

Study on the Construction of Family and Child Education Guidance Service System from the Perspective of Collaboration between Home, School and Society

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Abstract: China's basic family education guidance service has made great progress. However, in the process of construction, many problems have been exposed, mainly including the imperfect curriculum system of family education guidance service; the safeguard mechanism is still incomplete; the establishment of institutions is insufficient and the cooperation is not in place; and the specialization of talents is insufficient. Aiming at these problems, this paper establishes a family child education guidance service system from the three dimensions of parents' role awareness, professional knowledge and skills and family management, which can meet the needs of children's families. Then the fuzzy evaluation method is applied to implement the evaluation of educational influencing factors, and finally a new method of teaching is obtained. The results of the study showed that the online guidance had the highest percentage among the family education guidance paths, with 35.35% of the guidance paths expected by parents and 46.21% of the guidance paths provided by teachers. The frequency of home education guidance service most expected by parents was once a month, accounting for 48.48%.

1. Introduction

With the development and change of society, family children's education has gradually become the focus of social attention. Traditionally, education has been primarily the responsibility of the school, but the role of the family in children's education is also becoming more prominent [1-2]. In recent years, studies have shown that the holistic development of children can be promoted more comprehensively and effectively with the synergistic cooperation of the three levels of family, school and society [3-4].

Nurhayati S et al. suggested that parental involvement in early childhood education plays a vital role in the growth and development of children. Various findings suggest that parental involvement has a positive impact on both parents and educators or administrators of preschools, who must maintain a good relationship to meet the needs of all children [5]. Khalfaoui et al. proposed that family involvement in school life is essential to improve academic performance and social cohesion, especially among those who are systematically excluded, such as immigrants or Roma. However, the involvement of these families in school life tends to be low [6]. Firmanto et al. suggest that

organizing the teaching-learning process during epidemics can be challenging for educational stakeholders, including teachers and parents, especially at the early childhood education level, which is heavily playful and has a strong sense of supervision inherent in teachers and parents. Learning for kindergarten students becomes hindered by the need for traditional face-to-face learning. Online learning models have proven to be challenging for students even with parental guidance. These barriers may be in terms of digital literacy skills or in terms of supporting facilities. To address these challenges, a learning model based on home-school partnership was proposed to achieve the desired learning outcomes. In this learning model, parents take an active role as tutors at home while schools prepare learning materials with detailed processes and structured schedules for their children. Although this model is still not perfected, it is possible to follow the curriculum to the learning outcomes [7].

Su J, Yang W et al. suggest that Artificial Intelligence (AI) tools are increasingly being used in the field of Early Childhood Education (ECE) to enhance young children's learning and development. Previous proof-of-concept studies have shown that AI can be effective in improving teaching and learning in ECE; however, there is a paucity of knowledge about how these studies were conducted and how AI was used in these studies. This scoping review was conducted to assess, synthesize, and present the most recent literature on AI in early childhood education. Seventeen eligible studies conducted in different countries between 1995 and 2021 were analyzed. Despite the scarcity of research on this critical issue, the available references provide recent insights on different aspects (knowledge, tools, activities and impact) of AI in children. The research suggests that AI greatly improves children's conceptualization of artificial intelligence, machine learning, computer science, and robotics as well as other skills such as creativity, emotional control, collaborative inquiry, literacy skills, and computational thinking. The future direction of research on AI in early childhood education has also been discussed [8]. Cross C J et al. made the point that children who are raised by their biological parents together perform better academically than children who are raised in any other family structure. However, few studies have explained an important finding: living apart from biological parents has less negative impact on racial/ethnic minority children than on white children. Scholars have hypothesized that group differences in exposure to socioeconomic stress and embeddedness in extended family networks could explain this finding [9].

In this paper, a survey was used to determine the values of each factor from the data to obtain the fuzzy set of each single-factor rubric under the home-school-society synergy perspective. By obtaining effective kindergarten guidance, parents of young children not only promote good cooperation with the school, but also provide them with opportunities to understand early childhood education. In this process, parents' views on education and parenting are constantly updated, which gradually improves their quality and ability.

2. Construction of Family Child Education Guidance Service System

Preschool children's education plays a key role in lifelong learning and is an important stage of education in which family education, kindergarten education and social education work together [10-11]. When fuzzy evaluation of school education influencing factors is conducted under the perspective of home-school-society synergy, this comprehensive assessment method helps to understand the key factors in school education more comprehensively and provides decision-making support based on fuzzy evaluation, which promotes the synergistic development of preschool children's education [12-14].

This leads to the judgment set of:

$$V = \{v_1, v_2, v_3, v_4\} \quad (1)$$

Where, v_1 stands for Grade Excellent, v_2 stands for Grade Good, v_3 stands for Grade Medium and v_4 stands for Grade Poor. The expression for the factor set is:

$$U = \{u_1, u_2, u_3, u_4\} \quad (2)$$

Where u_1 denotes learning ability, u_2 denotes pedagogical impact, u_3 denotes the applicability of teaching materials, and u_4 denotes the advancement of assessment methods.

In order to illustrate the necessity of educational reform in the perspective of home-school-society synergy, the data were organized by means of questionnaires, and the ratio of each single factor can be obtained according to the data statistics [15].

The fuzzy set of each single factor evaluated under the perspective of home-school-society synergy is as follows:

$$R_1 = \{0.15, 0.2, 0.4, 0.25\} \quad (3)$$

$$R_2 = \{0.1, 0.3, 0.45, 0.15\} \quad (4)$$

$$R_3 = \{0.2, 0.35, 0.3, 0.15\} \quad (5)$$

$$R_4 = \{0.15, 0.4, 0.3, 0.15\} \quad (6)$$

That is, the fuzzy judgment matrix of these four factors is:

$$R = \begin{bmatrix} R_1 \\ R_2 \\ R_3 \\ R_4 \end{bmatrix} = \begin{bmatrix} 0.15 & 0.2 & 0.4 & 0.25 \\ 0.1 & 0.32 & 0.43 & 0.15 \\ 0.25 & 0.35 & 0.25 & 0.15 \\ 0.15 & 0.4 & 0.3 & 0.15 \end{bmatrix} \quad (7)$$

Similarly, the fuzzy judgment matrix for the four factors after education reform is:

$$R' = \begin{bmatrix} R'_1 \\ R'_2 \\ R'_3 \\ R'_4 \end{bmatrix} = \begin{bmatrix} 0.15 & 0.2 & 0.4 & 0.25 \\ 0.08 & 0.34 & 0.47 & 0.11 \\ 0.1 & 0.4 & 0.4 & 0.1 \\ 0.18 & 0.42 & 0.35 & 0.05 \end{bmatrix} \quad (8)$$

According to the experts' assessment, the weights of these four factors in the comprehensive fuzzy judgment are:

$$A = (a_1, a_2, a_3, a_4) = (0.5, 0.2, 0.08, 0.22) \quad (9)$$

By applying the principles of fuzzy comprehensive judging, it is possible to carry out an evaluation of traditional teaching, derived with the help of MATLAB programming:

$$B = A \cdot B = (0.148, 0.258, 0.372, 0.2) \quad (10)$$

The new approach to education was evaluated as:

$$B' = A \cdot R' = (0.1386, 0.2924, 0.403, 0.166) \quad (11)$$

3. Analysis of the current situation of family education guidance

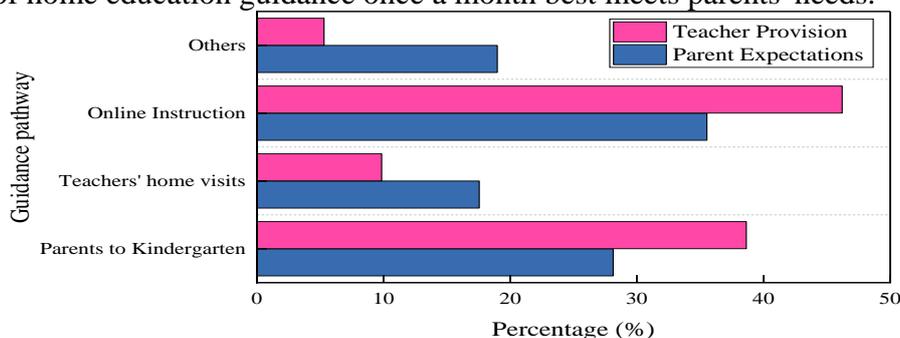
In the study exploring the construction of the family child education guidance service system under the perspective of home-school-society synergy, the program involves cognition, frustration education, interpersonal communication and conduct, safety, and health. A comparison of the mean values of the frequency of guidance for content related to early childhood development is shown in Table 1. The frequency of cognitive instruction was 99.15, which means that instruction emphasizing cognitive aspects is very frequent in the education of children at home. The frequency of frustration education was 95, and the frequency of instruction in interpersonal and character was 96.13, indicating that character and interpersonal interactions are emphasized in the education of children in the family. Safety and health were 98.68 and 93.57 respectively, indicating that safety and health are highly emphasized aspects in the education of children in the family.

Table 1: Comparison of Mean Frequency of Content Instruction Related to Early Childhood Development

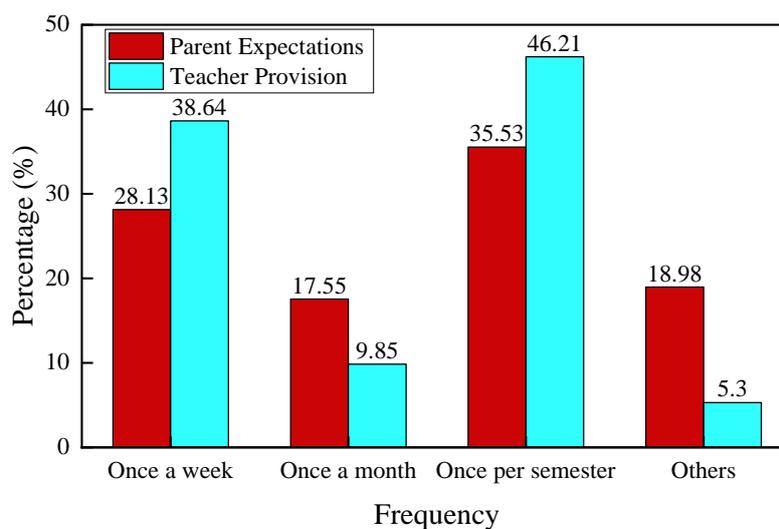
Mentoring Program	Frequency of instruction
Cognitive	99.15
Frustration Education	95
Interpersonal Communication and Behavior	96.13
Safety	98.68
Health	93.57

The supply and demand of home education guidance service pathways and frequency were analyzed as shown in Figure 1. As can be seen in Figure 1(a), for parents receiving guidance at kindergartens, the guidance pathway expected by parents is 28.13%, and the guidance pathway provided by teachers is 38.64%. For online guidance, the guidance pathway expected by parents was 35.35% and the guidance pathway provided by teachers was 46.21%, indicating that online guidance had the highest percentage of both parents' expectations and teachers' offerings. There are 18.98% of parents choosing other programs, while the rate of teachers choosing other programs is smaller, indicating that the current forms and pathways of guidance services adopted by teachers are more fixed, but cannot meet the expectations of some parents, and diversified forms and pathways of family education guidance need to be explored.

From Figure 1(b), it can be seen that the frequency distribution of teachers' arrangements for family education guidance is relatively even, but the frequency of family education guidance service most expected by nearly half of the parents is once a month, accounting for 48.48%. Finally, the frequency of home education guidance once a month best meets parents' needs.



(a) Family education guidance pathways



(b) Frequency of home education guidance

Figure 1: State of supply and demand for home education guidance

4. Conclusion

In the construction of the family children's education guidance service system of home-school-society synergy, the convenience and applicability of online guidance need to be fully considered in order to meet the actual needs of parents. The results of the study show that under the perspective of home-school-society collaboration, online guidance accounts for the highest proportion of the construction of family children's education guidance service system, reaching 35.35%. This emphasizes that the rapid development of technology in modern society has made online guidance a more preferred guidance path for parents. Meanwhile, the percentage of parents' desired guidance paths is 35.35%, indicating that parents are more willing to choose guidance methods that meet their expectations and needs. In addition, the percentage of guidance provided by teachers is 46.21%, which shows that teachers play an important role in family children's education and the guidance they provide has considerable influence.

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