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EDITORIAL

We Look Forward to the Future in the Difficult Days

NO matter from which point of view, 2020 is an unimaginable year. The sudden outbreak and rapid spread of the COVID-19 pandemic have caused the world to face unprecedented challenges. Schools were closed, and how to make the education system work effectively in this context has become a common topic among educators around the world.

Best Evidence in Chinese Education (BECE) realized the importance of this topic early on. As the country that first encountered the virus and was the fastest to control its impact, China has gained valuable experience in the process of education and anti-epidemic. Although the real situations are different in different countries, we believe that using academics to reach consensus and form a joint force must be our inevitable survival choice in the pandemic. Based on this understanding, the editorial office quickly organized topics on education to fight against the pandemic. We have not only invited Chinese scholars to discuss this issue, but at the same time, considering that this is a global public health crisis, people urgently need to learn from their own experience and strength. So we also organized scholars outside of China to discuss their own country's experience. This topic quickly attracted the attention of all parts. The download and reprint of related papers have risen rapidly from the statistics results, and some readers have given us feedback and praised us for doing a significant thing. We are gratified that we can contribute our modest strength to the global fight against the pandemic.

Besides, we continue to focus on promoting high-quality education empirical research results from China. Throughout 2020, through professional evaluation and screening, we published 15 original papers, reprinted the full text of 10 high-quality papers published in Chinese academic journals, and published 32 carefully compiled newsletters. These papers and newsletters cover a wide range of topics from pre-school education to higher education, involving dozens of authoritative Chinese education research journals. The authors include front-line teachers, education administrators, and scholars. Through our efforts, we hope that we can portray the current empirical research on education in China and promote academic exchanges and development for colleagues worldwide who are concerned about empirical research on Chinese education. In this process, we have received strong support from the journal staff, editors, and reviewers, and our readers continued to encourage and look forward to us. On behalf of the editorial office colleagues, I would like to express my sincere thanks to you for your guidance and help!

In 2021, we will continue to adhere to our original aspiration and promote empirical research on high-quality education in China as our mission and goal. 2021 is a critical time node for the initiation and deepening of China's education reform. We will focus on significant and vital issues in China, focusing on China's education poverty alleviation, education evaluation reform, education modernization progress, and front-line teaching reform as selected topics, and strive to contribute valuable empirical research on Chinese education to education colleagues around the world.

Just as whether or not the groundhog Phil can see his shadow, spring will definitely come. Although we still face challenges and difficulties at the beginning of the New Year, we are full of expectations for the future. We believe that difficult days will always pass, and we hope everything will return to normal as soon as possible and wish all people safety and health!

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ARTICLE

Family Background, Parent Involvement, and Shadow Education Participation of Middle School Students: Empirical Analysis from CEPS2015 Data

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Abstract*. Using the 2015 data of the China Education Panel Survey (CEPS), the relationship between family socioeconomic background, parent involvement, and shadow education participation was explored through structural equations. The results showed that: parent involvement strengthened shadow education participation; parent involvement played a part in the mediating role in the influence of family socioeconomic background on shadow education participation. Parent involvement activates the advantage of family socioeconomic background. Families with high socioeconomic backgrounds are more active in participating in shadow education, and families of different strata are divided into opportunities for participation in shadow education.*

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Keywords*: Shadow Education; Parent Involvement; Family Socioeconomic Background; High-Order Mediation Effect; Structural Equation Model*

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IN the 1960s, Coleman and his colleagues published the "Equal Educational Opportunity Report." The report found that family background is an essential factor that affects student development and academic performance, and is the regenerating source of educational inequality and even social inequality, and has a more significant impact than school (Coleman, 1966). Family background currently affects student development through two main paths: parental participation in education and providing children with differentiated educational opportunities. Parents' educational participation indicates that parents influence students' learning and promote students' development through direct participation in students' learning guidance and supervision (Epstein, 1986). In the case of the same school, parents provide differentiated educational opportunities for their children outside the school mainly by participating in "shadow education" (that is, extracurricular tutoring) to improve students' educational competitiveness (Zhang & Bray, 2018). So what is the relationship between these two paths? What role does parent involvement play in the influence of family socioeconomic background on shadow education participation?

Literature Review

Coleman, Hill, Bronfenbrenner, Joyce Epstein, and others have defined parent involvement (Bronfenbrenner, 1979; Coleman, 1988; Epstein, 1987; Hill & Taylor, 2004). The more recognized definition is: parent involvement is also called parent involvement, that is, "parent involvement in the child's education." Its purpose is for the excellent development and growth of children (Conger et al., 2007). In the empirical analysis of the connotation and types of parent involvement in China and abroad, specific operational definitions of parent involvement will be made, such as parental supervision of learning, homework guidance, parental expectations and parent-child communication, and parent-teacher communication (Morgan & Sørensen, 1999).

Study on the Influence of Family Background on Shadow Education Participation

Studies abroad have found that the family socioeconomic background has an essential influence on shadow education. Darby, Tansel and Bircan, Bray and Kwok used quantitative methods to analyze the effect of family factors on extracurricular tutoring (Bray & Kwok, 2013; Southgate, 2009; Tansel & Bircan Bodur, 2008). Using qualitative interviews and observation and tracking methods, Lareau found that middle-class children are more involved in organized extracurricular activities, including extracurricular tutoring activities (Lareau, 2009).

Domestic scholars Haiping Xue, Binli Chen, Hongli Chu, Manchao Zeng, etc., used quantitative methods to analyze data and found their parents' educational background, parents' occupation, and family income have an impact on students' participation in shadow education (Xue, 2016; Chen & Bai, 2015; Chu, 2009; Zeng et al., 2010). Xuelian Gao used the method of fieldwork to find that urban children mainly participate

in extracurricular tutoring in their spare time, and children from migrant workers' families mainly take "free-range" (Gao, 2017).

Research on the Influence of Family Background on Parent Involvement

The theory of social capital believes that the higher the family's social and economic background, the higher the emphasis on education and active participation (Masarik & Conger, 2017). Family stress theory (McCubbin et al., 1980) believes that families with low socioeconomic conditions usually do not have high parent involvement behaviors due to enormous economic pressure. The family absence theory believes families with low parent involvement are rooted in the class's massive gap (He, 2008).

Global empirical studies have also found that family socioeconomic background strongly affected parent involvement (Balli, 1996; Bracey, 1996). Domestic scholars Xiaorui Huang (Huang & An, 2008), Chonghan Wu (Wu, et al., 2017), Guiqing An and Yang Yang (An, & Yang, 2018) all believed that families with higher socioeconomic backgrounds have higher parents' enthusiasm for participating in their children's learning.

Research on the Impact of Parent Involvement on Shadow Education Participation

At present, there are not many studies on the influence of parent involvement on shadow education participation. Xiaoshan Lin's research found that the longer parents spend with their children, the more children's expenditure and opportunities for out-of-school education consumption (Lin, 2018). Haiping Xue studied structural equation modeling and found that parents' educational expectations positively affect extracurricular tutoring (Xue, 2017). Jing Li and Haiping Xue found that in academic tutoring, the longer parents spend with their children, and the more often they supervise homework each week, the more likely they are to participate in extracurricular tuition (Li & Xue, 2016). Jiali Li's research found that parent-child companionship, parent-child activities, etc., can positively predict the participation probability of tutoring, while parent-child communication and family-school communication have little effect (Li & Xue, 2019).

Data Source and Variable Description

The data used in this study all come from the 2014-2015 China Education Panel Survey (CEPS). In 2015, CEPS investigated the relevant situation of eighth-grade students in middle school. The variables used in the study are shown in **Table 1**.

Results

Table 1. Description of Variables in Statistical Analysis.

Variable Type	Variable Name		Variable Description
Shadow Education	Whether eighth grade students participate in shadow education		0=no, 1=yes
Family Socioeconomic Background	Parent's highest education		1=primary school and below, 2=junior high school, 3=high school, 4=junior college, 5=undergraduate and above
	Parents' highest occupational stratification		1=lower level, 2=middle level, 3=upper level
	Family's financial situation		1=very difficult, 2=very difficult, 3=medium, 4=relatively rich, 5=very rich
	Family Supervise	How often do parents check homework a week	1=no, 2=one to two days, 3=three to four days, 4=almost every day
		How often do parents guide homework a week	1=No, 2=One to two days, 3=Three to four days, 4=Almost every day
Parent Involvement	Family Communicate	Discuss school matters with parents	1=never, 2=occasionally, 3=always
		Discuss with parents about classmates	1=Never, 2=Occasionally, 3=Always
		Discuss teacher matters with parents	1=Never, 2=Occasionally, 3=Always
		Discuss your concerns with your parents	1=Never, 2=Occasionally, 3=Always
	Home school communication	Number of parent-teacher communication this semester	1=never, 2=once, 3=two to four times, 4=five times and more
		Number of times teachers communicated with parents this semester	1=never, 2=once, 3=two to four times, 4=five times and more
	Family expect	Parents' expectations of their children's education	1=graduated from junior high school, 2=high school, 3=associate, 4=undergraduate, 5=graduate and above
		Parents' confidence in their children's future	1=not confident at all, 2=not very confident, 3=relatively confident, 4=very confident
Control Variable	Gender		0=male, 1=female
	Grades		1=bad, 2=lower middle, 3=medium, 4=upper middle, 5=very good

The Impact of Family Socioeconomic Background and Parent Involvement on Shadow Education Participation

In order to verify the research hypothesis, take shadow education participation as the dependent variable, select three variables of family socioeconomic background and ten variables of parent involvement as independent variables, and use gender and performance as control variables to establish a binary logistic regression model as follows:

$$Y = F (I, S, F)$$

Table 2. The Influence of Family Socioeconomic Background and Parental Participation on Shadow Education Participation.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Gender: Female		0.25***	0.29***	0.22***	0.25***	0.29***	0.29***
Grades		0.06**	0.07***	0.03	-0.04	0.05**	-0.03
Family Socioeconomic Background							
Parents' Education	0.45***	0.44***	0.42***	0.42***	0.40***	0.44***	0.38***
Parent Occupation	0.35***	0.36***	0.35***	0.35***	0.34***	0.35***	0.33***
Economic Status	0.29***	0.28***	0.26***	0.26***	0.26***	0.27***	0.24***
Home Supervision							
Check Homework			0.20***				0.17***
Guide Homework			-0.04				-0.07**
Family Communication							
Discuss School				0.13**			0.09*
Discuss With Classmates				0.09*			0.06
Discussion Teacher				0.09*			0.03
Discuss Your Mind				0.02			-0.03
Family Expectations							
Parent Expectations					0.13***		0.12***
Future Confidence					0.23***		0.15***
Family-School Communication							
Active Communication						0.16***	0.12***
Passive Communication						0.00	0.00
Constant Term	-3.86***	-4.11***	-4.38***	-4.65***	-5.16***	-4.44***	-5.70***
Sample	9191	9191	9191	9191	9191	9191	9191
Cox & Snell R^2	0.12	0.123	0.13	0.13	0.13	0.13	0.14
Nagelkerke R^2	0.17	0.170	0.18	0.18	0.18	0.18	0.20

*Note: *p means p < 0.1, **p means p < 0.05, ***p means p < 0.01.*

In the model, Y represents whether the student participates in shadow education, I is an individual variable of the student, S is the family socioeconomic background, and F is parent involvement.

In **Table 2**, there was a significant positive correlation between parents' educational background, parents' occupational grade, financial status, and student participation rate in shadow education (model 1). The shadow education participation rate of girls was significantly higher than that of boys, and the higher the score, the higher the participation rate of shadow education (model 2).

In Model 3, students whose homework was checked frequently were more likely to participate in extracurricular tutoring. In Model 4, "discussion school," "discussion classmate," and "discussion teacher" all had a significant favorable influence on students' participation in shadow education. In Model 5, "parent education expectations" and "confidence" had a positive and significant impact on shadow education participa-

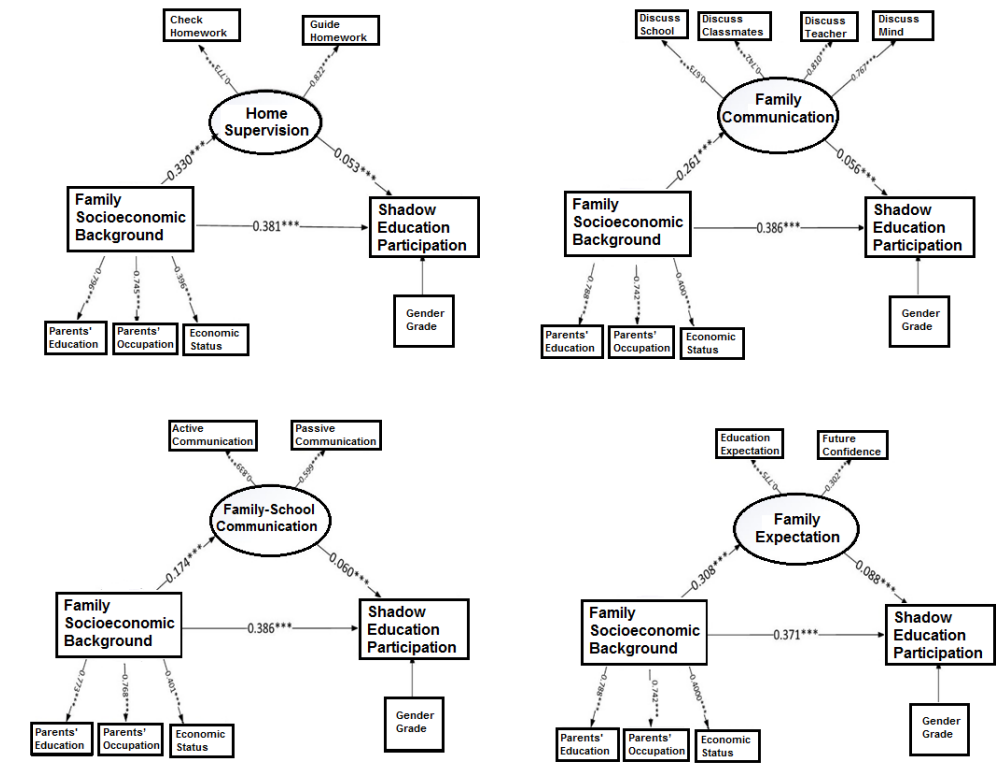

Figure 1. The Mediating Effect Model of Parental Participation in Four Dimensions.

tion. This also verified previous literature results: the higher the parents' expectations, the more confident they were in their children, and the more likely students were to participate in extracurricular tutoring. In Model 6, "actively communicating with teachers" positively and significantly impacted students' participation in extracurricular tutoring. Model 7 was a full-variable model; in addition to the index of homework guidance, most indicators of family socioeconomic background and parent involvement had a significant positive impact on shadow education. Parent involvement had not completely replaced shadow education but had become the driving force for students to participate in extracurricular tutoring.

Analysis of the Mediating Effect of Parent Involvement in the Influence of Family Socioeconomic Background in Shadow Education Participation

Table 3. Intermediary Model Fitting Results of Various Dimensions of Parent Participation in Affecting Shadow Education Participation.

Fitting Index	CMIN	DF	CMIN/DF	RMSEA	NFI	RFI	IFI	TLI	CFI
Home Supervision	564.375	18	31.354	0.057	0.955	0.930	0.956	0.932	0.956
Family Communication	870.167	33	26.369	0.053	0.960	0.945	0.961	0.947	0.961
Family-School Communication	739.436	18	41.080	0.066	0.927	0.887	0.929	0.889	0.929
Family Expectations	585.170	1 7	34.422	0.060	0.940	0.901	0.942	0.904	0.942
Judgment Criteria			< 5.0	< 0.10	> 0.9	> 0.8	> 0.9	> 0.8	> 0.9

Based on the above research review and binary logistic regression analysis, and then referring to the structural equation related method (Hou et al., 2004), a mediating effect model between the three is constructed.

The Mediation Effect of the Four Dimensions of Parent Involvement

Figure 1 presents the analysis of the effect of family supervision, family communication, family-school communication, and family expectations as intermediaries. The direct effects of family supervision, family communication, family-school communication, and family expectations on students' participation in shadow education are 0.053, 0.056, 0.060, 0.088, respectively, and the t-test results are all significant. It can be seen that family expectations have the most significant impact on students' participation in extracurricular tutoring, followed by family-school communication, family communication, and family supervision.

The formula for the total influence of family socioeconomic background on extracurricular tutoring participation is c=c'+a*b, where c' is the direct influence of family socioeconomic background on extracurricular tutoring. The real influence is the sum of direct and indirect influences. The total effect of family socioeconomic background on tutoring through the four parent involvement dimensions is family supervision 0.398, family communication 0.401, family-school communication 0.396, and family expectations 0.398.

The fitting results of the four-dimensional mediation model are shown in **Table 3**. Except for CMIN/DF > 5, all other fitting indexes of each parent involvement dimension reached an excellent level. The size of X2 (i.e., CMIN/DF) is related to the sample size N. When the sample size increases, X2 increases, so it is not limited to X2 as a discriminant index, but also other fitting indices (Hou et al., 2004). The sample size of this

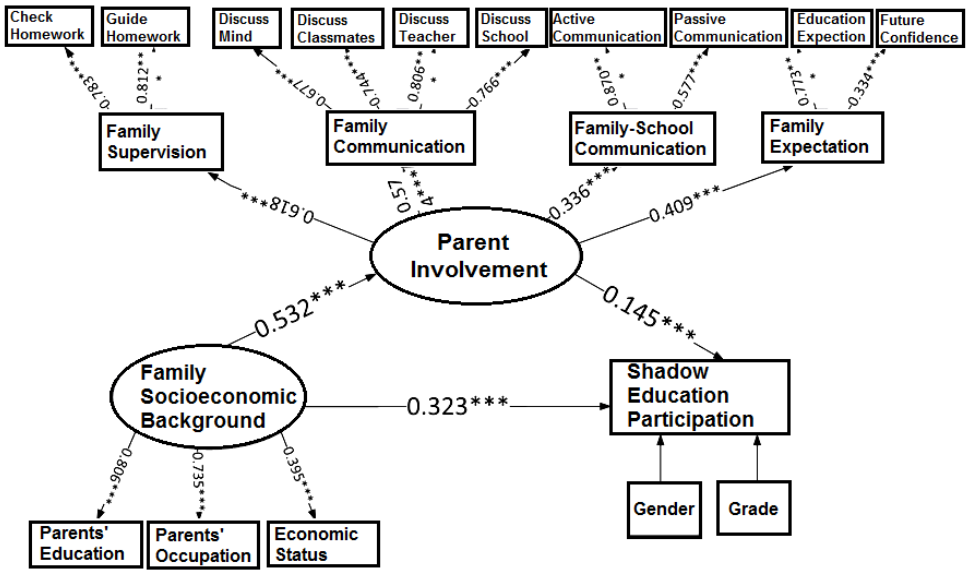

Figure 2. The Mediating Role of Parent Involvement between Family Socioeconomic Background and Student Shadow Education Participation.

study is 9,191. It can be referred to other fitting indicators, and other observation data would fit better.

Analysis of the high-level mediation effect of parent involvement

This study constructed a high-level mediation model in which family socioeconomic background influences student participation in shadow education. The mediation path model fits the data well: effective sample size N = 9,191, CMIN/DF = 29.416 > 5. Due to the large sample size, it cannot be judged by CMIN/DF alone. It should also be combined with other fitting indexes and the rationality of the relationship between the variables, and whether the parameters' estimation is appropriate (Hou et al., 2004). Approximate root mean square error RMSEA = 0.056, normalized goodness of fit index NFI = 0.920, comparative goodness of fit index CFI = 0.922, non-standardized goodness of fit index TLI = 0.904, and other fit indexes meet the criteria for judgment. These data indicate that the entire model fits well with the actual observation data.

The model standardized regression path coefficient results are shown in **Figure 2**. The family socioeconomic background has a direct effect of 0.323 on student participation in shadow education, an indirect effect of 0.077 (0.532*0.145), and a total effect

of 0.400. Accordingly, the family socioeconomic background directly affects whether students participate in extracurricular tutoring and indirectly affect parent involvement.

The direct effect of parent involvement on extracurricular tutoring is 0.145. From the model results, parent involvement plays a part in an intermediary role in family socioeconomic background and shadow education participation.

Conclusions and Discussion

This study examined the relationship between family socioeconomic background and parent involvement in shadow education participation and reached the following conclusions:

(i) Parent involvement is a powerful driving force for students to participate in shadow education, and the active participation of parents strengthens the participation in shadow education. Parent involvement has a significant positive impact on middle school student shadow education participation; that is, the higher the degree of parent involvement, the greater the chance of students getting shadow education. Specifically, family expectations have the most significant impact on shadow education participation, followed by family-school communication, family communication, and family supervision. Family expectations promote students to participate in tutoring most likely, mainly because parents hope to achieve social class upward mobility through education, and shadow education is one of the ways to improve educational competitiveness.

(ii) Parent involvement plays a part in an intermediary role in the influence of family socioeconomic background on shadow education participation. That is, family socioeconomic background affects the probability of students participating in shadow education through parent involvement. Specifically, family expectations have the most excellent intermediary effect in the family socioeconomic background, affecting students' participation in shadow education, followed by family supervision, family communication, and family-school communication.

Studies have proposed that parent involvement can activate the advantages of family background and empower children's school education (Lareau, 1987). Therefore, parent involvement provides advantages for children's school education and affects the chance of receiving shadow education. Families of different classes have differentiated participation opportunities in shadow education: parent involvement activates the advantages of the family's socioeconomic background, and families with high socioeconomic backgrounds often participate more actively in shadow education.

The research conclusions include the family socioeconomic background, parent involvement, and shadow education in the Chinese context, confirming Lareau's research in the United States. Lareau described in "Unequal Childhood" that middle-class American parents are more actively involved in students' study and life and achieve "cooperative training" by arranging organized extracurricular activities for students; however, the working class is more inclined to "stocking.", That is, let children "achieve natural growth" (Lareau, 2009). Different social classes make the degree of parent involvement different. Parents focus on activating resources based on class ad-

vantages, allowing their children to conform to educational organizations' evaluation standards, and helping their children achieve success in school education (Lareau, 2009). This study explored the impact of parent involvement on shadow education participation, and to a certain extent, improved Lareau's parent involvement theory. We reached relevant conclusions through quantitative analysis. However, it is impossible to specifically reveal how parent involvement activates family advantages, how different dimensions of participation affect extracurricular tutoring and the internal process of parents' tutoring decision-making. If the above questions can be supplemented by qualitative research, the fundamental research will be more informative.

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ARTICLE

The Non-Intellectual Norm of Middle School Students' Mathematics Learning and Its Grade Evaluation Standard: Taking Tianjin as an Example

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Abstract. *Using the "Middle School Student Mathematics Learning Non-intellectual Questionnaire," a total of 1,400 middle school students in 11 districts and counties of Tianjin were surveyed. According to the data, using the raw score normalization method and the formula "T = 50+10×Z", the non-intellectual overall and sub-dimension norm table of middle school student math learning were established, and the corresponding grade evaluation standard was determined. Using the results of this study, two types of application case analysis of class and individual were carried out, and corresponding suggestions were put forward based on the analysis results.*

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NON-INTELLECTUAL factors, as an essential part of influencing students' learning and development, have received extensive attention in the fields of education and psychology. Studies have shown that there is a positive correlation between non-intellectual factors of mathematics learning and mathematics academic performance (Lv et al., 1995; Wang, 2004; Zhang, 2012). Besides, non-intellectual factors are important influencing factors of mathematics learning efficiency (Wang et al., 2014; Wang et al., 2015; Wang et al., 2017; Wang & Yang, 2015). Although there are many non-intellectual evaluations of middle school students' mathematics learning in previous studies (Cao et al., 2015; Yang et al., 2015), they lacked a unified evaluation basis and reference, and the measurement results cannot be analyzed under the same reference standard. Therefore, it is indispensable to study the non-intellectual norm of middle school students in mathematics. Based on the "Middle School Student Mathematics Learning Non-intellectual Questionnaire," this study established the middle school student math learning non-intellectual norm and its grade evaluation standard and conducted a case analysis of this result.

Methods

Research Tools

This study chose the "middle school student math learning non-intellectual questionnaire" as the survey tool. The questionnaire is a five-level Likert scale, consisting of five main dimensions (motivation, emotion, attitude, willpower, personality) and polygraph questions, all of which have good reliability and validity (Wang & Li, 2020).

Sample Selection

The study selected 1,400 6th- and 7th-grade students in 11 districts and counties of Tianjin to conduct a survey, and a total of 1,400 questionnaires were returned. First, through manual inspection, 56 questionnaires with regular and identical answers were deleted; then, 58 invalid questionnaires were deleted with the help of polygraph questions, and finally, 1,286 valid questionnaires were obtained, with an effective rate of 91.86%.

Data Processing

When entering data, the A-E options were counted as 5-1 point, and the reverse questions were counted as 1-5 points. After data entry was completed, use SPSS software for data processing. Calculating the sufficient sample's percentile rank determined the correspondence between the original score and the percentile rank. And then checked the normal distribution table with the help of percentile rank to get its corresponding standard score. To ensure the convenience of reading the score, the standard score was converted using the formula "$T=50+10\times Z$" to establish a non-intellectual norm table.

Table 1. Non-Intellectual Level Evaluation Standards for Mathematics Learning.

Grade	T Score	Raw Score X	Percentile Rank PR
Low-Level	T < 32	X < 128	PR < 3.27
Middle and Lower	32 ≤ T < 44	128 ≤ X < 157	3.27 ≤ PR < 26.83
Middle	44 ≤ T < 56	157 ≤ X < 181	26.83 ≤ PR < 70.53
Middle and Upper	56 ≤ T < 68	181 ≤ X < 201	70.53 ≤ PR < 95.80
Excellent	T ≥ 68	X ≥ 201	PR ≥ 95.80

Table 2. "Motivation" Dimension Grade Evaluation Standards.

Grade	T Score	Raw Score X	Percentile Rank PR
Low-Level	T < 32	X < 31	PR < 3.27
Middle and Lower	32 ≤ T < 44	31 ≤ X < 40	3.27 ≤ PR < 25.74
Middle	44 ≤ T < 56	40 ≤ X < 47	25.74 ≤ PR < 69.52
Middle and Upper	56 ≤ T < 68	47 ≤ X < 54	69.52 ≤ PR < 96.19
Excellent	T ≥ 68	X ≥ 54	PR ≥ 96.19

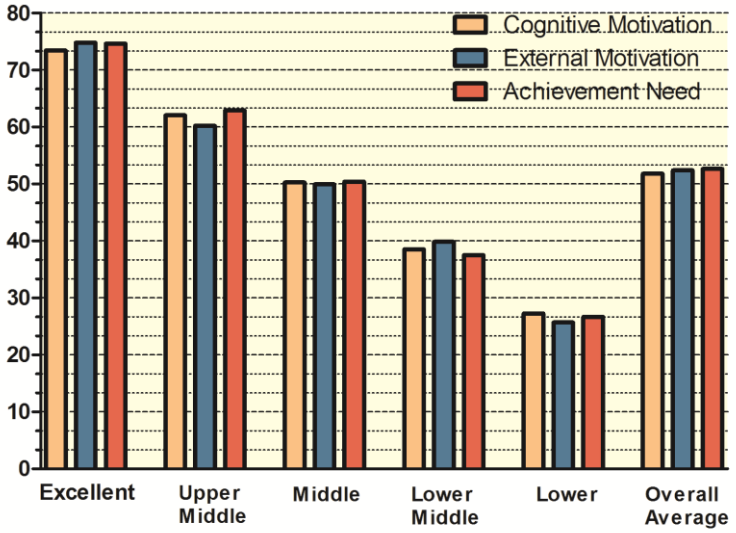

Figure 1. The T-Score Chart of the Sub-Dimension of the "Motivation".

According to the normal distribution theory, 99.74% of the values under the standard normal distribution fall within the interval [-3, 3], so first divided [-3, 3] into five equal intervals, and then used the formula "T=50+ 10×Z" to get the corresponding T score interval, and then divided it into five different levels. Finally, the T score interval was converted into a percentile grade interval to complete the grade evaluation standard's establishment.

Results

Mathematics Learning Non-Intellectual Norm and Its Grade Evaluation Standard

A middle school student's mathematics learning non-intellectual norm (table omitted) and its corresponding Grade Evaluation Standard (see **Table 1**) are established according to the norm's construction method through data sorting and analysis. The research was carried out from five main dimensions to diagnose the non-intellectual influence of students' mathematics learning more precisely.

"Motivation" Dimension Norm and Its Grade Evaluation Standard

According to the norm construction method, we established the "motivation" dimension norm (table omitted). Second, divided the "motivation" dimension horizontally, and then formulated the corresponding grade evaluation standard (see **Table 2**). Finally, we calculated the average scores of students of different levels in the sub-dimensions of "cognitive motivation," "extrinsic motivation," and "achievement need" under the "motivation" dimension (see **Figure 1**).

Based on **Figure 1**, combined with the definition of the concepts and questions of the sub-dimensions of mathematics learning motivation (Wang & Li, 2020), students of different levels have the following characteristics: "Excellent" students are curious about mathematics and like to study and explore; They have a vital purpose in learning mathematics and are eager to highlight their talents in mathematics learning. "Middle and upper" students are interested in exploring mathematics knowledge, are motivated to learn, and like to participate in activities that can show their mathematics learning ability. "Middle" students have specific goals and motivation to learn mathematics and show interest in learning mathematics and a desire to succeed. "Middle and lower" students do not like to participate in math learning activities, show less desire for performance, do not like inquiry, and are more inclined to accept learning. "Low-level" students lack interest in mathematics learning, hardly participate in math learning activities, and are unwilling to show their mathematics learning ability.

Table 3. "Emotion" Dimension Grade Evaluation Standard.

Grade	T Score	Raw Score X	Percentile Rank PR
Low-Level	T < 32	X < 25	PR < 3.03
Middle and Lower	32 ≤ T < 44	25 ≤ X < 33	3.03 ≤ PR < 23.59
Middle	44 ≤ T < 56	33 ≤ X < 41	23.59 ≤ PR < 72.08
Middle and Upper	56 ≤ T < 68	41 ≤ X < 48	72.08 ≤ PR < 96.35
Excellent	T ≥ 68	X ≥ 48	PR ≥ 96.35

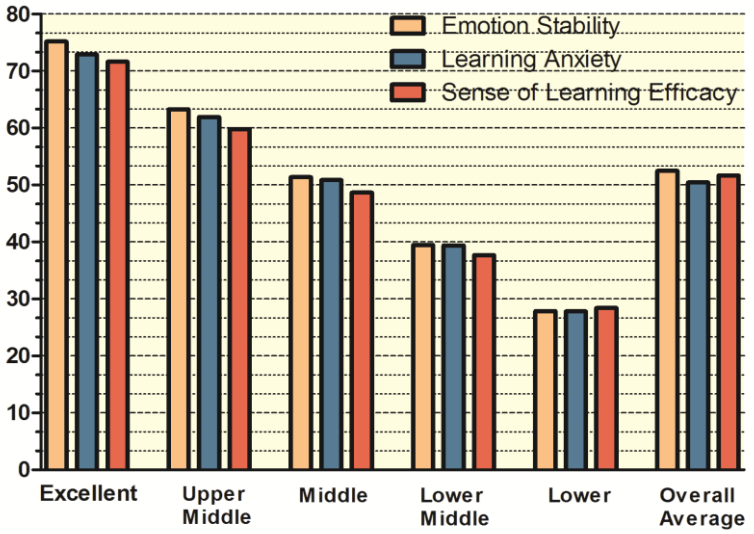

Figure 2. The T-Score Chart of the Sub-Dimension of the "Emotion".

Table 4."Attitude" Dimension Grade Evaluation Standard.

Grade	T Score	Raw Score X	Percentile Rank PR
Low-Level	T < 32	X < 32	PR < 3.19
Middle and Lower	32 ≤ T < 44	32 ≤ X < 39	3.19 ≤ PR < 24.57
Middle	44 ≤ T < 56	39 ≤ X < 45	24.57 ≤ PR < 69.75
Middle and Upper	56 ≤ T < 68	45 ≤ X < 49	69.75 ≤ PR < 93.39
Excellent	T ≥ 68	X ≥ 49	PR ≥ 93.39

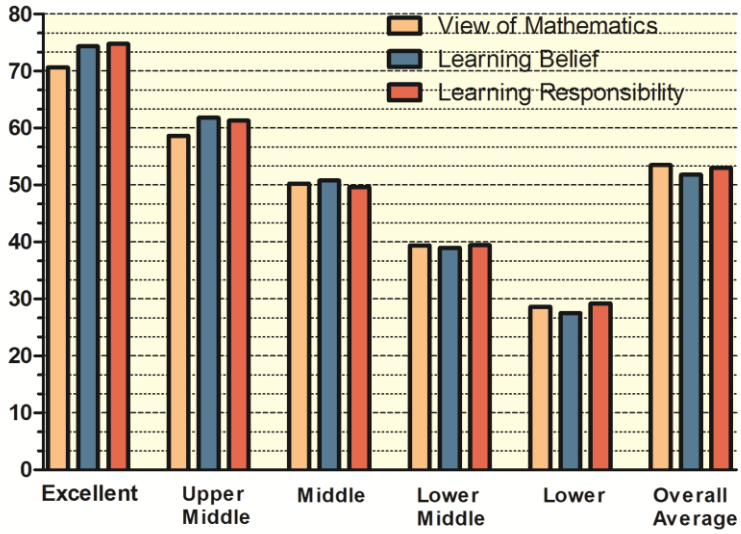

Figure 3. The T-Score Chart of the Sub-Dimension of the "Attitude".

Table 5. "Willpower" Dimension Grade Evaluation Standards.

Grade	T Score	Raw Score X	Percentile Rank PR
Low-Level	T < 32	X < 17	PR < 2.72
Middle and Lower	32 ≤ T < 44	17 ≤ X < 23	2.72 ≤ PR < 25.27
Middle	44 ≤ T < 56	23 ≤ X < 28	25.27 ≤ PR < 72.38
Middle and Upper	56 ≤ T < 68	28 ≤ X < 32	72.38 ≤ PR < 96.35
Excellent	T ≥ 68	X ≥ 32	PR ≥ 96.35

Table 6. "Personality" Dimension Grade Evaluation Standards.

Grade	T Score	Raw Score X	Percentile Rank PR
Low-Level	T < 32	X < 15	PR < 3.27
Middle and Lower	32 ≤ T < 44	15 ≤ X < 20	3.27 ≤ PR < 26.59
Middle	44 ≤ T < 56	20 ≤ X < 24	26.59 ≤ PR < 71.23
Middle and Upper	56 ≤ T < 68	24 ≤ X < 27	71.23 ≤ PR < 92.22
Excellent	T ≥ 68	X ≥ 27	PR ≥ 92.22

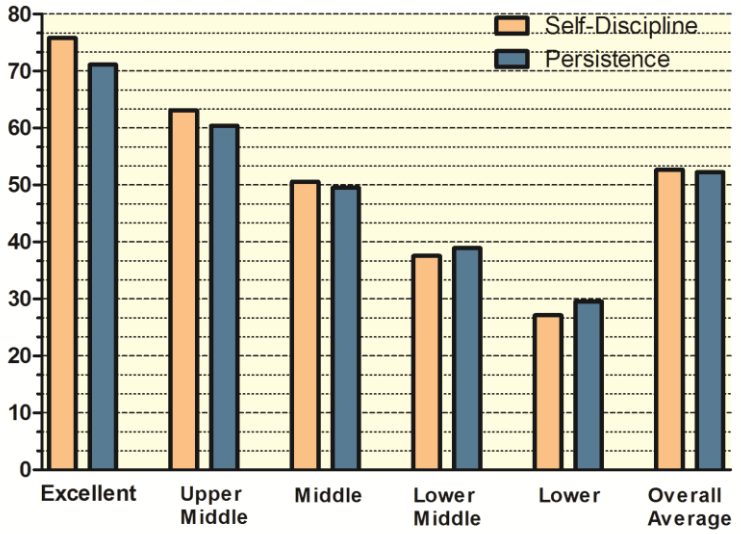

Figure 4. The T-Score Chart of the Sub-Dimension of the "Willpower".

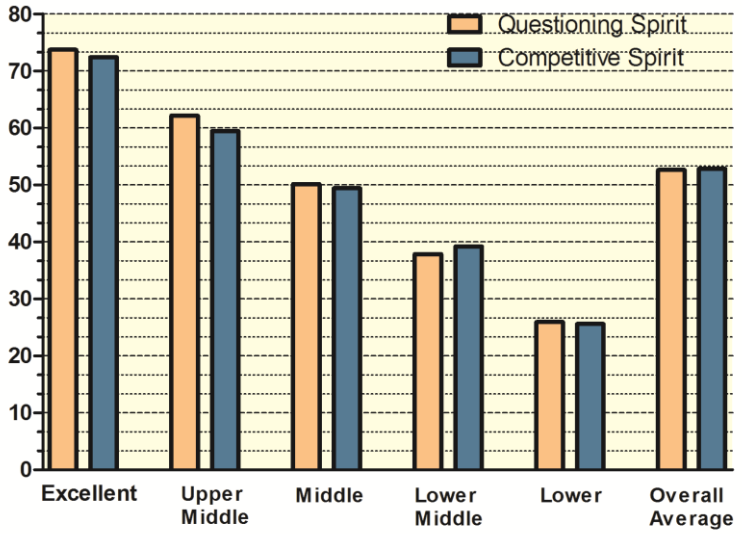

Figure 5. The T-Score Chart of the Sub-Dimension of the "Personality".

"Emotion" Dimension Norm and Its Grade Evaluation Standard

First, establish the "emotion" dimension norm according to the norm construction method (table omitted). Secondly, divide the "emotion" dimension horizontally, and then formulate the corresponding grade evaluation standard (see **Table 3**). Finally, calculate the average scores of students of different levels in the sub-dimensions of "emotional stability," "learning anxiety," and "learning efficacy" under the "emotion" dimension (see **Figure 2**).

Based on **Figure 2**, combined with the conceptual definition and questions of each sub-dimension of emotion (Wang & Li, 2020), it was found that students of different levels have the following characteristics: "Excellent" students have reasonable control over their emotions and can effectively control and regulate their emotions; they like to learn mathematics, basically do not have negative emotions, and have a high sense of learning efficiency. "Middle and upper" level students understand themselves and occasionally produce destructive emotions but can control and adjust them in time; they have less negative emotions when learning mathematics, they recognize their ability to learn mathematics, and have the confidence to learn math well. "Middle" students can be aware of their destructive emotions and control them, but will not adjust them; they will become anxious because they are worried about not being able to learn mathematics and are optimistic about their ability to learn mathematics, but think they need to work hard. "Middle and lower" students can perceive their own deficient or excessive emotions, but they cannot control and regulate them well and need help from others. They will have negative emotions such as fear and tension when they study mathematics, and they lack confidence in their math level. "Low-level" students will have deficient or excessive emotions due to learning mathematics, but they can hardly perceive and control their emotions and need guidance from others; they have repulsive emotions toward math learning and lack positive emotional experience.

"Attitude" Dimension Norm and Its Grade Evaluation Standard

According to the norm construction method, establish the "attitude" dimension norm (table omitted). Secondly, divide the "attitude" dimension horizontally, and then formulate the corresponding grade evaluation standard (see **Table 4**). Finally, calculate the average scores of students of different levels in the sub-dimensions of "view of mathematics," "belief in learning," and "sense of learning responsibility" under the "attitude" dimension (see **Figure 3**).

Based on **Figure 3**, combined with the concept definition and questions of each sub-dimension of attitude (Wang & Li, 2020), it is found that students of different levels have the following characteristics: "Excellent" students believe that mathematics is a valuable subject; mathematics learning should be systematic and comprehensive, and rules and skills need to be summarized in time; learning mathematics must emphasize

methods, strive to avoid errors, and always actively complete mathematics tasks with quality and quantity. The "Middle and upper" level students have a more objective understanding of mathematics knowledge and value; they believe that learning mathematics must know how to summarize the methods that suit them and actively complete math learning tasks. "Middle" students can correctly understand mathematics and the meaning of learning mathematics, but their learning enthusiasm is average; they think that learning mathematics does not require too many skills, and students can complete learning tasks but lack initiative. "Middle and lower" students have a somewhat subjective and one-sided understanding of mathematics knowledge and value; they believe that they can learn mathematics by rote and can complete their learning tasks under supervision. "Low-level" students have some deviations in their understanding of mathematics; they think that learning mathematics is meaningless and cannot understand mathematics more profoundly, and they think that mathematics learning does not need to be methodological and hardly complete the learning tasks actively.

"Willpower" Dimension Norm and Its Grade Evaluation Standard

According to the norm construction method, establish the dimension norm of "willpower" (table omitted). Secondly, divide the dimension of "willpower" horizontally, and then formulate the corresponding grade evaluation standard (see **Table 5**). Finally, calculate the average scores of students of different levels in the sub-dimensions of "self-discipline" and "persistence" under the "willpower" dimension (see **Figure 4**).

Based on **Figure 4**, combined with the definition of the concepts and questions of the sub-dimensions of willpower (Wang & Li, 2020), it is found that students of different levels have the following characteristics: "Excellent" students can formulate corresponding math learning plans and review plans based on their own and can complete learning tasks in strict accordance with the plan and review them in time, never give up quickly, and have a persevering learning spirit. "Middle and upper" level students are able to complete their self-made study plan more seriously, remind themselves to concentrate when studying mathematics, maintain a state of listening carefully, and be able to persist in studying mathematics. "Middle" students can basically implement their mathematics learning plan, and sometimes the plan will fail or appear without conscientiousness; when learning mathematics, they cannot maintain the learning state for a long time and occasionally need teacher reminders. "Middle and lower" students will occasionally implement mathematics study plans carefully; they cannot guarantee full energy, comfortable slack, and lack of perseverance when studying mathematics. "Low-level" students seldom study and review as planned and hardly make a study plan; they tend to get distracted when studying mathematics and tend to give up or escape when they encounter learning difficulties.

"Personality" Dimension Norm and Its Grade Evaluation Standard

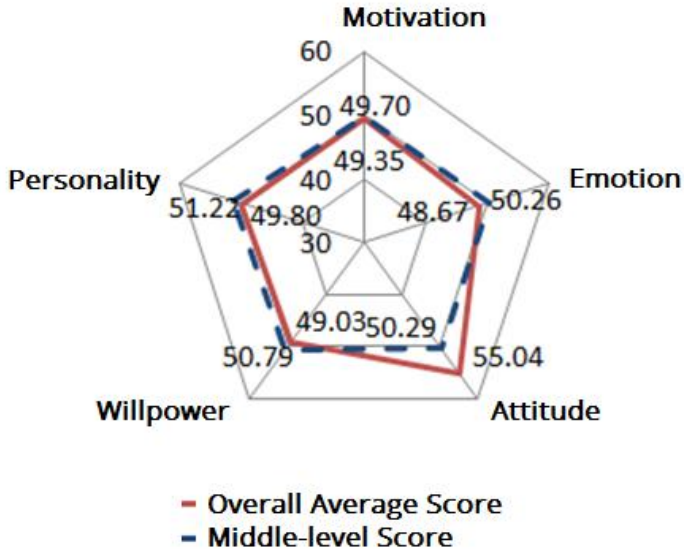

Figure 6. The T-Score Chart of Five Main Dimensions of Non-Intellectual Mathematics Learning of the Tested Class.

According to the norm construction method, establish the "personality" dimension norm (table omitted). Secondly, divide the "personality" dimension horizontally, and then formulate the corresponding grade evaluation standard (see **Table 6**). Finally, calculate the average scores of students of different levels in the sub-dimensions of "questioning spirit" and "competitive spirit" under the "personality" dimension (see **Figure 5**).

Based on **Figure 5**, combined with the definition of the concept of each sub-dimension of personality and the questions (Wang & Li, 2020), it is found that students of different levels have the following characteristics: "Excellent" students are good at asking questions; when they are inconsistent with others or books, they dare to question teachers or authorities; they are not to be left behind in mathematics learning, strive to show themselves, be aggressive, and eager to surpass others. "Middle and upper" students, when they are inconsistent with others or books, often have questions, ask questions, like competition, and hope to surpass other students. "Middle" students can show a psychological tendency to surpass others, and occasionally ask questions when their views are inconsistent with those of others or books. "Middle and lower" students occasionally have questions when studying mathematics, but they rarely raise doubts; although they want to surpass others in mathematics learning, they are not good at expressing themselves. "Low-level" grade students are not good at expressing their opinions, basically do not ask questions, have no willingness to show, surpass others, and do not care about math scores.

Application Cases of Norm and Grade Evaluation Standard

Class Application Case

Non-Intellectual Diagnosis of Mathematics in the Subject's Class

In this study, a total of 44 7th-grade students from Tianjin of China were selected as subjects, and 40 valid questionnaires were returned, with an effective rate of 90.9%. The 40 students in the class were regarded as a whole, and a comparative analysis with the students in the city was carried out to understand the group's general level of non-intellectual mathematics learning. The original non-intellectual average score of mathematics learning among the subjects was 166.10, which exceeded 42.15% of middle school students in Tianjin of China. Comparing it with **Table 1**, the subjects' non-intellectual mathematics learning was at the middle level in Tianjin. The non-intellectual dimension T scores of the subjects in mathematics learning were: 49.70 (motivation), 48.67 (emotion), 55.04 (attitude), 49.03 (willpower), 49.80 (personality). Starting from the five main dimensions, further diagnosis and analysis of the subject class were made. From **Figure 6**, in the dimension of motivation, the subject's class was equivalent to the "middle" level of middle school students in Tianjin; it was slightly lower than the "middle" level of middle school students in the city in terms of emotion, willpower, and personality; The class of the subjects was significantly higher than the "middle" level of the city's middle school students.

Suggestions for Improvement of Non-Intellectual Mathematics Learning in the Tested Class

The analysis shows that the subjects' non-intellectual math learning is at the "middle" level in Tianjin as a whole, and the five main dimensions of motivation, emotion, attitude, willpower, and personality are all at the "middle" level in Tianjin. Overall, the students in this class have a strong sense of responsibility for learning and are competitive; their learning anxiety, persistence, and questioning spirit are slightly lower than Tianjin's "middle" level. In mathematics teaching, teachers should enhance students' perception of the intrinsic value and fun of mathematics learning and guide students to effectively regulate and monitor their learning activities through positive learning attitudes and emotional experience (Du & Liu, 2017). It is also suggested that the teacher make full use of the students' strong sense of responsibility and competitive spirit. Studying mathematics often encounters difficult problems, and some students tend to be afraid of difficulties and give up. In response to this kind of phenomenon, on the one hand, teachers can provide students with "scaffolding" to reduce the difficulty of the problem; on the other hand, they can help students improve their ability to learn math-

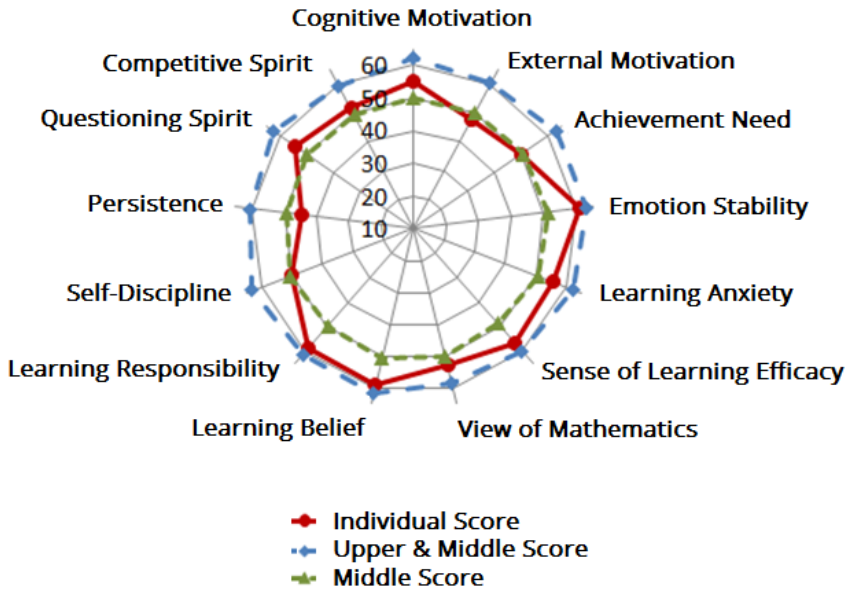

Figure 7. The T-Score Chart of the 13 Sub-Dimensions of Non-Intellectual Mathematics Learning of Individual Subjects.

ematics to achieve the purpose of solving problems. Besides, teachers should also pay attention to encouraging students to speak positively, question boldly, and always pay attention to students' psychological state to help students with learning difficulties deal with destructive emotions in time.

Individual Application Cases

Non-Intellectual Diagnosis of Subject's Individual Mathematics Learning

After understanding the situation with the tested class's mathematics teacher and obtaining the students' consent, a tested class student who had studied hard but had not satisfactory results was selected as the research object. The non-intellectual dimension T scores of the student's mathematics were: 55.10 (cognitive motivation), 47.60 (external motivation), 50.30 (achievement need), 61.60 (emotional stability), 55.60 (learning anxiety), 56.90 (sense of learning efficacy), 52.80 (view of mathematics), 59.30 (learning belief), 58.80 (learning responsibility), 49.80 (self-discipline), 44.70 (persistence), 54.30 (competitive spirit), 51.60 (questioning spirit). The overall original average score of the student's non-intellectual math learning was 176. According to **Table 1**, he was

at the "middle" level of Tianjin middle school student, and further diagnosis and analysis of each sub-dimension would be continued.

Figure 7 shows the T scores of the thirteen sub-dimensions of non-intellectual mathematics learning. Simultaneously, combined with the data analysis in **Table 2** to **Table 6**, this student's cognitive motivation was significantly higher than the city's "middle" students' level. The external motivation was slightly lower than the level of the city's "middle" students. Achievement needs to be comparable to the average level of the city's "intermediate" students. The students' emotional stability, learning anxiety, and sense of learning efficacy were significantly higher than the city's "middle" level students but slightly lower than the city's "middle and upper" level students. The students' learning beliefs and responsibility was slightly lower than the city's "middle and upper" students and significantly higher than the city's "middle" level students. The student's view of mathematics was slightly higher than the level of the city's "middle" students and lower than the city's "middle and upper" students. The student's self-discipline was slightly lower than the city's "middle" level students, and its persistence was lower than the city's "middle" level students. The students' questioning spirit and competitive spirit were slightly higher than those of the city's "middle" level students.

Suggestions for Non-Intellectual Improvement of Subject' Individual Mathematics Learning

The non-intellectual level of the student's mathematics learning is at the "middle" level in Tianjin, and the dimensions of motivation, willpower, and personality are all at the "middle" level in Tianjin, while the two dimensions of emotion and attitude are at the "middle" level in Tianjin. The analysis shows that this student's external motivation sub-dimensions and persistence sub-dimensions need to be further improved. Studies have shown that learning motivation can directly affect academic achievement and indirectly affect academic achievement by transforming motivations and learning behavior (Gao & Chen, 2017). Therefore, learning motivation can directly or indirectly affect students' mathematics learning performance. So it is necessary to strengthen students' learning motivation for students' math learning.

The external motivations of students' math learning mainly come from schools, teachers, and parents. Many schools will commend students with outstanding performance or progress, which is an effective way to strengthen students' external motivation. In addition, because students' persistence in learning is affected by many factors, teachers and parents can also stimulate their motivation through spiritual rewards. When students learn mathematics, teachers and parents should be good at discovering students' progress and shining points and giving timely praise and encouragement to be spiritually encouraged and affirmed and then more motivated to learn mathematics. Simultaneously, teachers are the guides and collaborators of students, and they have a significant influence on students (Gao & Chen, 2017). In the process of mathematics learning, teachers should consciously cultivate students' perseverance character; pay attention to the differences between individuals and teach students per their aptitude;

encourage students to find role models in the class and learn from the students with strong willpower around them; thereby creating a good class learning atmosphere.

Establish a non-intellectual norm for middle school students' math learning, so as to facilitate the comparison between different dimensions of non-intellectual factors of students' math learning. After the subjects were tested, some studies only performed descriptive statistics and level comparisons of questionnaire scores. It is difficult to use the scores of subjects to explain their objective performance level on non-intellectual. This research makes up for this deficiency. However, norm research results have certain regional and time-sensitive limitations. These research results are based on middle school students in Tianjin of China, so they can only be used for reference in Tianjin and other areas with similar education levels. With the rapid development of the times, the non-intellectual factors of students' mathematics learning in different periods may also undergo group changes. Therefore, the norm and grade evaluation standard established by our study need to be updated regularly.

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NEWSLETTER

Will the Nine-year Admission System Lead to the Increase of School District Housing Price?

By Zhang, B., Wang, Y., & Liu, J.
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IN recent years, people have been pursuing "sky-high school district housing", and the price of school district housing continue to soar. The nine-year admission system is an effort to reduce the pressure of school choice, so as to promote the high-quality and balanced development of compulsory education. However, will this admission system directly affect the price of the related houses, and continue to pull up the housing prices of certain primary school housing districts if it is combined with a high quality junior high school? This article published in Education & Economy taking Dongcheng District in Beijing as an example, used the difference-in-differences model (DID) to explore this issue:

- Setting the various communities within the seven schools affected by the admission system as the "treatment group", and other communities in the same district as the "control group". In order to confirm whether there exists a significant difference in the housing prices of those communities since the implementation of the policy in 2014, the treatment group was further divided into two groups: pre- and post-implementation
- The housing price data comes from Anjuke, which is the website of second-hand housing sales. After collecting the five-year data from the first quarter of 2012 to the fourth quarter of 2017, the statistical analysis shows that about the average price of second-hand housing for each community by quarter, the housing price of the treatment group was about 3,000 CNY/m^2 higher than the control group, however, according to the data from 2013 in Anjuke, the average price of the two groups did not differ a lot. Therefore, it was determined that the difference was mainly caused by the policy's implementation.
- Comparing with the housing prince after the policy implementation (each quarter of the 4 years) with the price of the first quarter in 2013, the analysis of DID model can be roughly concluded that the policy indeed pushed up the price of school district housing.

But the effect is rather than instantaneous but delays for more than one year.

- Re-calculate the aforementioned base period combinations with significant statistical differences, and control the other five variables that may affect housing prices: 1) Whether it is located in the original Chongwen District (taking administrative planning adjustment factors into consideration). 2) Distance from the elementary school. 3) Distance from the city center, subway station, and hospital. 4) Community management fees. 5) Community household amount.

The results are as follows:

- The policy plays a significant role in raising housing prices in school districts.
- The impact of the policy on school district housing prices is not immediate. The significant difference in housing prices did not begin to emerge until the sixth quarter after the implementation.
- The impact of the consistent policy on housing prices in relevant regions is not continuous. The significance of the price difference only lasted four quarters. After that, although the housing prices in the policy-affected areas are still slightly higher than those in other areas, there was no significant difference in the growth trend.

Finally, through the common trend test and counterfactual test, the DID model was tested for robustness. The results of the two model tests were not obvious, which respectively explained: 1) The housing price of the treatment group and the control group before the policy does not exist. It can be considered that the price change trends of the two groups of houses before the introduction of the policy are homogeneous. 2) The difference in the average house price between the treatment group and the control group is precisely the effect of the nine-year education school policy.

The research shows that the nine-year admission the system will not cause constant growth in the school district housing in the long term, and the external impact brought by which is relatively small, hence proved the policy itself worth promotion.

Source: Education & Economy, 2020; 36(4):40-49.

NEWSLETTER

Matthew Effect or Fair Effect

By Fang, C., & Huang, B.

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AS the financial educational funding from the government became more adequate, what role does family education expenditure play? Does it promote educational equity? These problems are worth pondering. Many studies have found that the higher the economic status and educational level of families, the higher the monetary investment in after-class tutoring. If investment in family education can significantly promote the development of students, then policymakers should be wary of the possible "Matthew effect". Based on this, research published in Education & Economy uses the data of China Education Panel Survey (CEPS) from 2013 to 2014, taking the student's cognitive level as the dependent variable, and the monetary investment of the student's family in after-class tutoring as the core independent variable constructs the regression model of an education production function. At the same time, students with different cognitive levels may be affected differently by investment in after-class tutoring. Therefore, Conditional Quantile Regression and Generalized Quantile Regression were used to test the possible heterogeneity. The results are as follows:

- The regression model shows that family education investment can significantly predict the cognitive level of students. For every unit increase in after-school interest or cram school that parents pay for a child over the course of a semester, the standardized cognitive test score rose 3.9 percent.
- The Conditional Quantile Regression was used to test the effect among students with low, middle, and high scores. Among the students with low scores, the regression coefficient was negative and significant, indicating that for the students with low cognitive ability, more investment in family education was not conducive to the improvement of students' cognitive ability. Further use of Generalized Quantile Regression also found the "Matthew effect", that is, more the investment in family human capital will widen the gap between groups of students at both ends of the cognitive ability distribution, which will lead to the "Matthew effect" that "the stronger the strong,

the weaker the weak", which is not conducive to promoting the equity of educational outcome.

Source: Education & Economy, 2020; 36(4): 58-67.

NEWSLETTER

Income Inequality, Education Competition, and the Model of Family Engagement in Education

By Li, J., & Zhang, M.

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IN order to "not let children lose at the starting line", parents get deeply involved in their children's educational life through various ways such as educational consumption, parental participation, and emotional support. Some scholars have proposed that "over-parenting" has appeared, while others have also put forward that this is an inevitable "transitional" parenting strategy presented with the development of society, economy, culture, and education. Whether it is "over-parenting" or "transitional" parenting, a survey published in The Journal Education Research, based on the 2018 data of the Program for International Student Assessment (PISA) in 79 countries and regions, Take the student's academic level as the dependent variable. Select the way of family education investment, including the two dichotomous variables of the education resource investment and emotional investment, and divide the family education investment into four categories: neglect investment with less investment in education resources and less emotional support, and investment with more education resources but more emotional support Material investment, emotional investment with less investment in educational resources but more emotional support, comprehensive investment with more investment in educational resources and more emotional support. The macro-level GDP per capita, the Gini coefficient, the gross enrollment rate of higher education, and the micro-level control variables such as family wealth, parents' highest professional status, and education level are included.

The article used a two-level multinomial probit (multinomial probit) model to estimate the data, and the research results are as follows:

- Different family education investment methods of family academic performance present the characteristics of "comprehensive investment in parenting method > material investment in parenting method ≥ emotional investment in parenting method > neglected investment in parenting method".

- The effect of income inequality and education competition on the choice of household education investment mode presents a non-linear U-shaped curve relationship.
- China is at a stage of high-income inequality and a high gross enrollment rate of higher education. Parents can achieve class mobility through educational competition by adopting comprehensive and material-based investment parenting methods that are more beneficial to academic performance.

This study found that the current level of emphasis on student family education has not reached "excessive", and it is still in the "transition" stage of development. Therefore, my country does not need to emphasize and advocate the restriction of family education investment but needs to encourage and guide parents to choose a reasonable way of family education investment.

Source: Educational Research, 2020; 41(8):75-84.

NEWSLETTER

Does Book-borrowing or Early-rising Benefit for College Students' Academic Performance?

By Du, S., Fei, Y.Q., He, M., & Hu, H.

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BEHAVIORS like book-borrowing and early-rising relatively reflect the process of thinking development of college students' self-efficacy consciousness and self-cognition adjustment. A study published in Distance Education in China collected the log data of library book-borrowing and smart card consumption of 833 university students, constructing characteristic index for learning performance, book-borrowing, and early-rising. Clustering and correlational analysis were administered to investigate the impact of book-borrowing and early-rising on learning performance as well as their relationship. Together with findings from the metacognition questionnaire survey, the correlation between collective learning behavior and overall learning performance and metacognition was established. Findings from the study show that:

- The two behaviors all correlate with learning performance through the mediating effect of metacognition.
- Moreover, early-rising (the time and frequency of getting up early) reflects college students' metacognitive experience and planning competence; also, early-rising is more correlated comparing to the rising pattern (the stability of getting up early).
- As for book-borrowing, it reveals disparities in college students' metacognitive thinking activities monitor and self-reflection; while reading speed shows greatest impact on learning performance, and the amount of book-borrowing and in-depth reading are conducive to knowledge and skill acquisition.

Based on the analysis results, this article puts forward suggestions to improve learning activities and the learning environment:

- Create a deep learning environment to stimulate college students' self-learning initiative;
- Optimize the way of knowledge dissemination to meet the individual reading needs of college students;

- Change the role of the library and provide high-quality services for the development of discipline and specialty.

Source: Distance Education in China, 2020; 2020(11): 47-58+77.

NEWSLETTER

An Empirical Research on the Employment of Chinese University and College New Graduates under the Impact of COVID-19

By Li, T., Sun, X., Wu, Z., & Shan, N.

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UNDER the impact of the pandemic, the employment status of recent graduates is unprecedentedly difficult. Recently, a study published in *Journal of East China Normal University (Educational Sciences)* investigated the employment situation of college graduates in China under the pandemic. Using the method of random sampling, the research group distributed electronic questionnaires to the fresh graduates, employers, and universities in 34 provinces, autonomous regions, and municipalities in China, from April to June 2020. As a result, 13,738 valid samples of students, 419 samples of employers, and 55 samples of colleges and universities were collected. According to the data analysis, the employment situation of the recent graduates shows:

- Half of the after-tax salary centralizes among 3,001 to 5,000 CNY, also the satisfaction and stability of attendance were relatively high.
- The difficulty for unemployed graduates increases. The pandemic did not significantly change the graduates' career expectations, while the mainstream is entering the enterprises, and the desire to take part in the civil servant examination is strong, what's more, the workplace and salary amount attract the most attention. Meanwhile, the expected career types do not adapt to the jobs available, and salary expectation is generally high.
- Regarding the evaluation of employment guidance services in universities, the feedback was generally positive. However, difficulties such as lack of full-time teachers, and insufficient professional knowledge still exist.

Based on the analysis above, the following research took the factors of physiology, family, organization, and individual as independent variables, and set the employment condition as dependent variables, and finally using the

logistic regression to further explore the core factors affecting employment. The results are as follows:

- Gender difference shows a strong impact on the employment situation. The employment rate of the female students is much lower than that of the male, which only accounts for 0.596 of the latter.
- As for the family influences, the non-needy students are easier to be recruited than the needy students, which reached 1.266 times.
- Considering the organizational and academic factors, students graduate from science and engineering universities, first-class universities, and those who graduate with "Double Tops" disciplines have an advantage over others, and students graduate with a degree in the humanities suffer the most.
- When it comes to the students themselves, the higher education background, the better academic performance, and the greater English proficiency representing the higher employment rate; therefore, it is recommended that the unemployed recent graduates should lower their expecting salary to increase the possibility of being hired, because volunteering to expect for less payment seems to be the most significant intervening variables; also, the higher expense they spend on job-seeking brings about the higher employment rate.

The author concluded the four considerable relevant issues that require urgent attention: 1). The unemployment situation of recent graduates from rural areas; 2). Targeted poverty alleviation for needy graduates; 3). The hidden and inevitable employment discrimination; 4). Practical assistance for graduates to start-up business as a result to improve the overall employment condition.

Source: Journal of East China Normal University (Educational Sciences), 2020; 38(10):110-126.

NEWSLETTER

How Do Personal Trait Credibility and Facial Credibility Affect Children's Peers Trust?

By Li, Q.G., Zhang, W.Y., Sun, J.Y., & Ma, F.L.

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FACIAL Credibility means the confidence level of the trustee is related to facial features, while Personal Trait Credibility represents that concerns personality traits. Li's team surveys 297 students aged 8 to 12 to explore the prediction of trustee's Personal Trait Credibility and Facial Credibility on peers trust and the age difference. The measurement process is divided into three parts. First, each participant evaluates the confidence level of their classmates to obtain peers trust scores. Second, through the introduction, the test relates high level to the traits of being honest, reliable, and considerate, so as to obtain the number of high level nominations for each student, and obtain the Personal Trait Credibility scores. Third, 80 primary students aged from 8 to 12 who did not participate in the test are selected to evaluate the credibility of participants from each face photo to get a Facial Credibility score. The results show that:

Children are inclined to trust peers with high Facial Credibility score and high Personal Trait Credibility score.

Compared with low Personal Trait Credibility, when trustees have higher score, Facial Credibility has a greater predictive effect on peers trust.

Compared with low Personal Trait Credibility, when trustees have higher score, trait credibility has a greater predictive effect on peer trust.

The predictive effect of Personal Trait Credibility increases with the growth of age, whereas the predictive effect of Facial Credibility remains the same.

Source: Psychological Development and Education, 2020; 36(1):38-44.

NEWSLETTER

Nutrition Improvement Program for Compulsory Education Students in Rural Area: Effects of Meal Plan on Pupils' Physical Health and Mental Health

By Yu, J.F., & Zhao, Q.R.

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THIS article is based on the research data of 49 schools from three northwest provinces in China that have implemented the "Nutrition Improvement Program for Compulsory Education Students in Rural Area "(2015), using Ordinary Least Squares (OLS) regression and Propensity Score Matching (PSM) methods to study the influence of enterprise and school meal plan on children's physical and mental condition through the development state like height and weight, including the status like anemia, since the implementation of the Plan in 2011. The research indicators and results are as follows:

- Indicator description: The Body Mass Index Z score (BMI z-scores) and Height for Age Z score (HAZ-scores) are used to evaluate the physical development of children; The anemia rate and HB(hemoglobin) value are used to reflect the anemia status of children; and the Mental Health Test(MHT) is used to measure the mental health of children.
- Analysis of regression results: This paper adopts the OLS regression estimation method，and the results show that after adding a series of personal and family variables, whether school supply meals or not have no significant impact on BMI index and HAZ index, but it has a significant impact on the HB value and anemia rate, and it also has a significant correlation with the psychological score. What's more, using the PSM method to control the endogeneity, which further proves whether the school supply meal or not has a significant effect on the mental health of students, and also including the specific learning anxiety, self-blame tendency, and physical symptoms.
- Research conclusions: In terms of physical development, there is no significant difference between school meals and corporate

meals; in terms of anemia and mental health, students who receive school meals is worse than those receiving corporate meals.

- Policy recommendations: In order to further improve the implementation of the plan, it is necessary to consider the reasonable design of the proportions of different types of meals and the nutritional combination of foods in different meal plan; in terms of nutrition, school meals need to pay attention to providing sufficient meat and other iron-rich elements food, corporate meals should increase the supply of vegetables or fruits.

Source: Education & Economy, 2020; 36(4):30-39.

NEWSLETTER

Public Goods Dilemma Experiment: How Will the Pressure & Situational Attribution Brought by the Reward &Punishment System Affect the Cooperative Behavior of Junior High School Students?

By Liu, Y., Tang, M.L. & Tian, H.

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IN school education, the reward system and punishment system, as two common methods of controlling students' behavior, have an important impact on the cooperative behavior of junior high school students. And what is the impact and how does the mechanism work? A study published in *Educational Research and Experiment* used the game experiment of Public Goods Dilemma, the pressure perception questionnaire, and the situational attribution questionnaire to analyze 285 junior high school students:

- In the public goods dilemma experiment, a series of five rounds with different rewards and punishments are designed, including no rewards or punishments, continuous fixed rewards, variable-ratio rewards, continuous fixed punishments, and variable-ratio punishments. The experiment used the amount of the subject coins for dependent variable as an indicator of cooperative behaviors among individuals. The more the amount of the coins, the higher the level of their cooperative behavior. The two experimental rounds of continuous fixed reward and variable-ratio reward are merged into the "reward group", while the two experimental bureaus of a continuous fixed penalty and variable-ratio penalty are merged into the "penalty group" and compared with the no reward or punishment group.
- The perceived stress scale was consisted of 8 items and uses a 5-point marking-system, ranging from 1 for "strongly disagree" to 5 for "strongly agree". The higher the score, the higher the level of perceived stress. The α coefficient is 0.87. As for the situational attribution questionnaire, using 4 items to judge the extent to individual and cooperative concerning the external rewards/punishments or economic. The α coefficient of the questionnaire in this study is 0.84.

The research results are as follows:

- Junior high school students will show more cooperative behavior under the reward system or punishment system. Compared with the continuous fixed reward and punishment system and no reward and punishment system, junior high school students will have more cooperative behaviors under the variable-ratio reward and punishment system;
- The reward system shows the direct and significant effects on the cooperative behavior of junior high school students, and indirectly affects the cooperative behavior of junior high school students through the mediating effect of contextual attribution;
- The punishment system shows the direct and significant effects on the cooperative behavior of junior high school students, and there are three indirect paths: punishment system → perceived stress → cooperative behavior, punishment system → situational attribution → cooperative behavior, punishment system → perceived stress → situational attribution → cooperative behavior.

This empirical study skillfully used game experiments, finding that situational attribution plays a mediating role between the reward system and the cooperative behavior of junior high school students, but the perceived stress does not have a significant mediating role between the two. Therefore, it is concluded that schools should promote both rewards and punishments, guiding students to establish a correct view of rewards and punishments, and educate students to rationally understand and correctly deal with pressure; At the same time, in conjunction with the requirements on adolescents psychological development , the school should establish and improve psychological counseling and mental health education system, and carry out targeted attribution training to guide students to form a positive and reasonable situational attribution method.

Source: Educational Research and Experiment, 2020; 2020(4):91-96.

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