental health, and learning attitudes (Borualogo & Casas, 2021; Knies, 2022). However, government-sponsored pre-service teachers, who are mainly drawn from disadvantaged backgrounds, often face financial constraints resulting in low levels of life satisfaction and happiness (Opree et al., 2012). In addition, they may have a negative attitude towards education and lack intrinsic motivation to learn (Froh et al., 2011; Ku et al., 2014). However, existing research has not established the mechanism underlying the relationship between materialistic values and learning burnout. Therefore, this study set out develop an intermediate model to explain the psychological processes underlying this relationship.

### 2.2 *The Mediating Role of Ontological Security Threat*

Ontological security refers to people's confidence in the continuity of self-identity and the stability of the social and material environment (Giddens, 1990). Individuals pursue the acquisition and consumption of material wealth as a means of attaining ontological security. Moreover, MVS are a significant predictor of ontological security (Arndt et al., 2004; Kasser, 2016; Rindfleisch & Burroughs, 2004); a fact supported by many empirical studies (Christopher et al., 2006; Johnson et al., 2005; Sheldon & Kasser, 2008). Furthermore, ontological insecurity adversely affects employees' psychology and behavior (Cuyper et al., 2009; Schreurs et al., 2010; Silla et al., 2009). Individuals who are often confronted with situations of uncertainty and insecurity may manifest physical and mental exhaustion (Hao & Lirong, 2013; Bosman et al., 2005; Hassan, 2015; Kim, 2020). The preceding negative experiences can ultimately culminate in learning burnout (Evans et al., 2013; Luo et al., 2020; Yu et al., 2021).

### 2.3 *The Mediating Role of Gratitude*

Materialistic values have a negative predictive effect on gratitude; materialistic individuals focus on what they lack, see others as competitors, and face difficulties in acknowledging help from others (Xu & Hamamura, 2014; Lambert et al., 2009). Gratitude is one of the most efficacious tools in positive psychology and is also a potent predictor of psychological well-being (Davis et al., 2016; Wood et al., 2010). Gratitude is linked to academic accomplishment and self-motivation (Froh et al., 2011; Valdez et al., 2017; Valdez & Chu, 2020) and reduces learning burnout. Previous studies have shown that gratitude enhances achievement motivation, goal pursuit, and diminishes learning burnout by creating a sense of debt (Bono & Froh, 2009; Froh & Bono, 2008; Froh et al., 2011; Naito et al., 2005).

### 2.4 *Methodology*

A previous research study developed a four-stage motivation model that delves into the intricacies of change, and involves contemplation, imbalance or ambivalence, evaluation, and adjustment (Zhai, 2019; Fields, 2004). Within this framework, pre-service teachers' curriculum-based education is considered a comprehensive process that transforms their motivation. Firstly, contemplation is a stage during which students consciously recognize their attitudes towards their future careers based on their existing experiences (i.e., materialistic values) and determine their current learning attitudes (i.e., whether to create LB). Secondly, an imbalance or ambivalence of perception or weight could potentially decrease pre-service teachers' motivation (Fields, 2004). When students find themselves in an unsafe environment, where their ontological safety is threatened, their willingness to learn is reduced. Thirdly, there is a process of self-evaluation and adjustment. In summary, this model illustrates the complex process of LB development and emphasizes the importance of the four-stage motivation model's components.

### 2.5 *Hypotheses*

We posit three research hypotheses regarding the psychological mechanism underlying LB of pre-service teachers.

**H1:** MVS positively predicts LB.

**H2:** Gratitude plays a mediating role in predicting LB.

**H3:** Ontological security plays a mediating role in predicting LB.

Indeed, discussions about the psychological processes underlying the mechanism between MVS and LB among pre-service teachers in China are of significant theoretical and practical value. Understanding this mechanism can enrich the theoretical basis of the field and inform the development of effective interventions to improve teacher education program stability. Additionally, it is crucial to retain high-quality pre-service teachers in the program to ensure the future quality of education given the importance of teachers in shaping the next generation. Results from this study can identify ways in which we can promote the well-being and motivation of pre-service to further their careers in teaching.

### 3. Research Methodology

#### 3.1 Participants and Procedures

This study utilized a convenient sample of pre-service teachers aged 18 years or older enrolled in the FTE program in Western China. Participants were informed that the study was voluntary and for academic purposes only and no compensation was offered. Counselors at each university were contacted to distribute the questionnaires during class meetings. Participants were asked to read the brief invitation to participate, complete the questionnaire, and submit it individually. In total, 963 respondents were contacted, 878 (91.17%) questionnaires were collected, 77 were excluded due to invalid data, resulting in a final sample of 801 valid questionnaires (Table 1) from 612 females and 189 males whose average age was 20.8.

Table 1. Demographic characteristics of participants.

Demographic variables		N (%)
Gender	Male	189 (23.6)
	Female	612 (76.4)
Age in years	18-19	141 (17.6)
	20-22	584 (72.9)
	23-29	76 (9.5)
Birthplace	Urban	296 (37.2)
	Rural	499 (62.8)
Only child	Only child	166 (20.8)
	Child with siblings	635 (79.2)
Subject classification	Science and Engineering	164 (20.7)
	Humanities and Social Sciences	604 (76.1)
	Arts and Sports	26 (3.3)

#### 3.2 Data Analysis

During data processing, we first conducted a preliminary data analysis including descriptive statistics and a reliability and correlation analysis of the study variables using IBM SPSS 26.0. Next, we performed confirmatory factor analysis (CFA) on each scale using AMOS 24.0. Finally, to verify our hypotheses, we conducted a mediation analysis using Hayes' (2017) SPSS PROCESS 3.0 macro program Model 4 after checking for outliers and collinearity in the data.

#### 3.3 Assessment of Common Method Variance

The Harman single-factor test is a popular method used to assess the presence of common method bias in survey research (Harman, 1976). An exploratory factor analysis is done on all items in the survey and if a single factor explains a majority of the variance, there is common method bias. In this study, first factor explained only 19.88% of the variance, a value less than the critical criterion of 40% (Podsakoff et al., 2003). Therefore, validity of the data was not affected by this potential source of bias.

#### 3.4 Measurement

##### 3.4.1 Materialistic Values Scale (MVS-13)

The MVS Scale compiled by Richins (1992) and revised by Li Jing (2009) contains 13 items and three dimensions of "acquisition centrality," "acquisition as the pursuit of happiness," and "possession-defined success." Questions are all scored on a five-point Likert scale, ranging from 1= "absolutely disagree" to 5="completely agree." The higher the score, the higher the MVS tendency. Reliability analysis of the MVS scale showed a Cronbach's alpha coefficient of 0.77 indicating good internal consistency. McDonald's Omega was estimated at 0.78 further confirming the reliability and validity of the scale (Hayes & Coutts, 2020). The model fitting index was ideal (RMSEA = 0.072, CFI = 0.919, NFI = 0.920, IFI = 0.947) by CFA in our study.

##### 3.4.2 Adolescent Student Burnout Inventory (ASBI-16)

The student burnout inventory compiled by Chinese scholars that includes three dimensions of exhaustion, learning cynicism, and reduced efficacy, has 16 items. Questions are all scored on a seven-point Likert scale, ranging from 1="completely disagree" to 7="completely agree." The higher the cumulative score, the higher degree of LB (Wu et al., 2010). The reliability of this questionnaire, as measured by Cronbach's alpha coefficient, was 0.84. The estimate of  $\omega$  was also found to be 0.84, indicating good reliability and validity. Furthermore, the model fit of the questionnaire was ideal as evidenced by the fitting indices of RMSEA = 0.068, CFI = 0.979, NFI = 0.977, and IFI = 0.971.

### 3.4.3 Gratitude Questionnaire (GQ-6)

The gratitude questionnaire used was compiled by Mc Cullough (2002). This study used a revised version of the questionnaire for adolescents that was translated into Chinese by Li (2012). Its 6 questions are all scored on a seven-point Likert scale ranging from 1="strongly disagree" to 7="strongly agree." The scale's Cronbach's alpha coefficient scale was 0.81. The estimate of  $\omega$  was 0.82. Furthermore, the model fit of the questionnaire was ideal as evidenced by the fitting indices of RMSEA = 0.072, CFI = 0.969, NFI = 0.965, IFI = 0.969.

### 3.4.4 Ontological Security Threat Perception Scale (OST-7)

The ontology threat perception scale developed by Xu (2020), which has good reliability and validity, was used to measure an individual's perceived state of ontological security threat (OST). Its seven items scores range from 1="strongly disagree" to 7="strongly agree." The higher the cumulative total score, the higher threat level. The scale's Cronbach's alpha coefficient scale was 0.78. The estimate of  $\omega$  was 0.83. Furthermore, the model fit of the questionnaire was ideal as evidenced by the fitting indices of RMSEA = 0.075, CFI = 0.941, NFI = 0.945, IFI = 0.949.

## 4. Results

### 4.1 Descriptive Statistics and Correlation

Correlation analysis was carried out on the four variables of MVS, gratitude, OST, and LB. MVS were positively correlated with ontological security and LB, and negatively correlated with gratitude. Sense of threat was negatively correlated with gratitude and positively correlated with LB. Also, gratitude was negatively correlated with LB. (Table 2)

Table 2. Correlations among major variables.

Variable	<i>M</i> ± <i>SD</i>	MVS	OST	Gratitude	LB
MVS	2.88±0.56	1			
OST	3.59±1.08	0.36**	1		
Gratitude	5.90±0.82	-0.13**	-0.28**	1	
LB	2.57±0.50	0.36**	0.51**	-0.34**	1

Note: Pearson's correlations were conducted. \*\* $p < 0.01$ , \* $p < 0.05$ .

### 4.2 Mediation Model Analysis

We utilized bias-corrected bootstrapping analyses with 5,000 resamples to test mediation models (PROCESS macro for SPSS; Hayes, 2013). The significance of indirect effects (i.e., significant mediating effects) was indicated by confidence intervals that did not including zero. Multiple mediator models were conducted with MVS as the predictor variable and LB as the outcome variable. The results showed that MVS has a significant direct effect on LB ( $\beta=0.21$ ,  $p<0.001$ ), positively predicts the threat of ontological security ( $\beta=0.33$ ,  $p<0.001$ ), but negatively predicts gratitude ( $\beta= -0.09$ ,  $p<0.01$ ). Ontological security positively predicts LB ( $\beta= 0.37$ ,  $p<0.001$ ), and negatively predicts LB ( $\beta= -0.22$ ,  $p<0.001$ ). (Table 3)

Table 3. Regression analysis.

Regression equation		Fitting index		Regression coefficient significance	
Result variable	Predictor variable	$R^2$	$F$	$\beta$	$t$
Ontological security	MVS	0.13	22.02***	0.33	9.27***
	Gender			-0.04	-1.11
	Age			-0.01	-0.25
	Only one child			-0.06	-1.48
	Professional category			-0.03	-0.76
gratitude	MVS	0.06	9.12***	-0.09	-2.37**
	Gender			0.10	2.53*
	Age			-0.02	-0.44
	Only one child			0.08	2.08*
	Professional category			0.11	2.85**
LB	MVS	0.34	53.393***	0.21	6.32***
	Ontological security			0.37	11.14***
	trait gratitude			-0.22	-6.74***
	Gender			-0.04	-1.26
	Age			-0.03	-1.06
	Only one child			0.02	0.60
	Professional category			0.04	1.26

Note: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . All variables have been standardized.

OST and gratitude mediate the association between MVS and LB: their effect value of 0.14 accounts for 41.17% of the total effect (Table 4, Figure 1). This specific mediating effect is produced in two ways: indirect effect 1 (e.g., "MVS→OST →LB ") and indirect effect 2 (e.g., " MVS →gratitude →LB ") which account for 35.29% and 5.88% of the total mediating effect, respectively. The 95% confidence range of bootstrap for all indirect effects does not include 0 proving that the two indirect effects are different.

Table 4. Mediation effect analysis.

	Indirect effect	Boot SE	Boot LLCI	Boot ULCI	Ratio of indirect to total effect
Total indirect effect	0.14	0.02	0.12	0.20	41.17%
Indirect effect 1	0.12	0.02	0.10	0.17	35.29%
Indirect effect 2	0.02	0.01	0.01	0.04	5.88%
Compare	0.10	0.02	0.07	0.15	

Note: SE: Standard Error; Boot LLCI: Bootstrap Lower Limit of Confidence Interval; Boot ULCI: Upper Limit of Confidence Interval. Boot SE, Boot LLCI, and ULCI refer to the standard error and lower/upper limits of the 95% confidence interval for indirect effects estimated by the offset-corrected percentile bootstrap method.

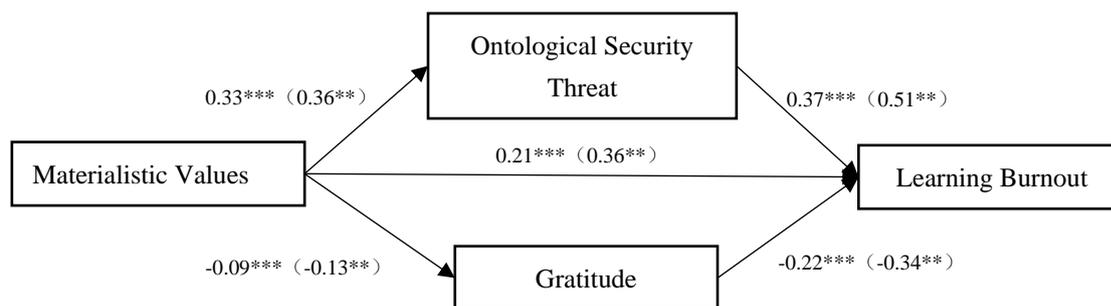


Figure 1. This figure displays the impact of MVS, gratitude, ontological security, and LB, along with their correlation coefficients in parentheses

The regression coefficient was obtained using Model 4 in the SPSS macro program after controlling for demographic variables. N = 801; \*\*\* $p < 0.001$ , \*\* $p < 0.01$ .

## 5. Discussion

### 5.1 Overview and Interpretation of Findings

This study constructed a parallel mediating model between MVS and LB and discussed the mechanisms mediating the relationship between MVS and LB, i.e., OST and gratitude. Our findings could explain how certain factors affect LB and the circumstances under which this effect occurs. These results have both theoretical and practical implications for interventions to prevent LB. Research has illustrated that individuals with stronger materialistic values are more likely to experience learning burnout. During the learning process, learners may face academic and personal life pressures, such as academic demands, homework load, and exam results. Individuals with materialistic values, who focus too much on material wealth and pleasure while neglecting the importance of academic pursuits, are more likely to experience learning burnout. Individuals with materialistic values may also devote more time and energy to pursuing material wealth instead of investing in learning. Such pursuits lead to insufficient time and effort being devoted to learning, making it difficult to maintain sufficient learning motivation and positivity and exacerbating learning burnout.

Due to contractual requirements, publicly funded pre-service teachers' willingness to teach for life has drastically decreased over time (Mateos-Moreno, 2022; Cuervo & Acquaro, 2018; Tang et al., 2018; Zhai, 2019). A study in rural schools in Victoria showed that teachers in rural schools felt what they described as "curriculum loneliness" (Cuervo, 2016). That is, in the process of curriculum implementation, the lack of attention to hidden courses did not achieve the desired effect, thereby further exacerbating learning burnout. Unstable family contexts, such as financial difficulties, partially influence adolescents' MVS (Baker et al., 2013); such contexts also damage an individual's intangible resources and affects his or her ontological security and gratitude level. Materialism is a powerful predictor of burnout among students. Schools and the society should screen the materialistic tendency of students through mental health

surveys and tests to formulate targeted intervention educational programs and prevent the harmful effects of materialism when students show excessive attention to property and conspicuous consumption.

Based on the intermediary analysis, MVS not only predicts LB, but it can also be indirectly influenced by gratitude and OST. These results further confirmed the strong association between MVS and LB, consistent with previous studies (Froh et al., 2011; Ku et al., 2014; Unanue et al., 2017). OST and gratitude affect LB through two paths: in the first path (MVS → OST → LB), MVS positively impacts OST as stated by previous research (Christopher et al., 2006; Sheldon & Kasser, 2008). Most pre-service teachers lack physical resources; individuals attempt to regain nomenclature security through pursuing material wealth to remove psychological instability (Hawkins & Maurer, 2011). However, this in turn threatens ontology security (Skey, 2010); when the external context changes and social order is disrupted, individuals find it difficult to anticipate future events, develop confidence, and acquire the ability for continuous development. Therefore, we ascribe great importance to paying attention to students' nomenclature security, creating a stable environment, and improving students' sense of control.

Additionally, the second pathway (MVS → gratitude → LB), confirms the association between MVS and gratitude. Specifically, it reveals that individuals with higher materialistic values tend to have lower levels of gratitude, which aligns with previous research findings. (Lambert et al., 2009; Xu & Hamamura, 2014). Gratitude acts as an intermediary between materialism and LB. Materialists tend to focus on the unattained things, ignore the positive aspects of life resulting in lower levels of life satisfaction (Tsang et al., 2014). Furthermore, gratitude can reduce LB through learning engagement (Bono & Froh, 2009). Therefore, in the future, parents might set an example for their children by being grateful. Moreover, society and universities should cultivate gratitude consciousness, improve financial support mechanisms, and practice gratitude in the current policy of "educating people in all aspects of the whole process." Finally, the indirect effect 1 exceed 2 implying that the mediating effect of OST surpasses that of gratitude. Ontological security stems from individual self-construction and emphasizes the interaction between individual self-continuity and a continuous and stable social environment. Hence, educators should not only focus on students' subjective experiences, but also on the process of uniform and ongoing cognitive construction.

### *5.2 Limitations and Future Directions*

There were some limitations. Firstly, due to the cross-sectional nature of our study, we could establish causality between the variables. Further research using experimental or longitudinal designs could explain causal relationships. Secondly, while gratitude had a small mediating effect, other mediators should be considered. Finally, the impact of materialism may vary based on different definitions and perspectives (Shrum et al., 2013); future studies could explore varied aspects of materialism.

School, especially in university campuses, is a critical place for cultivating and instilling correct values regarding materialism. Schools should encourage and guide university students to have a proper attitude towards material possessions and to form correct consumption patterns and habits. Furthermore, schools should incorporate consumer education into their curricula. Additionally, the current trend towards utilitarianism in the education system should be amended, the promotion and glorification of material possessions, fame, and economic success should be reduced, and the focus of education should be shifted towards enhancing the overall quality of education and comprehensive individual development.

The impact of family education on material values exceeds that of schools. Parents should be cognizant of the school's material value education content and reinforce it among their children. Concurrently, parents should also focus on building a healthy and positive family atmosphere and culture: a family culture that values spiritual and cultural values and emphasizes individual independence and free growth. Families should highlight the emotional relationship between two independent individuals while deemphasizing influence of material interests and dependency in the relationship between husband and wife. In parent-child relationships, utilitarian practices should be toned down, and a humanistic approach should be taken towards children's growth, allowing them to make free choices for their future.

## **6. Conclusion**

The aim of this study was to investigate the relationship between MVS, OST, gratitude, and LB and its underlying mechanism of action, among pre-service teachers enrolled in the Free Teacher Education program in China. Using a parallel mediation model, we determined that MVS not only directly predicts LB in pre-service teachers, but also simultaneously influenced by the independent mediators OST and gratitude.

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