

Exploring the Art Rehabilitation Model for Children with Autism Spectrum Disorder from the Perspective of Holistic Development

Xinyu Xu

School of Social Development and Public Policy, Beijing Normal University, Beijing, P.R.China

Abstract: The number of cases identified with autism spectrum disorder (ASD) is showing a rapid upward trend. While ASD may accompany sufferers for a lifetime, it does not mean that they cannot live a normal life, let alone that they have lost the possibility of holistic development. A social organization named Golden Wings that, based on the idea of holistic development, adopts a specific approach to support the development of a group of children for a long period of time. At this point in time, these children identified with ASD have shown their wonderful lives. This is a 13-year exploration, and it is still ongoing. By tracing and exploring their growth histories, the study aims to identify key elements supporting their realization of personal traits and attempt to establish a theoretical path for supporting systems needed for the development of autistic children. This study has randomly selected 10 members and their parents from the painting classes at Golden Wings, a rehabilitation center for disabled children

1. Overview

The number of cases identified with autism spectrum disorder (ASD) is showing a rapid upward trend. On March 23, 2023, the Centers for Disease Control and Prevention (CDC) released the latest autism prevalence rate in the United States, which stood at 1:36. This means that one in 36 8-year-old children (the data released in 2023 surveyed children born in 2012, with statistics commencing in 2020) was identified with ASD. This figure marks a surge of 22% from the prevalence rate of 1:44 released in 2021[1]. Although no authoritative data is currently available on the autism prevalence rate in China, it is an undeniable fact that the number of people identified with ASD is increasing each day. Obviously, theoretical guidance is urgently needed for the various practices for this group of people.

From a medical perspective, autism is a neurodevelopmental disorder that occurs in early childhood development. However, the pathogenesis of autism remains unclear to the present day[2]. Currently, it is widely believed that autism is a multifactorial disease caused by genetic and environmental factors[3][4][5], and no specific therapeutic intervention model has been found to be fully applicable to all children with ASD[6]. This implies that there is currently no cure to fundamentally eradicate autism in the medical field.

So the following problem arises: while ASD may accompany sufferers for a lifetime, it does not mean that they cannot live a normal life, let alone that they have lost the possibility of holistic development. Consequently, what is the highest level of development that individuals with ASD can socially achieve? what can we help them

realize their potential in life? Answers to these questions will determine the direction and outcome of all our work.

On the surface, these questions may involve a conceptual tug of war between ideas. As a matter of fact, however, these questions form a proposition that requires empirical evidence to provide an answer.

Such evidence must come from a social organization that, based on the idea of holistic development, adopts a specific approach to support the development of a group of children for a long period of time. At this point in time, these children identified with ASD have shown their wonderful lives. This is a 13-year exploration, and it is still ongoing.

Adopting a case study approach, this study has randomly selected 10 members and their parents from the painting classes at Golden Wings, a rehabilitation center for disabled children in China, for in-depth interviews. By tracing and exploring their growth histories, the study aims to identify key elements supporting their realization of personal traits and attempt to establish a theoretical path for supporting systems needed for the development of autistic children.

Due to limited space, what are presented in this paper are the findings of the study and a brief analysis of the curing effects. The technical and more systematic theoretical findings of the study process will be discussed in a separate paper.

surexxy@126.com

2.Theoretical Basis

2.1.Debates over Mainstream Intervention Methods

Currently, rehabilitation techniques used for children identified with ASD in China mainly include techniques of behavioral therapy, physical therapy, speech therapy, occupational therapy, cognitive therapy, and art therapy. Among them, applied behavior analysis (ABA) is the most widely used operation. ABA was first proposed by Professor Lovaas of the University of California, Los Angeles (UCLA) and used for the early intervention treatment of ASD. It adopts the "ABC" model of stimulus-response-reinforcement to eliminate problematic behaviors and shape adaptive behaviors that conform to social requirements.[7]

The basic theory of this technique comes from Skinner's operant conditioning theory. The basic assumption of the theory is that, in a specific environmental context, behaviors that generate favorable outcomes through reinforcement will continue to occur in future environments, while behaviors that do not produce favorable outcomes will decrease or disappear over time. In other words, behaviors are determined through the process of outcome selection. The occurrence of behaviors is a product of a specific environmental context, and they also have a negative impact on the internal or external environment in which the behaviors occur.[8]

However, this theory itself is highly controversial, and discussions of it in the Western theoretical circles have continued to the very present day. The main critics of the theory include Chomsky, Rogers, Maslow, among others. The core argument of the critics is that Skinner's conclusions drawn from animal experiments cannot be used to explain human language, consciousness, and thinking.[9]Despite significant debates among the theoretical circles, thanks to its "observable" nature, this method has unstoppably found wide application in interventions for children with special needs.[10] In the practical domain, debates over the application of this technique have also intensified.

The purpose of this paper is not to sort out or clarify the points of debate in these theories and practices, but to examine from another perspective whether there is a possibility for children identified with ASD to obtain rehabilitation and development through other ways that can avoid the "side effects" of the above training modes. This can be seen as the application of the humanistic theory on holistic development in social support practices for individuals identified with ASD.

2.2.Humanistic Perspective on Holistic Development

A person identified with ASD is first and foremost a complete person. Support for them must firstly conform to the laws of human physical and mental development, or special support must be based on general support. Humanistic psychologists believe that human growth stems from the need of individuals for self-actualization.

In Maslow's view, this is a desire for self-actualization and completion, which is a tendency to realize one's potential."[11]It is precisely because humans have the need for self-actualization that the potential of organisms can be realized, maintained, and enhanced. Children with ASD also have developmental needs and generate various motivations from them, which in turn lead to various behaviors. To offer support to them, it is necessary to deeply study their hierarchies of needs, understand these motivations, and provide support in the right way, so that they can also enter the track of self-realization.

Although humanistic theory is already a well-established system, its application in the education and development of children with special needs is still very limited. Compared to behaviorism which has been directly applied as an ABA-based intervention technique, no clear and actionable technique has provided so far for the application of the humanistic perspective on holistic development in the development of disabled children. Therefore, it is more of an idea than a theory.

2.3. Art Therapy

Art rehabilitation originated from art therapy. It mainly provides art materials, activity experiences, and so on as means of treatment. In 1997, the American Art Therapy Association defined art therapy as a professional service of art therapists to explore personal emotions, abilities, personalities, interests, inner conflicts, and reflections through the use of artistic media, creative artistic activities, and the reactions of the parties to the created artwork."[12]In other words, art therapy takes the theory of mind and the development of the parties themselves as the basis for practice. In various evaluation and treatment models in the cognitive, educational, and interpersonal relationship domains, it regulates emotions, promotes the development of self-awareness and social skills, controls individual behavior, helps solve problems, reduces personal anxiety, and enhances the self-esteem of individuals.

2.4. Modern Rehabilitation Medical Theory and Comprehensive Rehabilitation Thought for Special Children

Modern rehabilitation medicine believes that researchers should not only study the pathological changes and treatment techniques of organs and systems from a biological perspective, but also strive to restore and improve the local and overall functions of patients, so as to lay a good foundation for more patients to return to society.[13]Therefore, the objects of modern rehabilitation medicine are no longer divided by the injured sites but by the types of functional impairment, including all physical and psychological disabilities or impairments.

As the implementation form of modern rehabilitation medical theory, the World Health Organization (WHO) proposed in 2001 a new theoretical framework and classification system -- International Classification of Functioning, Disability and Health (ICF), for describing health and its related conditions in 2001. ICF provides a

new theory and application model for the classification of functioning, disability, and health, which integrates biological, psychological, social, and environmental factors. Its ultimate objective is to establish a unified and standardized terminology system to provide a reference theoretical framework for the classification of health and rehabilitation outcomes. It is based on the functional changes and abnormalities that occur in the health status at physical, individual, and social levels, thus forming a modern comprehensive intervention model.

Although it is only a general framework for action, its emergence has no doubt provided a reasonable space for actors who follow the idea. In this space, various actors engage in different forms of autonomous practice, and the research object of this paper is precisely a form of exploration within this framework.

3. Research Method and Object

This study adopts a case study approach, which is a qualitative research method. The methods of data collection include one-on-one interviews and classroom observations.

In this paper, the Chaoyang Golden Wings Art Rehabilitation Center is selected for case study. The reasons for its selection are as follows: 1. it has undertaken a 13-years exploration of the idea of holistic development for children with autism. The center has high research value because currently there are few institutions in China that have the content and duration of such practice; 2. the number of students served by the center is around 200 throughout the year, which provides a good foundation for selecting research objects and can avoid the problem of too small sample sizes; 3. all students served by the center have a certain length of rehabilitation. All the currently interviewed students have received rehabilitation service for over 3 years, with an average length of 5-6 years. Such service continuity can also be used as a strong basis for setting the independent variables; and 4. the researcher has been introduced to the center as an evaluation expert and has established a good relationship of trust with the head of the center. The center is willing to help with making contact with interviewees and open up all its information, thus providing great convenience for the study.

The researcher conducted in-depth interviews with three subjects, including the head of the center, and teachers, and then made random observations on the classroom performance and teacher-student interaction of 10 students in the painting classes, and undertook one-to-one interviews with five parents as shown in table 1

Table 1: Interviewees list

Type	Object	Duration (minutes)
Interview	Mr. Zhang, who was in overall charge at Golden Wings.	Approximately 120 (in three parts)
	MS Zhang, piano class teacher	40
	MS Zhang, painting class teacher	30
	Mother of student	30

	Ji **	
	Mother of student Zhang **	30
	Mother of student Liu**	45
	Mother of student Kang**	40
	Mother of student Dong**	40
Classroom observation	Ordinary painting class (5 persons)	90
	Little master painter class (4 persons)	120
	One-to-one cucurbit flute class (1 person)	20

4. Research Findings

This study does not attempt to construct a theory-based framework and fill in facts, but rather conducts fact-based induction and deduction based on the facts. It adopts a phenomenological analysis approach that uses personal and subjective experiences as the basis for acquiring abstract knowledge.

The contents of the following part come from parent interviews, which are qualitative descriptions. This is the first step of research, which is to collect information from the effect side. On this basis, questionnaires will be designed in the later stage to confirm the effects on a larger scale.

Through in-depth interviews with parents and teachers, it is found that students generally had significant changes in the following aspects:

4.1. Improvement in emotional stability and level of pleasure

In previous studies, the emotions of children with autism were studied as an ability[14], but there seems to be insufficient attention paid to the importance and influencing factors of the emotional state of autistic children. Direct experience shows that children with autism are highly sensitive to environmental stress. As long as there is a stress factor in the environment, children with autism will go through various stress reactions, the most prominent of which is loss of emotional control. And once their emotions get out of control, it will bring huge challenges to the ongoing tasks. This is a thorny issue that troubles many parents of children with autism and rehabilitation therapists. In the words of one parent, "Emotions are very important. If my kid has a good mood, he can do things well; if he has a bad mood, he cannot do anything."

From the parent interviews and classroom observations, all the respondents said that after participating in course activities at Golden Wings for a period of time, their emotional state was significantly improved: "My kid is much happier", "there are fewer and fewer instances of emotional outburst", and "he likes to come to class here and is happy every time he goes to class".

There is a student named Ke Xin, who is in her twenties. She signed for vocal and dance classes. In fact, she did not sing or dance at all. She just wanted to feel the atmosphere and be happy with others. When others sang and danced, she was applauding on the sideline. I asked her mother why she signed up for so many classes while she could neither sing or dance, her mother replied that as long as she was in class during the day, she would have a very good mood when she went home and did not cause trouble to her parents at night, constantly showing good behavior. If she did not come for class on any day, she would start to mess around with her parents at night, and show all sorts of poor mood. So even if she does not sing or dance, it is still worthwhile to come here as long as she is happy.

4.2. Reduced stereotyped behavior

Repetitive stereotyped behavior is one of the two core symptoms of ASD. It refers to high-frequency, monotonous behaviors that are repeated or craved in an unchanging manner in the environment.[15]When looking at birthday videos of 1-year-old children, Osterling et al[16] found that children eventually diagnosed with ASD exhibited more repetitive stereotyped behaviors than normally developing children at the age of one. Watt et al[17]used a child behavior observation system to observe the behaviors of 50 children with ASD, 50 children with normal development, and 25 stunted children, and the results showed that despite some overlap in the repetitive stereotyped behaviors of these children, the frequency and duration of repetitive stereotyped behaviors in autistic children were higher and longer. Morgan et al[18]utilized a parent questionnaire to evaluate the repetitive stereotyped behaviors of children with ASD and reached the same conclusion with the above study. One study in China[19]found that repetitive stereotyped behaviors in children with ASD are not correlated with age, but their manifestations vary among different age groups.

The reduction in stereotyped behavior is a natural result at Golden Wings. In the interviews, the interviewed parents all mentioned this. According to one parent, her daughter always made gurgling sound when she was bored, but she did not do so during class or when she had something to do.

Another parent gave her observation and analysis: it is necessary to constantly observe the kid, discover his interests, and seize this opportunity to develop along his points of interest. Otherwise, he will go in the opposite direction in a certain aspect, and may develop some kind of stereotyped behavior. So once I discover his good behavior, I need to seize the opportunity to expand it, and encourage him. But if I find some bad behavior, I need to promptly stop it and prevent it from becoming a stereotyped behavior.

4.3. Increased self-confidence and willingness of self-expression

Children with autism often face serious obstacles in the development of active language abilities. Apart from physiological and language comprehension barriers, lack

of the motivation for expression is also one of its root causes. By finding the interests of children with autism and developing their motivation for active expression can effectively help them perceive and grasp learning content overall, guide them to speak natural language in everyday life, and engage in the most common behaviors that conform to social norms and are acceptable to ordinary people, thereby improving their language expression ability.

From the classroom observations, the author found that most of the children would proactively greet the author, curiously inquire about the author's identity and what the author wanted to do in the class, and even take the initiative to ask to add the author's WeChat account. Some even showed the author their recent travel photos and painting works. Overall, the classroom atmosphere was relatively relaxed and enjoyable, and the children were in a very relaxed and free state. Mrs. Zhang, the person in charge of Golden Wings, told the author that he often took children to various activities and occasions to meet all kinds of people. Consequently, these children had good adaptability in unfamiliar environments, were free of stage fright, and could confidently express themselves. This was also found in the parent interviews.

In the past, I did not see much special meaning in taking my kid out. But, I did know its meaning this time. Once I went for an exchange visit to a special school in Baoding, and the children from both schools mingled together to attend class. When the teacher asked questions, it was our children who raised hands first. For example, my kid Ruirui (pseudonym) might not always like to answer questions at school, but that day she was very enthusiastic. The children in Baoding were very shy when they saw strangers and did not raise their hands to answer questions. We asked them about their name and age, but they never looked up. Even the few students who answered spoke in low voices and only told their names, but nothing more. The children from Golden Wings were very active. Later on, we chatted with their teachers and were told that they rarely went out. They even rarely went to parks or visit parks and museums.

4.4. Situational behavior management

Showing what kind of behavior in what kind of scenarios is an ability that autism sufferers find difficult to overcome. It is also a manifestation of social barriers. At Golden Wings, students are provided with rich social scenarios. Parents generally reported enhanced confidence in their children, and a marked increase in the frequency of exhibiting expected behaviors in situations.

Once, I accompanied my child to an art exhibition in Russia. While taking a small train around Lake Baikal, the entrance step was particularly steep, and my child enthusiastically helped the teacher. Then, the teacher said, "Oh, thank you. You are so warm and really a little warm-hearted man." Such encouraging words of praise gave my kid a great sense of achievement. Since then, he has been particularly enthusiastic about helping others get on and off cars, escalators, and open and close doors! He is very willing to help others. Since then, the kid seems to have

grown up and can take care of his parents. For example, when walking on the roadside, he would put me in a safe area on the inside of the road, and he would walk outside.

Another parent also described a similar scenario. During a social event, when her child saw the teacher setting up chairs, he took the initiative to help, which had never happened before.

4.5. Other effects

ASD is an innate developmental behavioral disorder with social communication barriers as its core problem. The cognitive impairment of children with ASD is mainly the consequence of "educational environment self-deprivation", which is a secondary derivative from social disorders.[20] This means that as long as the manifestations of the core barriers can be significantly alleviated, cognitive problems as secondary obstacles can also be prevented in a timely manner.

Based on the above understanding, the author has only presented the changes in several core obstacle indicators closely related to autism in children, and deduced that these changes can bring other benefits such as expanded interests, improved cognitive abilities, and enhanced physical functions, the list of which is far from exhaustive.

In summary, from the perspective of holistic development, using interest cultivation to offer support can also achieve improvement in these rehabilitation indicators without any "side effects". Next, a preliminary theoretical analysis is made of the working principles involved.

5.Principles of Effect and Analysis

5.1. Human development is a comprehensive and organic linkage process, rather than a mechanical superposition of multiple dimensions.

In the above research findings, the author extracted several effect indicators that are highly correlated with the autism disorder itself as the basis for observation and measurement. However, actions at Golden Wings did not undertake targeted interventions on these indicators, and it can even be said that there is no correspondence between them at all. Golden Wings provides relaxed and stress-free art classrooms, allowing children to complete their works in a joyful atmosphere and giving appreciation and recognition for the works. But why have they objectively achieved the multiple rehabilitation effects described above? It shows that human development is a comprehensive and organic linkage process, which cannot be achieved by adding up the effects of individual special trainings on various dimensions.

There are inevitably special challenges for distinguishing the dimensions of human development, because no matter what classification is made, it cannot cover all aspects. The greater harm of this classification method is that in practice, it is prone to fall into the "point-to-point" intervention mode. In other words, when we break down human development into indicators on various dimensions and attempt to measure them, it will directly

lead to subsequent interventions becoming a "point-to-point" approach, targeting one dimension, taking specific actions, and then observing changes in the value of that indicator. This logic originated from evidence-based medicine, but now it dominates in the field of social sciences and even human education.

The reason why this does not work in actions on humans is what Maslow explicitly stated at the preface of his book *Motivation and Personality*: "Our first proposition states that the individual is an integrated, organized whole. This theoretical statement is usually accepted piously enough by psychologists, who then often proceed calmly to ignore." The impact on humans is certainly a systematic process, and intervention at any point will produce a chain reaction. With current technological knowhow, these correlations and reactions are difficult to observe. Therefore, it is hard to say what effect an external behavior training will have. Even if a child exhibits the expected behavior, it is still difficult to show that he or she has truly internalized the behavior, and it is even more difficult to determine whether the behavior is consistent with motivations, whether it promotes integration or division.

5.2. Human development needs to be achieved through a series of meaningful events, in which the various functions are integrated.

After specifying that human development is an inseparable whole, the second implication from the case study of Golden Wings is the need to find meaningful events as carriers to support children's development. In his theory, Maslow also explained this principle: "Apparently the organism is most unified in its integration when it is successfully facing either a great joy or creative moment or else a major problem or a threat or emergency. But when the threat is overwhelming or when the organism is too weak or helpless to manage it, it tends to 30 Motivation and Personality disintegrate. On the whole when life is easy and successful, the organism can simultaneously do many things and turn in many directions." [21] For autistic children, it is usually difficult for the meaningful events mentioned here to reach the height of peak experience, but a positive state of attention grabbing alone can already achieve many effects.

One of the effects is reduced repetitive and stereotyped behaviors in autistic children through attention occupation. One of the typical characteristics of children with autism is narrow interest. If there is no thing that can attract their attention, they are extremely prone to repetitive and stereotyped behaviors. According to observations, repetitive stereotyped behavior often occurs when they feel bored, which is a way of self stimulation. So, letting them do something meaningful can at least play the role of grabbing their attention and thus reduce repetitive and stereotyped behaviors caused by boredom.

More importantly, when individuals can more deeply engage in events and truly form positive inner feelings, the integration of physical and mental functions will automatically occur. Taking piano lessons as an example, when children need to strengthen their fine motor skills but

their finger joints have high muscle tension and lack flexibility, the general practice at a rehabilitation institution is to have the children use chopsticks to pick up beans for training, but they often do not like this task and show rejection. However, in piano classes, they are very willing to play. By colliding with the keys, they naturally exercise the flexibility of their finger joints and can play their favorite music at the same time. As such, they enjoy this process very much.

This is just one of the most intuitive examples of integrating functions through meaningful events. More important integration occurs at a more internal level. One parent said when her child was unable to complete a task, she would choose to temporarily put it aside and instead provide support on things that the child was interested in. Soon after, the child could complete the task after getting back to it rather than stubbornly sticking to one thing. In this way, she found that her child could do more and more things, learn various skills better and better, and the whole person became very happy and outgoing. This is what she believes to be a state which a child should be in when they achieve maximum development.

Golden Wings provides such opportunities. The keywords here are meaningful events. Not everything can serve as such a carrier. In the view of the author, this carrier needs to meet the following conditions:

1. Openness, in that it does not pursue a standard or sole answer, while allowing for any possible outcome;

2. Fun, in that it aligns with children's interests and can attract their participation. Of course, children with ASD have narrow interest and find it difficult to develop interests, but as long as they are not resistant and willing to operate, it can be made a feasible choice. This also explains why art and sports activities are more suitable as carriers and resonate with the theory of game learning;

3. Presentability, which means that children's participation can ultimately form a perceptible result. Children can receive positive feedback. Of course, the best event here is one with genuine demand. For example, a customized painting in genuine demand can help children experience a sense of value.

4. The most important point is to have a stress-free environment, zero threshold, and zero task, fully respect the interest and natural flow of children, with no predetermined routes and established target requirements.

5.3. The support coordinate system for children with autism comes from the needs of social life, which means creating real experiential scenarios for them.

The common rehabilitation model at present is based on a norm of the developmental value of an ordinary person for determining which aspects of intervention a child needs. This implies that the goal of intervention is to make autistic children's score on certain aspects close to the threshold of ordinary people. Behind this is still the perspective of disease and the logic of the laboratory.

The WHO has already made changes to this. The core concept of ICF is that an individual's function in a specific field depends on the interaction between their health status

and background factors (environmental and personal factors). Such interaction is two-way, multidimensional, and dynamic. Changes in one component can promote or hinder other components, and functional limitations can be marked by levels. Therefore, this marks the entry of the International Classification of Diseases into a new function-oriented disease classification model that focuses on comprehensive health.[22]

According to the ICF framework, the support coordinate system for children with autism needs to be established in their real life and based on the needs of social life, rather than the absolute value of abilities. In the practices at Golden Wings, its implementation form is to continuously create integrated scenarios for children's normal life, social interaction, and social participation, and it is in these scenarios where support for children is achieved. Some of these supports are intangible, but profound. These include: acceptance, positive response, demonstration, etc.

Acceptance is not to treat autistic children and their parents differently. Unlike many other scenarios, there will be no different treatment here. Teachers treat children equally and with respect, neither being overly protective nor overly concerned. This makes both children and parents feel incredibly relaxed.

Here, seeing what children can do (rather than what they cannot do) and promptly making **positive response** is seen as a general guideline for teachers and staff. This coincides with the advantageous perspective in social work theory and has been fully applied at Golden Wings. The effect of doing so is also obvious, as children will perform more positively, and parents will be guided to pay attention to what their children can do, thereby changing their previous perspective on finding problems and looking for faults.

The **demonstrative role** is generally present in various situations, and teachers themselves can act as demonstrators to make positive actions that children can see. They can also promptly discover children's friendly behaviors, encourage and reinforce them in a timely manner, and make children more interested in this aspect and their actions more in line with situational needs.

6. Research Potential

This paper reports on the initial findings from the case study of Golden Wings. There are now still three questions to be answered: 1. are these effects obtained from interviews universally applicable? 2. how has Golden Wings achieved the effects and what operational strategies are in place technically to ensure the achievement of these effects? 3. can the above performance indicators cover all the effects? what are the theoretical implications?

Based on the initial findings, this study will also design questionnaires to verify the universality of the information obtained through qualitative interviews, and go on to make deeper technical analysis, establish a more direct causal relationship between actions and effects, and develop more profound and systematic theories.

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