

Study on Family Education of Migrant Children under the Background of Five-Pronged Education

-- Taking Doumen District, Zhuhai City as an example

Shenran Zhang, Yanning Chen, Kexin Li, Xinran Liang

Bay Area International Business School, Beijing Normal University, Zhuhai, China

Abstract: With the expansion of the scale of migrant children in Zhuhai and the deepening attention of the Party and the state to the "Five-Pronged Education", the education of migrant children has received increasing attention. Among them, family education is an important factor for the academic and physical and mental health development of migrant children. This article analyzes and summarizes the current situation and characteristics of family education for migrant children in Doumen District, Zhuhai City through qualitative case studies. And based on Spear-man correlation and non-parametric rank-sum test, explore the multidimensional factors that affect the family education of migrant children, including parents' educational level and economic status at the starting point of education, resource investment and educational environment in the education process, etc. Finally, from the perspective of "promoting the five aspects of education simultaneously", the SDS evaluation model is integrated to comprehensively address existing family education problems and influencing factors, and propose countermeasures and suggestions from multiple angles to promote the improvement of the education level of migrant children's families.

Keywords: Migrant Children, Simultaneous Development of Five Educations, Family Education.

1. Introduction

1.1. Study on the Background

"Migrant children" mean minor children who have moved to a new place with their parents or other guardians. They are in a critical period of physical and mental development, and migration may have a profound impact on their learning, life and psychology.

Therefore, "family education of migrant children" includes not only the teaching of basic knowledge, but also the cultivation of life skills, psychological adaptability and social skills. At present, China's economic development is not balanced, the phenomenon of migrant children is common, and their education has become the focus of social concern.

From a national perspective, migrant families face life pressure and unstable living environment, and it is more difficult for their children to obtain a stable learning environment. Migrant workers generally have low educational attainment, and the single-minded approach to family education can easily lead to children's boredom with schooling, and even affect their physical and mental health. In addition, migrant children differ from local students in terms of study habits and personality traits, and may face discrimination and psychological problems. As one of the core cities in the Hong Kong-Zhuhai-Macao Greater Bay Area, Zhuhai has a large number of migrant workers, and the problem of education for migrant children is prominent. Although Zhuhai has formulated relevant policies to safeguard the right to education of migrant children, it still faces many challenges, such as insufficient public school places and cumbersome enrollment procedures.

1.2. Literature Review

In September 2018, General Secretary Xi Jinping proposed at the National Education Conference to cultivate socialist builders and successors with all-round development in

morality, intelligence, physical fitness and aesthetics. As a result, the education system has gradually formed the "Five-Pronged Education" concept as an important guiding philosophy for accelerating the modernization of education, building a strong education country, and providing education to the satisfaction of the people [1].

Under the call for five education, family education plays a "rooting" role in children's self-development, lifelong development and social development[2]. Compared with school education, family is an independent educational field, and parents provide children with the original life world and complete moral archetypes. The influence of family education on children's moral, intellectual, physical, social and aesthetic development cannot be ignored.

However, family education for migrant children faces many problems, such as educational equity and the influence of family cultural background. A survey of the urban migrant population in the Pearl River Delta (PRD) found that migrant children have problems such as high school age, high percentage of enrollment in private schools, and high rate of transferring to other schools, which affects their integration into the towns. This paper analyzes the current situation of family education for migrant children through field interviews in Doumen District, Zhuhai, and explores the practical path of family education under the concept of "five educations in one", so as to provide a scientific basis for the development of education policies in Zhuhai.

1.3. Research Questions

Based on the study background and literature review, this paper focuses on three issues: The description of the current situation of family education for migrant children. The examination of the influencing factors of family education for migrant children. The countermeasures and suggestions to improve the level of family education for migrant children.

2. Data Sources and Assumptions

2.1. Data Sources

Since most migrant families in Zhuhai are concentrated in Doumen District, this paper explores the impact of the enrollment policies and educational resources on family education of migrant children in Doumen District. In order to collect real and comprehensive data and provide strong support for an in-depth understanding of the situation of family education level of migrant children in Doumen District, Zhuhai, this paper focuses on migrant workers and their children who are in the stage of compulsory education in Doumen District, Zhuhai. The main sources of interview data were migrant children and their parents in primary and secondary schools in Xintang Village, Doumen District.

Eventually, six migrant families, two migrant parents, and three current undergraduate students of our university with similar backgrounds were recruited to participate in this survey through social media publicity and telephone contact, including nine accompanying children and eight parents, and the data were coded and categorized after data collection.

2.2. Data Hypotheses

In conducting the research on the family education of migrant children, in order to ensure the scientific validity and reliability of the findings, the following hypotheses were formulated based on the background of the study and the purpose of the study: (1) It was hypothesized that different educational starting points in terms of the family's economic status and the parents' level of literacy would have a significant effect on the quality of education for migrant children. (2) It was hypothesized that the environment and the resources in the process of education would have a significant effect on the educational outcomes of migrant children.

3. Description of the Current Situation of Family Education for Migrant Children

3.1. Research Ideas

The previous study focused on the current situation of family education for migrant children in Doumen District,

Zhuhai City, through descriptive statistics and on-site interviews, to comprehensively understand the basic characteristics and problems of family education for migrant children. Specifically, the three dimensions of education starting point, education process and education result were explored respectively, and the overall situation of family education of migrant children was analyzed in detail with the basic information of the family, the family's education input and the students' physical and mental status. Finally, summarize the current characteristics of family education for migrant children and reasonably deduce the difficulties and challenges involved.

3.2. Research Methods

Key information was first collected through the distribution of questionnaires based on the interview and case method. Two questionnaires were designed, one for parents and one for children. Both questionnaires started from three parts: educational starting point, educational process and educational outcome. The questionnaire for parents mainly investigated how well parents tutored their children's homework and how well they performed homework supervision, and how well they knew their children's social situations at school. The questionnaires completed by the students focused on the children's views on their own family education, the improvements they hoped their parents would make, and their current study and living conditions in Zhuhai. In addition, the data information was organized using descriptive statistical analysis to analyze the distributional characteristics of basic family information, educational inputs, and students' physical and mental conditions.

3.3. Analysis of Results

3.3.1. Basic Family Information

The results of the questionnaire survey are shown in Table 1, which shows that the children who move with the family in Xintang Village, Doumen District, Zhuhai City, are generally non-only children, and their family members are mainly parents and siblings. Families in which both parents are employed account for more, and jobs are mostly for skilled labor workers, but parents' education is generally low (secondary school and below), and parental relationships are generally good.

Table 1. Basic information on the families of migrant children

| Variable | Number of siblings | Father's occupation | Mother's occupation | Father's education background | Mother's education background | Closeness of parents' relationship |
|----------|--------------------|---|---|----------------------------------|--------------------------------------|------------------------------------|
| FP_1 | 1 | — | — | — | — | — |
| FP_2 | 5 | Skilled worker | Self-employed Individuals | Primary education | Specialized university education | Yes |
| FP_3 | 0 | Skilled worker | Non-employed | High school education | High school education | Yes |
| FP_4 | 1 | — | Non-employed | — | — | Yes |
| FP_5 | 1 | Skilled worker | Non-employed | Primary education | Primary education | Yes |
| FP_6 | 1 | Self-employed Individuals | Self-employed Individuals | Specialized university education | Technical secondary school education | Yes |
| SP_1 | 0 | Senior and middle managers in enterprises | Self-employed Individuals | High school education | Junior high school education | Yes |
| SP_2 | 1 | Skilled worker | Skilled worker | Junior high school education | Primary education | Yes |
| SM | 2 | General workers in commerce and services | General workers in production and manufacturing | Primary education | Junior high school education | No |

Fathers are generally more educated than mothers, but fathers are the main out-of-home workers in the family, and mothers have relatively more opportunities to communicate with their students, and studies have shown that mothers' education and occupational status have a significant positive impact on their offspring's access to education and status. The generally lower educational attainment of mothers in families with migrant children may have a direct impact on

educational methods, educational quality and educational outcomes, and these families may be less likely to obtain correct and efficient educational methods without additional popularization of family education knowledge and proper guidance.

3.3.2. Family Education Investment

Table 2. Investment in education for families with migrant children

| Variable | Extracurricular interest class inputs (minutes/week) | Extracurricular remedial class inputs (minutes/week) | Frequency of students confiding their feelings to their parents | Parents' study guides (times/week) | Frequency of visits to museums and science centers | Frequency of exercise by parents accompanying students |
|----------|--|--|---|------------------------------------|--|--|
| FP_1 | 0 | 0 | Sometimes | — | — | — |
| FP_2 | 120 | 0 | Sometimes | Three to four times | Once a year | Once a week |
| FP_3 | 0 | 0 | Never | Three to four times | Once a year | Once a year |
| FP_4 | 0 | — | Sometimes | One to two times | Almost never | Once a week |
| FP_5 | 240 | 0 | Never | One to two times | Once a year | Once a week and more |
| FP_6 | 0 | 0 | Usually | Three to four times | Once a year | Almost never |
| SP_1 | 0 | 0 | Sometimes | One to two times | Once a year | Once a year |
| SP_2 | 0 | 0 | Usually | One to two times | Once a year | Once a week and more |
| SM | 0 | 120 | Never | Three to four times | Once a year | Once every six months |

From Table 2's broadly defined family education input, parents communicate less about students' emotions and psychology, and relatively guide study more. Since most of the interviewees are primary and secondary school students, it is crucial for parents to provide educational guidance or input from tutorials when students enter the stage of middle and high school entrance exams, otherwise students will rely on the school for all their academic pressure and performance levels, and will not be able to have deeper career planning and ideas. The phenomenon of parents neglecting their students' extracurricular study is prominent, probably due to the

uneven geographical distribution of museums and science and technology centers in Zhuhai, and the relatively higher time and economic cost of study for students in Doumen District, which may be neglected by parents who are busy with their work. Generally speaking, parents pay more attention to students' academic level and development, and to their physical and mental health. However, there is still much room for improvement in terms of deep and high-quality investment in aesthetic and intellectual education.

3.3.3. Physical and Mental Situations of Students

Table 3. Existing physical and mental conditions of migrant children

| Variable | Sleep duration (hours/day) | Main activities during summer and winter vacation | Relationship with father | Relationship with mother | Academic pressure | Internet access time (hours/day) | Recognition of the school |
|----------|----------------------------|---|--------------------------|--------------------------|--------------------|----------------------------------|---------------------------|
| FP_1 | 8.5 | At home | — | — | Moderate | 1~2 | Good |
| FP_2 | 8.5 | Labor | Neutral | Close | No pressure | <1 | Good |
| FP_3 | 8 | At home | Neutral | Close | Comparatively high | 1~2 | Good |
| FP_4 | 8.5 | — | Close | Close | Moderate | <1 | Good |
| FP_5 | 7 | Take a tutorial class | Close | Close | No pressure | >4 | Excellent |
| FP_6 | 10 | Take a tutorial class | Close | Close | No pressure | 2~4 | Poor |
| SP_1 | 7.5 | At home | Not close | Neutral | Moderate | >4 | Excellent |
| SP_2 | 8 | At home | Close | Close | No pressure | 1~2 | Poor |
| SM | 8 | home-based labor | Neutral | Neutral | High | >4 | Poor |

Table 3 shows that in terms of sleep, the overall situation does not meet the national standard. "The Opinions on Strengthening Youth Sports and Enhancing the Physical

Fitness of Young People" explicitly require that students' work and rest systems be scientifically regulated to ensure that primary school students have 10 hours of sleep per day,

junior high school students have 9 hours, and senior high school students have 8 hours. The generally longer time students spend on the Internet daily may be due to a lack of parental restrictions on student Internet use. In terms of family relationships, students are generally relatively close to their mothers, which is consistent with the research conclusion that "mothers in the family context have a significant impact on the educational attainment and social status acquisition of their offspring, and in some dimensions, their impact exceeds that of fathers [3]", and that there is a need to further emphasize the importance of mothers in family education and the importance of improving the quality of mothers' educational methods. In terms of stress level, the physical and mental condition and adaptability of migrant children are strong, but analyzed in conjunction with other data, the lack of deeper cultivation of migrant children is not conducive to the development of a sound personality.

3.3.4. Characteristics and Difficulties of Situations

The main variables of the interview survey were analyzed with descriptive statistics and the results are shown in Table 4. The proportion of only children among the migrant children is relatively small, most of them have siblings, and their economic conditions are relatively concentrated in the middle level, with a small standard deviation.

Parents' educational expectations of their children fall between university college and graduate school, with a mean value of a college bachelor's degree. Taken together, children's perceived pressure on parental expectations is at a normal level, but with a large standard deviation, indicating

that there are large differences in the pressure felt by children from different families. The mean value of children's perceptions of parental giving is high, which means that, on average, children believe that their parents give more to them, and the standard deviation is small, which means that there is not a large difference in the perceptions of the degree of parental giving among different children.

In terms of learning, the average time spent by children on homework was 108.889 minutes per day, or about an hour and a half. However, the standard deviation of the hours spent on homework was large at 79.285, indicating that the individual heterogeneity of the time spent on homework is more obvious and that there may be a large difference in the amount of time spent on homework by different students. The mean sleep duration of students was 8.222, with a standard deviation of 0.755, and the minimum value of sleep duration was 7.5h, while the maximum value was 10h, which did not differ much among students. The mean value of the length of time students use electronic devices is 3h, and the standard deviation is large, 2.179h, there is a big difference in the length of time different students use electronic devices. Students' satisfaction with teachers and their satisfaction with school rankings were relatively low and had a large difference, indicating that students' satisfaction with school in general was problematic. Most of the students interviewed preferred to talk to their classmates about what was on their mind than to talk to their teachers, which is more in line with the expectations of this paper about how children at this stage of life behave.

Table 4. Descriptive statistical analysis of variables

| Variable | Description | N | Mean | sd | Min | Max |
|---|---|---|---------|---------|-----|------|
| Only-Child Status | 1Yes, 2No | 9 | 1.78 | 0.44 | 1 | 2 |
| Economic condition | 1-5, the higher, the richer | 8 | 3.31 | 0.46 | 3 | 4 |
| Level of education of mother | 1-9, the higher the expectations, the higher the qualifications. 1 for no education, 5 for vocational high school | 8 | 2.50 | 1.41 | 1 | 5 |
| Level of education of father | 1-9, the higher the expectations, the higher the qualifications. 1 for no education, 5 for vocational high school | 8 | 2.50 | 1.51 | 1 | 5 |
| Parental relationship | 1-3, the higher, the better | 7 | 2.00 | 0.58 | 1 | 3 |
| Relationship with mother | 1-3, the higher, the closer | 8 | 2.75 | 0.46 | 2 | 3 |
| Relationship with mother | 1-3, the higher, the closer | 8 | 2.38 | 0.74 | 1 | 3 |
| Parental help | 1-5, the higher, the more they help | 9 | 3.89 | 0.60 | 3 | 5 |
| Parental expectations | 1-9, the higher the expectations, the higher the qualifications. 6 for university college, 7 for undergraduate, 8 for graduate school | 8 | 7.00 | 0.76 | 6 | 8 |
| Pressure from parental expectations | 1-5, the higher, the more stressful | 9 | 2.44 | 1.51 | 1 | 5 |
| Confidence in the future | 1-4, the greater, the more confident | 7 | 2.86 | 0.69 | 2 | 4 |
| Time spent on homework (every day) | Minutes | 9 | 108.89 | 79.29 | 20 | 240 |
| Sleep duration | Hours | 9 | 8.22 | 0.756 | 7.5 | 10 |
| Time of use of electronic devices | Hours | 9 | 3.00 | 2.18 | 1 | 8 |
| School faculty satisfaction | 1-5, the greater, the more satisfied | 7 | 2.29 | 0.95 | 1 | 4 |
| School rank recognition | 1-5, the greater, the less recognized | 9 | 1.89 | 0.79 | 1 | 3 |
| Willingness to talk to teachers about what's on your mind | 1-5, the higher, the lower the willingness | 6 | 2.83 | 1.169 | 2 | 5 |
| Willingness to talk to classmates about what's on your mind | 1-5, the higher, the lower the willingness | 6 | 1.67 | 0.52 | 1 | 2 |
| Parents' knowledge of the policy on accompanying children | 1-4, the higher, the lower the lever of understand | 8 | 3.00 | 1.20 | 1 | 4 |
| Cost per semester | Yuan | 7 | 4978.57 | 2821.92 | 200 | 8500 |
| Time spent each day educating children | Hours | 8 | 3.06 | 2.88 | 0 | 8 |

With regard to parents' education of their children, parents' knowledge of the policy on children moving with them varies greatly, with some families knowing it very well and others not knowing it at all. This may be related to the fact that different families have different difficulties in schooling, and i.e., families that meet the policy requirements do not have difficulties in schooling, and therefore do not need to take the initiative to learn about the relevant schooling policies, while families that have problems in schooling need to learn more about the relevant policies in order to solve the problem of their children's schooling. The mean value of family education expenditure per semester is 4978.571, and the standard deviation is 2821.917, with a large standard deviation, and there is a large difference in the education expenditure of different families. Combined with the realistic background, families that have difficulties in enrolling in public schools may choose to enroll in private schools with higher tuition fees, which leads to greater education expenses. And or due to the fact that the respondents' stages of education are different, there is a large education expenditure at various stages of education Differences. The mean value of the number of hours parents spend educating their children per day is 3.063h, and the standard deviation is 2.884, which is a large standard deviation, suggesting that there are large differences in the way different families educate their children.

In terms of family status, the majority of respondents reported a good family atmosphere, with respondent FP_4 stating, "They ask me what clothes I like and then go shopping together and try them on before deciding. My parents want me to get into university as much as possible but don't put too much pressure on me and they are willing to let me work for money at the right time. They want me to have a good life, but don't explicitly ask me to become a teacher, engineer or astronaut necessarily." With a relatively large proportion of foreigners in the school, exclusion in Zhuhai is not serious compared to other cities in Guangdong. Interviewee SP_1 said, "When comparing with Guangzhou and Shenzhen, there are more foreign students in Zhuhai, and there is almost no regional discrimination or small groups linked in this way. Zhuhai's requirements for migrant children to study are not too harsh." There are no tutorial classes in the school, but there are interest classes where students' interests and specialties can be utilized.

The common difficulties faced by families focus on the following areas. First, problems with school enrollment. Respondent FP_6 said, "The number of school places is allocated according to school districts, and the uneven distribution of educational resources makes it impossible to guarantee the quality". And respondent P said, "I chose the school because it's a subsidized school for local residents, but there is no subsidy this year ". The changes and adjustments in the enrollment policy will cause some difficulties for the enrollment of migrant children. Secondly, students have difficulties in adapting to the school environment, such as respondent SM, "The families of students here are relatively rich, students are multi-talented, a little bit of low self-esteem and caution. The teaching materials are different, and the results of the first opening examination are very poor". Respondent SP1 said, "the most important thing in the school is actually the interpersonal relationship, which very much affects one's mood and thus the learning state", indicating that migrant children have some difficulties in school adaptation. Thirdly, due to the relatively low education level of their

parents and the busy workload of parents in some families, parents have relatively little help in their children's career planning and academic guidance, and many of the interviewed students showed confusion about their future.

4. Examinations of the Factors Influencing the Family Education of Migrant Children

4.1. Research Ideas

Firstly, based on the literature review and the research on the previous questions, the multidimensional factors affecting the family education of migrant children are identified, including the family's economic status and the parents' cultural level. Secondly, the impact of these factors on the family education of migrant children is examined through data analysis and case studies. Finally, explore how these factors specifically affect the family education of migrant children and analyze their mechanisms of action.

4.2. Research Methods

The Wilcoxon two-sample rank sum test was used on the basis of previously collected data to test for differences in household educational expenditures across family economic status and parental literacy. Then Spearman rank correlation coefficient analysis is used to explore the correlation between intangible educational environment and educational outcomes, tangible educational inputs and educational outcomes. And through specific cases, we analyze in depth how the influencing factors play a role in the actual situation.

In the Wilcoxon two-sample rank sum test, an example is used to test for differences in family education expenditures across family economic conditions. In this paper, the economic condition variable is chosen to measure a family's economic condition, while the education spending per semester variable is used to measure a family's investment in their children's education. Among them, the economic condition value of 4 represents a better economic condition, and the economic condition value of 3 is categorized as a worse economic condition. Based on this categorization, the original data are uniformly ranked and the rank sum of any set of samples is obtained, which is noted as W . Assuming that there is no difference in investment in education between the two samples, formula (1) and (2) are shown below.

$$\mu_w = \frac{n(N+1)}{2} \quad (1)$$

$$\sigma_w = \sqrt{\frac{nn^*(N+1)}{12}} \quad (2)$$

Among them, n and n^* are the capacities of the samples in this group and the other group, respectively, and N is the total number of samples.

$$Z = \frac{W - \mu_w}{\sigma_w} \quad (3)$$

And the standardized value Z and the corresponding p -value are calculated by formula (3). If $p \leq 0.5$, the original

hypothesis is rejected and it is considered that there is a significant difference between the two samples' distributions and that the economic conditions of the family will have an impact on the family's investment in their children's education.

When using Spearman rank correlation coefficient analysis, the same as Wilcoxon two-sample rank sum test, first assign a value to each value and calculate the rank difference d_i for each pair of data (x_i, y_i) , and the Spearman rank correlation coefficient r_s can then be obtained by formula (4).

$$r_s = 1 - \frac{6 \sum_{i=1}^n d_i^2}{n(n^2 - 1)} \quad (4)$$

4.3. Analysis of Results

4.3.1. Multidimensional Impact Analysis of the Educational Starting Points

(1) Family Economic Status and Investment in Education

This paper finds that when economic conditions are used as a categorical variable to test whether there is a significant difference in education expenditure between families with better economic conditions and those with worse economic conditions, the Wilcoxon two-sample rank sum test shows that the p-value is 0.1797, which is greater than 5%, and so it cannot be assumed that there is a significant difference in education expenditure between families with different economic conditions under this data. If the correlation coefficient of the two variables -0.8154 is true, it indicates to some extent that families with poorer economic conditions

spend more on education instead, which may be related to the enrollment policy for migrant children, whereby the chances of families with poorer economic conditions to obtain enrollment quotas in public schools may be relatively low, and enrollment in local private schools may lead to their higher educational expenditures. At the same time, since the values of the economic conditions variable are obtained from interviews, it cannot be ruled out that individual subjective factors have an impact on the accuracy of the variable, leading to bias in the estimation of the variable.

(2) Parents' Educational Level and Children's Academic Achievement

According to the theory of intergenerational benefit transfer, children with well-educated parents may grow up in a more ideal family environment and receive better nurturing, guidance and informal pre-school education, so there should be a correlation between the children's academic performance and their parents' literacy.

Table 5 presents the distribution of parents' education level in the interview data, the higher the number represents the higher education level, 4 represents secondary/technical school, it can be seen from Table 5 that the education level of the parents of migrant children is relatively low. Combined with the characteristics of the data, this paper takes the families in which one of the two parents has an education level of secondary/technical school and above as the families with parents with a higher education level. The families where both parents have an education level of less than secondary/technical school as families with low parental literacy.

Table 5. Educational level of parents of migrant children

| Children's academic performance | | Level of education of mother | | | | |
|---------------------------------|-------|------------------------------|---|---|---|-------|
| | | 2 | 3 | 4 | 6 | Total |
| Level of education of father | 2 | 1 | 2 | 0 | 0 | 3 |
| | 3 | 1 | 0 | 0 | 0 | 1 |
| | 6 | 0 | 1 | 0 | 1 | 2 |
| | 7 | 0 | 0 | 1 | 0 | 1 |
| | Total | 2 | 3 | 1 | 1 | 7 |

Using parental education as a categorical variable, the Wilcoxon two-sample rank-sum test of students' achievement rankings, with a p-value of 0.5541, could not be considered as a significant difference in children's achievement in families with different parental education. On the one hand, most of the interview subjects are primary and secondary school students, and at this stage the difference in parents' ability to tutor homework may not have appeared yet, and the influence of parents' education level on children's performance is not obvious. On the other hand, the interviewed students generally said that the family atmosphere is good, and their parents' education is more enlightened, and the good education environment may make up for the shortcomings of their parents' own knowledge level. At the same time, due to the generally low educational level

of parents of migrant children and the small amount of data, the test itself may have errors.

4.3.2. Multidimensional Impact Analysis of the Educational Process

(1) Invisible Educational Environments and Educational Outcomes

In order to explore the intangible influence of family atmosphere and parenting styles on children's growth and values, this paper carries out a simple and comprehensive quantification of educational outcomes (Table 6), intangible educational environment (Table 7), and a non-parametric method of Spearman's rank correlation coefficient analysis suitable for small samples by constructing a multi-indicator evaluation system (Table 8).

Table 6. Construction of educational outcome variables

| Variable | Pressure | Targeted or not (college or occupation) | Academic performance | Hobby | Volunteer to help with household chores | Educational achievements |
|----------|----------|---|-------------------------|-------|--|-----------------------------|
| FP 1 | 1 | 0 | 2 | 0 | 0 | 3 |
| FP 2 | 2 | 1 | 1 | 1 | 0 | 5 |
| FP 3 | 1 | 0 | 2 | 1 | 1 | 5 |
| FP 4 | 1 | 1 | 1 | 1 | 0 | 4 |
| FP 5 | 2 | 1 | 2 | 1 | 0 | 6 |
| FP 6 | 2 | 1 | 3 | 1 | 0 | 7 |
| SP 1 | 1 | 1 | 3 | 1 | 0 | 6 |
| SP 2 | 2 | 1 | 3 | 1 | 0 | 6 |
| SM | 0 | 1 | 3 | 1 | 1 | 6 |

Note: The four representative variables of pressure, targeted or not (college or occupation), academic performance, hobby, and volunteer to help with household chores are all dummy variables. Among them, 0, 1 and 2 of the pressure variables represent high pressure, average pressure and not too much pressure. 1, 2 and 3 of the academic performance represent the distribution of academic performance in the back 1/3, middle 1/3 and front 1/3. And

the variables of targeted or not (college or occupation), hobby and volunteer to help with household chores are all 0-1 variables. Assuming that the weights of the above variables are equal, i.e., based on the multi-indicator evaluation system to construct the educational outcomes = pressure + targeted or not (college or occupation) + academic performance + hobby + volunteer to help with household chores.

Table 7. Construction of invisible educational environment variables

| Variable | Frequency of students confiding their feelings to their parents | Parents' study guides (times/week) | Frequency of exercise by parents accompanying students | Invisible educational environment |
|----------|--|--|---|--------------------------------------|
| FP 1 | 1 | 1 | 0 | 2 |
| FP 2 | 1 | 2 | 1 | 4 |
| FP 3 | 0 | 2 | 0 | 2 |
| FP 4 | 1 | 1 | 1 | 3 |
| FP 5 | 0 | 1 | 2 | 3 |
| FP 6 | 3 | 2 | 0 | 5 |
| SP 1 | 1 | 1 | 0 | 2 |
| SP 2 | 3 | 1 | 2 | 3 |
| SM | 0 | 2 | 0 | 2 |

Note: The three representative variables, namely, the frequency of students confiding their feelings to their parents, parents' study guides (times/week), and the frequency of exercise by parents accompanying students, are all dummy variables. Among them, 0, 1 and 2 represent never, occasionally and often, respectively, of the frequency of students confiding their feelings to their parents. 1 and 2 represent one to two times and three to four times, respectively, of parents' study guides(times/week). And 0, 1

and 2 represent once a year, once a week and more than once a week, respectively, of parents' accompanying students' exercise frequency. It is assumed that the weights of the above variables are equal, i.e., based on the multi-indicator evaluation system to construct the invisible educational environment = the frequency of students confiding their feelings to their parents + the frequency of parental study guides + the frequency of exercise by parents accompanying students.

Table 8. Spearman's rho results for invisible educational settings

| Correlation coefficient | Educational achievements | Invisible educational environment |
|-----------------------------------|--------------------------|-----------------------------------|
| Educational achievements | 1 | |
| Invisible educational environment | 0.3303(0.3854) | 1 |

Note: *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

The correlation analysis between the intangible educational environment and educational outcomes shows that although the correlation coefficient between the two is 0.3303, the p-value is not significant, i.e., the contribution of the improvement of the intangible educational environment to educational outcomes is yet to be determined.

(2) Tangible Educational Resources and Educational Outcomes

This paper further analyzes the impact of the educational process factors of tangible educational resources on educational outcomes such as children's academic performance and five-school development. By constructing a multi-indicator evaluation system for tangible educational inputs, the contribution of these inputs to educational outcomes is quantified (Table 9) and correlation analysis is conducted (Table 10).

Table 9. Construction of tangible education input variables

| Variable | Extracurricular interest class inputs (minutes/week) | Extracurricular remedial class inputs (minutes/week) | Frequency of visits to museums and science centers | Tangible education inputs |
|----------|--|--|--|---------------------------|
| FP 1 | 0 | 0 | 0 | 0 |
| FP 2 | 1 | 0 | 1 | 2 |
| FP 3 | 0 | 0 | 1 | 1 |
| FP 4 | 0 | 0 | 0 | 0 |
| FP 5 | 1 | 0 | 1 | 2 |
| FP 6 | 1 | 0 | 1 | 2 |
| SP 1 | 0 | 1 | 1 | 2 |
| SP 2 | 0 | 0 | 1 | 1 |
| SM | 0 | 0 | 1 | 1 |

Note: The three representative variables of extracurricular interest class input (minutes/week), extracurricular remedial class input (minutes/week), and frequency of visits to museums and science centers are all 0-1 dummy variables. Assuming that the weights of the above variables and

indicators are equal, i.e., based on the multi-indicator evaluation system, tangible education inputs = extracurricular interest class input (minutes/week) + extracurricular remedial class input (minutes/week) + frequency of visits to museums and science centers.

Table 10. Spearman's rho results for tangible education input

| Correlation coefficient | Educational achievements | Tangible education inputs |
|---------------------------|--------------------------|---------------------------|
| Educational achievements | 1 | |
| Physical education inputs | 0.6870(0.0409**) | 1 |

Note: *, **, and *** indicate 10%, 5%, and 1% significance levels, respectively.

The correlation analysis between tangible educational inputs and educational outcomes reveals a highly significant positive correlation, with a correlation coefficient as high as 0.6870. This result emphasizes the important role of tangible educational resources in enhancing children's academic performance and overall development. That is, extracurricular interest and remedial classes, participation in cultural activities, etc., have a significant positive impact on children's academic performance and overall development. These resources not only enhance the knowledge base of children, but also promote their social skills and cultural literacy.

5. Countermeasures and Suggestions to Improve the Education Level of Families with Migrant Children

5.1. Research Ideas

Based on the mid-term study, the main problems of family education for migrant children were further identified. The causes of these problems were analyzed from the perspectives of the government, schools, family economy and parental education, and countermeasures and suggestions were put forward to improve the level of family education for migrant children based on the concept of "Five-Pronged Education".

5.2. Research Methods

The literature method is used to review relevant literature and summarize effective strategies and methods to enhance the level of family education. Applying the SDS model (Systemic, Development, Sensitivity), the effect of family education is evaluated through specific cases, identifying the strengths and weaknesses of family education, and summarizing the successful experiences and practices in enhancing the level of family education. It also puts forward specific and actionable implementation suggestions in light of

the actual situation of Doumen District, Zhuhai, in order to promote the enhancement of the level of family education for migrant children.

5.3. Analysis of Results

5.3.1. Enhancing Government Policy Support

(1) Increasing the Number of Counterpart Public Schools

In the interviews, FP_6 family interviewees talked about the current problem of school places allocation and distribution of education resources, i.e., the number of school places is allocated according to the school districts, and the uneven distribution of education resources results in the quality of allocated schools not being guaranteed. In order to enable their children to receive better education, many parents have to invest a lot of time and money in choosing private schools for their children. Therefore, the Government should attach great importance to this problem and increase the number of counterpart public schools in each school district, so as to ensure that the children of migrants in each school district can have more choices and thus have access to more equitable educational resources.

(2) Developing the Principle of Proximity to Schools

When talking about their children's current mode of transportation to and from school, respondent FP_1 mentioned the expectation of going to school nearby. Since the respondent's home address is a certain distance away from his child's school, out of concern for his child's personal safety, his parents have to transport his child to and from school on time every day, but they also spend a lot of time on the road. Therefore, the Government should emphasize the principle of proximity in the allocation of schools in the school district, so as to ensure that every family can enjoy the convenience of going to school in the vicinity as far as possible.

(3) Lowering the Threshold for Points-based Enrolment

Interviewee FP_4 talked about his suggestions on the

enrollment policy for migrant children from the perspective of the points-based enrollment system, hoping that the points requirement for choosing schools can be lowered, while Interviewee FP_5 hoped that in the future, migrant children would choose schools more on the basis of their own hard work and academic performance. In addition, parents' residence permits and children's school registration are the most basic requirements, and a considerable number of cities require parents to have stable employment, stable housing and proof of social security payment[4]. Therefore, the Government should give full consideration to the impact of tailor-made education when formulating the policy on school choice for migrant workers, so as to avoid some outstanding migrant children from missing the opportunity to attend quality schools because of their parents' insufficient points. This not only runs counter to the principle of fairness in education, but may also adversely affect the future development of these children.

(4) Simplifying Enrollment Procedures

Respondent FP_1 revealed to the interview students that at present, when applying for enrollment for their children, there are still some messy enrollment procedures to be carried out, which require parents to go back and forth between different institutions and departments for many times, which not only consumes a lot of time and energy, but also brings considerable financial pressure to parents. Therefore, the government should focus on streamlining the process and clarifying the standards, making reasonable planning and adjustments to the documents and qualifications required for enrollment, removing redundant links and duplicated certificates, and reducing the difficulty and complexity of the process for parents. The government also needs to work to improve the transparency and predictability of the enrollment process, and reduce the hassle by publicizing enrollment policies, processes and standards so that parents can understand and prepare for the process in advance.

5.3.2. Strengthening the Role of Schools in Educating People

After compiling the data from the interview questionnaires, this paper finds that most of the interviewed families are willing to increase their financial investment to develop their children's non-curricular hobbies, but very few of them have implemented them. Except for the interviewed family FP_5 who would let their children learn computer programming freely in their free time during vacation, children in other families, although they also have their own hobbies, it is difficult for them to continue them without the support of their parents. Respondent SM said that he would feel inferior due to the gap between him and his classmates in terms of family status and talents, which would lead to difficulties in adapting to school life.

At this level, for parents and their children who cannot afford to invest too much, schools can take ways to improve the quality of their own moral education, labor education, aesthetic education, sports and other kinds of study and education activities to make up for the shortcomings of family education, for example, a curriculum system with multiple modules, such as child-rearing, school-family-society co-education, etc., and activities such as the "Parents' Lecture Hall" which can be carried out in depth and on a continuous basis, and collaborative parenting actions implemented through fixed classrooms, mobile classrooms, cyberclassrooms, and guidance hotlines, etc[5].

5.3.3. Improving Family Economic Conditions

Economic conditions are also not to be ignored as a factor in the educational starting point for family education, and can be improved in the following ways:

Provide housing subsidies or rent reductions to alleviate the financial burden of families moving with them, so that they can live in a better environment and create more stable learning and living conditions for their children.

Encourage and support enterprises to provide more employment opportunities and room for career development for families who have moved with them, so as to increase family income and thus raise the overall material standard of living of families.

A social assistance system can be set up to provide necessary material help, such as food assistance and subsidies for school supplies, to families accompanying their children in financial difficulties, so as to ensure that their children's basic living and learning needs are met.

5.3.4. Improving Parenting Methods

(1) Establishing Community-based Family Education Steering Groups

Specialized family education guidance centers should be set up in communities to provide parents of migrant children with family education counselling and guidance services, and to disseminate knowledge about the five pillars of education and their importance. Family education support hotlines or online platforms might also be set up to provide parents with real-time counseling and assistance, and to effectively raise the awareness and capacity of the main body of educators.

(2) Organizing Parent Exchange and Sharing Sessions

Regular parent-exchange meetings should be held, in which parents of more successful migrant children are invited to share their experiences and insights, forming a community of migrant families and helping other parents to understand how to better adapt to the new environment and deal with various problems in family education.

(3) Carrying out Parent-child Activities to Enhance Parent-child Relationships

Most of the interviewed migrant children have daily exchanges with their parents, but there are fewer opportunities for parent-child activities such as watching movies, doing sports and reading books together. The community can organize a variety of parent-child activities, such as outdoor development, cultural experience, handicrafts, etc., so that parents and children can participate together, enhance the emotional connection between parents and children, and promote the students' "labor", "aesthetic" and "moral" qualities, so that parents can reflect on the students' deficiencies in "morality, intelligence, physicality, aesthetics, and labor" in a timely manner, and make improvements to the shortcomings of family education according to the physical and mental characteristics of the students.

(4) Attention to the Needs of Special Families

For special families, such as single-parent families and families in financial difficulty, it is necessary to set up a special support mechanism to provide them with personalized family education guidance and services, so as to resolve practical difficulties in family education and improve parenting methods more thoroughly.

5.3.5. Focusing on the Deeper Development of Children

The results of the interviews show that FP_2, SP_1, and SM students have clear goals and the rest of the students have no clear goals, which indicates that the parents' educational guidance on academic career planning is missing or has not

penetrated into the hearts of the students. The relationship between the students and their parents is generally closer. And the joint activities between the students and their parents are generally missing. The relationship between students and their parents is generally close. The joint activities between students and their parents are generally missing. Students need more in-depth guidance in "intellectual education", and there is more room for improvement in "physical education, aesthetic education and labor education".

In terms of improving intellectual education, we should fully respect students' ability to think and explore on their own, encourage students to ask questions and solve problems on their own, and clarify the purpose of their behaviors. For example, if SP_1's target university is Wuhan University, we should lead him to look up relevant information and understand the conditions needed to get into Wuhan University, and formulate a suitable career plan, so as to refuse to let the "dream" stay at the "dream" level. Refuse to let the "dream" stay in the stage of "dream" and "think". A few researchers have empirically verified the value of educational expectations and found that the influence of family and school on migrant children must be transformed into the children's own educational expectations in order to realize a positive impact on their cognitive and other non-cognitive abilities (e.g., school adaptability)[6]. The questionnaire shows that a small number of students are not aware of their parents' academic qualifications. Parents should break the information gap created by the Chinese patriarchal system in order to maintain their authority, and refuse to pretend to understand.

Emphasize physical education. The study found that the level of sports participation of migrant children can positively affect their self-efficacy and psychological integration, and self-efficacy plays a partly mediating role in the path of sports participation positively affecting the psychological integration of migrant children, which indicates that the increase in the level of sports participation and self-efficacy can not only effectively improve the level of public interaction of migrant children, but also deepen the psychological integration of migrant children, and realize the socialization of the individuals in different places[7]. Regular exercise programs can be formulated according to the children's interests and specialties to cultivate for them a good sports sense that exercise is good for physical and mental health.

In terms of aesthetic and labor education, parents should be involved in the interaction with their children, using vacation time, community resources to participate in handicrafts, sports, labor practices with students instead of playing cell phones and other pastimes, listening to their children's ideas during the process, helping children with worries and problems to solve their problems, and establishing good values.

5.3.6. Case Summarization - Judgment Based on SDS Models

The article "SDS Model of Family Education" in the Chinese Social Science Journal in 2022 proposes the SDS model of family education judged from the perspectives of "Systemic", "Development" and "Sensitivity".

"Systemic" emphasizes the family, family education, and family culture, and believes that there is a dynamic interaction process between parents and students, and that the cognition, emotion, and behavior of one individual affects the other, so it is important to shape the family atmosphere.

"Development" emphasizes growth, and "the National

Survey Report on the Status of Family Education (2018)" shows that "having a warm home" ranks first among the most important things in life for students. Fourth graders' most admired role models are "parents". Eighth graders' most admired role model is "parents". Therefore, it is important to utilize the role of parents as role models in the development of students.

"Sensitivity" emphasizes students' sensitive awareness, which requires parents to develop the ability to understand students' psychology and needs through communication and parent-child activities.

Combined with the five educational requirements, the indicators were categorized into three levels: excellent, neutral, and poor. Five questionnaires (FP_2~FP_4) in which both parents and students effectively participated in the interviews were screened, and the types of family education were summarized based on the above indicators.

(1) FP_2 Family Education Case

Table 11. FP_2 Results of the family education assessment

| Variable | Systemic | Development | Sensitivity |
|----------|----------|-------------|-------------|
| FP_2 | Neutral | Excellent | Neutral |

Analyzing the variables in Table 11, Systemic: Students perceive their relationship with their mother as close and their relationship with their father as average. Combined with the fact that the father's education level is "elementary school", the father's intellectual ability is relatively weak, and there may be deficiencies in education, so the systemic indicator was neutral. Development: The mother of this family has the highest level of education in this interview, and she works as a self-employed person, so her time is relatively flexible and she has more time and energy to take care of her students. At the same time, both parents in this family are working and have relatively good economic conditions. The student is one of the few migrant children who receive extracurricular interest classes, and has a good development of aesthetic education. The number of times they received study guidance from their parents was 3 to 4 times, which was more frequent compared to the other samples. At the same time, the frequency of parents' accompanying sports (once a week) and labor (see the question "Main activities during summer and winter vacations") is relatively high, and the development of labor and sports is comprehensive. This sample is the sample with the best completion of family education in this survey, so the growth indicator was excellent. Sensitivity: Students believe that there is no academic pressure, the recognition of the school is good, and the overall mentality is good. However, the frequency of telling their parents about their feelings is "occasionally", and the low frequency of parents visiting science and technology centers and museums is a common problem in this survey. It is believed that the family does not have enough opportunities for in-depth communication with students, so the sensitivity index was neutral.

Suggestions for improvement: Focus on the father's role in family education and the construction of close father-child relationship, which can avoid the academic shortcomings, and increase the educational efforts for sports and intellectual education. Make use of community and school resources or self-organized parent-child activities to increase parent-child communication opportunities.

(2) FP_3 Family Education Case

Table 12. FP 3 Results of the family education assessment

| Variable | Systemic | Development | Sensitivity |
|----------|----------|-------------|-------------|
| FP 3 | Neutral | Neutral | Poor |

Analyzing the variables in Table 12, Systemic: Students perceive their relationship with their mothers as close and with their fathers as average. Combined with the fact that the father works as a "skilled worker" and the mother is unemployed, the student spends more time with the mother and therefore is close to her, and the father should increase his communication with the student. Therefore, the systemic indicator was neutral. Development: Both parents in this family have a high school education and are capable of tutoring, so the frequency of homework tutoring (3-4 times a week) is relatively high. However, the parents neglected the development of students' interests, and the main activity of the students during summer and winter vacations was staying at home, with a lack of aesthetic and labor education, and the students believed that the pressure of academics was high, so the family emphasized the development of academics but neglected the rest of the students' feelings and overall development. Therefore, the growth indicator was neutral. Sensitivity: The student never confides in his parents about his feelings and believes that he is under a lot of pressure. There is a certain distance between the student and parents, so the sensitivity indicator was poor.

Suggestions for improvement: Focus on the father's role in family education and the construction of a close father-child relationship. Parents can take advantage of their academic qualifications to innovate tutoring methods with an active atmosphere to channel students' psychological pressure. Increase the number of parent-child activities and the investment in students' moral, aesthetic and labor education.

(3) FP_4 Family Education Case

Table 13. FP 4 Results of the family education assessment

| Variable | Systemic | Development | Sensitivity |
|----------|-----------|-------------|-------------|
| FP 4 | Excellent | Poor | Neutral |

Analyzing the variables in Table 13, Systemic: The student believes that both parents are close to each other and the family atmosphere is good. Therefore, the systemic indicator was excellent. Development: Both parents in this family have unknown education, the students do not attend interest classes or tutorial classes, and the number of homework tutorials by parents is relatively low, so there is too much missing data to analyze. However, compared to other families, this family lacks in the number of homework tutorials and interest development, and has never visited museums and science and technology centers. Therefore, the growth indicator was poor. Sensitivity: the student is willing to confide in his parents occasionally, and the academic pressure is average. Therefore, the sensitivity indicator was neutral.

Suggestions for improvement are similar to the family case in FP_3.

6. Conclusion

Taking Doumen District of Zhuhai as an example, this study explores in depth the issue of family education for

migrant children in the context of the five education programs. Through systematic combing of literature, field interviews and case studies, non-parametric tests, and model evaluation, this paper reveals the current situation, outcome characteristics, difficulties and challenges, and possible influencing factors of family education for migrant children, and also puts forward a series of practical countermeasures and suggestions. The results of this study shows that family education for migrant children faces multiple challenges in Doumen District, such as policy constraints in the society and resource inputs in the family. However, there are also many opportunities for development under the emphasis on education in Zhuhai. This paper expects that the results of this study can provide useful references and lessons for the formulation of relevant policies and the promotion of practical work, so as to jointly create a better family education environment for the healthy growth of migrant children. However, due to the relatively small sample size, some of the findings of this study may lack statistical significance, which limits the generalizability of the conclusions we can draw from them. Future studies should consider expanding the sample size to enhance the representativeness and reliability of the findings.

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