

Child-Friendly Cities: What is Possible and What is Feasible?—A Study on the Path of Child-Friendly Transformation of Urban Public Space in Jinan City

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Abstract: *In order to reduce the cost of childcare and increase citizens' motivation to have children, the Resolution of the Standing Committee of Jinan People's Congress on Promoting the Construction of Child-Friendly Cities was adopted in August 2022, proposing the construction of child-friendly cities in the context of Jinan's reality. This paper explores the issue of how to accelerate the transformation of child-friendly public spaces in Jinan City. Based on the theory of child-friendly city and scene theory, the paper proposes countermeasures and suggestions for child-friendly transformation of public space in Jinan through the "1+2+3" model.*

Keywords: *Child Friendly Cities; Scene Theory; Child-friendly space; Quancheng IP*

1. Introduction

Child-friendly city building is a major goal of modern city building. "Building a child-friendly city is a practice of urban governance and a reflection of the concept of modern urban civilization." Children are the future of the country and the hope of the nation. China is a large population country and a large population of children. Building child-friendly cities, creating better conditions and environment for children's growth and development, and thus promoting child-friendliness as a common concept, action, responsibility and cause for the whole society, cultivating new people of the times who will take up the responsibility of national rejuvenation, is the responsibility and mission of governments at all levels and the whole society.

2. Presentation of the problem

In the context of China's current "double reduction", children are gradually freed from heavy school work and remedial classes and can have more time to participate in outdoor activities. Resolution", the creation of child-friendly spaces for growth needs more attention and consideration from the whole society.

The need for child-friendly spaces in today's urban development is becoming more and more prominent. According to the Accidental Injury Monitoring Network, there are many accidents involving children in public spaces in China, park safety is not up to standard, public facilities are not suitable for children, parents are difficult to feel at ease, and it also reduces children's enthusiasm for activities in public spaces, most children cannot grow up in a more child-friendly environment, which greatly discourages residents from raising children. Although Jinan has proposed the goal of building a child-friendly city, the construction of public space is still not perfect, and it is still difficult to effectively improve the existing problems.

In the context of the "double reduction" policy and the 14th Five-Year Plan of Jinan to build a child-friendly city, this study uses a combination of literature, questionnaires, and face-to-face interviews to understand the needs of school-age children and parents under the double reduction policy, and also to understand the degree of child-friendliness and use of public spaces, including parks and pocket parks, in Jinan, in the hope of building a child-friendly city.

In this paper, we examine the development of friendly cities by using the construction of public space for child-friendly as an indicator. The assessment of public space is based on the fact that, firstly, the construction of public space is important in satisfying citizens' leisure, improving urban ecological network, and building regional landscape space, and the improvement of public space is closely related

to the life of every citizen; secondly, the quality and culture of a city is directly related to the suitability of the disadvantaged groups (children); thirdly, in 1996, UNICEF and Third, in 1996, UNICEF and UN-Habitat officially proposed "child-friendly cities", suggesting that the fundamental needs of children should be incorporated into the planning of neighborhoods or cities, with space-friendliness being the initial requirement and one of the important indicators for building child-friendly cities.[1] Therefore, in this paper, we determine the degree of child-friendliness of urban public spaces in the process of urban child-friendly transformation.

3. The problems of child-friendly transformation of public space

This study focuses on the adaptation of public space to children, and investigates five dimensions: safety, resources, accessibility, fun, and humanity.

3.1 Safety: No safety devices are set, and parental supervision is difficult

In China, on average, nearly 200,000 children lose their lives due to accidental injuries every year, and the primary reason for the occurrence of accidental injuries is the lack of safety facilities. Children's self-protection ability is weak, so the safety of children's public space has become a basic demand of parents. Children's indoor play activities generally occur in community rooms, children's homes and other public places, which are generally supervised by specialized staff and have a high safety factor. But at the same time, it also imposes a certain economic burden on parents. In addition, most communities and parks in Jinan do not have the conditions to arrange for dedicated staff to work with children, and parental negligence combined with the absence of staff, resulting in child safety accidents occur from time to time. The variability of outdoor public spaces is even more complicated, as the openness and public nature of the space makes the movement of people in the children's activity space extremely large, and the natural factors in the outdoor space also threaten the safety of children's activities. Since most of the activity places are on both sides of the road, there is no special activity space for children, and it is difficult for parents to supervise them.

3.2 Resourcefulness: less applicable resources for children, uneven distribution of resources

Jinan City's large leisure places are mostly concentrated in the Lixia District, including Quancheng Square, Baotu, Black Tiger Spring, Furong Street, Bahuazhou, Daming Lake Park, etc. into a cluster of distribution, while the west of the city and other areas such as the Central District, Tianqiao District, etc. Cultural resources are less available to children are mostly cultural parks and fitness facilities on both sides of the street, the park inside the open space. These leisure resources are not specifically open to children, but to all citizens.

During our visit, we focused on observing the applicable leisure resources for children. In general, large places will be specifically for children to provide certain places and related services, such as the Shandong Provincial Museum to provide learning services, Baotu to provide the "spring study", Wulongtan to provide spring water play pool, etc., but the services provided are limited, the degree of enjoyment of children is low; small children's activities such as Wang Guanzhuang Cultural Park etc. will be equipped with some fitness equipment, but the most common children play slide, not to fall basic, children go to play, are often their own in the open space "to find their own fun", chase play, no specific open places to children.

3.3 Convenience: poor accessibility of space and low frequency of use by children

The accessibility of the external space of the urban complex is an important reflection of the convenience of the activity space. Space environment is designed, created and used by people, therefore, the layout, structure and environment creation of space should be based on the physiological, psychological, behavioral and cultural characteristics of people. The basic structure of today's families is mostly composed of two workers, and children are mostly raised by the elderly, whose ability to travel limits the scope of children's activities, while children themselves have their own activity limitations due to their psychology and body. Under the process of urbanization, children's playgrounds and large parks tend to be marginalized and suburbanized, while public resources for children in Jinan are mostly concentrated in the east, which is less popular among children, and children's activities are mainly in small areas, often showing a "15-minute living circle", with monotonous activities, single types of activities, and inaccessible places. The inaccessibility of places, coupled with the temptation of

electronic products, makes children more and more like watching TV and playing with cell phones, and lose interest in outdoor sports, and the myopia rate of children is increasing. Therefore, the convenience of children's activity space is an effective guarantee to meet children's basic needs and respect their interests, and is a practical manifestation of children's position.

3.4 Humanity: urban construction is less distinctive, and it is difficult to reflect the characteristics of Quancheng

The construction of child-friendly space needs to improve the integrity and systematization of space construction, and create a sense of atmosphere that is unique to the "scene". In Jinan, most of the public cultural and leisure resources exist in a fragmented manner, and the degree of association is not high, but only mechanical presentation, lacking a one-meter perspective, moreover, lacking fun, and not forming an overall cultural atmosphere. Urban characteristics refer to the individual characteristics of a city whose content and form are obviously different from those of other cities [2]. Jinan is a city of springs, and Jinan has historical and cultural heritage such as the 72 famous and ancient cultural districts of springs, but it fails to make use of this feature in the construction of child-friendly spaces." The phenomenon of "one city with a thousand faces" is widespread and the regional characteristics are seriously lost, so that people cannot find the cultural attributes that identify their own existence in the urban landscape [3].

3.5 Fun: Less consideration of fun factors and less consideration of children's perspectives

Urban environment construction needs to be strengthened in terms of "children first and children's perspective". Fun should be the hallmark of children's space that distinguishes it from other public spaces. When the space or place is full of playfulness and childishness, children's own interest and enthusiasm will be stimulated, which will lead to certain learning behaviors. Therefore, it is particularly important to introduce the "one-meter height view of space" in the construction of children's public spaces. If the layout and creation of space are designed from an adult's perspective, children will only feel that they have entered a space "carefully" created by adults and will not feel any fun and interest. They will not feel any interest and meaning.

Most of the public facilities are designed according to the needs of adults, without considering the psychological and behavioral needs of children, and have not yet reached a child-friendly level. The Shandong Provincial Museum is the most popular place for parents in Jinan to bring their children to learn and communicate. Many parents feedback that they bring their children to the museum because they want the atmosphere to influence their children, rather than to make them learn. Museums are more about displaying exhibits, and children have a poor sense of experience. Therefore, how to enhance the fun of children's activity space is also very worth considering.

4. Child-friendly public space transformation proposal: "1+2+3" model

4.1 Children first: child-friendly concept into the policy system

The construction of a child-friendly city should first include the goal of building a child-friendly city into the overall strategy of the city, and incorporate the principles of fairness and inclusiveness, love and care for children into the consensus of all construction departments. The child-friendly transformation is the focus of the work, and the specific process is as follows.

a) The establishment of a high-profile leadership group and work team. Establish a high-profile leading group for child-friendly city construction to enhance the ability of inter-departmental coordination and joint deliberation. At the same time, we will set up a special working group for child-friendly city construction, absorb the power of relevant experts and social organizations, set up a think tank for child-friendly city construction, gather the actual situation on the ground in the sector and theoretical support from experts, make construction planning according to local conditions and provide decision support for strengthening top-level design and policy research in Jinan.

b) Accelerate the development of a three-year action plan for child-friendly cities. Focus on three dimensions: policy-friendly, space-friendly, and service-friendly,[4] and select a number of special areas for early and pilot implementation, such as public facilities space renewal, community services, etc., and implement list-based management, project-based implementation, and rolling evaluation. The construction process can be promoted progressively according to "the first year with basic hardware in

place, the second year with distinctive local characteristics, and the third year with comprehensive quality improvement", so as to fully prepare for the creation of Jinan's "Spring City" child-friendly city ip.

c) Precise selection of local pilot pioneer areas. A number of street communities with relatively dense children, urgent talent needs and good livelihood foundation should be selected as pilot pilot areas for the construction of child-friendly cities in Jinan. The creation of child-friendly cities is linked to educational innovation, child care, science and technology research, and popularization of science, responding to the needs of parents for comprehensive development of children under the double reduction.

d) Organize the launch of the Jinan Children's Think Tank. We insist on "looking at the world from a meter's perspective" to understand what a "child-friendly city" looks like from a child's point of view. We will use children's ideas to build children's cities. The Education Bureau should take the lead in the construction of a children's think tank in Jinan and play its own role and advantages by actively calling on elementary school to collect students' suggestions on building a child-friendly city, and the schools should form proposals that incorporate the actual situation of children on campus and summarize them to the Education Bureau. The Education Bureau will then combine the proposals from the schools and submit them to the relevant government agencies.

4.2 Two transformation priorities: safety and convenience as the focus of space transformation

a) Improve the existing public space protection measures

In the process of survey, we found that 90% of the parents choose the children's activity space, safety is the first consideration, so when the children's activity space transformation pilot, we should make safety transformation intervention for public children's activity space.

One is to divide the children's activity area in the park, try to choose the location in the center of the community, there is no road and parking lot around to avoid traffic safety accidents in the area according to the age of the area, according to the age characteristics to design the activity space.

Second, the community should strengthen security work to ensure the safety of the overall community environment, while the community should be equipped with basic first aid workstations to minimize injuries to children when accidents occur.

Third, in the site of the "children's zone", should be surrounded by the construction of protective fences, the ground for child-friendly transformation, such as the addition of soft gum, the area is equipped with children's activities in line with the characteristics of children, to meet the needs of children playing at the same time to ensure safety.

At the same time, the "park children's area" should also provide convenience for parental supervision during the transformation. Improve the basic service facilities, dedicated to children's activities in the "children's area" need to build a perfect rest room, so that parents and children in bad weather conditions or play too long to have a comfortable space to rest; construction of a perfect public restrooms and so on.

b) Improve community play space facilities for children

The community is a place where children come into contact with every day. In visiting many communities and some streets in the city, we can find that the community is basically equipped with "a park + multiple fitness facilities", and a few communities are equipped with traditional children's play facilities such as slides and slides, but the fitness equipment is mostly for adults, and the park is limited in construction space. Children's activity space is almost non-existent. After the double reduction, children's leisure and recreation time is obviously increased, in order to let children break away from the computer, cell phones, the community space should be updated at the same time for children and parents needs, consider the convenience of children and parents to reach.

The focus is on building a "15-minute children's circle", following the "1+n" model. Each community should establish a children's activity center and add children's activity spaces in public spaces such as parks, libraries, museums, etc., and add children's book corners, children's sports fields, children's play areas, etc.

Enrich the variety and choice of play facilities and bring them back to nature. Add exercise playgrounds (ball games); places to stimulate children's creative thinking (sand pits, ground fountains);

facilities to enhance children's imaginative play (climbing, slides); interactive places (hide and seek), and provide seats for parents to rest, shade facilities, and safety facilities for the peripheral environment, etc.

4.3 Three indicators: determine the wholeness, interestingness and humanity as space transformation indicators

a) Wholeness: to enhance the wholeness and systemic nature of space construction

The overall design enhances the sense of linkage and creates a unique atmosphere of the "scene". In a random interview on the street, when we asked them about their impressions of several famous tourist attractions in Jinan, most of the children answered that they could have water fights at Wulongtan, and the museum could know many animals like butterflies, etc.

The transformation of Jinan's famous attractions and public cultural and leisure facilities, such as Jinan's many famous springs, Shandong Provincial Museum, Art Museum, etc., is child-friendly and involves the renewal of urban space. At the macro level, the city and district facilities are based on libraries, museums, youth palaces, etc., and the construction of art galleries, art museums, museums, and other special cultural facilities is enhanced by improving the surrounding facilities to enhance the "sense of scene", expanding the scale and improving the construction standards of facilities, and focusing on the needs of children's activities. At the micro level, children's understanding of the environment comes mostly from their rich sensory experience. We use diversified carriers to design various contexts at the scale of the entire public space to promote communication and co-education through educational and fun interactive devices, diverse display means, operable games, immersive sensory stimulation, and family-like parent-child activities. The modification and adjustment of the spatial environment, together with the addition of facilities, can enhance the needs of children's services.[5]

b) Interesting: Injecting interesting elements to increase children's attraction

Use creative colors and combine with humanistic environment to provide play space. When carrying out pilot renovation of child-friendly spaces, the concept that only facilities in playgrounds belong to children's activities should be changed, as children grow up, their needs are also changing. Children mostly focus on the fun of the scene, and libraries, museums, which sound resistant to children, how to become "child-friendly", so that children like, so that children like to come, first of all, the major public cultural and leisure venues should improve the services for children, according to their own characteristics to build their own places belong to "Scene characteristics", in addition to children's topics, should try to increase the children's fun interpretation services, children's guidance services, etc.; outside the collection of surrounding facilities, personalized design, such as exterior design, bulletin boards to explain the collection, so that children do not have to enter the real place, outside the museum can feel the quaint atmosphere.

c) Humanity: Creating child-friendly IPs in the city of springs

In order to avoid the construction of child-friendly space similarity, Jinan should make good use of the spring city brand name, many attractions can be "spring" as the characteristics of the construction of child-friendly city brand. Jinan's major springs can try to use their own "spring water story" by establishing their own unique brand activities, such as the five dragon pool "water war", Baotu can set up a "stamp punch card" "Spring water knowledge to explain" and other platform stories, so that "spring city dolls" from the environment to learn new knowledge, education and fun.

As a characteristic of Jinan's urban space "pocket park", is also one of the key transformation projects. The pocket parks were originally built according to the local characteristics, personalized scenes designed to integrate Jinan elements, but the use of pocket parks is not high, part of the children's play facilities damaged and become unrepaired, the "pocket parks" everywhere for spatial renewal, to build a "15-minute children's circle The "15-minute Children's Circle" is a convenient public activity space for children to fully enjoy, and also allows children to learn special knowledge and absorb local humanities knowledge in each "micro space".

For example, the Ruihe Pocket Park located on the east side of Baimashan South Road, featuring a tea house for personalized construction, exterior view making fascinating, adding more interesting facilities in the upgrading process, increasing the tea house culture explanation board, etc., so that academic knowledge can be seen everywhere in daily life; pocket parks can be found everywhere in the city, so that similar attractions and cultural and historical origins can be integrated, in addition to the

appearance design, its cultural connotation should also be basically the same. In addition to the design, the cultural connotation should be the same.

5. Conclusion

We conducted a sample survey and field interviews with school-age children (4-12 years old) in different communities and museums in Jinan, and distributed questionnaires to children and parents throughout the city to actively understand the current situation and the needs of children and parents after the promulgation and implementation of the "double reduction" policy, and to actively explore the current situation of child-friendly public spaces in Jinan. We also explored the current situation of child-friendly public spaces in Jinan, and collected citizens' opinions on building a child-friendly city. We examined five aspects: resourcefulness, convenience, fun, safety, and humanity, and found that there are a series of problems such as uneven isolation of resources and lack of consideration for children in the design of public spaces. Based on the current situation in Jinan, we proposed the policy orientation of "children first", "safety and convenience" as the focus of reform and the characteristics of each district in the pattern to create child-friendly space reform, so that children can obtain a healthy growth and comprehensive development of space, and help Jinan become a child-friendly city as soon as possible. Jinan will become a child-friendly city.

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