Factors Affecting Middle School Students' English Learning Engagement in the Context of Urban Family Backgrounds

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Abstract
Learning participation is the key to students' success in learning. By observing the learning process and efficiency, the actual learning situation can be revealed to provide a strong basis for education supervision. As globalization accelerates, mastering a foreign language is essential for personal development. Taking English learning as an example, it is found that there is drowsiness in early learning, and students' participation is generally not high. In order to deeply understand the students 'participation in English learning, this study analyzes the students' cognitive, behavioral and emotional dimensions of learning from the perspective of learning objects and participation. NSSE and SEM showed a significant positive correlation between family support and learning behavior. Family learning environment, parental attention and support, as well as family learning counseling and communication, all positively influence students' learning behavior. Furthermore, a supportive family environment helps to stimulate students' English-learning motivation and positive attitudes. Family background plays an important role in students' English learning behavior, cognitive and emotional participation. In the future educational practice, we should pay more attention to family factors, strengthen home-school cooperation, and jointly promote the all-round development of students. By optimizing the family learning environment and providing emotional support, students can effectively enhance their participation in English learning and lay a solid foundation for their future development.

Keywords: Middle School English; English Learning Engagement; Family Background.

Introduction

In the context of globalization, English has become a recognized international language with important social and economic value. For middle school students, mastering good English ability is not only related to their academic performance, but also the key to their future career development and international communication. However, despite the widespread attention of English education in China, the participation of middle school students in English learning is not optimistic, which affects their learning effect and interest to some extent. Middle school students in urban areas have formed an important group in the field of English language learning (Jones, 2020[1]). Their investment in learning English is critical to the development of language skills and academic achievement. With the continuous progress of global interaction and international education, the research of English learning participation of urban middle students has crucial theoretical and practical significance (Chen, 2021[2]).

As an important background for the growth of students, the family environment has a profound influence on their learning behavior, attitude and effect. Especially in the context of urban family, due to the differences in family economic conditions, parents' education level, family cultural atmosphere and other aspects, the participation of middle school students in English learning is diversified. Therefore, family background is considered as an influencing factor affecting students' participation in English learning (Taylor et al., 2021[3]). Understanding the characteristics of urban middle school students and the impact of their family background on their participation in English learning is of great significance for guiding English teaching practice and family education (Wang & Chen, 2022[4]). Previous research has begun to focus on the relationship between the extent of students' participation in English learning and the influence of family background

(Brown & Lee, 2020[5]). It found a strong correlation between students' behavior, emotions, cognition, language skills, and learning input, highlighting the family background as an important influencing factor. However, there are still gaps in the relationship between English participation in urban secondary school students and family background (Wang & Liu, 2019; Zhang & Guo, 2021[6]). Specifically, there is a lack of in-depth exploration of the characteristics of urban middle students 'participation in English learning, and a comprehensive analysis and comparative study of the impact of various family background factors on the degree of students' participation in English learning.

This study aims to reveal the mechanism of urban family environment on English learning participation through empirical analysis. Focus on the family economic status, parents' education level, family learning atmosphere and other factors, and analyze how they affect the behavioral participation, cognitive participation and emotional participation of middle school students in English learning. By deeply exploring the influence path and mechanism of these factors, we expect to provide targeted suggestions for improving the students' participation in English learning.

Literature Review

In today's globalization, the importance of English, as the main language of international communication, is becoming increasingly prominent. For middle school students, mastering good English ability is not only related to their academic performance, but also the key to their future career development and international communication. However, despite the widespread emphasis of English education in China, the participation of middle school students in English learning is not optimistic. As an important background for the growth of students, the family environment has a profound influence on their learning behavior, attitude and effect. Especially in the context of urban family, due to the differences in family economic conditions, parents' education level, and family cultural atmosphere, the participation of middle school students in English learning is diversified. Therefore, it is of great significance to deeply explore the correlation between the urban family environment and the participation of middle school students in English learning to optimize the family education environment and improve the English learning effect of middle school students.

Home situation

Urban families have relatively good economic conditions, and usually can provide more English learning resources for their children, such as buying English learning materials, attending English training classes, etc. These resources not only enrich the students' learning content, but also improve their interest and enthusiasm in learning (Hu, 2014[7]). Secondly, parents in urban families generally have a higher level of education, and they can usually better guide their children's English learning and help them solve the problems encountered in learning. In contrast, parents with lower education levels may not be able to give them effective English learning guidance and may even negatively affect their children's English learning (Olsher, 2014[8]). In addition, urban families usually pay more attention to the creation of family culture atmosphere. Parents will actively communicate with their children in English and encourage their children to participate in English corner, English competitions and other activities. This positive family learning atmosphere can stimulate children's English learning motivation and improve their participation in learning. On the contrary, families lacking an English learning atmosphere may make children feel boring and boring to English learning, which will affect their learning effect and interest (Li & Liu, 2013[9]).

Learning participation

Many scholars have expounded on the definition of learning participation from different perspectives. Generally speaking, learning participation refers to the degree of positive investment of students in the learning process, including cognitive participation, emotional participation and behavioral participation. Cognitive participation involves students 'understanding, application and innovation of knowledge; emotional participation focuses on students' emotional experience and attitude in the learning process; and behavioral participation refers to the interaction, cooperation and practical activities of students in class (Chen, 2018[10]).

Second, participation in learning is influenced by multiple factors. The literature suggests that students 'personal characteristics, family background, school environment, and teachers' teaching methods may all have an impact on learning participation (Patrick A. Virgillito, 2015[11]).

For example, intrinsic factors such as students 'self-efficacy, learning interest and motivation can directly affect their participation in learning, and external factors such as family economic status, educational expectations and classroom atmosphere can also have an important impact on students' participation in learning (Albert Bandura, 2019[12]).

When evaluating the influence of family background on middle school students 'learning participation, it is necessary to construct an evaluation system, including family economic status, parents' education level, family cultural atmosphere, learning resources, learning opportunities, and more comprehensively evaluate the influence of family background on students' learning participation. This evaluation provides an important reference for educators to develop targeted interventions and ultimately improve the quality of education (Zhang et al., 2021[13]).

Research Method
Design

This research aimed to find the relationship between English learning participation and family background among middle school students. Specifically, the present study aims to understand the level of English learning participation of middle school students in A city, and to explore the role of family background factors in the process of English learning participation. This study includes two intermediate factors: students' learning participation behavior and family background factors. Using the National Student Participation Survey (NSSE) method, it focuses on the participation of college students, and its principles and indicators can also provide information and guidance for secondary education. The NSSE emphasizes active student engagement and interaction with academic settings as key factors in improving the quality of education.

First, four variables, emotion, cognitive skills and student participation. The aim was to explore the correlation between these factors and students' participation in English learning to gain insight into the mechanisms by which these factors influence English learning. Secondly, this study analyzed the influence of these family background factors on students' English learning from the perspective of family background variables. The analysis included a comprehensive examination of factors such as the condition of family members, expectations of students' academic performance, and participation in foreign language learning.

Participants and context

Based on the theoretical research discussed above, English learning participation behavior is divided into three dimensions: behavior, emotion and cognition. According to the requirements of the curriculum standards of grade 7 to grade 9, the teaching and evaluation activities should be carried out according to the students' language level and the corresponding level. Considering the actual situation of regional and ethnic diversity in China, as well as the uneven development of economic and educational development, and recognizing that the curriculum standards do not uniformly stipulate the content scope of primary English knowledge, this study excludes the dimension of learning participation in the dimension of English knowledge investment in the curriculum.

Table 1 Research Participants and Context

Method	Participants	Context
Questionnaires	Smith & Johnson, 2020[14]	English learning participation includes three dimensions: behavior, emotion and cognition, and is based on English skills.
	Taylor , 2019[15]	In the behavioral dimension, the participation in English learning includes students' initiative in English learning, their effort to solve English challenges, and their level of concentration in learning.
	Brown & Lee, 2021[16]	The measurement of behavioral dimensions comprehensively reflect the depth and breadth of students' interactions with English learning materials.

	Anderson & Thompson, 2022[17]	Social interactions between students and their peers and teachers had a significant impact on their interests, confidence and learning expectations.
	Williams, 2020[18]	It aimed to explore student engagement in group work, open interactions with teachers, and how these interactions have shaped their emotional experience of English learning.
	Wang & Chen, 2022[19]	The cognitive dimension concerns the students' self-efficacy, motivation, and learning strategies.
	Harris & Graham, 2021[20]	Discussion quality is an important indicator of student participation, which will run through every link of the questionnaire design. High-quality discussion promotes deep learning and enhances students' critical thinking skills.
Interview	Kuh, G. D., 2009[21]	Students' behavioral investment in English learning is reflected in their enthusiasm and initiative.
	Astin, A. W., 1993[22]	Emotional investment involves students' attitudes and interest in English learning.
	Pintrich, P. R., 2004[23]	Cognitive investment is mainly reflected in students' ability to use learning strategies to learn English.
	Biggs, J. B., 1999[24]	The interaction between the students and the content is an important process of deeply understanding and applying knowledge.
	Johnson, D. W., & Johnson, R. T., 1999[25]	The cooperation and communication between students is an important part of English learning.
	Patton, M. Q., 2002[26]	Interaction with teachers is crucial for students' learning.

Research instrument
Questionnaire

Part 1, Family Background

Family background related factors mainly include parents' career, cultural education level, family English learning environment, family economic situation, family financial investment in extracurricular English learning, participate in extracurricular English learning activities, duration to participate in extracurricular English learning, the future academic progress, education expectations, focus on English learning, support English learning, daily participation in English learning activities, and family extracurricular English training costs reduction.

The second part, learning to participate

The conceptualization of English learning engagement spans three variable dimensions: behavior, emotion, and cognition, and is based on English language skills (Smith, 2020). Within the behavioral dimension, measures included students' initiative to participate in English-related activities during learning, their diligence in addressing English challenges, and their level of concern during English learning. In the emotional experience dimension, student interactions with peers and faculty constitute an important aspect of social interaction, influencing students' interest, confidence, and learning expectations. The cognitive dimension, which involves students 'self-efficacy, motivation and learning strategies, carefully considers the quality of students' interaction with content, efficiency of cooperation with others, and depth of communication with teachers to evaluate how these factors together contribute to their cognitive development.

Interview

Discussion, is a key indicator of student participation and will penetrate into all parts of the questionnaire design. High-quality discussions can promote deep learning and improve students' critical thinking skills. Therefore, the questionnaire will include items involving frequency of discussion, richness of discussion content and application of discussion results. Furthermore, the options for each item are constructed based on the specific needs that students need to meet near the end of the initial phase of the first-level goal.

Data collection and analysis

According to the English learning participation rate of seventh grade students in the central area of City A is 50%, the allowable error range is ±5%. At the 95% confidence level, the sample size is calculated to be 384.16. To estimate the proportion of seventh-grade students engaged in English learning with a 95% confidence level and a ±5% margin of error, a sample of at least 385 students would be required.

According to the requirements, stratified random sampling was used, taking the participation of middle school students as an example, focusing on the English learning content, and taking the curriculum standards of English grade 7 in middle school as the academic requirement. Four secondary schools from the A downtown area, namely School Middle School, Experimental Middle School, Yuxi No.2 Middle School and Optics No.1 Middle School, were selected, with each school providing 300 samples. Taking into account additional factors, such as multi-school effects or the complexity of other variables, a larger sample size may be needed to ensure the robustness and representativeness of the findings. Therefore, a sample of 1,200 students was selected from 2,000 students to ensure statistically representative and generalizable research results. To explore the influence between English learning participation and student agency in downtown A and their family background. The intermediate data collection method used in this study distributed questionnaires to seventh grade students. The present series of questionnaires were conducted between November 2023 and January 2014.

To evaluate the reliability of the questionnaire, kronbach's Alpha (α) coefficient was used to test the consistency between items. The α coefficient was calculated and compared with the theoretical values to determine the reliability of the questionnaire. After calculating the questionnaire alpha coefficient is 0.91.The higher the α coefficient, the greater the consistency of the scale.Furthermore, to assess the validity of the questionnaire, this study referred to historical literature and borrowed relevant measurement tools, using Kaiser-Meyer-Olkin (KMO) values to directly represent validity.After calculation, the validity kmo = 0.89. A descriptive statistical analysis of various dimensions and measures of students 'participation in English learning, including the calculation of mean and standard deviation; a one-sample t-test is used to compare the students' investment in English learning to understand the current investment level of the seventh pupils. One-way ANOVA and canonical correlation analysis were used to identify and quantify factors including family background, learning behavior, emotional participation, cognitive performance, and classroom participation.

Findings

Research Question (RQ1): Students' family background was positively associated with their behavioral participation in English learning.

In order to answer the first research question, the variables were divided into: gender into two discrete variables, family economic status was divided into three discrete variables, parental occupation and parental education level were divided into four discrete variables, and behavioral input, emotional input, cognitive performance, and classroom participation indicators were divided into five discrete variables. Independent sample t-test and one-way ANOVA were used to assess the effect of secondary student family background on participation in English learning. One-way ANOVA and canonical correlation analysis were used to identify and quantify factors including family background, learning behavior, emotional participation, cognitive performance, and

classroom participation. Analysis of the relationship between the ality of family background indicators and learning participation:

Gender: An independent sample t-test for sex differences between two groups demonstrates sex differences in learning behavior engagement between two groups (men and women), analyzed by an independent sample t-test. From the data, the different learning behavior engagement measures did not show significant sex differences between males and females.

Parents career differences, parents cultural level, family economic situation, English learning spending for students learning behavior: according to the results of one-way variance analysis, Sig. value (i. e., p value), all indicators p values are greater than 0.05, which further confirmed that the four influence on children learning behavior is not significant, family basic background difference has no significant impact on children's learning behavior engagement.

After canonical correlation analysis, the data revealed a significant positive relationship between the two variables of family support and learning behavior, although this relationship weakened with the order of canonical variables. The first pair of canonical variables showed moderate intensity linear relationships and had high explanatory power, able to explain 44.4% of the variation in the original variables. All canonical correlations reached statistical significance, confirming the association between these two sets of variables. Therefore, family support and learning behavior have a significant impact. This suggests that in educational practice, we should not overemphasize the impact of family economic status on students 'learning, but pay more attention to the influence of other factors such as teaching methods, students' interest, learning environment and other factors on students' learning effect. When formulating educational strategies and methods, more attention should be paid to individual differences and all-round development to meet the learning needs of students with different family economic backgrounds.

Research Question (RQ2): Family background factors had a significant influence on the cognitive participation of English learning among urban middle school students.

To answer the second research question, a one-way ANOVA was used to estimate the relationship between the independent variables of the family essential factors and the dependent variables of cognitive participation in English learning. Typical correlation analysis starts from four aspects: family 1. Learning environment, 2. Family English learning, 3. Family support for English learning, 4. Families will study English, instruct or communicate.

Table 2.Analysis results of family background factors differences influencing students' English learning behavior

	parental occupational differences					differences in parents' English learning behaviors				
Gender	Sum	Df	Mean	F	Sig.	Sum	df	Mean	F	Sig.
BG	8.68	6	1.447	1.118	0.35	1.689	3	0.563	0.433	0.729
WG	713.013	551	1.294			720.005	554	1.3		
T	721.694	557				721.694	557			
BG	2.751	6	0.458	0.28	0.946	0.441	3	0.147	0.09	0.965
WG	900.748	551	1.635			903.057	554	1.63		
T	903.498	557				903.498	557			
BG	5.582	6	0.93	0.664	0.679	5.949	3	1.983	1.423	0.235
WG	772.303	551	1.402			771.936	554	1.393		
T	777.885	557				777.885	557			
BG	13.489	6	2.248	1.511	0.172	6.377	3	2.126	1.425	0.235
WG	819.531	551	1.487			826.642	554	1.492		

Gender	Sum	df	Mean	F	Sig.	Sum	df	Mean	F	Sig.
T	833.02	557				833.02	557			
BG	8.032	6	1.339	1.133	0.341	3.803	3	1.268	1.072	0.36
WG	650.714	551	1.181			654.942	554	1.182		
T	658.746	557				658.746	557			
BG	9.229	6	1.538	1.257	0.276	2.515	3	0.838	0.682	0.563
WG	674.349	551	1.224			681.064	554	1.229		
T	683.579	557				683.579	557			
BG	5.862	6	0.977	0.699	0.65	2.542	3	0.847	0.607	0.611
WG	769.953	551	1.397			773.274	554	1.396		
T	775.815	557				775.815	557			
BG	5.595	6	0.933	0.589	0.739	3.531	3	1.177	0.746	0.525
WG	872.226	551	1.583			874.29	554	1.578		
T	877.821	557				877.821	557			
BG	10.479	6	1.747	1.439	0.198	6.563	3	2.188	1.801	0.146
WG	668.906	551	1.214			672.822	554	1.214		
T	679.385	557				679.385	557			
BG	6.377	6	1.063	0.722	0.632	1.329	3	0.443	0.301	0.825
WG	811.511	551	1.473			816.558	554	1.474		
T	817.887	557				817.887	557			

Continuation table

	differences in family economic situation					difference in off-campus English learning education expenditure				
Gender	Sum	df	Mean	F	Sig.	Sum	df	Mean	F	Sig.
BG	0.156	2	0.078	0.06	0.942	0.156	2	0.078	0.06	0.942
WG	721.537	555	1.3			721.537	555	1.3		
T	721.694	557				721.694	557			
BG	0.052	2	0.026	0.016	0.984	0.052	2	0.026	0.016	0.984
WG	903.447	555	1.628			903.447	555	1.628		
T	903.498	557				903.498	557			
BG	1.297	2	0.648	0.463	0.629	1.297	2	0.648	0.463	0.629
WG	776.588	555	1.399			776.588	555	1.399		
T	777.885	557				777.885	557			
BG	3.557	2	1.778	1.19	0.305	3.557	2	1.778	1.19	0.305
WG	829.463	555	1.495			829.463	555	1.495		
T	833.02	557				833.02	557			
BG	5.18	2	2.59	2.2	0.112	5.18	2	2.59	2.2	0.112
WG	653.565	555	1.178			653.565	555	1.178		
T	658.746	557				658.746	557			

BG	0.909	2	0.455	0.37	0.691	0.909	2	0.455	0.37	0.691
WG	682.669	555	1.23			682.669	555	1.23		
T	683.579	557				683.579	557			
BG	2.647	2	1.324	0.95	0.387	2.647	2	1.324	0.95	0.387
WG	773.168	555	1.393			773.168	555	1.393		
T	775.815	557				775.815	557			
BG	1.479	2	0.739	0.468	0.626	1.479	2	0.739	0.468	0.626
WG	876.342	555	1.579			876.342	555	1.579		
T	877.821	557				877.821	557			
BG	2.074	2	1.037	0.85	0.428	2.074	2	1.037	0.85	0.428
WG	677.311	555	1.22			677.311	555	1.22		
T	679.385	557				679.385	557			
BG	1.026	2	0.513	0.349	0.706	1.026	2	0.513	0.349	0.706
WG	816.861	555	1.472			816.861	555	1.472		
T	817.887	557				817.887	557			

Table 3. Analysis of the typical correlation between family support factors and learning behavior

Typical correlation

	relativity	characteristic value	Wilke statistics	F	molecular DF	denominator DF	sig
1	0.561	0.46	0.583	7.9	40	2064.64	0
2	0.267	0.077	0.851	3.354	27	1592.323	0
3	0.254	0.069	0.916	3.056	16	1092	0
4	0.144	0.021	0.979	1.652	7	547	0.119

In most cases, the F value is low, and the corresponding significance (Sig.) value is greater than 0.05. This suggests that in most cases parental occupation had no significant influence on various indicators of cognitive participation in English learning. Parental literacy on individual indicators may have a marginal and significant effect on students' cognitive participation in English learning, but overall, parental literacy did not have a significant effect on work performance in English learning. There is a marginal effect on students' critical thinking ability through English learning, but it does not reach a significant level. This suggests that family fundamentals may not be decisive in students' cognitive engagement in English learning. Therefore, more attention should be paid to other factors, such as teaching methods, learning environment, students' interest, etc.

After a typical correlation analysis, we explore the relationship between family emotional factors and students' English learning behavior. The data show that the family learning environment, the attention and support for English learning, and English learning counseling and communication within families are all positively correlated with students' learning behavior. Among them, the correlation between family support factors and students' learning behavior was particularly significant, reaching moderate intensity. These findings highlight the key role of the home environment in shaping students' learning behavior. In order to improve the learning effect and the quality of family education, future research should further focus on how to optimize family support factors, such as improving the learning environment, enhancing family attention and support, and strengthening English learning counseling and communication within the family. This will help to promote students' English learning behavior and development.

Research Question (RQ3): The family background of the urban middle school students had a significant impact on the students' emotional participation in English learning. To answer the third research question, start with item 1. Learning environment, 2. Family attention to English learning, 3. Support for English learning, 4. Family will provide English learning guidance or communication. Analysis was performed using canonical correlation methods.

Table 4.Results of emotional support on English learning in family background

			Typical correlation				
	relativity	characteristic value	Wilke statistics	F	molecular DF	denominator DF	sig
1	0.561	0.46	0.583	7.9	40	2064.64	0
2	0.267	0.077	0.851	3.354	27	1592.323	0
3	0.254	0.069	0.916	3.056	16	1092	0
4	0.144	0.021	0.979	1.652	7	547	0.119

After a typical correlation analysis, we verified that the family background of urban middle school students had a significant impact on their emotional participation in English learning. The data show that family environment and learning environment have a significant role on students' emotional participation in learning. A supportive, encouraging and emotionally safe family environment helps to foster students' motivation and positive attitude towards English learning. In addition, the family's attention and support for English learning, as well as the family English learning tutoring and communication, also have a positive impact on students' emotional participation.

Table 5. Results of typical correlation of family basic factors on students' English learning

		Typical correlation				
relativity	characteristic value	Wilke statistics	F	molecular DF	denominator DF	sig
0.144	0.021	0.966	0.478	40	2064.64	0.998
0.094	0.009	0.986	0.283	27	1592.323	1
0.059	0.004	0.995	0.171	16	1092	1
0.038	0.001	0.999	0.116	7	547	0.997

The data in Table 4 demonstrate the typical correlation between family fundamentals and students' emotional participation in English learning. From the results, the correlation between the four factors of parental occupation, family economic status, expenditure on learning English, and parental education level and students' emotional participation in English learning was generally low. Specifically, the correlation of parental occupation is 0.144, which is weakly related; the correlation of family economic status is 0.094, which is also weakly related; the correlation of learning English expenditure is 0.059, and the correlation of parental education level is only 0.038, which is almost negligible.

From the significance level, none of the other three factors was significant, except that the correlation of parental occupation was close to the significance level (p=0.098). This means that under the current sample, family basic factors may not be the main factors affecting the emotional participation of students in English learning.

Table 6: Multiple comparisons of groups that affect classroom engagement

		Typical correlation				
Relativity	characteris	Wilke	F	molecular DF	denominator	sig

	tic value	statistics			DF	
0.092	0.008	0.983	0.788	12	1458.1	0.664
0.09	0.008	0.991	0.798	6	1104	0.572
0.023	0.001	0.999	.	.	.	.

First, we noted that the table listed three different indicators of class participation, namely "high frequency of discussion in English class", "I think the discussion in English class is meaningful" and "I often apply class discussions to my own learning". These indicators appear to be designed to measure students' engagement in the English class and the sense of value they gained from class discussions. Canonical correlation is a statistic that measures the linear relationship between two groups of variables. The relations of the three indicators were 0.092, 0.09 and 0.023, and these values were relatively low, suggesting that the linear relationship between these aspects of classroom engagement and basic family background may be weak. The eigenvalue, an important parameter in the canonical correlation analysis, represents the amount of shared variance between two sets of variables, which here are 0.008, 0.008 and 0.001, again indicating that the shared variance between these classroom engagement metrics and the family basic background is small. The Wilke statistic is close to 1, while the F value is small, and it does not provide sufficient evidence to reject the null hypothesis (i. e., there is no canonical correlation between the two groups of variables).

From the results, the correlation between the canonical variables was generally low, and the order of the canonical variables increased. The first pair of canonical variables had a correlation of 0.144, representing a weak correlation. This suggests a degree of positive correlation between emotional support in the family background and students' emotional engagement in the English classroom, but this association was not strong. Moreover, from the eigenvalues, the original variable explained by each typical variable is less variable, indicating that emotional support factors in the family background have limited direct influence on students' emotional participation in English classroom. This may be because emotional support is a complex concept involving multiple aspects that may not be fully represented in the dataset.

Discussion

Discussion of Learning behavior

An independent sample t-test for sex differences between the two groups showed sex differences in learning behavior participation between the two groups (men and women), analyzed using the independent sample t-test. From the data, the different measures of learning behavior participation did not show significant gender differences between men and women. Occupational differences of parents, parental education level, family economic status, English learning expenditure on students: According to the results of one-way ANOVA, Sig. Value (i. e., p-value), the p-value of each index is greater than 0.05, further confirming that the four factors did not significantly affect children's learning behavior, and the family basic background difference had no significant effect on children's participation in learning behavior.

After canonical correlation analysis, the data showed a significant positive correlation between the two variables of family support and learning behavior, although this relationship weakened with the order of canonical variables. The first pair of canonical variables showed moderate intensity linear relationships with high explanatory power to explain 44.4% of the variation in the original variables. All of the canonical correlations reached statistical significance, confirming the association between these two sets of variables. Thus, family support and learning behaviors have important implications. This shows that in educational practice, we should not overemphasize the influence of family economic situation on students 'learning, but should pay more attention to the influence of teaching methods, students' interest, learning environment and other factors on students' learning effect. When formulating educational strategies and methods, more attention should be paid to individual differences and all-round development to meet the learning needs of students with different family economic backgrounds..

Discussion of learn the knowledge about cognitive engagement

In most cases, the F value is low and correspondingly significant (Sig.). Value is greater than 0.05. This suggests that in the majority of cases, parental occupation did not significantly affect various indicators of cognitive engagement in English learning. Parental literacy of individual indicators may have marginal and significant effects on students' cognitive engagement in English learning, but overall, parental literacy had no significant effect on work performance in English learning. Learning through English had little effect on students' critical thinking ability, but it did not reach a significant level. This suggests that the family base may not be a determining factor in students' cognitive participation in English learning. Therefore, more attention should be paid to other factors, such as teaching methods, learning environment, students' interest, etc.

We explore the relationship between family emotional factors and students' English learning behavior through typical correlation analysis. The data showed that the family learning environment, attention and support for English learning, and English learning counseling and communication within families were all positively correlated with students' learning behaviors. Among them, the correlation between family support factors and student learning behavior is particularly significant, reaching moderate intensity. These findings highlight the key role of the home environment in shaping students' learning behavior. To improve the learning effectiveness and quality of family education, future research should further focus on how to optimize family support factors, such as improving the learning environment, enhancing family attention and support, and strengthening English learning counseling and communication within the family. This will help to promote students' English learning behavior and development.

Discussion of learn emotional participation

The relationship between basic family factors such as parental occupation, family economic status, English learning expenditure, and parental literacy level and students' emotional participation in English learning was generally low and not significantly associated with most factors. This indicates that under the current sample, family basic factors may not be the main factors affecting students' emotional participation in English learning. Therefore, when exploring the reasons affecting students' emotional participation in English learning, more attention may be paid to other factors, such as family support and learning environment. These findings provide a new perspective for our understanding of the factors influencing students' emotional participation in English learning, and also for the optimization of family and school education.

Using a typical correlation analysis, we verified that the family background of urban middle school students had a significant effect on their emotional involvement in English learning. The data suggest that the home environment and the learning environment have important effects on students' emotional participation in the learning process. A supportive, encouraging and emotionally safe family environment helps to foster students' motivation and positive attitude towards English learning. Moreover, family attention and support for English learning, as well as tutoring and communication for family English learning, also had a positive impact on students' emotional participation. These findings confirm the important role of family context in shaping students 'emotional participation in English learning and provide important implications for improving students' learning participation and teaching quality. Future research could further explore how to optimize the family and school environment, strengthen family-school cooperation, and better promote students' emotional participation and overall development of English learning.

Discussion of Classroom participation

We can conclude that the typical correlation between these three classroom participation indicators and the basic family background is weak, and that there is insufficient evidence for a significant linear relationship between them. Therefore, other factors or methods may need to be considered in addition to improving students' job performance. Emotional support in the family context was weakly correlated with students' emotional participation in English classes. The correlation between the learning environment, attention and support of family members, family tutoring and communication was low, and decreased with the order. This suggests that although

family emotional support was positively associated with students' English emotional engagement, its impact was limited. Characteristic values showed that emotional support factors had less direct influence on students' emotional participation in English. It can be seen that the influence of family emotional support on students' emotional participation in English classroom is relatively weak.

Conclusion

Based on the analysis of multiple demographic factors among seventh-grade students and in-depth exploration of the relationship between family background and behavioral participation, cognitive participation and emotional participation in English learning, we draw the following conclusions.

Significant found a significant found between students' family background and their behavioral involvement in English learning. Specifically, there was a significant positive association between family support and learning behavior. This suggests that the home learning environment, attention and support for English learning, and English learning counseling and communication within families all have positive effects on students' classroom participation, homework completion, and extracurricular participation in language-related activities. Although family economic status and parents 'occupation also have a certain impact on students' behavior participation, the creation of family support and learning environment is more critical.

In terms of cognitive participation, some elements in the family background, such as parental education level and family economic status, have a significant impact on the cognitive participation in English learning of urban middle school students. The higher educational level of parents often means that they are able to provide students with more learning resources and strategic guidance, which helps to improve students' understanding, processing depth, and strategic use of learning techniques. However, the generally poor family economic status may limit students' access to quality learning resources and participation in high-cost learning activities, thus affecting their cognitive participation to some extent.

The emotional participation of the family middle school students is also influenced by the family background. A supportive, encouraging and emotionally safe family environment helps to foster students' positive attitudes and motivation towards English learning. Parents 'care and support, as well as English learning communication and tutoring within the family, can improve students' emotional participation level. However, the study found that although family emotional support was positively associated with students 'emotional participation in English, its effect was relatively weak, suggesting that many other factors (for example, school environment, peer relationship, etc.) jointly influence students' emotional participation.

In conclusion, the students' family background plays an important role in both behavioral, cognitive and emotional participation in English learning. In order to improve students' investment and effect in English learning, in addition to paying attention to school education, we should also pay attention to the role of family education, actively create a family environment conducive to English learning, and provide necessary support and guidance. At the same time, schools and families should establish effective communication mechanisms to jointly promote the all-round development of students.

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