

# From the Perspective of Online Education: The Impact of Volunteer Teaching on the Values of Rural Children

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**Abstract:** Teaching assistance from universities has a significant impact on the values of rural children. With the widespread adoption of Internet-based distance teaching and the expanding coverage of university-based assistance, the Internet has narrowed the gap in values between rural and urban children. This study, based on a survey of rural children's reading abilities, investigates how distance education provided by universities plays a moderating role in the formation of values. Using multiple linear regression models and moderation models, the study analyzes 950 samples from 21 rural schools. The results show that the improvement of reading ability brought about by distance education can effectively enhance rural children's cognitive and understanding abilities, and promote further maturation of their values. Reading ability can explain 39.5% of the formation of values, and distance education provided by universities can increase this explanatory power to 60.7%. The moderating effect of distance education is significant, and the informatization of education can effectively improve knowledge dissemination and enhance the positive effects of reading on the formation of rural children's values.

**Keywords:** online education, rural children, volunteer teaching, moderation models

## 1. Introduction

Left-behind children are a unique group in rural China, generally referring to those who remain in rural areas without parental supervision. Abundant researches on left-behind children focus on aspects such as mental health, self-awareness, internet behavior, personality, and academic performance [1]. Compared to urban children, rural left-behind children receive less life and emotional support from their parents, and they often have to face psychological, educational, and lifestyle issues alone [2]. However, left-behind children do not actually have the ability to confront or handle these problems alone, and urban children have advantages in aspects such as mental health [3], nutritional requirements [4], social skills [5], reading ability [6], and emotional experiences compared to their rural counterparts. In the context of comprehensive backwardness compared to urban children, universities have begun to explore ways to change this situation. As a common approach, online education has been adopted by the majority of universities, where the companionship of college students replaces the absence of parents in the family, bringing more social and learning skills, and reducing the gap between left-behind children and urban children. A study from Sichuan Province showed that the experience of left-behind children had a negative impact on academic performance, and education could partially compensate for the negative effects of parental absence on these children [7], improving the

adaptability of rural children in the higher education stage [8] and reducing the adverse effects of parental migration on academic achievement.

Teaching assistance from universities takes various forms, including mental health counseling, reading ability cultivation [9], and academic support [10]. This article aims to explore the relationship between the reading ability and the formation of values of rural left-behind children, and to observe the regulatory role of teaching assistance factors in this process, which has practical significance for optimizing volunteer selection, training, and other aspects.

## **2. Theoretical framework and variable composition**

Reading is an important pathway for the formation of values. Prior studies have shown that reading ability can affect factors such as mental health [11] and academic performance [12] that influence children's values, therefore this study assumes that reading ability has a positive effect on values. The variable of reading ability is observed from five dimensions: reading comprehension, reading selection ability, application ability, teacher guidance, and family support, with a total of 7 items designed. Children's values [13] are generally observed from angles such as knowledge application, practice, and utilitarianism, and combined with measurements of reading abilities such as attention concentration [14], repetition degree, and critical reading, 7 items such as "Extracurricular reading is my main way to understand the outside world" and "I believe that reading is a learning method that can replace practice" were designed. Education has a certain impact on the formation of reading ability and values. Studies from Germany [15] and Yunnan Province, China [16] have shown that teaching assistance can longitudinally improve children's reading ability. Combining common evaluation standards for teaching assistance [17], this study designed 5 questions to observe the moderating effect of teaching assistance in the process of reading ability influencing values, including dimensions such as new knowledge brought by teaching assistance, improvement of reading comprehension ability, and reading sharing.

## **3. Method**

### **3.1 Data Source**

The samples of this study come from the 21 hope schools established by Changshu Institute of Technology in various parts of China. Volunteer guidance was provided for primary school students to complete the questionnaire, and a total of 950 valid questionnaires were collected. The questionnaire adopted the Likert 7-point scale, where 1 represents complete disagreement and 7 represents complete agreement. The higher the number, the greater the recognition degree for the item. Meanwhile, considering regional differences, the questionnaire added three humanistic variables: parents' education level, main guardian, and school library stock.

### **3.2 Analysis Method**

The independent variable consists of seven items of reading ability, the dependent variable consists of seven items of value formation, and the moderating variable consists of five items of teaching assistance. All variables are interval measurements. This study assumes a causal

relationship between the independent variable and the dependent variable, and adopts multiple linear regression and moderating effect models for analysis. In multiple linear regression, the average value of the dependent variable is used as the value formation variable, and in the moderating effect analysis, the average value of the moderating variable is used as the teaching assistance variable.

## 4. Result

### 4.1 Descriptive Statistics

The lowest score of the 950 questionnaires is 65 (19-133), the highest score is 133 (19-133), and the mean and standard deviation are 108.4 and 18.06, respectively. The descriptive statistical information of the 19 interval measurement independent variables is shown in Table 1.

**Table 1** Descriptive statistics information of the independent variable.

	N	Minimum	Maximum	Mean	Std. Deviation
I can understand the content of the book I am reading quite well.	950	1.00	7.00	5.6105	1.42392
I like to choose books to read based on my own preferences.	950	4.00	7.00	6.3684	.94591
I can apply what I read in books to my daily life and learning.	950	2.00	7.00	5.6211	1.40045
My teacher often guides us in choosing extracurricular reading materials.	950	2.00	7.00	5.8526	1.44376
My teacher often leads us to read books together.	950	1.00	7.00	5.5895	1.64701
My family strongly supports my reading of extracurricular books.	950	2.00	7.00	6.6316	.92314
My family often reads extracurricular books with me.	950	1.00	7.00	5.6947	1.49520
The formation of values - Extracurricular reading is my main way of understanding the outside world.	950	2.00	7.00	5.9684	1.28372
Reading breaks through a thousand volumes, and writing is like having a divine hand.	950	2.00	7.00	6.4421	1.01809
Read a thousand books and travel ten thousand miles.	950	4.00	7.00	6.5053	.88575
I think writing guidance books are more useful than classic literature.	950	1.00	7.00	5.2316	1.83032
I believe that reading is a learning method that can replace practice.	950	1.00	7.00	4.8211	2.06788
Compared to printed books, I prefer reading e-books.	950	1.00	7.00	4.4632	1.90638
Compared to extracurricular reading, I think learning classroom knowledge is more beneficial to my development.	950	1.00	7.00	4.8211	1.86216
The arrival of volunteers brought me fresh knowledge from the outside world.	950	1.00	7.00	6.0737	1.27365
The help of volunteers is the main channel for me to understand the content of reading.	950	2.00	7.00	5.6526	1.47870
Compared to school courses, I prefer summer volunteer teaching courses.	950	1.00	7.00	5.1789	1.68838

The suggestions of volunteers are an important reference for me to choose extracurricular reading books.	950	2.00	7.00	5.7895	1.32805
I look forward to the reading sharing of volunteers.	950	2.00	7.00	6.1263	1.23978
Valid N (listwise)	950				

The mean of the value formation variable is 5.46 (1-7), and the standard deviation is 1.13. The mean of the moderating variable is 5.76 (1-7), and the standard deviation is 1.17. Among the samples, 81% of the students receive good extracurricular reading support from their families, but only 41% of the families have someone read with their children. More than 70% of the respondents believe that reading and practice are equally important and cannot be replaced by each other. More than half of the students believe that extracurricular reading is their main way to understand the outside world. The rural children's path to forming values is relatively narrow. 72.6% of the students look forward to the reading guidance of volunteers, and 67.5% of the students who think that the school library has a large number of books also look forward to the reading guidance of volunteers. The book collection cannot significantly improve reading ability. Therefore, volunteers have a significant positive effect on the cultivation of rural children's reading ability.

#### 4.2 Multiple Linear Regression

The related items of value formation are combined to take the average value as the dependent variable, and regression is performed with reading ability items, teaching assistance related items, and all items respectively. All three regression equations are significant, as shown in Tables 2 and 3, F values are 9.784, 14.558, and 13.104, respectively, and p values are all <0.001.

**Table 2** Results of different multivariate linear regression models

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.664	.440	.395	.88519	1.909
2	.671	.450	.419	.86779	2.051
3	.811	.657	.607	.71361	2.136

Dependent Variable: Values

**Table 3** Variance analysis of different multivariate linear regression models

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.666	71	7.667	9.784	<.001
	Residual	68.170	879	.784		
	Total	121.835	950			
2	Regression	54.814	269	10.963	14.558	<.001
	Residual	67.022	681	.753		
	Total	121.835	950			
3	Regression	80.077	127	6.673	13.104	<.001
	Residual	41.758	823	.509		
	Total	121.835	950			

Model 1 only observed the impact of reading ability on the formation of values, with an explanation rate of 39.5%. Model 2 only observed the impact of teaching assistance on the formation of values, with an explanation rate of 41.9%. Model 3 considered the impact of both reading ability and teaching assistance simultaneously, with an explanation rate increased to 60.7%. The improvement of reading ability and the degree of acceptance of teaching assistance have a significant positive effect on the formation of values among rural left-behind children.

### 4.3 Regulation Effect Model

Further observing the influencing mechanism of teaching assistance in the process, a regulation model as shown in Figure 1 was established. The average value of teaching assistance-related items was used as the regulatory variable to observe the impact of reading ability on the formation of values among rural left-behind children under different teaching assistance levels. The degree of impact of reading ability on the formation of values among rural left-behind children under different teaching assistance levels is shown in Figure 2.

The results indicate that the higher the level of teaching assistance received by rural left-behind children, the greater the impact of reading ability on their value formation. When the level of teaching assistance exceeds 5, the impact significantly increases. Under the low acceptance level of teaching assistance, the impact of reading ability on value formation remains relatively stable.

## 5. Discussion

From the perspective of rural left-behind children, both reading ability and teaching assistance have a significant impact on value formation. Among them, teaching assistance courses ( $B=0.353$ ,  $p<0.001$ ), family support for reading ( $B=0.241$ ,  $p<0.001$ ), reading preferences ( $B=0.182$ ,  $p<0.001$ ), and teacher-led reading ( $B=0.182$ ,  $p<0.001$ ) have a relatively large positive impact, while expectations of volunteer reading sharing ( $B=-0.228$ ,  $p<0.001$ ) have a negative impact on value formation. The impact of other variables is shown in Table 4.

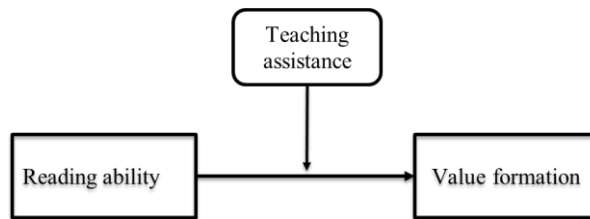


Fig. 1 Moderating effect model

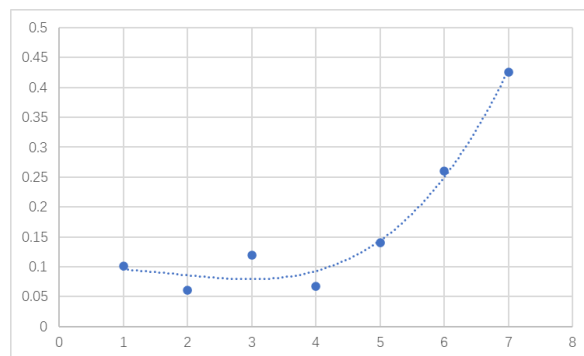


Fig. 2 The degree to which the reading ability of rural left-behind children affects the formation of values under different tutoring levels.

The rural left-behind children in the sample came from the data provided by university teaching assistance teams. In reality, when university teaching assistance teams go to rural areas to provide teaching assistance, they distribute questionnaires and conduct individual interviews. All the samples in this study received teaching assistance from universities. The biggest difference between university teaching assistance teams and teaching assistance teams from ordinary enterprises or social organizations lies in the strength of the faculty. University teaching assistance teams can provide more customized courses, and have the ability to develop different courses for rural left-behind children in different regions. Therefore, among the teaching assistance variables, the impact of teaching assistance courses on the formation of values among rural left-behind children is the greatest.

The results of the regulation model show that the higher the acceptance rate of teaching aids, the greater the impact of literacy on the formation of values. The role of teaching assistance is not merely to learn extracurricular knowledge and improve reading ability. In fact, the most significant impact that educational aid can bring to rural left-behind children may be a way for them to understand the world through reading.

## 6. Conclusion

This study constructs a multivariate linear regression model to evaluate the impact of reading ability and university-based distance education on the formation of rural left-behind children's values, and further explores the role of distance education in this process through a moderation model. The reading ability and acceptance of teaching assistance can explain 60.7% of the variation in the formation of rural left-behind children's values. The Internet-based distance education plays a moderating role in the process of reading ability affecting value formation. The more remote education opportunities provided by universities, the greater the impact of reading ability on value formation. Based on the above analysis, the main conclusions can be summarized as follows:

1. The reading ability and the level of teaching assistance acceptance of rural left-behind children significantly positively affect the formation of their values. Receiving remote education and strengthening reading ability training can promote the formation of rural left-behind children's values and reduce the gap with urban children.

**Table 4** The coefficient table for each item in model 3

Model		Unstandardized Coefficients		Standardized Coefficients	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF
1	(Constant)	.058	.628			
	I can understand the content of the books I read fairly well.	-.013	.082	-.016	.396	2.525
	I enjoy selecting books to read based on my own preferences.	.182	.109	.151	.507	1.972
	I can apply what I read in books to my daily life and study.	-.025	.095	-.031	.304	3.294
	My teacher frequently guides us in choosing extracurricular reading materials.	.111	.076	.141	.456	2.195

My teacher often leads us to read together.	.182	.075	.263	.350	2.854
My family strongly supports my reading of extracurricular books.	.241	.120	.195	.438	2.282
My family often reads extracurricular books with me.	.010	.082	.013	.356	2.807
Tutoring service - The arrival of volunteers brings me fresh knowledge from the outside world.	.107	.102	.120	.324	3.088
The help of volunteers is the main channel for me to understand the content of reading.	.069	.108	.090	.213	4.685
Compared to school courses, I prefer the summer tutoring courses.	.353	.067	.523	.425	2.354
The suggestions of volunteers are an important reference for me to choose extracurricular reading books.	-.058	.118	-.068	.221	4.532
I look forward to the reading sharing of volunteers.	-.228	.110	-.248	.293	3.410

2. Rural left-behind children who receive more remote teaching assistance services are more affected by reading ability in their values, and their cognitive gap with urban children is smaller.

3. The informatization of education has expanded the coverage of teaching assistance in rural areas, thereby narrowing the gap between rural and urban children.

**Acknowledgements:** This manuscript was supported by Jiangsu University Philosophy and Social Sciences Special Research Project (Project No. 2021SJB0712 & 2021SJB0714)

## References

- [1] LUO, J., WANG, W., & GAO, W. B. (2009). Review of the studies on rural left-behind children in China. *Advances in Psychological Science*, 17(05), 990.
- [2] Sun, X., Tian, Y., Zhang, Y., Xie, X., Heath, M. A., & Zhou, Z. (2015). Psychological development and educational problems of left-behind children in rural China. *School Psychology International*, 36(3), 227-252.
- [3] Zhao, F., & Yu, G. (2016). Parental migration and rural left-behind children's mental health in China: A meta-analysis based on mental health test. *Journal of Child and Family Studies*, 25, 3462-3472.
- [4] Li, Q., Liu, G., & Zang, W. (2015). The health of left-behind children in rural China. *China Economic Review*, 36, 367-376.
- [5] Hu, B. Y., Wu, H., Winsler, A., Fan, X., & Song, Z. (2020). Parent migration and rural preschool children's early academic and social skill trajectories in China: Are 'left-behind' children really left behind?. *Early Childhood Research Quarterly*, 51, 317-328.
- [6] Xiaozhao, D., Min, Z., & Can, L. (2013). Study on the Reading Environment of Rural Left-behind Children—Taking Chongqing for Example. *Library and Information Service*, 57(05), 50.
- [7] Liang, W., Hou, L., & Chen, W. (2008). Left-behind children in rural primary schools: The case of Sichuan province. *Chinese Education & Society*, 41(5), 84-99.
- [8] Wang, S., Dong, X., & Mao, Y. (2017). The impact of boarding on campus on the social-emotional competence of left-behind children in rural western China. *Asia Pacific Education Review*, 18, 413-423.

- [9]Baker, S., Gersten, R., & Keating, T. (2000). When less may be more: A 2-year longitudinal evaluation of a volunteer tutoring program requiring minimal training. *Reading Research Quarterly*, 35(4), 494-519.
- [10]Elliott, J., Arthurs, J., & Williams, R. (2000). Volunteer support in the primary classroom: the long-term impact of one initiative upon children's reading performance. *British Educational Research Journal*, 26(2), 227-244.
- [11]Liu, H., Chen, X., & Liu, X. (2022). Factors influencing secondary school students' reading literacy: An analysis based on XGBoost and SHAP methods. *Frontiers in Psychology*, 13, 948612.
- [12]Finch, H., & Finch, M. E. H. (2022, April). The relationship of national, school, and student socioeconomic status with academic achievement: A model for Programme for International Student Assessment Reading and Mathematics scores. In *Frontiers in Education* (Vol. 7, p. 857451). Frontiers Media SA.
- [13]Wigfield, A. (2023). The role of children's achievement values in the self-regulation of their learning outcomes. In *Self-regulation of learning and performance* (pp. 101-124). Routledge.
- [14]Segal, D. (2023). Sustained attention plays a critical role in reading comprehension of adults with and without ADHD. *Learning and Individual Differences*, 105, 102300.
- [15]Zijlstra, H., Van Bergen, E., Regtvoort, A., De Jong, P. F., & Van Der Leij, A. (2021). Prevention of reading difficulties in children with and without familial risk: Short-and long-term effects of an early intervention. *Journal of Educational Psychology*, 113(2), 248.
- [16]Jackson, L., & Adarlo, G. (2016). Bridging cultures through unpaid labor: US volunteer teachers' experiences in China's Yunnan Province. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 27, 2330-2352.
- [17]Lili, L., & Yingjin, C. (2020). An empirical investigation of Chinese college students in volunteer teaching activities: Dilemmas, challenges, and solutions. *Sage Open*, 10(2), 2158244020931923.