



Megaron

<https://megaron.yildiz.edu.tr> - <https://megaronjournal.com>
DOI: <https://doi.org/10.14744/MEGARON.2023.27048>

MEGARON

Article

An investigation into the perception of space in children through visual representations: The Children's Library in Giresun (The Capuchin Catholic Church)

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ARTICLE INFO

Article history

Received: 21 October 2022

Revised: 08 February 2023

Accepted: 20 February 2023

Key words:

Children; perception; The Capuchin Catholic Church; The Children's Library in Giresun

ABSTRACT

Children's physical and mental activities cause them to show differences in their perception and evaluation of spaces. Correctly designed spaces specifically for the child support the physical and psychological development of the child positively. In addition, children who can establish strong relationships with historical places develop a sense of attachment and belonging to the place, which is also important in the transfer of such places to the coming generations. Capuchin Catholic Church (Giresun Central Children's Library) has an important place in the memory of the city and is the sole example in the region. It is used by children. The present study discusses how children perceive the church. The study aims, on the one hand, to reveal how the church is perceived by children, and, on the other, to examine how the child's perception of space and expression styles change depending on age. To this end, children were made to draw visual representations and these images were converted into numerical data. These data are discussed in terms of the preoperational period and the concrete operational period which takes into account the developmental stages of the child. The study employed observation and mapping methods. It was concluded that the child's perception of space changes depending on age, experience and frequency of use of the space, and historical buildings are important stimuli for the child's perception of space.

Cite this article as: Yılmaz Yıldırım D, Bayram Ş, Çakır Güngör N. An Investigation into the perception of space in children through visual representations: The Children's Library in Giresun (The Capuchin Catholic Church). Megaron 2023;18(1):45–60.

INTRODUCTION

Understanding how people perceive spaces is important to design spaces and creating liveable spaces for users. Creating a living space, especially for children who have free thinking and are creative, is a special situation because

children's physical and mental activities differ from those of adults in their recognition, perception, evaluation, and interpretation of space. For this reason, one should examine how children perceive what, how they evaluate them, and how they make sense of them.

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Published by Yıldız Technical University Press, İstanbul, Turkey

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The production of functional, mental, and ergonomic spaces that understand children, comply with their wishes, perceptions, and expectations, and make them flexible and free, is extremely important for their self-confidence and self-identity as members of society. In addition, the child interacting positively with the place feels a sense of attachment and belonging to the place, which is important in the transfer of such places to future generations.

Today, historical structures that have lost their original function are reused with different functions in order to keep them alive. The selection of the new function to be given to these structures, which have an important place in the city's memory, is another important issue. As one of these examples, the Capuchin Catholic Church has been transformed into the Giresun Children's Library by being re-functionalized as a first-degree monumental building, which has symbolic value for the city of Giresun. It is a remarkable and different example, especially with its re-functioning as a children's library, in addition to its unique architecture, which is not often seen in the Eastern Black Sea Region.

The study aims to discuss how children's perception of space changes depending on age (6- to 10-year-old). What are the prominent features of space depending on age, and how do children's expressions of these differ? For this purpose;

- In the representations of the building, which part of the space (indoor space, form/facade, or outdoor space) is depicted by children at the preoperational stage?
- Both at the preoperational stage and the concrete operational stage, what attracted the children's attention?
- What were the most perceived elements in the outdoor-close environment both at the preoperational stage and the concrete operational stage?
- What is the biggest difference between these two groups in the outdoor-close environment?
- What was the most perceived elements on the facades of form both at the preoperational stage and the concrete operational stage?
- What is the biggest difference between these two groups on the facades of form?
- What was the most perceived elements in the interior of the building both at the preoperational stage and the concrete operational stage?
- What is the biggest difference between these two groups in the interior of the building?
- Was the original aspect of the Giresun Children's Library that was converted from a church, perceived strongly by the children or not?

These are answered and the study was detailed using interview, observation, and cognition mapping methods.

Child and Space Perception

Perception is defined as the organisation of sensing the stimulant effects from the environment and transforming them into semantic experiences by simply memorising them (Morgan, 1986; Çolpan Erkan, 1996). According to another definition, perception is the formation and visualisation of all kinds of information obtained through the five senses in our brains (Aydınlı, 1992). The phenomenon of perception differs depending on who perceives, what he perceives, what he wants to perceive and how he perceives, that is, external factors and personal factors. Personal factors consist of features such as the individual's personality traits, gender, age, cultural and social values, social environment, feelings, and thoughts, needs and expectations, cognitive orientation, experiences, attitudes and behaviours, and instant attention (Aydınlı, 1992; Gregory, 1997; İnceoğlu & Aytuğ, 2009; Asar, 2013). External factors, on the other hand, consist of features such as the intensity and magnitude of the stimulus, the repetition or continuity of the stimulus, the contrast of the stimulus with the environment, the sudden change or extraordinariness of the stimulus, its differentiation from the environment, and the state of movement of the stimulus (Atkinson, et al., 2002; Hokelekli, 2008; Morgan, 2011).

Children's perceptions and evaluations differ from those of adults. The child develops from the day she is born, and accordingly her perception of space changes. These differences are clearly read by age. It is obvious that the work of the child is very unlike the work of the adult. Children use the environment to improve themselves; adults use themselves to improve the environment. Children work for the sake of process; adults work to achieve an end result (Lillard, 1982). Perception of the world is always a multi-sensory event that includes the use of every sense and the whole body. This causes difficulty in processing the simultaneous sensory stimuli (Day & Midbjer, 2007), and gives priority to senses in cognitive processes and makes them one of the main determinants of childhood. The information received from the environment is transformed into behaviour by the senses and instant emotions rather than logic. Whereas adults already understand things, children are still exploring the relationships between sensory messages (Day & Midbjer, 2007). The child's perception of space improves continuously and regularly in the form of an intertwined process depending on physical (physiological), mental (perceptual-cognitive), social-emotional age (Gür & Zorlu, 2002; Yılmaz, 2010; Piaget & Inhelder, 2016; Aydın, 2018).

The cognitive development of children is divided into four stages: the sensory-motor stage (birth to 2-year-old), the preoperational stage (2- to 7-year-old), the concrete operational stage (7- to 11-year-old), and the formal operational stage (11- to 18-year-old) (Piaget, 1970). The sensory-motor stage (birth to 2-year-old) is the coordination stage of the senses. The child makes inaccurate movements

while trying to catch the object whose colour and shape he perceives only. The movements of the hand trying to catch the object with the eye are uncoordinated, and the mind cannot clearly determine the distance and direction between the hand and the object. In this period, it is extremely difficult for the child to perceive space, and the perception of space begins to form only after the sixth month (Gür & Zorlu, 2002). In this period, there is no continuity in the perception of space (Piaget and Inhelder, 1967; Altman and Chemers, 1980; Akarsu, 1984; Kök, 2016). After the age of two, relations such as proximity, disconnection, enclosure, and continuity between the objects in the space form in his mind. The preoperational stage (2- to 7-year-old) is the stage in which the logical thinking process develops. Children are influenced by the appearance of objects, and they talk about objects that are not in the field of perception in space. However, he establishes random relations between all these objects (Gür & Zorlu, 2002). During this period, children perceive the space in general, but cannot elaborate (Piaget & Inhelder, 1967; Altman & Chemers, 1980; Akarsu, 1984; Kök, 2016). The concrete operational stage (7- to 11-year-old) is the period in which the ability of classification begins to develop. The child arrives at the distinction between fantasy and reality (Piaget, 1970). Children now begin to schematise the space while perceiving it (Piaget & Inhelder, 1967; Altman and Chemers, 1980; Akarsu, 1984; Kök, 2016). In the period up to the age of 8/9, the child cannot fully realise the concepts of quantity and quality, and the relationship between the part and the whole. The age of 8/9 is the critical age when the mental reality period is completed and concrete operations begin to take place. The formal operational stage (11-18-year-old) is the stage in which concrete operations reach maturity. The reality of formal operations shows continuous improvement with age (Piaget, 1970). In summary, while the perceptual and cognitive mechanisms of children's mental development are simpler, they become more complex later. However, the data that he has accumulated by experiencing the space over time complicates the mental process. (Zaporozhets, 1965; Baksi, 2018).

Coding the features of the space is important in the perception of space in children. Coding the space is divided into two such as primary coding system and secondary coding system. The primary coding system includes the creation of an egocentric body representation of the object, that is, an "egocentric representation" so that the child can express spatial characteristics. This system is defined as the child's coding by primarily evaluating the spatial features according to his/her own location and environment. On the other hand, the secondary coding system involves creating the representation of the object's relation to the object, that is, the "allocentric representation". This system is also defined as the child's coding by evaluating the spatial features according to the location of another object.

Although both representations are present in children from an early age, the egocentric representation is more dominant in the sensory-motor and preoperational stages, and the allocentric representation begins to dominate towards the later stages (Acredolo, 1990; Campos et al., 2000; Galati et al., 2000; Bocchi et al., 2020). That is, children first realise their position in the place where they are. Then they learn to evaluate their relationships with objects in their close environment, distances, dimensions through visual perception. The perception of space relations includes figure-ground distinction (Reinartz and Reinartz, 1975). On the other hand, Piaget (1955) claims three types of relationships in children's perception and coding of space: metric space, topological space, and projective space (Hart & Moore, 1973). Metric space is a relationship that is based on the distance parameter in children's perception of spaces and explains the equivalence of shapes in a mathematical equation. Topological space is the relation regarding the qualitative properties that exist entirely within a form. The perception of relationships such as proximity, disconnection, organisation, enclosed and continuity in the topological space, objects structure and revitalise the intuitive space. In projective space, in addition to the topological space properties, it is necessary to identify the locations of the elements of the objects within the framework of their relations with others and within a certain perspective. Existing topological operations are enriched with the addition of perspective operations and gain new meanings. Briefly, children perceive space by being based on size, shape, and distance parameters, and make sense of the space by passing their perceptions through their personal filters (Hart, 1979; Altman & Chemers, 1980; Koç, 1999; Babaoğlu, 2007; Buluklu, 2015; Piaget, 2016).

While children have difficulty in expressing the perceived space clearly with language, they express their thoughts with a picture independently and freely. The picture, which is a symbolic game for the child, is the image that is related to his emotional and intellectual life. Therefore, these first spontaneous symbolic expressions of children are the simple expressions of the feelings and thoughts that they experience in their inner worlds (Piaget, 1955; Poyraz, 1999).

Artistic developments in children are divided into five stages that develop in direct proportion to age, from simple to complex and to more naturalistic expressions. These are the scribbling stage (2- to 4-year-old), the pre-schematic stage (4- to 7-year-old), the schematic stage (7- to 9-year-old), the dawning realism stage (9- to 12-year-old), and the pseudo-naturalistic stage (13- to 21-year-old). In the pre-schematic stage (4- to 7-year-old), children's drawings begin to become recognisable. Object drawing, which starts at the age of 4, leaves its place to the subject toward the age of 7. Feelings and thoughts begin to become clear. In the drawings, the relationship with the space is less and there

is a hierarchy. They can draw the important ones larger. In the schematic stage (7- to 9-year-old), their drawings are quite plain and concise containing sketches and repetitions. One may also see that real objects and events that are away from the imaginary world are reflected, and real colours are used. During the downing realism stage (9- to 13-year-old), space and perspective now show themselves. They tend to draw realistically in their drawings; they go into details (Malchiodi, 1998a,b; Paktuna Keskin, 2009; Uysal & Selvi, 2012). The pictures drawn by children are used as the best data collection tools to reflect their relationship with the space and to measure various perceptions in their subconscious.

MATERIALS AND METHODS

The study focuses on the subject (perceiver) and objects (perceived), which the two basic elements of perception are. Children in the age group of 6- to 10-year-old were chosen as subjects and their developmental stages were taken into account. As the object, a historical and architecturally original building that was converted from a church to a library was chosen. The study aimed to examine the child's perception of space, which changes depending on age, and the common and different aspects that are prominent in the form of expression, and to reveal how the church with a strong stimulating effect is perceived by children.

The study was carried out in two stages such as literature review and field study. In the literature review, the concepts of perception, space perception, space perception in children, and visual representation in children were examined and information was given about how the child perceives the space and how it expresses it. Different architectural aspects of the Giresun Children's Library were presented. To this end, the façades, floor plans, details, and functions of the building were examined. Secondly, by conducting a field study, both the library records were examined and the librarian was interviewed in order to determine by whom and with what intensity the library was used. Observations were made to determine which areas of the library were used by the children and for what purpose. Observations were made by an observer with architectural training for two months from a position that could see every point of the library, six days a week, between 2:00 pm and 5:00 pm, when the library was used the most. The data obtained through observations were plotted on the building plan and in this way, the study determined which area was used for what purpose and by which age group. Thus, the study tried to determine other variables that affect perception, such as whether it is used or not, and the frequency of use. Finally, the children in the 6-10 age group who actively use the library were asked the question "How would you describe the library" and they were asked to paint a picture expressing this. The type

and technique of the paint that children will use were left entirely to children's interest, skill, and imagination. The children were asked to draw a picture at home describing the library and to write a composition expressing it in order to portray the images that were created in their minds by their spatial experiences, that is, not what they saw but what they knew. However, most of the children drew pictures of the library and did not want to write. As a result, a total of 100 pictures were obtained where 20 from each age group and these pictures were grouped according to Piaget's Child's Cognitive Development theory as preoperational period (6–7-year-old) and concrete operational period (8–10-year-old). The aim of the study is to investigate how spatial perceptions change according to children's age, so other data were not taken into account.

Common and different elements that stand out in the exterior/close environment, form, facade, and interior in the obtained pictures were determined, and these prominent elements in every age group were converted into numerical data. Thus, a priority order was made among the prominent items. Secondly, the originality that children used while expressing the space was determined. The different aspects that arose due to age were also discussed in terms of the preoperational stage and the concrete operational stage. In this way, the study aimed to unveil the effects of a child's developmental stages on space perception. The study employed observation and mapping methods.

Each of the cognitive maps is seen as a set of propositions that are determined by the individual as true value and stored about the individual's environment. One of the basic elements that make up the formation of these maps is the concept of environmental cognition. It is accepted that this concept is related to constitute, recall, storage and organisation of location, distance, and spatial information in the mind (Robinson & Petchenik, 2011). The actions of collecting, presenting, and processing all kinds of information belonging to the physical environment are also included in this concept (Kitchin, 1994). Downs and Stea defined cognitive mapping as a process consisting of a series of psychological transformations by which an individual acquires, encodes, stores retrieve, and decodes information about the relative locations and properties of phenomena in his or her everyday spatial environment (Downs & Stea, 1973; Downs & Stea, 2011).

The concept of cognitive mapping was first proposed by Tolman (1948) in his research on the spatial relationships of animals in their environment. Later, this concept started to be used in the field of environmental psychology in a sense that expresses the inner image, mental/cognitive fiction, or representation of the environment in which people live (Göregenli, 2010). Kevin Lynch, a pioneer in this field, aimed to determine people's images of their cities through the cognitive mapping technique.

It can be said that there are detailed studies on cognitive maps, and some studies look deeply at children's cognitive maps (Golledge & Stimson, 1997; Golledge, 1999; Kitchin & Freundschuh, 2000). Among the first studies on children's cognitive maps, Trowbridge (1913) "On Fundamental Methods of Orientation and Imaginary Maps" was the first to examine the development of cognitive mapping in childhood. Hermer and Spelke (1994) used cognitive maps in their "a geometric process for spatial reorientation in young children" study. They clarified how children (between the ages of 18-24 months) use landmarks in a room. Piaget (1956) explained the development of children's spatial perception in terms of three categories of spatial relations: topological space, projective space, and metric space. Siegel and White used cognitive maps in their study which is "The development of Spatial Representations of Large-Scale Environments". They determined how children represent the large-scale environment (Siegel & White, 1975). In addition, Cousins, Siegel and Maxwell in their study, which is "Wayfinding and cognitive mapping in large-scale environments: A test of a developmental model", used cognitive mapping in primary school children (aged 7, 10, and 13) for determining prominent elements and routes of campus (Cousins, Siegel & Maxwell, 1983).

The children's drawing skills are different from each other. In the representations, the subject is more important than quality. In the study, cognitive mapping method is used. As the majority of the children, especially the little ages, did not want to make interviews about their pictures. Within the scope of the study, perceptual differences according to age were highlighted. In this respect, the study was limited to age. Other factors which affected children's perception such as gender, social/cultural differences were not discussed.

Subject (Perceiver) (2- to 10-Year-Old)

In terms of the subject affecting the perception, the study revealed information such as "who uses the library, how old the user is, how often the space is used, and how much time the user spends in the space". The result of the examination of the written records of the library and the interview with the librarian, it was found that the library is used approximately by 60–120 children per day. In general, it is used by the students of the nearby school to borrow books, return books, and do homework after school hours. In addition, during school hours, some primary school students make reading hours in the library with their teachers at certain hours on certain days. Especially 7- to 10-year-old group children study with their teachers in the library once a week. Again, children from 2- to 7-year-old group visit the library together with their teachers once a month on some special days, take a short tour, and do a one-hour fairy tale reading. It was observed that on days when there is no school, children (2- to 7-year-old group) usually come to the library with their parents, and spend a

short time in the library before noon. In the afternoon, it was observed that children (6- to 10-year old group) spend more time individually in the library to borrow books, meet with their friends to study, and play board games. As a result, children (6- to 10-year-old group) who are the intensive users of the building, were grouped and discussed based on Piaget's developmental stages of the child as the preoperational period (2- to 7-year-old) and concrete operational period (7- to 11-year-old).

Object (Perceived) – The Capuchin Catholic Church (Giresun Children's Library)

The object that affects the perception is important to reveal the architectural features of the church, the form, the facade, the interior, and the actions that take place in the space. It is important to reveal which age group uses the library, when, and how often.

The Capuchin Catholic Church was built as a bell tower and a church between 1850 and 1900 by Franciscan Capuchin Priests. The Ministry of National Education functioned the Capuchin Catholic Church as Giresun Central Children's Library in 1964.

Giresun Central Children's Library is 23 m long, 10 m wide and 13 m high. It was built as a ground floor and a gallery in a rectangular plan in the north-south direction, with a roof inclined in two directions and a frame-system carrier. The building has a stone garden border with an iron railing on it, and it has an entrance to which a steel ramp has been added and is accessed by stairs from three sides. The entrance façade of the building facing the street is quite magnificent. It has four stained-glass guillotine windows with pointed arches and is covered with a vault from the inside and a cradle porch from the outside. This porch is supported by two square-section stone columns. The two-winged wooden entrance door of the building is one of the 19th-century door examples in Giresun. On the façade are rows of shallow niches with pointed arches arranged parallel to the eaves. There are metal rosettes inside the niches. The northern façade of the building, whose corners are arranged in the form of grooved plaster, ends with profiled stone eaves at the top. The east and west façades of the building are divided into two horizontally with a vertical five-stone moulding with grooved plasters. A window is placed inside each of the vertical partitions. Three of these windows in the middle have pointed arches and the two windows on the sides are in round form. The pointed arches of the windows in the middle are kept quite high. The joinery of the side windows is arranged in the form of a six-pointed star. On the eastern façade of the building, there is a second door with a flat weft stone that gives access to the square-section bell tower built adjacent to this façade. The bell tower has a simple façade arrangement which is illuminated by narrow crenelated windows. It has a large side garden with iron railings on cut stone (Bostan, 1997; İltar, 2014) (Figure 1).



Figure 1. Outdoor structural elements of Giresun central children's library.

With the conversion of Giresun Central Children's Library from Capuchin Catholic Church, some changes were made to its interior. The building is entered through a wooden double-wing carved door. In addition to the administrative units, there is a cloakroom in the landing section. The interior is accessed from the landing also with a double-winged wooden door. The interior is divided into two with elevations. The space consists of the ground floor and the gallery that was used as a gathering place at that time. On the first elevation on the first floor are colourful wooden bookcases along the right and left walls of the space. In

addition, there are wooden bookcases in double rows also in the middle of the space. There are models of nature and science on the wooden bookshelves. Two circular tables and colourful chairs surrounding them are placed between the bookshelves in the middle. Again, there are colourful tables and chairs at many points in the space. On the second elevation on the ground floor, there are table chess games, a ground chess game, a television, and a DVD-CD library. For table chess games, there are tables and beanbag seating elements on the right and left parts of this elevation. The ground floor is covered with tile mosaic flooring with

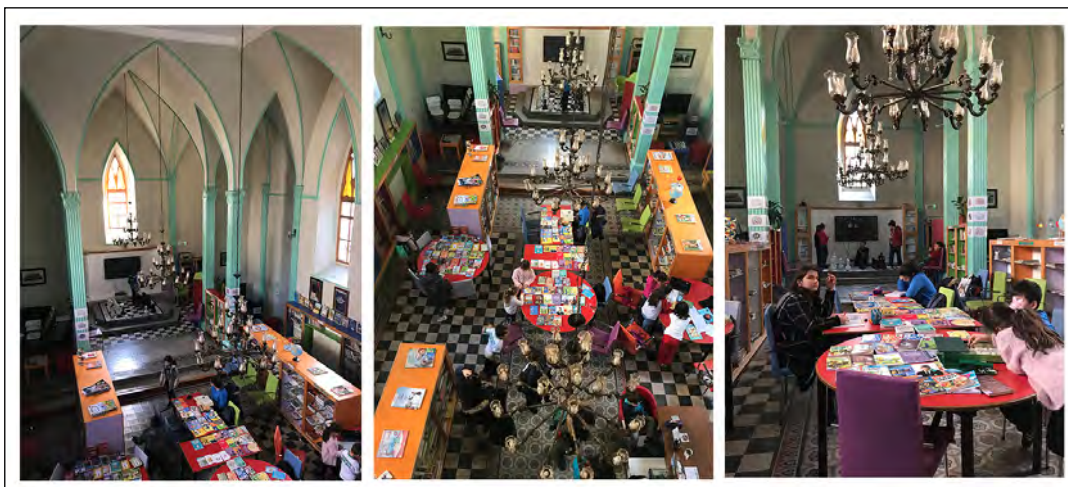


Figure 2. Giresun Central Children's Library interior structural elements and equipment.

floral ornaments. The gallery is reached by the spiral staircase located to the left of the entrance to the interior. There are also tables and chairs on this floor. Finally, the interior space is covered with a Baghdadi ceiling, which is a gable roof on the outside, arranged in a vault with straight sides in the middle. The space is illuminated by three magnificent pendant chandeliers with arms on the middle axis (Figure 2).

In terms of the actions that take place in the space, children leave their belongings in the cloakroom in the entrance area of the building and work in the office to the right of this area. Borrowing books, reading, and group work are done in the second space, which is accessed by elevations after the front entrance area. Bookshelves are spread throughout the space, and science and nature models are also used as a part of the library. In the third area, visitors can play chess and watch DVD-CDs. In the gallery, visitors read books, do research, and play chess. In the garden of the building, visitors can read books and play games while working in groups (Figure 3).

Since Giresun Central Children’s Library was converted from a religious structure, it draws attention as a structure that dominates and contrasts its surroundings and that differs from other library structures with its features such as pointed arches, guillotine or star windows, chandeliers, form, façade, and interior space.

THEORY/CALCULATION AND RESULTS

First, the number of elements determined in outdoor, indoor and mass/facade of space were counted in each visual representation. The preoperational stage consists of 40 children, the concrete operational stage consists of 60 children. Because of this, each element was calculated as a percentage within each group for making comparisons. This data is arranged in Table 1.

For determining prominent elements and showing differences clearly prominent elements were put in order in each age. The most prominent elements were signed in the 1st level of the diagram, and the least prominent elements were signed in the 8th level. The green circular structures were used for the preoperational age, the red circular was used for the operational stage and the blue line shows differences in degrees. This data is represented in Figure 4.

In the representations of the building, children at the preoperational stage depicted the indoor space more than the form/facade or outdoor space; contrary to this, the children at the concrete operational stage depicted the form/facade or outdoor space more than the indoor space.

Both at the preoperational stage and the concrete operational stage, the outdoor road, the garden railing, the tree at the church entrance, the bench in the backyard, the front of the entrance door, the library sign outside the building, the children’s library sign and the Turkish flag attracted

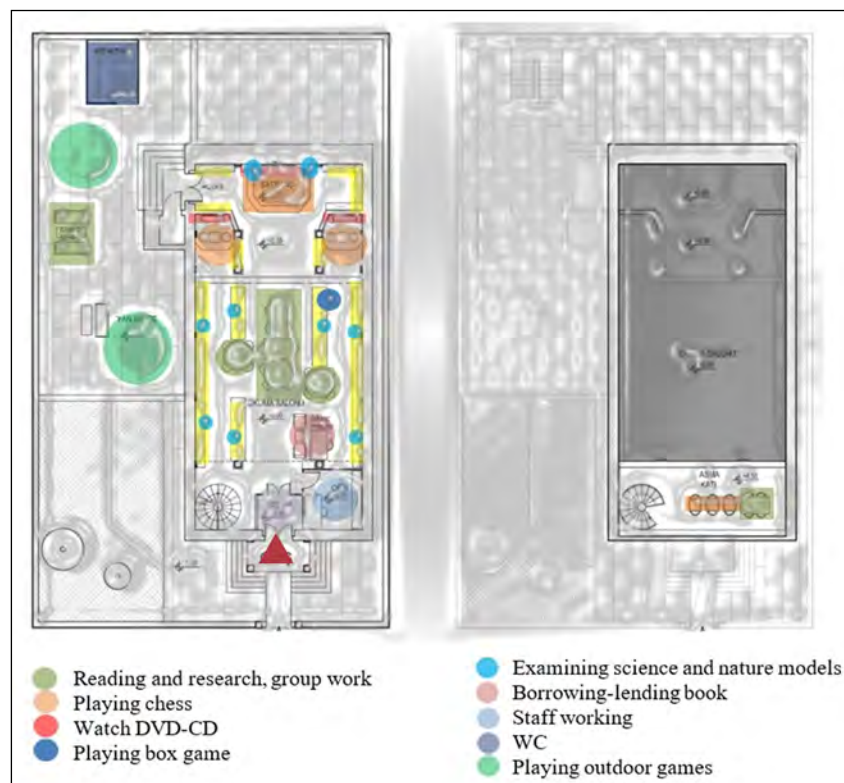


Figure 3. Activities taking place in the space.

Table 1. Percentage value of elements according to the ages

Outdoor																
	Road (%)	Garden Railing (%)	Tree at the Entrance (%)	Bench in the Backyard (%)	Front of the Entrance Door (%)	Library Sign Outside the Building (%)	Children's Library Sign (%)	Turkish Flag (%)								
The Preoperational Stage (40 person)	12.5	17.5	5	5	2.5	2.5	47.5	15								
The Concrete Operational Stage (60 person)	6.6	23.2	6.6	1.6	24.8	11.6	11.6	16.6								
Total (100 person)	9	21	6	3	13	16	26	16								
Mass / Facade																
	Triangular Pediment (%)	Triangular Porch (%)	Pointed Windows with Lambs (%)	Entrance Door (%)	Six-Armed Star Windows (%)	Entrance Column (%)	Pointed Arc (%)	Star Ornament (%)	Cross Decoration (%)							
The Preoperational Stage (40 persons)	25	-	10	45	7.5	-	2.5	10	-							
The Concrete Operational Stage (60 persons)	41.6	13.3	31.6	50	5	16.6	3.3	16.6	1.6							
Total (100 persons)	35	8	23	48	6	10	3	14	1							
Indoor																
	Wooden Door (%)	Spiral Staircase (%)	Column (%)	Mezzanine Floor (%)	Tile Coating on the Floor (%)	High Walls (%)	Vault Combination (%)	Niches in the Wall (%)	Bookshelves (%)	Table (%)	Chair (%)	Television (%)	Game of Chess (%)	Socket (%)	Chandelier (%)	Earth Globe (%)
The Preoperational Stage (40 persons)	12.5	7.5	27.5	-	10	-	-	-	57.5	30	27.5	5	17.5	2.5	2.5	2.5
The Concrete Operational Stage (60 persons)	10	5	11.6	5	1.6	-	-	-	48.3	35	30	3.3	18.3	-	21.6	13.3
Total (100 persons)	11	6	18	3	5	-	-	-	52	33	29	4	18	1	14	9

the children's attention. The garden railing, library sign, and the Turkish flag were the most perceived elements in the outdoor-close environment, both at the preoperational stage and the concrete operational stage. The biggest difference between these two groups is that the front of the entrance door is perceived most at the concrete operational stage, while it is perceived less at the preoperational stage.

The triangular pediment, triangular porch, pointed windows with jambs, entrance door, six-armed star windows, the entrance column, the pointed arch, the star ornament, and

the cross decoration on the facades of the form and the building attracted the attention of the children both at the preoperational stage and at the concrete operational stage. For both groups, the entrance door, triangular pediment, pointed window with jamb, and star ornaments were the most perceived elements on the facades of the mass and the building. No big differences were found between these two groups in terms of perceived items and their effects.

The wooden door, spiral staircase, columns, and tile coating on the floor in the interior of the building attracted the

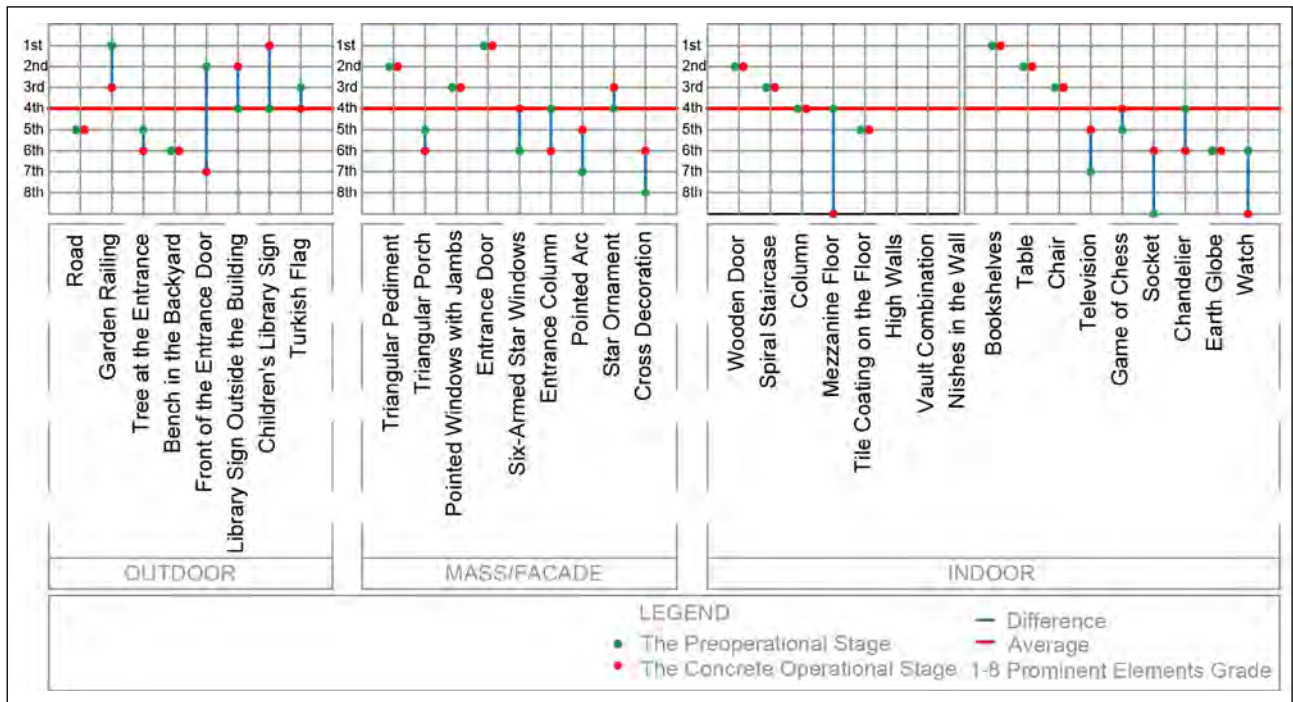


Figure 4. Prominent elements in children's visual representations (prepared by the authors).

attention of the children both at the preoperational stage and the concrete operational stage. The biggest difference between these two groups was that the gallery attracted the attention of the children at the concrete operational stage most, while it did not attract the attention of the children at the preoperational stage. It is thought that this stems from the fact that this area is not used by children at the preoperational stage. In addition, the high walls surrounding the interior, the places where the columns

meet with the vaults and the niches in the wall did not attract the attention of the children.

Bookshelves, tables, chairs, television, games of chess, chandeliers and earth globe attracted the attention of children in terms of equipment, furniture, and accessories both at the preoperational stage and concrete operational stage. The bookcase, tables, chairs were the most perceived items in both groups. The biggest difference between these two groups is that the socket attracted the attention of the



Figure 5. Visual representations of children at the preoperational stage (6-year-old).

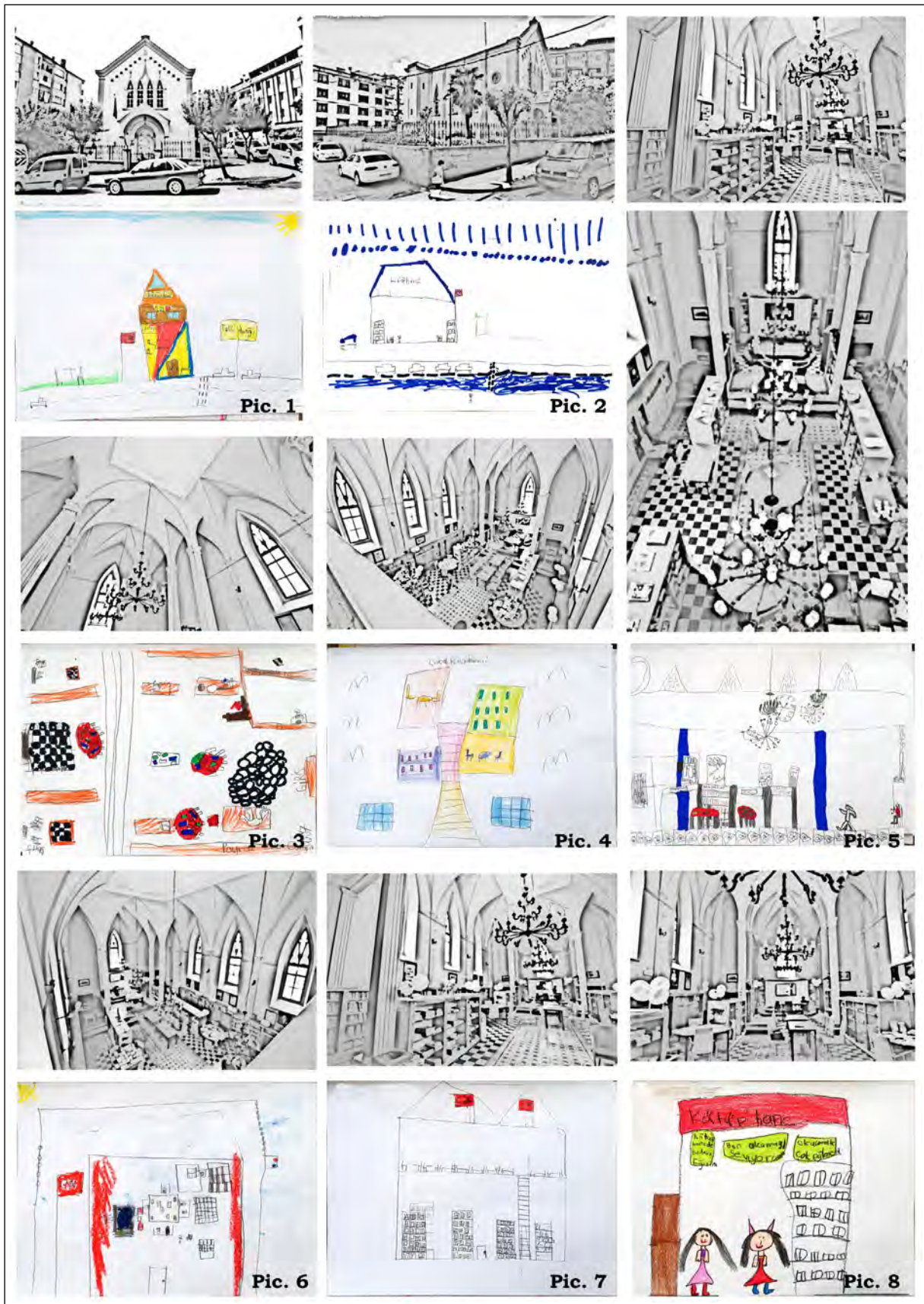


Figure 6. Visual representations of the children in the pre-operational stage (7-year-old).



Figure 7. Visual representations of children (6- to 7-year-old).

children at the preoperational stage, but did not attract the attention of the children at the concrete operational stage, and the clock attracted the attention of the children at the concrete operational stage but did not attract the attention of the children in the operational period.

Elements in the triangular pediment structure pointed the six-armed star windows, the high and wide entrance door surrounded by wooden carved mouldings, which constitute the original aspect of the Giresun Children's Library that was converted from a church, were perceived strongly by the children both at the preoperational stage and concrete operational stage. Columns, spiral staircase, floor tiles, and arm chandeliers, which are the originalities of the interior, were perceived strongly. Apart from this, it was observed that children also perceive different/ordinary items arising from use, but apart from all spatial items, it was observed that children also portrayed themselves and their friends in their paintings (Figure 4).

When evaluated as a whole, it is possible to see the changes in children's perception of space over time, although there is no significant difference between the two groups in terms of the effective elements of this library structure, which was converted from a church. For example, in the preoperational age group (6- to 7-year-old), the building form was especially formally expressed together with its roof and door (Pictures 1, 2). Books, bookshelves, desk and chair items and the function of reading books were highlighted (Picture 3). In detail, the name of the children's library is written in most pictures (Pictures 2, 3). In addition, the children included themselves and their friends in their pictures (Picture 3) (Figure 5).

In the 7-year-old group, it is remarkable that the descriptions of the building and the immediate environment increased. Road and garden descriptions increased (Pictures 1, 2). Children described the exterior and interior of the building together (Pictures 3–5). Books, especially bookshelves, tables, and chairs stand out as basic elements in the interior. It is noteworthy that they also included their friends in the pictures (Pictures 6–8). It was observed that different

functional parts such as the entrance, reading section, chess section, and exit, where the spatial organisation is expressed, are reflected in continuity in the interior. In addition, it is remarkable that the details go down to the equipment in the representations. In addition, it was found that the windows, chandeliers, and columns unique to the structure were also represented in the interior (Pictures 4–7) (Figure 6).

In the representations, the children in the 6-year-old group associated the library with a single item instead of bringing together multiple items in a single picture, and generally drew this item with a single colour or pencil. Contrary to this, children in the 7-year-old age group represented the outer borders of the library and placed the prominent equipment inside the representations, and expressed the exterior and interior descriptions together (Figure 7). The actions and the fields of action highlighted by the children at this stage also differ. While the entrance area of the building gains priority, especially in the 6-year-old group, the reading hall takes priority in the 7-year-old group.

At the concrete operational stage (8- to 10-year-old), it was observed that children aged 8 represented the outer contour of the building and the window and ornamental details next to the entrance door in the building form. The facade was represented in more detail, especially with its ornamentation (Pictures 1–3). In the paintings the form representation and the façade were dominant, while the bookcase and chandelier came to the fore in the interior (Pictures 4–6) (Figure 8).

In the 9-year-old group, the entrance area, outer door, staircase, and front door area were represented in the building form (Pictures 1, 2). Unlike other age groups, the interior and façade were expressed separately (Pictures 3, 4). Perspective representations highlighting the building style, door and window were found (Pictures 5, 6). The furnishing details increased even more in the interior space and besides the bookshelves, tables, chairs, chandeliers, and columns, the world globe, chessboard, and TV screen were represented. In some paintings, the functional parts of the building – the entrance, the landing area, the WC,

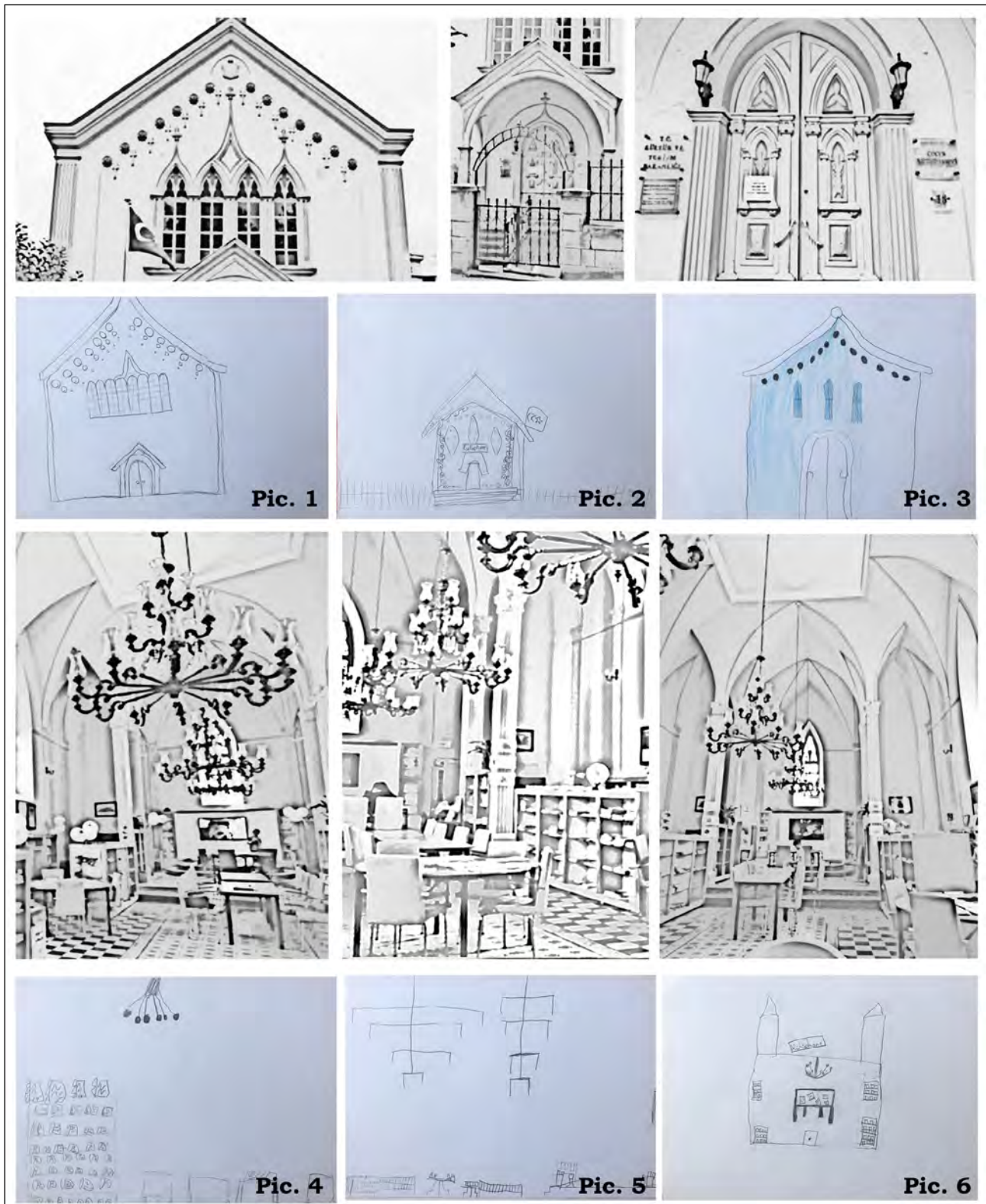


Figure 8. Visual representations of children (8-year-old) at the concrete operational stage.

the floor stairs, and the exit – were drawn in detail. In fact, these functional parts were highlighted and represented in different colours (Figure 9).

In the 10-year-old group, the interior space of the building was represented more. The details on the façade were represented less. As in the 9-year-old group, bookshelves,



Figure 9. Visual representations of 9-year-old children at the concrete operational stage.

tables, chairs, chandeliers, and columns stood out again, while the world globe and chess area were indicated (Pictures 1, 2). The use of colour increased, and different types of books were represented in different colours. Representation of toys increased (Pictures 3, 4) (Figure 10).

CONCLUSION

The study discussed whether the children’s perceptions of the historical Capuchin Church, which is one of the buildings with high stimulus intensity and with its distinguishing features from other buildings, change according to age. It has been concluded that the original characteristics of the Capuchin Church – with its current name, the Children’s Library – are strongly perceived by all children in terms of form, façade, interior space, and equipment. In addition, the fact that the height of the church is greater than its width in the children’s paintings, i.e., the proportion, shows that the children also perceived the space metrically. This multidimensional perception of space by children is remarkable. Again, it was found that the difference between the ages was not between the objects

that the children perceived strongly, but in the way of perception and expressions. There is a difference between simple to complex, which develops in direct proportion to age. Even a one-year difference between children’s ages (6- to 7-year-old) in the pre-operational stage is clearly seen in the representations. This difference decreases with increasing age. Again, due to the development of logical thinking in children in the preoperational period, objects in the space, i.e., objects in the field of perception, were remembered. However, the relations between these objects were established randomly. In addition, the children expressed multiple objects together in a single composition. The space was portrayed in general terms with less use of colour, and the details were not specified. Children at the concrete operational stage, on the other hand, have more developed classification skills, and space was shaped, sized, and coloured in a way that is close to reality. Children in this age group used quite a lot of colours in their visual representations usually with simple and plain expressions. In children at the preoperational stage, the objects in the library representations were a single structure, a single desk, a single bookcase, etc., while in the children at the concrete



Figure 10. Visual representations of 10-year-old children at the concrete operational stage.

operational stage, the objects that children portrayed in the space increased in number. In other words, the details that are remembered and conveyed in the place increase with age in children.

Children's perception of space also changes depending on their experience and frequency of experience. The spatial experiences of children in the pre-operational stage that takes place in the form of short-term library visits with their parents or library visits with their teachers once a month are generally reflected in the library representations as the

transfer of the structural features of the exterior. Since they actively use books, tables, and chairs during their time in the library, they become the most dominant elements that they use in library representations. On the other hand, the children in the concrete operational stage spend more time in the library individually and this is reflected in their library representations as the transfer of both the interior and exterior spaces. In addition to the representation of book-bookcase and table-chair equipment in spaces, the addition of more detailed equipment such as sockets and

television in the representations also indicates that the way children use the space is different (Table 1).

In summary, the child's perception of space changes physically, mentally, and socially depending on age. The mental development of the rapidly developing child should be supported by the spaces to be designed. The fact that children's perceptions of space change depending on their age, experience, and frequency of experiencing space should be taken into account when creating spaces for children. Especially in children, the increase in the details that are remembered, in, and transferred from, the space requires that the space be handled in detail from the whole to its equipment. In addition, historical buildings are important for children because they develop their perception of space. Making children experience historical buildings improves their aesthetic understanding. Children who establish strong bonds with historical buildings become important actors in the permanence of these structures.

ETHICS: There are no ethical issues with the publication of this manuscript.

PEER-REVIEW: Externally peer-reviewed.

CONFLICT OF INTEREST: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

FINANCIAL DISCLOSURE: The authors declared that this study has received no financial support.

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