PUBLIC PRESCHOOL ARCHITECTURE IN HO CHI MINH CITY - ASSESSING THE CURRENT SITUATION TOWARDS THE DEVELOPMENT OF CHILDREN'S EMOTIONAL INTELLIGENCE

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Abstract - In preschool education, not only teaching methods but also the play-learning spaces play a crucial role in the holistic development of children. A good learning environment should not only focus on providing knowledge but also helps children develop emotional and social skills. Emotional Intelligence (EI) plays a key role in the development of these skills and needs to be integrated into the architectural design of preschools. Using the method of document analysis and actual survey, this paper focuses on analyzing the role of Emotional Intelligence in the design and construction of public preschools in Ho Chi Minh City. It also assesses the current status of existing architectural works and proposes design orientations aimed at optimizing play-learning spaces for children.

Key words - Emotional Intelligence; preschool children; preschool education; public preschool architecture; Ho Chi Minh City

1. Research question

In recent years, the development of preschool education has become one of the top priorities in Ho Chi Minh City, where the child population is growing rapidly along with the urbanization process. Preschool is not only a place that provides basic knowledge and skills but also an important environment that helps children form emotional and social values. In this context, emotional intelligence (EI) plays an extremely important role in the comprehensive cognitive, intellectual, physical, aesthetic and social-emotional development of children.

Considering the scope of research on the architecture of public preschools in the city, in Ho Chi Minh City today, the general situation still has many limitations in creating a learning and play environment that meets the needs of children's emotional intelligence development. Most preschool buildings have not been designed with careful consideration of the impact of physical space on children's emotions and behavior. Factors such as a lack of green space, natural light and unscientific layout of play-learning spaces can negatively affect the development of children's emotional intelligence.

Emotional intelligence helps children recognize, understand and manage personal emotions and social interactions. Therefore, school architecture needs to be designed to facilitate children's development of these important skills. Elements such as color, lighting, materials and spaces need to support children's mental and emotional development. Building a friendly and emotionally stimulating learning environment not only improves the quality of education but also creates conditions for the comprehensive development of children from the preschool stage.

In this article, we will focus on analyzing the role of emotional intelligence in preschool children from the perspective of the current state of architectural space of public preschools in Ho Chi Minh City, thereby orienting a number of solutions to improve architectural design to create an optimal play-learning and emotional development environment for children.

2. Concept of Emotional Intelligence and preschool education

2.1. Definition of Emotional Intelligence

Emotional intelligence is the ability to recognize, understand and manage one's own emotions as well as those of others. For children, emotional intelligence is one of the fundamental factors that help children develop social skills, adaptability and learning.

According to Yale University psychologist Peter Salovey, today's definition of emotional intelligence can be expanded and assessed in five main areas:

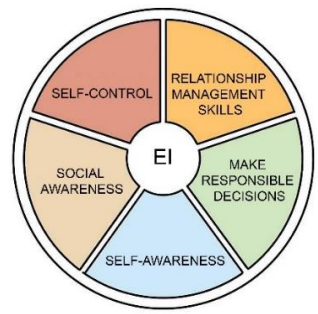

Figure 1. *Key areas in the science of emotional intelligence - Source: [3]*

• ***Self-awareness:*** Accurately recognize emotions and thoughts, evaluate strengths and weaknesses, have confidence and optimism.

• ***Self-control:*** Manage emotions, thoughts, and behaviors, control stress and impulses, and motivate yourself.

• ***Social awareness:*** Empathize, understand social norms, recognize sources of support from family and community.

• ***Relationship management skills:*** Establish and maintain healthy relationships, effective communication,

cooperation, and conflict resolution.

• ***Make responsible decisions:*** Choose appropriate behavior, considering ethical standards, safety, and benefits for yourself and society.

2.2. The role of emotional intelligence in preschool education development

In the current preschool education context, developing children's emotional intelligence contributes to building a positive learning environment, where children not only develop intellectually but also emotionally. This helps children have a solid foundation for comprehensive development in the future [5], [6]:

● ***Developing social skills:*** Emotional intelligence helps children improve communication, cooperation, and interaction with others. Children easily understand and respond to emotions, building positive relationships with friends and adults.

● ***Enhance the ability to self-manage emotions:*** At preschool age, children do not have good control over their emotions. Emotional intelligence helps children identify and regulate negative emotions such as anger or anxiety, thereby responding more appropriately in situations.

● ***Improve learning ability:*** The ability to control emotions helps children focus more in learning, manage stress and be confident when participating in activities, improving academic performance.

● ***Develop confidence and ability to face challenges:*** Children with high emotional intelligence are often more confident when solving problems and adapting to learning and social environments, helping to develop perseverance in the face of difficulties.

● ***Encourage empathy and understanding of others' emotions:*** Emotional intelligence helps children understand and share emotions with others, develop empathy and understanding, and build a compassionate social environment.

● ***Support building a moral foundation and life values:*** Emotional intelligence not only helps regulate emotions but also promotes values such as compassion, respect, and social responsibility.

3. The relationship between preschool architectural design and children's emotional intelligence

3.1. Architectural elements of preschools affect children's emotions and behavior

● ***Architectural works:*** The layout of building blocks greatly affects the operation of architectural spaces. The distance and size of the building determine the connection between spaces. The building and play spaces must be arranged in harmony to have connection with each other to ensure the normal operation of functions. The proportions of the building's shapes must be beautiful and reasonable, contributing to increasing the overall aesthetics. The building's architecture must be suitable for preschool age groups. Funny and cheerful images will have a good impact on children, creating an attraction and desire for children to go to school.

● ***Decoration, materials, colors and lighting:*** Decorations, materials, colors and lighting play an important role in organizing the architectural play-learning space for children. Materials must be lively according to each space, especially ensuring safety for children when playing. Light must be enough to provide the interior spaces and colors help reflect light, creating aesthetic effects that are beneficial for children's visual development.

● ***Trees - water surface - small architecture:*** Trees in the garden provide shade, repel insects, create fragrance and produce beautiful flowers. Trees also contribute to increasing the overall aesthetic of the project. Grass in the garden or in each area not only has the effect of creating scenery but also cleaning and avoiding dust for the project. Small structures (rest huts, sculptures, etc.) will contribute to increasing the quality of the play space. Water surfaces, fountains, and small lakes will create cool air, while also increasing aesthetics, creating a beautiful scene.

● ***Equipment and toys:*** Equipment in preschools must be highly safe, synchronous, neat and convenient for children to play and study, and must be suitable for the characteristics of each age group. At the same time, the equipment is not complicated for easy monitoring of care and cleaning. Toys and other equipment used for children must be beautiful in shape, balanced, and unique to help with aesthetic education.

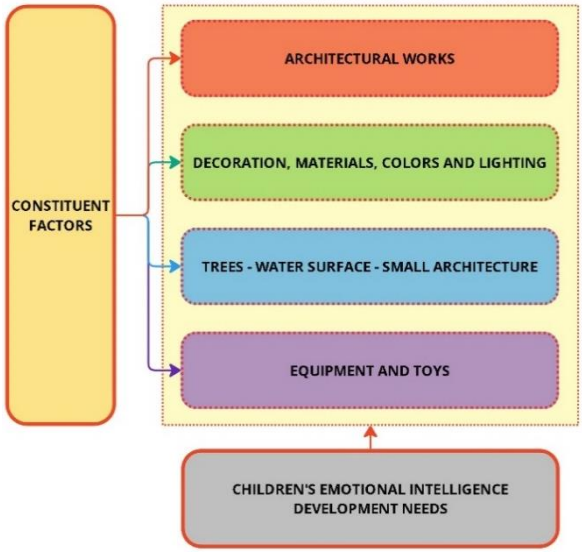

Figure 2. *Architectural elements of preschools influenced by Emotional Intelligence - Source: [4]*

3.2. The impact of Emotional Intelligence on preschool architecture

Emotional intelligence has a profound impact on preschool architecture because it influences how spaces are designed to support children's emotional, psychological and social development, to name a few impacts. after:

● ***Create an environment that fosters positive emotions***: Preschool design needs to focus on creating a safe, comfortable, and friendly space so that children feel confident and secure when learning and playing. This space helps children develop emotional intelligence, encouraging curiosity and natural learning ability.

● ***Encourage confidence and independence:*** Children will develop confidence and independence when they are able to take charge of their activities. The design of the preschool space needs to be appropriate to the size and ability of the child, such as suitable tables and chairs, and easy-to-access functional areas. This encourages children to participate in activities actively, thereby developing confidence.

● ***Active and creative learning space:*** Architecture needs to create flexible, open spaces that stimulate children's imagination and creativity. These spaces allow children to freely explore, express themselves and thereby develop creative thinking abilities as well as emotional intelligence.

● ***Enhance communication and social interaction:*** An important part of emotional intelligence is the ability to communicate and interact socially. Preschool architecture needs to design areas that encourage children to communicate and work in groups, such as group learning spaces and common play areas, helping children develop skills in working with friends and learn to cooperate.

● ***Child-centered design:*** In architectural design, careful consideration should be given to children's emotional needs. Using soft colors, natural light and natural elements such as trees and gardens will help children feel safe, peaceful and relaxed.

● ***Sound control and quiet environment:*** Sound plays an important role in the learning environment. An environment that is too noisy can distract and stress children. Therefore, it is necessary to have soundproofing measures and create quiet spaces to help children easily concentrate and develop emotionally.

● ***Develop emotional management skills:*** Relaxing, quiet areas such as reading corners or natural spaces help children learn to recognize and manage their emotions when stressed or tired, thereby developing the ability to effectively regulate emotions.

● ***Encourage empathy and connection:*** Shared play and learning spaces help children develop empathy skills, learn to understand and share with friends. When children feel connected and belong to a community, they learn to respect the feelings of others and develop greater emotional intelligence.

● ***The impact of connection to nature:*** Preschool architecture can take advantage of natural elements such as green areas and gardens to help children connect with nature. Nature not only helps children relax and reduce stress, but also creates conditions for children to develop emotional intelligence and interact more positively.

● ***Multifunctional space for comprehensive development:*** Preschools need to provide diverse spaces such as learning areas, play areas, sports areas, and art spaces. These spaces help children develop comprehensively emotionally, physically and socially, promoting the development of comprehensive emotional intelligence.

4. Current status of public preschool architecture in Ho Chi Minh city

As a strongly developed and largest city in the country in almost every aspect, Ho Chi Minh City has been facing many challenges in education management and development, especially in preschool education; This is clearly shown in the comments about the current state of the organization of architectural spaces in the vast majority of public preschools today.

● ***Total area***

- According to the report of the City Department of Construction. Ho Chi Minh City, by 2023, the city has more than 1,300 preschools, of which about 60% are public schools. However, only 30% of schools meet the standards for space and facilities according to regulations of the Ministry of Education and Training. Accordingly, the land area for preschool construction averages 8-10 m²/child, lower than the national standard of 12-15 m²/child [1], [2].

- Currently, many public preschools in Ho Chi Minh city faces difficulties in land size and area, especially in central districts, due to land scarcity and rapid urbanization. The overall planning is patchy, without a unified whole due to inconsistent investment and not suitable for the development needs of the industry. The area of schools is often small, with no space or reserve land fund for development.

- Public preschools in suburban areas often have larger premises, but due to their distance from the center and sparse population density, the occupancy rate is not high, causing waste of resources.

● ***Architectural form***

- Many old public preschools in Ho Chi Minh City were built before 2000, having simple architecture, with concrete structure, reinforced steel and tile or corrugated iron roof. Classrooms are arranged in the form of adjacent classrooms, with little green space or large playgrounds. A typical example is 19/5 Kindergarten in District 1, built in the 1990s with a 1-2 storey design and corridors connecting classes.

Figure 3. *Kindergarten 19.5, District 1 - Source: [4]*

- Preschools built after 2010 have had a clear change in architectural form, with open space design, many outdoor play areas, making the most of natural light. A specific example is Saigon South Kindergarten (District 7). This is one of the advanced public preschools built according to international standards. The total school area is 8,000 m², with blocks arranged in an open format, including study areas, play areas, gardens and swimming pools. The school uses green materials such as wood, glass, and trees throughout the campus, helping to reduce internal temperatures. Learning spaces are arranged flexibly, with classrooms with outside views and optimal natural light. This school is highly appreciated for creating a friendly environment that contributes to children's emotional development.

Figure 4. *Saigon South Kindergarten, District 7 - Source: [4]*

● ***Decoration, materials, colors, lighting***

According to Ho Chi Minh City Department of Education (2023), 40% of public preschools have been renovated or newly built, while 60% of schools still use old materials and lighting systems [1], [2].

- Decoration: Most public preschools in the city. HCM uses vivid images, paintings and educational symbols on the walls. However, some old schools have simple, less creative decorations such as 19/5 Kindergarten, Ben Nghe (District 1).

- Materials: Old schools often use concrete, bricks and industrial wood, while new schools use more friendly materials such as glass and natural wood. Hoa Mai Kindergarten (Binh Thanh District) is an example of applying modern and sustainable materials.

- Color: New schools often use bright colors (green, yellow) to stimulate children's creativity. Meanwhile, old schools such as Son Ca Kindergarten (Tan Binh District) use monotonous colors, not optimized for children's emotional development.

- Lighting: New schools make good use of natural light with many large windows, such as Saigon South Kindergarten (District 7), while many old schools rely on artificial light from fluorescent lights, such as Kindergarten Hoa Hong mountain (District 3).

Figure 5. *Ben Thanh Kindergarten, District 1 - Source: [4]*

● ***Green trees, water surface, small architecture***

According to a report by the Ho Chi Minh City Department of Education (2023), 70% of schools have green spaces, 30% of schools have water surfaces, and 50% of schools have small structures for children. Green landscape elements, interior and exterior decoration, and small architecture are often omitted because they are considered wasteful and not a priority. Or sometimes it is not taken care of and is not suitable for the school's common space [1], [2].

- Trees: about 70% of public preschools have green spaces, mainly decorative and shade trees. For example: An Binh Kindergarten (District 2) with a rich green garden helps children develop positive emotions.

- Water surface: Only 30% of schools have swimming pools or water areas. For example: Be Ngoan Kindergarten (District 1), Binh Minh (District 7) has a mini swimming pool, creating opportunities for children to learn about the water environment.

- Small architecture: About 50% of schools lack small architecture such as huts and outdoor play areas. For example, Hoa Huong Duong Kindergarten (District 8) has built a hut and a safe play area for children.

Figure 6. *Be Ngoan Kindergarten, District 1 - Source: [4]*

● ***Equipment, games***

- Equipment: According to a survey by the Ho Chi Minh City Department of Education (2023), about 60% of public preschools lack modern equipment for teaching and learning. Many schools still use old equipment that does not meet teaching requirements. Teaching equipment such as projectors and interactive whiteboards are only available in about 40% of schools [1], [2]. For example: Thanh Da Kindergarten (Binh Thanh) has old school equipment and supplies, affecting the quality of education.

- Games: Only about 50% of schools have outdoor play areas large and safe enough for children [1], [2]. The number of outdoor and classroom toys is limited, mainly traditional wooden toys. There is too little individual or small group space or toys that stimulate children's comprehensive development, and they are not flexible enough for different ages of children. This may partly lead to a lack of exercise and thinking in children. For example, Bong Sen Kindergarten (District 10) was invested by a modern outdoor play area with equipment such as slides and swings, helping children develop physically and mentally.

- The outdoor playground area is often small and is arranged in the central front yard or taking advantage of the circulation corridor in front of the classroom to make part of the playground for children. This area cannot be guaranteed to meet standards (2.5m^2/child).

Figure 7. *Childhood Preschool 7, District 3 - Source: [4]*

Thus, limitations in funding, area and professional knowledge of child psychology, etc. are major barriers in applying emotional intelligence to preschool architecture. The general situation is that play-learning spaces are often narrow and do not take full advantage of natural elements. Other elements, such as trees, decorations, recreational

activities, and group gatherings, simply adhere to the guidelines set for the cramped area above. Currently, school architectural projects often focus on functional factors rather than children's emotional development. Integrating emotional intelligence into preschool planning and architecture has not yet received attention.

5. Analysis of some preschool architectural models designed based on Emotional Intelligence

Preschool architectural models based on emotional intelligence not only focus on creating a friendly play-learning environment but also help children develop comprehensively emotionally, socially and cognitively. Investing in appropriate architectural design will improve the quality of preschool education and support children's comprehensive development.

Kindergarten model according to Montessori educational philosophy: This model focuses on creating flexible play-learning spaces where children can freely move and choose activities. The school's architecture often uses gentle colors, natural light and open learning areas, helping children feel comfortable and safe. The design of outdoor activity areas also encourages children to interact with nature, develop emotions and creativity.

Some typical Montessori Preschools in Ho Chi Minh City: Montessori Worldkids – WIS, WonderKids Montessori School – WMS, Tiny Flower Montessori School, The Montessori International School of Vietnam, Wonderkids Montessori, Saigon Montessori,… have been designed with open learning spaces and playgrounds combined with trees, helping children explore and develop emotional intelligence.

Kindergarten model according to Reggio Emilia educational philosophy: This model emphasizes designing learning spaces that reflect children's needs and interests. The architecture is built from natural materials, helping children connect with their surroundings. Activity areas are scientifically arranged to encourage communication and cooperation between children, thereby developing social skills and emotional intelligence.

Little Em's Sun World preschool system (District 3, Ho Chi Minh City) was designed with many creative spaces, such as art corners and outdoor play areas, to help children develop empathy and abilities for group work.

Green School kindergarten model: The model focuses on integrating nature into the learning environment. The school's architecture uses environmentally friendly materials and open space design, encouraging children to explore nature and develop emotional sensitivity. Children are encouraged to participate in outdoor activities, which help increase self-confidence and empathy.

The Green School Kindergarten system is currently developing widely throughout a number of Northern provinces. Focused mainly in Hanoi City with 5 facilities,... with gardens and spacious outdoor learning areas, creating conditions for children to develop both physically and emotionally.

6. Some directions in applying Emotional Intelligence to the architectural design of public preschools in Ho Chi Minh city

Applying emotional intelligence to preschool architectural design can create learning and living spaces suitable to children's emotional and psychological development needs. Based on the following main research framework, the author has proposed important design directions to integrate emotional intelligence into preschool architecture:

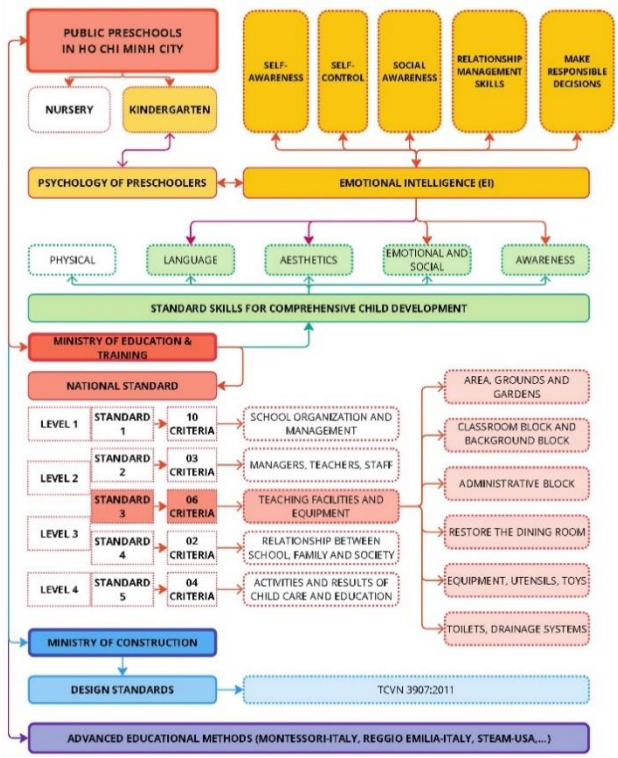

Figure 8. *Main research framework of the article*
Source: author, [1], [7]

6.1. Flexible space, stimulating creativity

Design flexible play-learning areas that can be changed to serve many different activities, giving children the opportunity to explore, interact and develop creative thinking. For example, classrooms can be arranged to transition between group activities, individual activities, or free play, to encourage children to express themselves in a variety of ways.

6.2. Use colors that create positive emotions

Colors have a strong impact on children's emotions. Bright, gentle colors such as green, light yellow or blue can create a comfortable space, encouraging children to play and study. On the contrary, colors that are too bold or too bright can be irritating or distracting.

6.3. Natural space and natural light

Connecting indoor and outdoor spaces through small gardens, playgrounds or open areas with natural light helps children feel close to nature. This can reduce stress and anxiety and promote calmness, helping children develop positive emotions and a sense of security.

6.4. Relaxing and quiet areas

Children sometimes need a quiet space to rest or calm down after exciting activities. Rest areas with soft chairs, soft lighting and quiet spaces will help children learn to self-regulate their emotions and feel more comfortable when they need private time.

6.5. Designing community and interactive spaces

Common areas such as playgrounds, dining rooms or group play-study corners need to be designed to encourage children to interact with each other, learn to communicate, cooperate and share. This space can help children develop social skills and empathy, an important part of emotional intelligence.

6.6. Arrange a safe and friendly spaces

Safety in design is an important factor to help children feel confident and worry-free. Elements such as non-slip floor surfaces, soft edges, and child-appropriate interior heights help create a safe environment, supporting children to freely explore without fear.

6.7. The design encourages independence and confidence

Design elements can help children learn self-management and become more independent, such as lockers at the right height, hand-washing areas that are easily accessible, or play spaces where children can arrange it themself. This helps children develop autonomy and confidence in their abilities.

6.8. Sound and audio spatial quality

Sound greatly affects children's emotions and concentration. Designing balanced sound spaces that are not too noisy and have the ability to reduce echo helps create a pleasant environment, reduce stress and enable children to learn how to listen and interact effectively.

6.9. Materials are safe, friendly and create positive emotions

Use natural, safe and non-toxic materials to create a child-friendly learning space. This not only ensures health safety but also contributes to creating a feeling of closeness to nature. At the same time, attention should be paid to surfaces with diverse textures to stimulate children's sense of touch. Interacting with different surfaces such as smooth, rough, soft or hard will help children develop feelings and emotions.

6.10. Diversity in functional areas

An effective preschool design needs to provide a variety of spaces for many different activities such as physical activity areas, play-learning areas, art creation areas, and outdoor play areas. This richness helps children develop comprehensively intellectually, emotionally and physically.

7. Conclusion

Through the process of understanding and analyzing the relationship between emotional intelligence and preschool architecture, through some assessments of the current state of public preschool architecture in Ho Chi Minh City, it can be seen that the current architectural elements have contributed significantly to supporting children's development. However, compared to the requirements of developing children's emotional intelligence, preschool architecture still needs adjustment and improvement to better meet the needs. Integrating emotional intelligence elements into preschool architecture not only creates good conditions for children's comprehensive development but also contributes to improving the quality of current preschool education.

Preschools need to focus more on designing learning and play spaces, creating favorable conditions for children to develop emotional and social skills. This includes using open, natural spaces, emphasizing natural light and color, and arranging living areas to encourage children to communicate and interact. To achieve this, there needs to be cooperation between educational managers, architects and the community to build a friendly, safe and creative learning environment for children.

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