

Article

Sustainable Development of High School English Learners in China: Motivation and Its Impact on Their English Achievement

Shi Jiao ¹  and Fang Liang ^{2,*}¹ College of Education, Minzu University of China, Beijing 100081, China² College of Science, Minzu University of China, Beijing 100081, China

* Correspondence: 2001037@muc.edu.cn

Abstract: The Sustainable Development Goals (SDGs) cannot be achieved without quality education and the cultivation of innovative and international talents. This study examined high school students' English learning motivation structure, the differences between male and female students, and the motivational impact on English learning achievement. Participants included 778 high school students (385 boys and 393 girls) from two Chinese high schools in two representative regions. The results showed that the English learning motivation of high school students mainly included four types, namely, intrinsic interest, learning situation, social responsibility, and personal development. Females' English learning motivation was significantly higher than that of males. Further, intrinsic interest and personal development had a significantly positive impact on English achievement, whereas social responsibility had a significantly negative impact, and learning situation had no significant impact. The above findings contribute to further understanding of the internal structure of second language learning motivation and the influence mechanism of motivation on achievement, which are of great significance to students' growth and the sustainable improvement in the quality of education.

Keywords: SDGs; motivation; achievement; intrinsic interest; personal development; social responsibility

**Citation:** Jiao, S.; Liang, F.Sustainable Development of High School English Learners in China: Motivation and Its Impact on Their English Achievement. *Sustainability* **2022**, *14*, 12619. <https://doi.org/10.3390/su141912619>

Academic Editors: Lawrence Jun Zhang and Vincent T. Greenier

Received: 13 September 2022

Accepted: 30 September 2022

Published: 4 October 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Since the establishment of the Sustainable Development Goals (SDGs), countries all around the globe have been working together toward an inclusive, sustainable, and resilient future [1]. However, there is still a long way to go before we can meet the aim of sustainable development on time [2]. Providing quality education and promoting gender equality are important tasks encompassed by the UN development goals [3]. Quality education is a key component of the SDGs, yet little is known about how to accomplish the SDGs' quality education targets [4]. Second language learning plays an essential role in cultivating international innovators, and it is also an important way of achieving sustainable development [5,6]. The impact of the COVID-19 pandemic has forced many countries to close schools, posing a huge challenge to the sustainability of quality education [7]. Managing the relationship between quality education and sustainable development in this new era is our top priority. In this special period, it becomes particularly important to study students' motivation to learn a second language.

Motivation determines the willingness to learn, the effect, and achievement of learning goals [8]. It also determines why learners learn, for whom they learn, and the direction and results of their efforts [9]. Therefore, motivation plays an important role in second language learning. For a long time, researchers have tried to solve the problem of what constitutes second language learning motivation, and developed concepts such as instrumental motivation and integrative motivation [10,11]. The current academic research on second language learning motivation has provided the reasons, necessity, and motivations for English learning [12,13]. However, the issue of motivational effects on academic achievement must be addressed, and the internal structure and gender differences in motivation

must be clarified. Past studies have shown that learning motivation has an impact on students' academic performance [14,15]. Recent studies show that learning motivation has a significant predictive effect on grades [16,17]. The stronger the second language learning motivation, the higher the second language achievement will be. The weaker the second language learning motivation, the weaker the second language achievement will be [18].

However, previous studies have mainly focused on the influence of motivation on students' academic achievement but paid little attention to how motivation affects students' academic achievement. Few studies have explored the role of various motivations in influencing students' academic achievement [19]. Studies on gender differences in motivation are mostly reflected in the analysis of the results of gender differences between male and female students, but little is known about the causes of such gender differences [20,21]. As for the study of motivation structure, the previous studies mainly focused on the exploration of motivation types without paying enough attention to the internal structure of motivation, and the interpretation was insufficiently explanatory.

There are different challenges that educational transformation must face. Schools are the main drivers of social change, aiming to help students get fair and high-quality educational opportunities after COVID-19 and cultivate individuals who can create a sustainable world with comprehensive learning ability [22]. High school plays a key role in Chinese students' academic careers, and the National College Entrance Exam, called "Gaokao", is a college admission examination for Chinese students [23]. English is a compulsory subject in high school, playing an important role in high school studies [24]. Students' motivation to learn English determines their desire and priority [25]. Studying the motivation of high school students' English learning has both theoretical and practical value. For high school students, learning English is not only driven by the desire for personal development, but also influenced by internal interests, social responsibilities, and learning situation [19,23]. However, under the pressure of the National College Entrance Exam, it is challenging to achieve ideal academic levels and maintain motivation for learning English [26]. In the context of high school learning, it is of great research value to explore English learning motivation. As an important factor in pursuing higher education, the research value of high school learning cannot be ignored. Since English is an important subject in high school, the research on English language learning motivation of high school students is of great significance.

The research on second language learning motivation has not paid enough attention to the high school level. The discussion on English learning motivation is mainly confined to college and middle school students, and there is a lack of research on high school learners. The questions of how to structure the classification of high school students' English learning motivation, and how motivation affects academic achievement, are difficult to determine, and are the focus of this study. This study attempts to explore the internal structure of high school students' English learning motivation, the influence of motivation on English achievement, and the motivational differences between male and female students through empirical investigation. This study collects data on the English learning motivation of high school students from two representative high schools in Beijing city and Shandong province. The novelty of this study is that it explores the motivational complexity of English learning for high school students and examines the internal structure of English learning motivation and its influence on English achievement in the Asian context. Additionally, gender differences in motivation are analyzed and their causal reasons are explained. By deepening the understanding of high school students' English learning motivation, we seek to enhance second language teaching across China and worldwide.

2. Literature Review

2.1. Motivation Composition

Second language learning motivation is an important indicator in measuring students' second language learning levels. Dörnyei and Ottó [27] defined the motivation of second language learning as the dynamic awakening of individual English learning, which could

start, guide, coordinate, amplify, terminate, and evaluate the cognitive and operational processes, in order to select the priority learning content and finally realize the initial learning desire. Motivation for second language learning is both a mental engine and an emotional attitude [28]. Therefore, second language learning motivation is an important concept that cannot be ignored in second language learning [29]. Generally, second language learning motivation can be categorized into three aspects [30,31]. The first one is socio-educational-based theory, which mainly includes integrative and instrumental motivation. The second approach is self-determination theory (SDT), which includes both internal and external drives. The third model is the L2 Motivational Self System (L2MSS), which is the leading model in contemporary research on second language learning motivation [32–34].

The research on motivation in second language learning initially focused on the debate between instrumentality and integration. Gardner and Lambert [35] put forward instrumental and integrative motivation as the main motivations for second language learning. Instrumental motivation was defined as acquiring a second language through utilitarian behavior, such as earning a higher salary or getting better jobs. Integrative motivation was defined as the willingness of second language learners to become important members of the language community, in contrast to utilitarian acquisition [10,35,36]. Since the classification was proposed, instrumental motivation and the integrative motivation framework have been the focus of the debate surrounding second language learning.

Csizér and Dörnyei [25] proposed that integration was the most important motivation for second language learning, and the main effects of other motivation variables were adjusted by integration and the number of efficiency scales. Aoki [37] argued that Chinese students had higher integrative motivation than students from other countries. The language competence of high achievers was closely related to integrative motivation, indicating that high achievers possessed high integrative motivation [38]. However, a critic suggested that most second language learners exhibit instrumental learning motivation, and that the type of motivation was influenced by the social environment; second language learners mostly possessed instrumental motivation, which was an important factor in students' second language learning [39]. Similarly, students' instrumental motivation for test-taking remained high and they attached importance to the practicability of English tests [40].

Gardner and MacIntyre [36] indicated that both integrative and instrumental motivation could promote learning, but students with instrumental motivation invested more time in learning than students without instrumental motivation. Instrumental motivation had a significant predictive effect on language achievement [41]. This argument was supported by Gao, Zhao, Cheng, and Zhou [5]. An empirical study was conducted; students' learning motivation for a second language was divided into seven types: intrinsic interest, academic performance, going abroad, learning situation, social responsibility, personal development, and information media. Gao, Zhao, Cheng, and Zhou [5] believed that instrumentality and integration were compatible. Therefore, integrative and instrumental motivation could be mutually inclusive, and language learning, in most cases, involves a mixture of various motivations [35].

In recent years, the world has witnessed a change not seen for centuries. The outbreak of the COVID-19 pandemic has hindered the sustainable development of second language learning and quality education [42]. This change has made second language learning increasingly complex and uncertain, and traditional theories have made it hard to fully explain students' motivation for second language learning in the new era. Therefore, the research on second language learning motivation has evolved from the integrative and instrumental debate to the vision of the L2 Motivational Self System [43]. Based on the framework of the L2 Motivational Self System, You and Dörnyei [12] conducted a large-scale investigation on English learners' motivation and divided motivation into three levels: the Ideal L2 Self, the Ought-to L2 Self, and the L2 Learning Experience. Dörnyei [8] used the concept of "vision" to specify "the Ideal L2 Self". "The L2 Learning Experience" was not only a powerful predictor of various standard measures, but also generally the

most powerful predictor of motivational behavior. It was regarded as the perceived quality of learners' participation in all aspects of the language learning process [43]. Despite the increasing knowledge regarding the above findings, the internal structures of second language learning have not been adequately explored.

2.2. Gender Differences

It is generally acknowledged that girls' learning motivation is significantly higher than that of boys, and second language learning is no exception. In terms of second language learning motivation, it was believed that girls' second language learning motivation was higher than boys', and their second language learning involvement and academic achievements were also better than boys' [44]. A recent study found that the score of second language learning motivation of girls was higher than that of boys [20]. Female students' intrinsic interest motivation was significantly higher than that of male students, which might be due to their higher self-development and vision cultivation ability than those of male students [12]. Mori and Gobel [45] supported the above views and found that there were significant differences in motivation between genders, suggesting that female students scored significantly higher in second language motivation than male students. Female students' learning motivation was positively correlated with their intellectual development and course performance, but male students' learning motivation was not [46]. Most studies on gender differences in motivation have paid great attention to the motivational results, but have paid little attention to the specific causes behind these differences.

2.3. Motivation and Academic Achievement

In motivation research, previous studies have reached a consensus that motivation affects students' academic achievement [15,16,47]. Learning motivation had a significant predictive effect on learning results [48], and motivation could promote academic achievement [17]. Liu, et al. [49] suggested that motivation could predict test results, and different motivational conditions would lead to different academic performance. A wide range of studies had confirmed that stronger motivation was associated with higher academic achievement and weaker motivation was associated with lower academic achievement [13,18,19]. Motivation could not only improve academic achievement, but could promote students' health and psychological growth as well [50]. Motivation could enhance students' learning autonomy, which was predictive of academic achievement [51]. Motivation could also be divided into intrinsic motivation and extrinsic motivation. Intrinsic motivation has been defined as an activity performed for the intrinsic satisfaction it provides rather than for some external outcome. Extrinsic motivation was the desire to achieve some discernible results whenever an activity was completed [14]. Internal motivation, such as internal interest, had been found to improve students' academic achievement. The stronger the internal motivation, the higher the academic achievement [52,53].

Intrinsic interest has been proven to be correlated with achievement [54]. Students who were intrinsically motivated showed more interest and happiness while learning [55]. A recent study indicated that intrinsic interest motivation had a direct positive impact on science achievement [56]. Besides, students who displayed more interest in learning were more likely to have higher academic achievement [30,57]. In the Asian context, intrinsic interest has been recognized as an influential factor in enhancing lifelong learning for students [58].

In many Asian-Pacific educational contexts, instrumental goals, primarily personal development, are central to the learning process and its outcomes, and this motivation has a positive impact on academic achievement [59]. When students are motivated by clear achievement goals, the instrumental nature becomes evident. Achievement goals had an impact on the motivation of students to face challenging tasks, and students with positive personalities showed a stronger tendency to face challenging tasks [60]. A promotion-oriented approach to language learning led to more adaptive motivation, which in turn contributed to language learning success [61].

Past studies have generally reached a consensus on the predictive role of learning context on academic performance [29,62]. A recent study implied that when students received positive attention and praise from teachers and had positive interactions with them, they were more likely to achieve higher levels in reading and math. Students who were sensitive to school conditions, such as order and safety, were more likely to have lower reading scores [57]. The perception of the classroom learning environment could affect students' participation and significantly impact their academic performance [63].

Social responsibility has a significant predictive effect on academic achievement [64]. Chinese students live in a field-dependent society, and a large proportion of Chinese students have the learning motivation of family responsibility, as they are deeply influenced by Confucian culture. This motivation for Chinese students was found to be driven by a sense of duty, and this motivation could predict their grades [65]. In China, parental expectation deeply influences the motivation for second language learning, which may be related to the principle of "reciprocal duty", in which parents feel obliged to provide their children with a high-quality education in return for the children's responsibility to care for their elderly parents [12]. Therefore, this responsibility motivation has a profound impact on second language learning in China. Responsibility not only predicts academic achievement but is also the most important predictor of outcomes in management [66].

Notably, motivations seem to be particularly relevant to students' learning outcomes [56]. Although previous studies have shown us different motivational impacts on students' academic performance, little is known about how motivation affects students' academic performance, and it is still necessary to explore how motivation plays a role in influencing students' academic performance. The relationship between motivation and academic achievement affects students' specific investments and goals in second language learning. Therefore, the question of how motivation affects performance needs to be further explored.

2.4. The Present Study

Previous findings show that the types of second language learning motivation can be divided according to their own structural characteristics [5,12,58]. Motivation and academic achievement are indeed correlated and important, and it is essential to understand the mechanisms by which these variables influence each other [8,56]. However, based on previous findings, there are still some areas that require further investigation. Firstly, the internal structure of motivation. Although previous studies have classified motivation types in detail, such as integrative and instrumental motivation, and internal and external motivation, the correlation between motivation dimensions and the differences in motivation in different situations have been ignored [19,21,33,44].

Secondly, how does motivation affect English language academic achievement? Although many studies have shown that motivation plays an important role in academic achievement, few studies have explored the underlying mechanisms between motivation and achievement [23,48,53]. To the best of our knowledge, the relationship between different motivations and English learning performance has rarely been studied. Therefore, this study would contribute to advancing our knowledge about the potential mechanism through which motivations impact English language achievement.

Based on the framework of L2 Motivational Self System [67], this study sought to investigate the internal structure and gender differences in high school students' English learning motivation, examining and the influencing mechanism of motivation on English achievement. The following research questions were proposed:

- What are the internal structures of English learning motivation for high school students?
- Are there any motivational differences between female students and male students?
- What is the motivational impact on English achievement? How does motivation affect achievement?

3. Materials and Methods

3.1. Participants

We used strict procedures to select schools and students in China. A total of 800 questionnaires were distributed at the ratio of 1:3 in two representative high schools in Beijing and Shandong province in eastern China with typical Confucian culture. In general, eastern areas are well-developed regions in China. Shandong province is the birthplace of Confucian culture, and Beijing is the capital of China—the political, cultural, and educational center. Both sampled areas are deeply influenced by Confucian culture. Therefore, when examining the relationship between motivation and academic achievement, the samples are representative to some extent.

A total of 778 participants (grades ranging from 10 to 12) were recruited, including 385 boys (49.5%) and 393 girls (50.5%). Among the participants, 300 (38.6%) were from Beijing and 478 (61.4%) were from Shandong province (See Table 1).

Table 1. Demographic composition of the questionnaire ($n = 778$).

Variable	Frequency	Percentage	
Gender	Male	385	49.5%
	Female	393	50.5%
Grade	Ten	311	40.0%
	Eleven	238	30.6%
	Twelve	229	29.4%
Areas	Beijing	300	38.6%
	Shandong	478	61.4%

We conducted a paper-based questionnaire survey in a classroom setting, requiring 10 min to complete, and taking one class as a unit. The sampled students were informed that all the responses would only be used for research purposes, and they were provided with the same incentives to participate. Thus, participants could provide honest answers in the study.

3.2. Instruments

There are two classic questionnaires for examining English learning motivation. One is the English Learner Questionnaire for Asian Learners by Dörnyei and Taguchi [68]. The other one is the Questionnaire on the English Learning Motivation for Chinese Students by Gao, Zhao, Cheng, and Zhou [5]. Although there is a high similarity between the two questionnaires' item designs, the latter is adopted in this study considering the special situation and culture of Chinese second language learners. Measures of the questionnaire design and implementation subsequently included the following steps:

First, referring to the Questionnaire on the English Learning Motivation for Chinese Students by Gao, Zhao, Cheng, and Zhou [5], the initial project of the High School Students' English Learning Motivation Questionnaire is sorted in accordance with the characteristics of high school students. All scale items were rated on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The higher the score, the stronger the motivation for the item was.

Second, some topics are appropriately adjusted for high school students.

Third is the test phase. Before the formal test, 80 and 120 samples were selected to conduct two tests on the questionnaire. The irrelevant questions were deleted, and the questionnaire was issued again.

Finally, the questionnaire was formally issued.

3.3. Data Analytic Procedure

Data analysis includes the following steps: The SPSS20.0 software (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY, USA: IBM Corp.; 2011) was used for exploratory

factor analysis (EFA) on the motivation of high school students' English learning. In addition, confirmatory factor analysis (CFA) was performed to examine the model fit by Amos22.0 software (Arbuckle J.L. Amos, Version 20.0. [Computer Program]. Chicago, IL, USA: IBM SPSS; 2011). Moreover, independent sample *t*-tests were conducted to test the mean differences between male and female students. Finally, multiple linear regression was used to test the influence of English learning motivation on academic achievement.

4. Results

4.1. Item Analysis

The construct reliability (CR) significance test was conducted to delete the items with insignificant correlation coefficients. In combination with the correlation test, items with correlation coefficients of less than 0.3 were deleted, and items 2, 3, 11, and 28 were deleted from the study, leaving 26 remaining items.

4.2. Exploratory Factor Analysis of the Motivational Structure (EFA)

Half of the data points ($n = 389$) from the total sample ($n = 778$) were randomly selected for item analysis and EFA. Through multiple factor analysis, item 12 with a communality of less than 0.4 was deleted according to psycho-statistical theory. In addition, items with a factor load value of less than 0.5 were deleted. Factors 4, 6, 22, and 30 were deleted, which showed significant cross-loading and were irrelevant to items. Finally, the remaining 21 items were reserved for formal factor analysis.

EFA was performed on the remaining items and data of the questionnaire by using SPSS20.0 statistical software. The KMO and Bartlett's sphericity tests showed that the samples met the criteria for factor analysis. The KMO score was found to be 0.889, and the Bartlett Sphericity test results were significant ($\chi^2 = 3896.693$, $df = 210$, $p = 0.000$), indicating that there were common factors among the correlation matrices of the data, and therefore that the questionnaire was suitable for EFA. Through principal component analysis (PCA), factors and communalities were extracted from the 21 questions to obtain the initial factor load matrix. The factor structure matrix after rotation was obtained according to the oblique rotation method. In accordance with the criterion of an eigenvalue greater than 1, a total of 4 factors were extracted, explaining approximately 60.593% of the total variance. See Table 2 for specific item load values.

4.3. Confirmatory Factor Analysis of Motivational Structure (CFA)

Based on the results of the EFA, Amos22.0 statistical software was used to conduct a CFA on the other half of the data ($n = 389$), to test the fitting of the four-factor model of high school students' English learning motivation, which was composed of intrinsic interest, learning situation, social responsibility, and personal development. After model modification, CFA showed that the full model (see Table 3) was well-supported by the data ($CFI = 0.903 > 0.90$, $IFI = 0.904 > 0.90$, $\chi^2/df = 3.295 < 5.0$, $RMSEA = 0.077 < 0.08$), indicating that the model is well suited to the structure [69] and verified the multi-dimensional structural hypothesis of the High School Students' English Learning Motivation Questionnaire.

4.4. Reliability Analysis

The internal consistency coefficient (α coefficient) of the total motivation questionnaire was 0.901 after screening, and the reliability coefficients of intrinsic interest, learning situation, social responsibility, and personal development motivation were 0.886, 0.842, 0.746, and 0.749, respectively. This indicates that the High School Students' English Learning Motivation Questionnaire has a relatively ideal reliability index.

Table 2. Exploratory factor analysis (EFA) results.

Items	Intrinsic Interest	Learning Situation	Social Responsibility	Personal Development	Communality
21. Like the language itself.	0.833				0.694
23. Like English literature.	0.818				0.692
19. Like language learning.	0.780				0.610
18. Be interested in English-speaking countries.	0.766				0.612
20. Like English songs/movies.	0.755				0.571
27. Go abroad to experience the culture.	0.670				0.592
1. Like English at first sight.	0.622				0.529
17. Learn the world's economy, science and technology.	0.605				0.503
7. Like English teacher in high school.		0.828			0.726
5. Like English teacher before entering high school.		0.790			0.646
10. Enjoy English classes.		0.773			0.619
8. Recognize the quality of English classes.		0.761			0.606
9. Like English textbooks.		0.749			0.596
25. Live up to your parents' expectations.			0.829		0.693
24. For the prosperity of the nation.			0.781		0.676
16. Get a good job.			0.660		0.573
26. Go abroad for educational and job opportunities.			0.568		0.447
14. A sense of accomplishment.				0.817	0.693
13. Use it as a tool.				0.785	0.656
15. Learn other subjects better.				0.669	0.512
29. Use English as an important stepping stone.				0.579	0.478
The eigenvalue	7.238	2.849	1.559	1.078	
Contribution %	34.467	13.568	7.424	5.133	
Cumulative contribution %	34.467	48.035	55.459	60.593	

Table 3. Confirmatory factor analysis (CFA) fitting index of the model.

Fitting Index	χ^2	df	χ^2	RMSEA	CFI	IFI
Value	550.333	167	3.295	0.077	0.903	0.904
Criteria			<5.0	<0.08	>0.90	>0.90

CFA results showed that the Standard Regression Weights (SRW) of potential variables corresponding to each item of the questionnaire ranged from 0.429 to 0.767, and were higher than 0.4 ($p < 0.001$). The construct reliability (CR) values of intrinsic interest, learning situation, and social responsibility were significantly higher than 0.7, while personal development was 0.699. The CFA statistical results support the EFA results, and the High School Students' English Learning Motivation Questionnaire has good convergence validity, as shown in Table 4.

4.5. Internal Relationship among Various Factors

The results of the correlation coefficient matrix between English learning motivation factors and the total score are shown in Table 5. All factors were significantly correlated with each other, and all factors were highly correlated with the total amount table (correlation coefficient between 0.532 and 0.890), which was higher than the correlation coefficient between all factors, which fully verified that the scale had good structural validity.

Table 4. Confirmatory factor analysis (CFA) results.

Latent Variables	Observation Variable	EFA's Factor Loading	Cronbach's α	CFA's SRW	AVE	CR
Intrinsic interest	21. Like the language itself.	0.833	0.886	0.742	0.478	0.878
	23. Like English literature.	0.818		0.706		
	19. Like language learning.	0.780		0.723		
	18. Be interested in English-speaking countries.	0.766		0.767		
	20. Like English songs/movies.	0.755		0.632		
	27. Go abroad to experience the culture.	0.670		0.756		
	1. Like English at first sight.	0.622		0.429		
Learning situation	17. Learn about the world's economy, science, and technology.	0.605	0.842	0.715	0.512	0.839
	7. Like English teacher in high school.	0.828		0.670		
	5. Like English teacher before entering high school.	0.790		0.724		
	10. Enjoy English classes.	0.773		0.673		
	8. Recognize the quality of English classes.	0.761		0.685		
Social responsibility	9. Like English textbooks.	0.749	0.746	0.667	0.373	0.701
	25. Live up to your parents' expectations.	0.829		0.484		
	24. For the prosperity of the nation.	0.781		0.626		
	16. Get a good job.	0.660		0.624		
Personal development	26. Go abroad for educational and job opportunities.	0.568	0.749	0.691	0.369	0.699
	14. A sense of accomplishment.	0.817		0.619		
	13. Use it as a tool.	0.785		0.664		
	15. Learn other subjects better.	0.669		0.524		
	29. Use English as an important stepping stone.	0.579		0.614		

Table 5. Correlation matrix between factors and between factors and total score.

Factors	Intrinsic Interest	Learning Situation	Social Responsibility	Personal Development	Total Score
Intrinsic interest	1				
Learning situation	0.219 **	1			
Social responsibility	0.635 **	0.231 **	1		
Personal development	0.687 **	0.186 **	0.641 **	1	
Total score	0.890 **	0.532 **	0.790 **	0.799 **	1

Note: ** means $p > 0.01$.

4.6. Characteristics of High Students' English Learning Motivation

4.6.1. Dimensions of Motivation

Table 6 shows the mean results of English learning motivation factors and the total score. The dimensions of motivation from high to low were personal development ($M = 3.53$), social responsibility ($M = 3.33$), learning situation ($M = 3.07$), and intrinsic interest ($M = 3.03$). Among them, the strongest motivation for high school students is personal development and the weakest motivation is intrinsic interest (See Table 6).

Table 6. Mean distribution of motivation dimensions and total score.

Factors	n	M	SD
Personal development	778	3.53	0.85
Social responsibility	778	3.33	0.88
Learning situation	778	3.07	0.92
Intrinsic interest	778	3.03	0.90
Total score	778	3.19	0.68

4.6.2. Gender Differences

According to the independent sample *t*-test, there are significant gender differences within each value of the English learning motivation. Girls' intrinsic interest ($M = 3.14 > M = 2.92$), learning situation ($M = 3.15 > M = 2.98$), social responsibility ($M = 3.44 > M = 3.23$), personal development ($M = 3.64 > M = 3.41$), and the total value of girls' English learning motivation ($M = 3.30 > M = 3.09$) were significantly higher than those of boys. Combined with the independent sample *t*-test analysis, the results show that female students' intrinsic interest motivation ($t = -3.462, p = 0.001$), learning situation motivation ($t = -2.548, p = 0.011$), social responsibility motivation ($t = -3.277, p = 0.001$), personal development motivation ($t = -3.681, p = 0.000$), and total motivation value ($t = -4.250, p = 0.000$) were significantly higher than those of male students (See Table 7).

Table 7. Gender differences in motivation: Independent sample *t*-test results.

Factors	Gender	<i>n</i>	<i>M</i>	<i>SD</i>	Standard Error	<i>F</i>	<i>t</i>	<i>p</i>
Intrinsic interest	Male	385	2.92	0.93	0.047	2.632	−3.462	0.001
	Female	393	3.14	0.85	0.043			
Learning situation	Male	385	2.98	0.97	0.049	0.579	−2.548	0.011
	Female	393	3.15	0.87	0.044			
Social responsibility	Male	385	3.23	0.95	0.048	8.249	−3.277	0.001
	Female	393	3.44	0.80	0.040			
Personal development	Male	385	3.41	0.90	0.046	4.729	−3.681	0.000
	Female	393	3.64	0.78	0.040			
Total motivation	Male	385	3.09	0.72	0.037	3.895	−4.250	0.000
	Female	393	3.30	0.63	0.032			

4.7. Motivational Influence on English Achievement

Table 8 shows the influence of English learning motivation on the English learning achievement of high school students, and the results of multiple linear regression are shown in Table 8.

Table 8. Results of multiple linear regression.

Model	Non-Standardized Coefficient		The Standard Coefficient	<i>t</i>	Sig.
	<i>B</i>	Standard Error			
(Constant)	53.493	5.260		10.170	0.000
Intrinsic interest (X_1)	9.569	1.690	0.276	5.663	0.000
Learning situation (X_2)	−0.444	1.154	−0.013	−0.385	0.701
Social responsibility (X_3)	−3.886	1.631	−0.110	−2.383	0.017
Personal development (X_4)	8.286	1.782	0.227	4.649	0.000
R^2	Adjusted R^2	<i>F</i>			
0.153	0.149	35.037			

Independent variables: intrinsic interest, learning situation, social responsibility, and personal development.

Dependent variable: English achievement.

In this study, a multiple linear regression model was used for statistical analysis, and the equation expression of the model was as follows:

$$Y = 53.493 + 9.569X_1 - 3.886X_3 + 8.286X_4$$

$$R^2_{Adj} = 0.149, F = 35.037 (p = 0.000)$$

According to the multiple linear regression table, it was found that the intrinsic interest motivation, social responsibility motivation, and personal development motivation had a significant impact on the English learning achievement of high school students, while the learning situation motivation had no significant impact on it. Among them, for a unit change in X_1 , Y changes to 9.569, and for every change in X_3 , Y changes to -3.886 (negative effect). For each change in X_4 , there is a change of 8.286 in Y .

5. Discussion

5.1. Research Findings

This study examined the internal structure of high school students' English learning, the gender differences, and influence mechanism of motivation on academic achievement. EFA and CFA results suggested that the internal structure of high school students' English learning motivation mainly included four types: intrinsic interest, learning situation, social responsibility, and personal development. Intrinsic interest motivation referred to "Appreciation of the language itself and its literature, being interested in English countries and culture, songs or movies, fondness to experience the culture of English countries, love of English at first sight and the interest to understand the development of economics, science and technology." Situational motivation included "Appreciation of the teacher, lesson, textbook, and the quality of the class." Motivation for social responsibility included "living up to parents' expectations, doing one's best for the country, finding a decent job, and going abroad to seek education and employment opportunities." Motivation for personal development included "achieving a sense of achievement, using English as a tool for communication, learning other subjects well, and as a stepping stone in life".

The descriptive statistics showed significant gender differences in English learning motivation among high school students. The independent sample t -test showed that the motivation of female students was significantly higher than that of male students. Female students' scores were significantly higher than male students' in terms of intrinsic interest, learning situation, social responsibility, personal development, and total score.

Moreover, through multiple linear regression, this study proved that motivation had a significant impact on English learning achievement. More specifically, intrinsic interest, social responsibility, and personal development motivations had a significant impact on English learning achievement, while learning situational motivation had no significant impact. Among them, intrinsic interest and personal development motivation had positive impacts on English academic achievement, whereas social responsibility motivation had a negative impact.

5.2. Research Question 1: The Internal Structure of High School Students' English Learning Motivation

The results of this study were consistent with Gao, Zhao, Cheng, and Zhou [5]. The results showed obvious intrinsic interest, learning situation, social responsibility, and personal development motivations for high school students' English learning, which overlapped with the findings of You and Dörnyei [12]. However, the motivation of academic performance, going abroad, and information media was not prominent, which was the main point of difference with Gao, Zhao, Cheng, and Zhou [5].

The intrinsic interest motivation reflected the interests of high school students in the English language, culture, science, and education. The intrinsic interest motivation was in line with the results of Gao, Zhao, Cheng, and Zhou [5] and Jiao, Wang, Ma, You, and Jiang [30]. Intrinsic interest could help high school students maintain long-term motivation in language learning [70]. Therefore, intrinsic interest was a key factor in triggering students' English learning. The intrinsic interest could also be understood as the integrative motivation of Gardner [10]. According to the L2 Motivational Self System of Dörnyei and Ushioda [67], intrinsic interest belonged to the Ideal L2 Self level. Intrinsic interest was the cultural interest in the Ideal L2 Self. The findings of this study coincided with the findings of Ryan and Deci [19], highlighting the importance of internal motivation. Apart from

intrinsic interest, the results also exhibited three other motivations necessary for second language learning.

Learning situation implied the level of the L2 Learning Experience from the L2 Motivational Self System [67], which was embodied in the teaching environment, such as teachers and courses. At the same time, situational motivation responded to the “learning situation level” of Dörnyei [71], and Gao, Zhao, Cheng, and Zhou [5]. In addition, the study echoed the findings of Waninge et al. [72] that classroom context had a profound impact on students’ second language learning motivation. Situational motivation is an important component of the L2 Learning Experience for second language learners, and generally has predictive effects on motivational behaviors and outcomes [43]. Therefore, when discussing L2 motivation, the learning situation should not be neglected. Learning situation plays an important role in the structural composition of motivation.

Personal development indicated the Ideal L2 Self level in the L2 Motivational Self System [67], and personal development was reflected in instrumental promotion, indicating the practical utility of language learning. Personal development motivation in social psychological theory is regarded as an instrumental motivation [10]. This was in line with the personal development motivation in Gao, Zhao, Cheng, and Zhou [5] and the extrinsic motivation in [19]. Personal development concerned behaviors that were driven by externally imposed rewards and punishments. Chinese second language learners placed a high value on the practical value of second languages, particularly in terms of finding work and raising salaries [73]. Different from the instrumental motivations of Liu [74], Long, Ming, and Chen [40], and [39], the results did not indicate students’ obvious demands for examination. Despite the intense pressure of the National College Entrance Exam (Gaokao), high school students exhibited no obvious motivation to take the exams.

The social responsibility motivation was explored and it was consistent with the Ought-to L2 Self level of Dörnyei and Ushioda [67], which reflected the expectations of parents and society. This dimension embodied the characteristics of instrumental prevention, demonstrating a sense of obligation to protect the interests of others and avoid negative outcomes [43]. In the context of Confucian culture, responsibility is a positive factor encouraging Chinese students’ learning. Relative to the findings of Wang and Rao [65], responsibility plays an important role in students’ learning behavior and grades. The social responsibility of high school students is mainly exhibited through contributing to the family and society as well as seeking employment opportunities, which echoes the findings of Gao, Zhao, Cheng, and Zhou [5] and You and Dörnyei [12]. Much like a system of integrated regulation, learning a second language is not only to recognize the value of the activity itself, but also to conform to the interests and values of others [19].

5.3. Research Question 2: Gender Differences between Female and Male Students

The results indicated that female students’ motivation was significantly higher than that of males. This study validated the results of You and Dörnyei [12], Oga-Baldwin and Nakata [44], and Mori and Gobel [45]. Learning engagement could also predict the academic achievement of second language learners, and that female students worked harder than males [20]. According to the results of previous studies, girls’ motivation for second language learning was higher than that of boys, which was attributed to their higher investment in second language learning [21,75]. Based on the research findings and previous studies, we can conclude that the participating female high school students invest more in English language learning and study harder than male students.

5.4. Research Question 3: Motivational Effect on English Achievement

5.4.1. Intrinsic Interest and Personal Development Motivation Have Significant Influence on English Achievement

The results showed that intrinsic interest and personal development motivation had a positive impact on English academic performance. This research outcome verified the results of Taylor, Jungert, Mageau, Schatke, Dedic, Rosenfield, and Koestner [52], and Ryan

and Deci [19]. Academic achievement was significantly influenced by intrinsic interest and personal development [31,33]. It exhibited high school students' cultural interests and a strong desire for personal improvement. From the perspective of the L2 Motivational Self System, the findings seemed to be in line with the Ideal L2 Self [12]. High school students focused on the culture of English-speaking countries, the world economy, science and technology, and using English as an instrument for social communication and as a stepping stone toward future employment opportunities. From the mean value results of motivations, we found that the personal development motivation was the strongest, while the intrinsic interest motivation was the weakest. This proved to us that the most important purpose of high school students' English learning was personal development, and the lowest motivation was intrinsic interest.

Intrinsic interest motivation is a kind of intrinsic motivation that refers to autonomous motives "for their own sake." Students learn out of inherent interest and enjoy the process of learning [76]. This motivational behavior does not rely on external motivation or pressure, but provides satisfaction and happiness [77]. Taylor, Jungert, Mageau, Schattke, Dedic, Rosenfield, and Koestner [52] suggested that intrinsic interest played an important role in school achievement. Consistent with the research of Froiland and Worrell [53], intrinsic interest could predict student engagement, which in turn would produce higher grades. However, this study showed that intrinsic interest had the lowest mean value among the four types of motivation. This outcome could probably affect students' learning participation and achievement. Shandong and Beijing, two of China's leading educational areas, have the most impressive educational resources and outcomes [78]. While maintaining abundant learning resources, external pressure also increases. There is no denying that the college entrance examination is very critical for high school students, so grades add an invisible pressure on high school learning [79]. This decline in intrinsic interest could, to some extent, weaken students' initiative in learning [80,81]. A recent study indicated that the transmission strategies could enhance students' interest and consolidate their learning [82]. Therefore, schools should optimize the support environment, focusing on promoting students' communicative abilities and intrinsic interests, thus promoting students' learning motivation and achievement.

Personal development motivation and intrinsic interest motivation belong to the components of the Ideal L2 Self, but are reflected in external stimulation or pressure to a greater extent. Personal development, which is similar to external motivation, cannot be approached from the standpoint of simple external reward or punishment. Personal development motivation here reflects the learner's autonomy, which has a common feature with internal motivation, namely, a high degree of willingness [19]. Previous studies have shown that more autonomous forms of motivation lead to increased student engagement, better learning outcomes, and student health [83]. This may be partially explained by the fact that motivated students work more diligently [84]. Therefore, teachers and parents should make efforts to improve students' learning autonomy, improve students' willpower, and enhance students' participation, thus improving learning outcomes.

A good classroom atmosphere could also stimulate students' learning autonomy [77]. Fernet et al. [85] found that when teachers experienced work overload or bureaucratic pressure from the upper and lower levels of the school, they had lower teaching autonomy, motivation, and perceived ability. This would lead to more emotional exhaustion and job burnout [86]. Therefore, eliminating teachers' work pressure, improving teachers' job satisfaction, active involvement in teachers' work, and creating a good classroom atmosphere could enhance the quality of education [87]. Support for teachers could promote students' autonomy, motivation, and participation, thus leading to their achieving higher grades [88,89]. In conclusion, through good support of autonomy for teachers and students, students' autonomy motivation and participation could be further stimulated, and academic performance could be improved as well.

5.4.2. Social Responsibility Motivation Has Significantly Negative Impact on English Achievement

Past studies have shown that social responsibility motivation has a positive predictive effect on academic achievement [65]. Contrary to previous research findings, this study proved that social responsibility motivation had a significantly negative impact on English performance. China is the birthplace of Confucian culture, and students in Beijing and Shandong have been exposed to Confucian culture for thousands of years [90]. According to previous research logic, Confucian culture should play a positive role in social responsibility motivation and academic performance [91]. However, the result of this study showed just the opposite. This study suggested that high school students' motivation to learn English was not simply their social responsibility toward parents or the country, but their own internal interests and personal development needs. In contrast to the aspect of Ought-to L2 Self [67], social responsibility had opposite effects on instrumental prevention and parental expectation. The findings suggested that extrinsic stimulation to meet the expectations of others was counterproductive to the English learning of senior high school students.

Thus, if students do not rely on external motivation or pressure, but learn purely for their own satisfaction and happiness, students' learning autonomy could be enhanced, willpower could be increased, and students' participation in learning would be improved accordingly [77]. Therefore, in the process of English teaching, teachers and parents should enhance students' intrinsic motivation and improve their learning autonomy from "doing it for others" to "doing it for myself".

5.4.3. Learning Situation Motivation Has No Influence on English Achievement

Learning situation motivation proved to have no obvious impact on English achievement. This seems to contradict the findings of Dörnyei [43] that the L2 Learning Experience was the most powerful predictor of motivated behavior. A favorable environment could put learners in an advantageous position, while an unfavorable learning environment would lead to a disadvantageous situation for learners [11]. Based on the results, we could infer that situational motivation would not influence learning outcomes. The findings might result from the relatively favorable learning situation and sufficient distribution of educational resources in the eastern areas of China [92]. Apparently, learning situation motivation did not constitute a profound influence on English achievement for students in Beijing and Shandong. In fact, Beijing and Shandong are both well-developed areas in China, and both enjoy an abundant supply of resources [78]. To some extent, they represent high levels of quality of life and education in China [93]. The results validated no obvious correlation between learning situation and academic achievement, indirectly indicating students' appreciation of their English teachers, teaching material, and curricula. In contrast to the study by Ushioda [29], the learning context for high school students in Beijing and Shandong failed to play a role in academic achievement. As a result, the key factors that impacted students' English achievement were intrinsic interest, social responsibility, and personal development motivation. Therefore, schools and teachers should execute targeted English teaching and intervention work according to these motivational aspects.

Moreover, school closures due to the COVID-19 pandemic have changed the learning situations for most students [31]. The teaching format has transformed from in-person to remote [94]. A recent study indicated that children's dependency on the classroom environment gradually shifted to the home. The learning effect on children was significantly influenced by parental support and information technology [95]. The main problems with distance learning for students were being isolated, and a lack of technology and parental support. As a result, the family has come to play a crucial role in shaping how students' cultural capital changes throughout the course of the pandemic, and lockdown may worsen the achievement gap across socio-economic groups [96]. To take advantage of the positive effects of remote learning situations in forming children's learning habits and long-term learning objectives, parent-school communication has to be strengthened [97]. Phone and text message interventions have been shown to be effective ways to promote

academic achievement [98]. The digital divide is not only a tool, but also an adaptation to the educational system. The reform of educational technology will become the key to educational reform and will also have a bearing on the adjustment of teaching strategies in the future virtual environment [99]. The importance of parental engagement and support could be helpful to students' sustainable second language learning in the future.

6. Conclusions

This study examined the internal structure of motivation for high school students' English learning and distinguished motivational differences between male and female students. The motivational impacts on English attainment were adequately explored. Based on the previous studies and present findings, this study has several important contributions and implications.

This study adapted the L2 Motivational Self System to explain the motivational types of second language learning in an Asian context. It not only enriched the L2 Motivational Self System theory, but also improved the practical path in the context of Chinese high schools. The research echoed the L2 Motivational Self System theory, while simultaneously giving a more in-depth explanation of the three levels of the theory. Engagement with intrinsic and extrinsic motivation at the Ideal L2 Self level involved discussion of the commonalities and individualities of theories for second language learning. The Ideal L2 Self included intrinsic interest and personal development motivation in this study. Moreover, both motivations had positive predictive effects on academic achievement. Therefore, the importance of the Ideal L2 Self in the composition of the theory was confirmed. The Ought-to L2 Self was reflected in the level of social responsibility motivation and proved to have a negative effect on grade prediction. This study depicted different applications of the Ought-to L2 Self from the opposite direction of the original theory. Therefore, this study is of great significance and enriches the existing theory. Regarding the L2 Learning Experience, the original theory assumed that this level should be the most favorable predictor of motivated behavior. However, the study results were not significant. This makes us rethink the real circumstances behind the theory.

The findings in this study have long-run implications for second language learning motivation. Past studies focused too much on motivational compositions, such as integrative and instrumental motivation. Based on the L2 Motivational Self System [67], this study offers in-depth explanations at three levels: the Ideal L2 Self, the Ought-to L2 Self, and the L2 Learning Experience. Moreover, gender differences echoed the study of You and Dörnyei [12] as well as Yang and Quadir [20]. The motivation of high school boys to learn English should be improved. Parents and teachers should boost male students' interests and personal development; help them internalize learning input into an interest; and help them actively engage in learning through interest. The personal development plans of high school boys should be strengthened, and academic and career planning can be initiated to promote their English learning outcomes.

Previous studies have suggested that context has a profound impact on motivation levels [8,43], but little is known about the impact of contextual motivation on academic achievement. In this study, the impact of situational motivation on academic achievement proved to be insignificant, demonstrating that the learning situation of sampled students could not have a differential impact on academic achievement. Another innovation is that the study factors in the effects of the COVID-19 pandemic. This study explored the motives of high school students who studied at home during the school closures, as well as the consequences of the lockdown on their motivation. This has implications for the study of motivation for learning a second language and the viability of second language acquisition in times of crisis.

The findings were also contrary to some previous studies, suggesting that social responsibility could not promote academic achievement. From the perspective of traditional Confucianism, it is hard to persuade students to engage in second language learning. This fully validates the notion that greater responsibility does not necessarily produce better

academic achievement. Parents and teachers should relieve the pressure students feel due to social responsibility and reduce their moral burden. To obtain sustainable language learning, schools and parents should also promote students' willingness by encouraging autonomous motivation and students' participation. Second language learning motivation research is a key component of quality education in the goal of sustainable development. This study could help future researchers better understand how to help high school students improve their second language learning motivation, so as to promote the cultivation of innovative talents and achieve the sustainability of quality education.

7. Limitations and Future Work

This study has given the first indications of motivational impact on academic achievement partially inconsistent with previous studies; therefore, the underlying reasons for this phenomenon need to be further explored. The study selected Beijing and Shandong as representative places in China, and the main subjects of the study were selected from high schools in well-developed areas. Further research could consider the western areas or the less-developed regions. This study examined the structure of high school students' English learning motivation but did not involve samples from other educational levels. Additionally, family environment and educational experience could be considered in future research.

Author Contributions: Conceptualization, S.J. and F.L.; methodology, S.J. and F.L.; software, S.J.; validation, F.L.; formal analysis, S.J. and F.L.; investigation, F.L.; resources, S.J.; data curation, S.J. and F.L.; writing—original draft preparation, S.J. and F.L.; writing—review and editing, S.J. and F.L.; visualization, S.J.; supervision, F.L.; project administration, S.J.; funding acquisition, F.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the National Social Science Fund of China (Grant No. BMA200041).

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the College of Science, Minzu University of China.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the author. The data are not publicly available due to ethical considerations.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Sachs, J.; Kroll, C.; Lafortune, G.; Fuller, G.; Woelm, F. *Sustainable Development Report 2021*; Cambridge University Press: Cambridge, UK, 2021.
2. Sachs, J.; Kroll, C.; Lafortune, G.; Fuller, G.; Woelm, F. *Sustainable Development Report 2022*; Cambridge University Press: Cambridge, UK, 2022.
3. UNESCO. The Education 2030 Framework for Action. Available online: <https://en.unesco.org/news/education-2030-framework-action-be-formallyadopted-and-launched> (accessed on 9 September 2022).
4. Colglazier, W. Sustainable development agenda: 2030. *Science* **2015**, *349*, 1048–1050. [CrossRef] [PubMed]
5. Gao, Y.; Zhao, Y.; Cheng, Y.; Zhou, Y. Relationship between English Learning Motivation Types and Self-Identity Changes among Chinese Students. *TESOL Q.* **2007**, *41*, 133–155.
6. Reynolds, B.L.; Yu, M.H.; Ha, X.V. Administrative staff learning and using English to communicate with international students. *Innov. Lang. Learn. Teach.* **2022**, 1–16. [CrossRef]
7. UN. Global Education Coalition. Available online: <https://en.unesco.org/covid19/educationresponse/globalcoalition> (accessed on 10 September 2022).
8. Dörnyei, Z. *Innovations and Challenges in Language Learning Motivation*; Routledge: London, UK, 2020.
9. Gardner, R.C. *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation*; Edward Arnold: London, UK, 1985.
10. Gardner, R.C. Integrative motivation and second language acquisition. In *Motivation and Second Language Acquisition*; Second Language Teaching and Curriculum Center, University of Hawaii: Honolulu, HI, USA, 2001; Volume 23, pp. 1–19.
11. Mercer, S.; Dörnyei, Z. *Engaging Language Learners in Contemporary Classrooms*; Cambridge University Press: Cambridge, UK, 2020.
12. You, C.J.; Dörnyei, Z. Language learning motivation in China: Results of a large-scale stratified survey. *Appl. Linguist.* **2016**, *37*, 495–519. [CrossRef]

13. Bai, B.; Wang, J. The role of growth mindset, self-efficacy and intrinsic value in self-regulated learning and English language learning achievements. *Lang. Teach. Res.* **2020**. [[CrossRef](#)]
14. Ryan, R.M.; Deci, E.L. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemp. Educ. Psychol.* **2000**, *25*, 54–67. [[CrossRef](#)]
15. Yunus, A.S.; Ali, W.Z.W. Motivation in the Learning of Mathematics. *Eur. J. Soc. Sci.* **2009**, *7*, 93–101.
16. Jones, M.H.; Cooke, T.J. Social status and wanting popularity: Different relationships with academic motivation and achievement. *Soc. Psychol. Educ.* **2021**, *24*, 1281–1303. [[CrossRef](#)]
17. Almulla, M.A.; Alamri, M.M. Using Conceptual Mapping for Learning to Affect Students' Motivation and Academic Achievement. *Sustainability* **2021**, *13*, 4029. [[CrossRef](#)]
18. Guo, W.; Bai, B. Effects of self-regulated learning strategy use on motivation in EFL writing: A comparison between high and low achievers in Hong Kong primary schools. *Appl. Linguist. Rev.* **2022**, *13*, 117–139. [[CrossRef](#)]
19. Ryan, R.M.; Deci, E.L. Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemp. Educ. Psychol.* **2020**, *61*, 101860. [[CrossRef](#)]
20. Yang, J.C.; Quadir, B. Individual differences in an English learning achievement system: Gaming flow experience, gender differences and learning motivation. *Technol. Pedagog. Educ.* **2018**, *27*, 351–366. [[CrossRef](#)]
21. You, C.; Dörnyei, Z.; Csizér, K. Motivation, vision, and gender: A survey of learners of English in China. *Lang. Learn.* **2016**, *66*, 94–123. [[CrossRef](#)]
22. Otero, J.M.; Ortega, J.H. Una metamorfosis educativa para alcanzar el desarrollo humano sostenible. *Profr. Rev. Currículum Form. Profr.* **2020**, *24*, 149–173.
23. Wei, H.; Gao, K.; Wang, W. Understanding the Relationship Between Grit and Foreign Language Performance Among Middle School Students: The Roles of Foreign Language Enjoyment and Classroom Environment. *Front. Psychol.* **2019**, *10*, 1508. [[CrossRef](#)]
24. Gao, X.; Zheng, Y. Multilingualism and higher education in Greater China. *J. Multiling. Multicult. Dev.* **2019**, *40*, 555–561. [[CrossRef](#)]
25. Csizér, K.; Dörnyei, Z. The internal structure of language learning motivation and its relationship with language choice and learning effort. *Mod. Lang. J.* **2005**, *89*, 19–36. [[CrossRef](#)]
26. Zhang, W. Shadow education in the service of tiger parenting: Strategies used by middle-class families in China. *Eur. J. Educ.* **2020**, *55*, 388–404. [[CrossRef](#)]
27. Dörnyei, Z.; Ottó, I. Motivation in action: A process model of L2 motivation. In *Working Papers in Applied Linguistics*; Thames Valley University: London, UK, 1998; Volume 4, pp. 43–69.
28. Dörnyei, Z. *The Psychology of the Language learner: Individual Differences in Second Language Acquisition*; Lawrence Erlbaum Associates, Inc.: Mahwah, NJ, USA, 2005.
29. Ushioda, E.; Dörnyei, Z. Beyond global English: Motivation to learn languages in a multicultural world: Introduction to the special issue. *Mod. Lang. J.* **2017**, *101*, 451–454. [[CrossRef](#)]
30. Jiao, S.; Wang, J.; Ma, X.; You, Z.; Jiang, D. Motivation and Its Impact on Language Achievement: Sustainable Development of Ethnic Minority Students' Second Language Learning. *Sustainability* **2022**, *14*, 7898. [[CrossRef](#)]
31. Jiao, S.; Jin, H.; You, Z.; Wang, J. Motivation and Its Effect on Language Achievement: Sustainable Development of Chinese Middle School Students' Second Language Learning. *Sustainability* **2022**, *14*, 9918. [[CrossRef](#)]
32. Brown, J.W. *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation*. R. C. Gardner. London: Edward Arnold, 1985. Pp. xiv + 208. *Stud. Second. Lang. Acquis.* **1988**, *10*, 419–421. [[CrossRef](#)]
33. Deci, E.L.; Koestner, R.; Ryan, R.M. Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. *Rev. Educ. Res.* **2001**, *71*, 1–27. [[CrossRef](#)]
34. Boo, Z.; Dörnyei, Z.; Ryan, S. L2 motivation research 2005–2014: Understanding a publication surge and a changing landscape. *System* **2015**, *55*, 145–157. [[CrossRef](#)]
35. Gardner, R.C.; Lambert, W.E. *Attitudes and Motivation in Second-Language Learning*; Newbury House: Rowley, MA, USA, 1972.
36. Gardner, R.C.; MacIntyre, P.D. An instrumental motivation in language study: Who says it isn't effective? *Stud. Second. Lang. Acquis.* **1991**, *13*, 57–72. [[CrossRef](#)]
37. Aoki, N. The challenge of motivation: Teaching Japanese kanji characters to students from diverse language backgrounds. In *Bridging Transcultural Divides: Asian Languages and Cultures in Global Higher Education*; Cadman, K., Song, X., Eds.; The University of Adelaide Press: Adelaide, Australia, 2012; pp. 131–154.
38. Samad, A.A.; Etemadzadeh, A.; Far, H.R. Motivation and language proficiency: Instrumental and integrative aspects. *Procedia-Soc. Behav. Sci.* **2012**, *66*, 432–440. [[CrossRef](#)]
39. Suryasa, W.; Prayoga, I.; Werdistira, I. An analysis of students motivation toward English learning as second language among students in Pritchard English academy (PEACE). *Int. J. Soc. Sci. Humanit.* **2017**, *1*, 43–50.
40. Long, C.; Ming, Z.; Chen, L. The Study of Student Motivation on English Learning in Junior Middle School—A Case Study of No. 5 Middle School in Gejiu. *Engl. Lang. Teach.* **2013**, *6*, 136–145. [[CrossRef](#)]
41. Junko, M.C. New framework of intrinsic/extrinsic and integrative/instrumental motivation in second language acquisition. *Keiai J. Int. Stud.* **2005**, *16*, 39–64.
42. Zhao, X.; Xiao, W.; Zhang, J. L2 Motivational Self System, International Posture and the Sustainable Development of L2 Proficiency in the COVID-19 Era: A Case of English Majors in China. *Sustainability* **2022**, *14*, 8087. [[CrossRef](#)]

43. Dörnyei, Z. Towards a better understanding of the L2 Learning Experience, the Cinderella of the L2 Motivational Self System. *Stud. Second. Lang. Learn. Teach.* **2019**, *9*, 19–30. [[CrossRef](#)]
44. Oga-Baldwin, W.L.Q.; Nakata, Y. Engagement, gender, and motivation: A predictive model for Japanese young language learners. *System* **2017**, *65*, 151–163. [[CrossRef](#)]
45. Mori, S.; Gobel, P. Motivation and gender in the Japanese EFL classroom. *System* **2006**, *34*, 194–210. [[CrossRef](#)]
46. Cortright, R.N.; Lujan, H.L.; Cox, J.H.; Cortright, M.A.; Langworthy, B.M.; Petta, L.M.; Tanner, C.J.; DiCarlo, S.E. Intellectual development is positively related to intrinsic motivation and course grades for female but not male students. *Adv. Physiol. Educ.* **2015**, *39*, 181–186. [[CrossRef](#)] [[PubMed](#)]
47. Ning, B. Discipline, motivation, and achievement in mathematics learning: An exploration in Shanghai. *Sch. Psychol. Int.* **2020**, *41*, 595–611. [[CrossRef](#)]
48. Wang, Y.; Peng, H.; Huang, R.; Hou, Y.; Wang, J. Characteristics of distance learners: Research on relationships of learning motivation, learning strategy, self-efficacy, attribution and learning results. *Open Learn. J. Open Distance e-Learn.* **2008**, *23*, 17–28. [[CrossRef](#)]
49. Liu, O.L.; Bridgeman, B.; Adler, R.M. Measuring learning outcomes in higher education: Motivation matters. *Educ. Res.* **2012**, *41*, 352–362. [[CrossRef](#)]
50. Kuo, M.; Barnes, M.; Jordan, C. Do Experiences With Nature Promote Learning? Converging Evidence of a Cause-and-Effect Relationship. *Front. Psychol.* **2019**, *10*, 305. [[CrossRef](#)]
51. Huéscar Hernández, E.; Moreno-Murcia, J.A.; Cid, L.; Monteiro, D.; Rodrigues, F. Passion or Perseverance? The Effect of Perceived Autonomy Support and Grit on Academic Performance in College Students. *Int. J. Environ. Res. Public Health* **2020**, *17*, 2143. [[CrossRef](#)]
52. Taylor, G.; Jungert, T.; Mageau, G.A.; Schattke, K.; Dedic, H.; Rosenfield, S.; Koestner, R. A self-determination theory approach to predicting school achievement over time: The unique role of intrinsic motivation. *Contemp. Educ. Psychol.* **2014**, *39*, 342–358. [[CrossRef](#)]
53. Froiland, J.M.; Worrell, F.C. Intrinsic motivation, learning goals, engagement, and achievement in a diverse high school. *Psychol. Sch.* **2016**, *53*, 321–336. [[CrossRef](#)]
54. Kang, J.; Keinonen, T. The effect of student-centered approaches on students' interest and achievement in science: Relevant topic-based, open and guided inquiry-based, and discussion-based approaches. *Res. Sci. Educ.* **2018**, *48*, 865–885. [[CrossRef](#)]
55. Ryan, R.M.; Deci, E.L. Promoting self-determined school engagement: Motivation, learning, and well-being. In *Handbook of Motivation at School*; Routledge/Taylor & Francis Group: New York, NY, USA, 2009; pp. 171–195.
56. Chai, C.S.; Lin, P.-Y.; King, R.B.; Jong, M.S.-Y. Intrinsic Motivation and Sophisticated Epistemic Beliefs Are Promising Pathways to Science Achievement: Evidence From High Achieving Regions in the East and the West. *Front. Psychol.* **2021**, *12*, 581193. [[CrossRef](#)]
57. Fan, W.; Williams, C. The Mediating Role of Student Motivation in the Linking of Perceived School Climate and Achievement in Reading and Mathematics. *Front. Educ.* **2018**, *3*, 50. [[CrossRef](#)]
58. Liu, W.C. Implicit Theories of Intelligence and Achievement Goals: A Look at Students' Intrinsic Motivation and Achievement in Mathematics. *Front. Psychol.* **2021**, *12*, 593715. [[CrossRef](#)]
59. Fryer, L.K.; Ozono, S.; Carter, P.; Nakao, K.; Anderson, C.J. Instrumental reasons for studying in compulsory English courses: I didn't come to university to study English, so why should I? *Innov. Lang. Learn. Teach.* **2014**, *8*, 239–256. [[CrossRef](#)]
60. Liu, C.-H.; Huang, P.-S.; Yin, X.-R.; Chiu, F.-C. Effects of Attribute Affirmation and Achievement Goals on High School Students' Motivation. *Front. Psychol.* **2021**, *12*, 661668. [[CrossRef](#)]
61. Papi, M.; Khajavy, G.H. Motivational mechanisms underlying second language achievement: A regulatory focus perspective. *Lang. Learn.* **2021**, *71*, 537–572. [[CrossRef](#)]
62. Hennebry-Leung, M.; Xiao, H.A. Examining the role of the learner and the teacher in language learning motivation. *Lang. Teach. Res.* **2020**, 1362168820938810. [[CrossRef](#)]
63. Malik, R.H.; Rizvi, A.A. Effect of Classroom Learning Environment on Students' Academic Achievement in Mathematics at Secondary Level. *Bull. Educ. Res.* **2018**, *40*, 207–218.
64. Nathani, N.; Mathur, G.; Dwivedi, G. Social Responsibility and Academic Achievement: A Perceptual Learning. *Int. J. Innov. Technol. Explor. Eng.* **2019**, *9*, 5221–5226.
65. Wang, J.; Rao, N. What do Chinese students say about their academic motivational goals—Reasons underlying academic strivings? *Asia Pac. J. Educ.* **2020**, *42*, 245–259. [[CrossRef](#)]
66. Li, X.; Li, Q. Does corporate social responsibility affect the achievement of performance commitment in valuation adjustment mechanism agreement? Evidence from Chinese listed company. *Manag. Decis. Econ.* **2022**, *43*, 533–543. [[CrossRef](#)]
67. Dörnyei, Z.; Ushioda, E. *Motivation, Language Identity and the L2 Self*; Multilingual Matters: Bristol, UK, 2009; Volume 36.
68. Dörnyei, Z.; Taguchi, T. *Questionnaires in Second Language Research: Construction, Administration, and Processing*; Routledge: New York, NY, USA, 2009.
69. Hu, L.T.; Bentler, P.M. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct. Equ. Model. A Multidiscip. J.* **1999**, *6*, 1–55. [[CrossRef](#)]
70. Brown, H.D. *Principles of Language Learning and Teaching*; Longman: New York, NY, USA, 2000; Volume 4.
71. Dörnyei, Z. Motivation and motivating in the foreign language classroom. *Mod. Lang. J.* **1994**, *78*, 273–284. [[CrossRef](#)]
72. Waninge, F.; Dörnyei, Z.; de Bot, K. Motivational dynamics in language learning: Change, stability, and context. *Mod. Lang. J.* **2014**, *98*, 704–723. [[CrossRef](#)]

73. Taguchi, T.; Magid, M.; Papi, M. 4. The L2 Motivational Self System among Japanese, Chinese and Iranian Learners of English: A Comparative Study. In *Motivation, Language Identity and the L2 Self*; Zoltán, D., Ema, U., Eds.; Multilingual Matters: Bristol, UK, 2009; pp. 66–97.
74. Liu, M. Chinese students' motivation to learn English at the tertiary level. *Asian EFL J.* **2007**, *9*, 126–146.
75. Hsieh, T.-Y.; Simpkins, S.D.; Eccles, J.S. Gender by racial/ethnic intersectionality in the patterns of Adolescents' math motivation and their math achievement and engagement. *Contemp. Educ. Psychol.* **2021**, *66*, 101974. [[CrossRef](#)]
76. Deci, E.L.; Ryan, R.M. The “What” and “Why” of goal pursuits: Human needs and the self-determination of behavior. *Psychol. Inq.* **2000**, *11*, 227–268. [[CrossRef](#)]
77. Ryan, R.M.; Deci, E.L. *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*; Guilford Publications: New York, NY, USA, 2017.
78. Zou, W.; Li, J.; Shu, Z. Urban Quality of Life and Production Amenity in Chinese Cities. *Sustainability* **2022**, *14*, 2434. [[CrossRef](#)]
79. Lu, Y.; Shi, X.; Zhong, S. Competitive experience and gender difference in risk preference, trust preference and academic performance: Evidence from Gaokao in China. *J. Comp. Econ.* **2018**, *46*, 1388–1410. [[CrossRef](#)]
80. Gnams, T.; Hanfstingl, B. The decline of academic motivation during adolescence: An accelerated longitudinal cohort analysis on the effect of psychological need satisfaction. *Educ. Psychol.* **2016**, *36*, 1691–1705. [[CrossRef](#)]
81. Scherrer, V.; Preckel, F. Development of motivational variables and self-esteem during the school career: A meta-analysis of longitudinal studies. *Rev. Educ. Res.* **2019**, *89*, 211–258. [[CrossRef](#)]
82. Sánchez-García, P.; Hernández-Ortega, J.; Rovira-Collado, J. Reading the social reader: Evolution of Spanish children's and young adult literature on Goodreads Leyendo al lector social: Evolución de la literatura infantil y juvenil española en Goodreads. *Ocnos* **2021**, *20*, 7–22. [[CrossRef](#)]
83. Howard, J.L.; Gagné, M.; Bureau, J.S. Testing a continuum structure of self-determined motivation: A meta-analysis. *Psychol. Bull.* **2017**, *143*, 1346–1377. [[CrossRef](#)]
84. León, J.; Núñez, J.L.; Liew, J. Self-determination and STEM education: Effects of autonomy, motivation, and self-regulated learning on high school math achievement. *Learn. Individ. Differ.* **2015**, *43*, 156–163. [[CrossRef](#)]
85. Fernet, C.; Guay, F.; Senécal, C.; Austin, S. Predicting intraindividual changes in teacher burnout: The role of perceived school environment and motivational factors. *Teach. Teach. Educ.* **2012**, *28*, 514–525. [[CrossRef](#)]
86. Bartholomew, K.J.; Ntoumanis, N.; Cuevas, R.; Lonsdale, C. Job pressure and ill-health in physical education teachers: The mediating role of psychological need thwarting. *Teach. Teach. Educ.* **2014**, *37*, 101–107. [[CrossRef](#)]
87. Klassen, R.M.; Perry, N.E.; Frenzel, A.C. Teachers' relatedness with students: An underemphasized component of teachers' basic psychological needs. *J. Educ. Psychol.* **2012**, *104*, 150–165. [[CrossRef](#)]
88. Núñez, J.L.; León, J. Determinants of classroom engagement: A prospective test based on self-determination theory. *Teach. Teach.* **2019**, *25*, 147–159. [[CrossRef](#)]
89. Manganelli, S.; Cavicchiolo, E.; Mallia, L.; Biasi, V.; Lucidi, F.; Alivernini, F. The interplay between self-determined motivation, self-regulated cognitive strategies, and prior achievement in predicting academic performance. *Educ. Psychol.* **2019**, *39*, 470–488. [[CrossRef](#)]
90. Gao, R.; Zhang, J.; Liu, Y.; Zeng, J.; Wu, D.; Huang, X.; Liu, X.; Mo, L.; Zhan, Z.; Zuo, H. A Sustainability Lens on the Paradox of Chinese Learners: Four Studies on Chinese Students' Learning Concepts under Li's “Virtue–Mind” Framework. *Sustainability* **2022**, *14*, 3334. [[CrossRef](#)]
91. Wang, J.; Lin, J. Traditional Chinese views on education as perceived by international students in China: International student attitudes and understandings. *J. Stud. Int. Educ.* **2019**, *23*, 195–216. [[CrossRef](#)]
92. Liu, J.; Peng, P.; Luo, L. The Relation Between Family Socioeconomic Status and Academic Achievement in China: A Meta-analysis. *Educ. Psychol. Rev.* **2020**, *32*, 49–76. [[CrossRef](#)]
93. Liu, Y. Geographical stratification and the role of the state in access to higher education in contemporary China. *Int. J. Educ. Dev.* **2015**, *44*, 108–117. [[CrossRef](#)]
94. Lichand, G.; Doria, C.A.; Leal-Neto, O.; Fernandes, J.P.C. The impacts of remote learning in secondary education during the pandemic in Brazil. *Nat. Hum. Behav.* **2022**, *6*, 1079–1086. [[CrossRef](#)]
95. Goudeau, S.; Sanrey, C.; Stanczak, A.; Manstead, A.; Darnon, C. Why lockdown and distance learning during the COVID-19 pandemic are likely to increase the social class achievement gap. *Nat. Hum. Behav.* **2021**, *5*, 1273–1281. [[CrossRef](#)]
96. Parolin, Z.; Lee, E.K. Large socio-economic, geographic and demographic disparities exist in exposure to school closures. *Nat. Hum. Behav.* **2021**, *5*, 522–528. [[CrossRef](#)]
97. Richmond, G.; Bartell, T.; Cho, C.; Gallagher, A.; He, Y.; Petchauer, E.; Curiel, L.C. Home/School: Research Imperatives, Learning Settings, and the COVID-19 Pandemic. *J. Teach. Educ.* **2020**, *71*, 503–504. [[CrossRef](#)]
98. Angrist, N.; Bergman, P.; Matsheng, M. Experimental evidence on learning using low-tech when school is out. *Nat. Hum. Behav.* **2022**, *6*, 941–950. [[CrossRef](#)]
99. Hernandez-Ortega, J.; Álvarez-Herrero, J.F. Educational management of confinement by COVID-19: Teacher perception in Spain. *Rev. Esp. Educ. Co.* **2021**, *38*, 129–150.