Quality Assessment and Enhancement Strategies for Learning Environments in Top Classes of Kindergarten— A Reflection Based on the Perspective of School Readiness

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Abstract: School readiness is a key predictor of young children's future academic achievement and school adjustment, and a high-quality learning environment is essential for improving young children's school readiness. Ensuring that young children are well prepared for school is a strong guarantee for ensuring their equal development and promoting educational equity. The study assesses the quality of learning environments employing the ECERS-R assessment tool in a sample of four kindergarten classes in X kindergarten in Yinchuan, China. The study finds that the quality of the learning environment in the sample kindergarten classes is low in general, and some of the dimensions fail to reach the minimum standards; the level of Personal Care Routines has a clear advantage, but there are some deficiencies in the ability of cooperative co-education, the utilization of opportunities for early childhood education, and the environment for language use and communication. In order to face the current problems, family-kindergarten cooperation should be strengthened and the development of school readiness should be focused on; then the individual needs of young children should be paid attention to and the improvement of self-management ability should be encouraged; and a high-quality language environment should be created to promote the development of young children's language level.

1. Introduction

School readiness refers to a variety of key characteristics and essential conditions that young children need to possess before they can benefit from the formal schooling they are about to receive[1]. Preparing children for school is important for children's adjustment to school, for improving children's academic performance, and for narrowing the gap between different strata of children's development[2]. International research focusing on school readiness emerged in the United States in the 1990s, such as the federal government's enactment *Goals 2000: Educate*

America Act, which explicitly stated that by the year 2000, all U.S. children would be ready for school, and then continued to increase financial investment in children's school readiness. In 2011, the federal government established the *Race to The Top-Early Learning Challenge* (RTT-ELC), which required funded states to implement early childhood readiness assessments, and has led to an increase in state early childhood readiness assessments. As a result, early childhood school readiness policies have been established and gradually improved in each state. Meanwhile, since 2000, Germany, New Zealand, Canada and other countries have begun to focus on their own school readiness goals and education reform policies. In recent years, China's government has also gradually paid attention to early childhood school readiness. In 2019, the theme of China's preschool education publicity month was "scientific school readiness". In 2021, the Ministry of Education issued the *Guiding Opinions on Vigorously Promoting the Scientific Bridging of Kindergarten and Primary School* and the corresponding *Guidance Points for Kindergarten School Readiness Education*, which provided a response strategy for school readiness.

The quality of the learning environment, as an important factor influencing school readiness, has far-reaching implications for young children's development. After the research on children's school readiness has entered an ecological trend, preschool environments promote school readiness for young children in terms of developmental needs in every area [3]. Research by the National Education Goals Panel (NEGP) also points to the importance of families, schools, and communities providing infants, toddlers, and preschoolers with appropriate environments and experiences that can support physical, social, emotional, verbal, and cognitive levels of development in order to promote school readiness[4]. At the same time, the quality of child care facilities is an important factor in the school readiness of young children[5]. There is a high correlation between the quality of the educational environment and school readiness of young children, and the physical environment has a significant effect on the scientific aspects of school readiness of young children[6]. In particular, young children who were educated in high-quality child care institutions score higher on standardized measures of school readiness [7]. In high-quality learning environments, young children have better levels of development in areas such as language, vocabulary, and math[8]. Differences in learning environments are one of the most important factors influencing the gap in language proficiency and math proficiency of young children entering school[9][10]. Based on this, the study aims to explore the quality of learning environments in top classes of kindergartens and propose effective ways to improve the quality of environments by taking school readiness as an entry point, which is supposed to provide valuable references for the practice of school readiness education for young children.

2. Research design and methodology

2.1 Research objects

This study employs purposive sampling to select the quality of the learning environment in the four top classes of Kindergarten X in Yinchuan as the object. Interviews were conducted with the director and the main teacher of each class to explore the level of development of the quality of the learning environment in top classes.

2.2 Research ideas

The three researchers in this study used non-participatory structured observation, combined with interviews to supplement and cross-check what was observed. In order to ensure the objectivity and authenticity of the data, the 3 researchers were strictly trained to ensure the consistency of the scoring, and issues involving subjective factors were scored individually according to the indicators,

and then discussed centrally and collegially on a case-by-case basis to finalize the scores.

2.3 Research tools

The Early Childhood Environmental Rating Scale—Revised Version (ECERS-R), which was used in this study, was mainly developed by Frank Porter Graham of North Carolina State University and Thelma Harms of the Child Development Center of the United States. It includes seven dimensions: Space and Furnishings, Personal Care Routines, Language-Reasoning, Activities, Interactions, Program Structure, and Parents and Staff, with high sub-scale reliability and an overall reliability of 0.92. Through the revisions and extensive practical administration of the test, it has been developed to have better procedural elements and consequential elements, with good content structural validity and score consistency above 70%.

3. Research results and analysis

3.1 Overall description of the level of learning environment quality in top classes

Table 1: Evaluation results of learning environment quality in X kindergarten top class (N=4)

sub-scale	items of sub-scale	score	average score	sub-scale	items of sub-scale	score	average score
Space and Furnishings	Indoor space	6.00	4.22	Activities	Blocks	2.50	2.86
	Furniture for routine care, play and learning	4.50			Sand/water	3.25	
	Furnishings for relaxation and comfort	2.25			Dramatic play	2.00	
	Room arrangement for play	4.75			Nature/science	3.00	
	Space for privacy	1.50			Math/number	3.50	
	Child-related display	5.50			Use of TV, video, and/or computers	3.25	
	Space for gross motor play	5.00			Promoting acceptance of diversity	3.00	
	Gross motor equipment	4.25		Interaction	Supervision of gross motor activities	5.75	4.30
Personal Care Routines	Greeting/departing	4.25	5.04		General supervision of children (other than gross motor)	5.50	
	Meals/snacks	3.75			Discipline	2.00	
	Nap/rest	3.00			Staff-child interactions	2.00	
	Toileting/diapering	4.75			Interactions among children	6.25	
	Health practices	7.00		Program Structure	Schedule	4.50	3.33
	Safety practices	7.00			Free play	4.00	
Language-Reasoning	Books and pictures	2.50	3.25		Group time	1.50	
	Encouraging children to communicate	2.75		Parents and Staff	Provisions for parents	1.00	3.54
	Using language to develop reasoning skills	4.00			Provisions for personal needs of staff	2.50	
	Informal use of language	3.50			Provisions for professional needs of staff	3.75	
	Fine motor	4.00			Staff interaction and cooperation	5.75	
Activities	Art	2.75	2.86		Supervision and evaluation of staff	4.25	
	Music/movement	1.75			Opportunities for professional growth	4.00	
Total							3.79

This study used descriptive statistics to analyze the quality of the learning environment in top

classes in kindergarten, and assessed it in accordance with the ECERS-R division criteria. There are different items under each dimension, totaling 43 items, and since the sample classes did not enroll children with disabilities, Item 37: Support for Children with Disabilities in ECERS-R was rated as NA (not applicable), and then the total number of items involved in scoring was 42. The specific scores are shown in Table 1.

According to the data in Table 1, it can be seen that the overall item mean of the quality of the learning environment in top classes of Kindergarten X is 3.79 points, with a standard deviation of 2.69, and according to the level hierarchy delineated by the scale, 3 points is the minimum standard, 5 points is the good standard, and 7 points is the highest level of the excellent standard. Accordingly, it can be seen that the quality of the learning environment of the top classes is in the range of the lowest standard level. In terms of the scores between classes, the extreme value of the scores between classes is 7, which is a small difference, and the overall level of development between classes is more balanced.

3.2 Statistics on the different dimensions of the quality level of the learning environment in top classes

In order to further explore the quality level of the learning environment of the top classes in a systematic and in-depth manner, it will be analyzed in terms of seven evaluation dimensions. As can be seen from Table 1, the Personal Care Routines dimension scores the highest, which is at the excellent level; the Interaction dimension and the Space and Furnishings dimension follow, which are at the good level; and then the Parents and Staff dimension, the Program Structure dimension, and the Language-Reasoning dimension, are at the lower level. The lowest score is for the Activities dimension, whose corresponding level tier does not meet the minimum standard.

Specifically, in terms of the seven different dimensions of the evaluation of the quality of the learning environment in top classes, the Space and Furnishings dimension reaches a good level overall, but the scores are not balanced between the items; and the Personal Care Routines dimension as a whole reaches the level of the minimum standard and above. The differences between classes are minimal, with all classes achieving relatively strict uniform standards for the daily routines; the Language-Reasoning dimension is at the minimum standard for the range of developmental levels, with more room for improvement in using language to develop reasoning skills; and the Activities dimension does not reach the minimum standard. The number and duration of activities, the provision of activity materials, the variety of activities, and the development of children's individuality and artistry are insufficient in all classes; the developmental level of the Interaction dimension is above the minimum standard. The overall level of development of the Interaction dimension is high, but there is uneven development among the evaluation indicators. The level of development of the Program Structure dimension is at the minimum standard. Most of the activities in top classes are in the form of group activities, with fewer opportunities for children to engage in independent activities and make their own choices. The Parents and Staff dimension is at the lowest level of development. Items like Provisions for professional needs of staff and Supervision and evaluation of staff are generally up to the par, but there are large gaps between Provisions for parents and Provisions for personal needs of staff as well as other items.

4. Research conclusion and discussion

Based on the general and dimensional analysis, the problems and reasons of the quality of the learning environment in the kindergarten class are specifically analyzed.

4.1 High level of daily care for young children

The survey shows that the sample kindergarten class has reached a good and above developmental level in items such as Health practices, Safety practices, Interactions among children, and Supervision of gross motor activities. This indicates that the kindergarten class has a good level of development in the dimension of daily care for children, especially in the dimension of Health practices and Safety practices with a high degree of concern. The reason for this is that the kindergarten pays attention to the development of childcare work, and follows the standard procedure of daily health check, hygiene, disinfection, and food. Early childhood care, as a fundamental prerequisite for the overall healthy development of young children, lays the foundation for the development of social interaction and self-care ability[11]. Moreover, the kindergarten has strict requirements for childcare, and the strict hygiene and health system implemented in the kindergarten class lays a good foundation for children to participate in kindergarten educational activities.

4.2 Inchoate capacity of efficient cooperative co-education

The study finds that the kindergarten class scores low in the Provisions for parents, and its development level is far from meeting the basic requirements of the development level of the learning environment, which indicates that it still has much room for improvement in the level of cooperation and co-education between kindergarten and families, their cooperation is not enough and has not been able to reach a high degree of agreement on children's school readiness to realize synergistic development. The reasons for the above problems are: on the one hand, there is a single form of family-kindergarten co-education, and parents do not have an in-depth understanding of kindergarten's educational activities. The communication between staff and parents mainly consists of answering parents' confusions and assigning tasks, which makes the form of co-education dominated by parents cooperating with staff, forming a unilateral arrangement and blind obedience of parents rather than a two-way cooperation between parents and staff. At the same time, during the special period, affected by the epidemic of new coronary pneumonia, parents hardly have the opportunity to know the arrangement of kindergarten activities, and seldom participate in the activities of children. On the other hand, the kindergarten undertakes most of the work in the co-education, and parents have fewer chances to participate and are not involved, so the quality of family-kindergarten co-education cannot be effectively improved.

4.3 Low utilization rate of early childhood education opportunities

The study shows that the scores in the items of Space for privacy, Group time, and Furnishings for relaxation and comfort do not meet the minimum standards, probably due to the fact that the staff neglect the above items or pay too much attention to the group activities, ignoring the individual needs of the children, which results in the children adopting negative attitudes and being forced to be integrated into the group activities, and the time for learning and educational opportunities are wasted. The causes of the problems stem from the fact that, for one thing, kindergarten classroom management concepts emphasize the organization of collective activities, in which children are assembled as a whole most of the time during the day, and in addition to participating in activities and games collectively, they also need to go to the toilet, drink water, change clothes, etc. collectively. Such a uniform arrangement makes transitions extremely long and stereotypical, and activity and play-time is bumped off, wasting the time of some children who do not have relevant needs. For another thing, the way of responding to individual needs is inappropriate, and children's individual needs are mostly recognized as inconsistent with those of

the group. It is inevitable that some children in the classroom have individualized needs, for example, some children want to have a private space to be alone, have no need for a nap, and are not interested in cartoons. However, the way staff choose to deal with this is mostly to force the children to reintegrate into the group, to rest with their eyes closed if they can't sleep at noon, or to sit quietly in their seats if they don't want to watch cartoons rather than rearranging activities for them.

4.4 Lack of language use and communication opportunities

The scores of the four items of Music/movement, Dramatic play, Discipline and Staff-child interactions in the top classes are low. The scores of the items of Books and pictures, Encouraging children to communicate do not reach the minimum standard in the dimension of Language-Reasoning, indicating that the language development and communication environment provided for children in the top classes could not meet the developmental needs of the children. The main reason for this is that, first of all, the content of communication between staff and children is relatively simple and mostly in the form of collective communication, and in activities and games, staff mostly ask questions in a closed format with fixed standard answers. Staff-child interactions are not deep enough, and children's answers are mostly short. When children's answers are too long, the staff will stop children's answers to save time, and the staff will tell the answers herself. As a result, children's learning is not deep enough and their thinking is not sufficient. Secondly, staff seldom create informal language use environments for children. Except for educational activities and outdoor play, children have no opportunity to communicate freely. Finally, the classroom library is managed in a stereotypical way. Staff hardly allow children to access books freely, and in most cases, children need to access books in groups or small groups with the permission of the staff, and the time for accessing books is also restricted. As a result, books are left unread for much longer than they are used, and the classroom books are not fully utilized.

5. Educational suggestions for improving the quality of kindergarten learning environments

Based on the above-mentioned analysis, it is hoped that by improving the learning environment level of kindergarten classes, the kindergarten school readiness education quality can be promoted.

5.1 Strengthening family-kindergarten cooperation, and gathering educational synergy in school readiness

Family-kindergarten cooperation is an important part of kindergarten school readiness education. The educational synergy formed by family and kindergarten will vigorously promote the quality of the kindergarten classroom learning environment, and at the same time is of great significance to the improvement of the quality of kindergarten school readiness education. In early childhood development, the influence of the family environment on children far exceeds that of the kindergarten environment. And the NEGP's ecological model of school readiness takes family readiness as an important part of school readiness[12]. It has also been shown that the readiness of the home environment is a direct factor in the level of school readiness of individual young children[13]. And currently there are problems such as parents' insufficient understanding of kindergarten education and a single form of co-education. Based on this, staff should actively communicate with parents to understand their needs for young children's school readiness. First, teachers can communicate with parents to understand the level of each child's family readiness, and clear different children in school readiness of the ability to develop strengths and weaknesses, and then do the targeted improvement in the development of school readiness education. Secondly,

kindergartens should provide parents with a timely stage plan for kindergarten school readiness education, annotate the plan to help parents understand the educational value of different educational activities, answer parents' confusions about school readiness education for young children, and put forward alternative school readiness suggestions for different parents, so as to ensure the scientific and synergistic relationship between family education and kindergarten education, and to form a good synergy of school readiness education.

5.2 Emphasizing the individual needs of young children and developing their self-management skills

The development of self-management skills lays a solid foundation for the improvement of children's school readiness and is crucial to the development of children's future social adaptability. When the NEGP constructs the framework indicators of children's school readiness at the individual level, it regards the development of children's self-concept and self-awareness as an important indicator of children's school readiness[14]. In this study, teachers in kindergarten classes pay less attention to children's individual needs, and in most cases, they regard children's individual needs as a lack of individual ability, and generalize them with children's inability to integrate into group activities. Staff should pay more attention to children's individual needs, grasp key events and use them as educational opportunities to guide children to develop a strong sense of autonomy and self-management. Therefore, staff should adopt diversified guidance methods when facing children's individual needs. Firstly, when children put forward some individual needs that do not interfere with group activities, staff can take this as an opportunity to develop children's self-management ability, and hand over the autonomy of activity arrangement to children, allowing them to arrange their own personal activities during the time without interfering with group activities, and teachers can give them guidance and assistance accordingly. Secondly, when children's individual needs interfere with the collective order, teachers should also help children realize the necessity of collective activities in some parts of the day through guidance, and enhance children's collective concept and sense of order.

5.3 Creating high-quality language environments to promote children's language development

Language readiness for school is crucial for predicting children's future academic performance, and children's language development level directly affects the ease or difficulty of acquiring knowledge after school. Studies have shown that the level of language readiness for school entry has a significant correlation with the quality of children's language learning after school entry[15]. A lower level of language development can also limit the development of young children's thinking ability[16]. The developmental level of the sample kindergarten class is still deficient in the areas of Books and pictures, Encouraging children to communicate, and Staff-child interactions. Based on this, creating a better quality language environment as a way to promote the development of young children's language level can help to improve their future academic performance and better adapt to the schooling environment. First of all, to enrich children's vocabulary and language bank by increasing the utilization of books. Staff should allow children to select a wider variety of books during the open hours of the library area, without limiting the time they can access the books. If the children show greater interest in the books they choose, staff should allow them to finish the books or borrow them, so that the children can really have the autonomy of reading. Secondly, enrich the content of language communication and change the way of language communication. Staff should change the way of interaction between staff and children, which is mainly aimed at managing children, and try to communicate with children individually as the main way of interaction and

reduce collective communication. In the choice of communication content, staff should conduct more information exchange and daily conversations with children, focus on emotional communication with children, and use as many open-ended and continuous questions as possible to promote children's in-depth thinking and verbal expression. Finally, kindergartens should support teachers to create more informal language application environments for children, give children the right to communicate in more parts of their daily life, and encourage children to communicate with their peers.

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