

CHILD AND CHILD EDUCATION IN THE 21ST CENTURY



Editors

Assoc Prof. Dr. Oguz Emre

Assoc. Prof. Dr. Ayşegül Ulutaş Keskinılıç



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Child and Child Education in the 21st Century

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PREFACE

Many studies have been conducted on child development and education from past to present. The child has an important place in the survival of societies, in improving the quality of life and in laying the foundations of the future. Investing in children who will create the future is the most reliable investment for society. Therefore, it is important to support the development and education of the child. The topics in this book, which emerged as a reflection of the innovations and thoughts in the field of child development and education, will gain practical meaning with the interests and wishes of the readers.

In order for them to become responsible, healthy individuals of the future, it is necessary to follow the development and education of children in well-equipped environments and by well-equipped people, and to work in cooperation with families and educational institutions. In order to recognize children developmentally, to support their healthy development in all developmental areas, and to provide them with appropriate learning experiences, it is necessary to have the competence to put the principles of child development and education into practice.

It is expected that this book will contribute to the field in terms of drawing attention to new trends in child development and education in the 21st century and looking at child development and education from different perspectives.

The book includes 9 chapters on children, “child development and child education”. We wish to contribute to all concerned whose target audience is children.

Assoc. Prof. Dr. Oğuz EMRE

Assoc. Prof. Dr. Ayşegül KESKİNKILIÇ

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CHAPTER I

APRAXIA-CHILDHOOD APRAAXY OF SPEECH

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Leipmann (1900) used the concept of apraxia to describe a movement disorder in which a person has difficulty in forming voluntary movement patterns accurately in the absence of other neuromuscular anomalies (Rothi and et. 2004). Marshalla (1997) described apraxia in speech as a non-verbal sensorimotor disorder that pairs with impaired capacity to program the position of muscle movements.

According to Leipman's theory, there is a communication of information from the **left parietal cortex**, which is responsible for complex movements and planning, to the **left frontal cortex** via the corpus callosum, and if this communication is disrupted, apraxia occurs (Leipman, 1900 and 1905). Geschwind further extended Leipman's theory and argued that apraxia is caused by a communication breakdown between the neural networks responsible for motor functions. He attributes this communication gap to an arcuate lesion between the posterior part of the speech region and the motor-associative region, which is responsible for planning motor movements (Geschwind, N.,1975). However, although

some patients have lesions in the region, there is no problem in motor movements such as gestures and mimics, and this theory is insufficient to fully explain why patients cannot use different objects in the deteriorated area.

Heilman's theory is related to the nervous system because, as it is known, the nervous system also includes motor skills. Patients with parietal lesions

may exhibit signs of apraxia because they have praxicones (input/output motor representations stored in memory). These praxicon programs are implemented by the motor cortex. Later, Heilman et al. (1982) stated that there are two different forms of motor apraxia based on this theory. They stated that the first is that the loss of praxicon causes the loss of submarginal and angular gyrus, and the second is that the loss of communication between praxicon and the premotor cortex and motor-associative cortex occurs due to the lesions.

* Not associated with cognitive or linguistic comprehension problems.

Apraxia is considered a motor disorder caused by neurological damage. It is manifested by the inability to carry out voluntary movements despite normal muscle tone and coordination. In other words, the muscles function normally, but the brain's faulty programming prevents precise, purposeful movements. When apraxia is examined, it can be said in three types as limb, oral and verbal (Shiple and et. 1992).

Limb apraxia is associated with voluntary movements of the legs and arms. Although the patient has the muscle strength and range of motion needed to perform the tasks, the patient cannot say goodbye or start on command, even if the patient can do the commands automatically.

The patient with **oral apraxia** may not be able to protrude his tongue and voluntarily stroke his lips or make his tongue in and out. Oral apraxia can sometimes be confused with verbal apraxia because both involve the oral-facial muscles in the apraxia type, but they do not mean the same thing in the two cases.

Verbal apraxia is a disorder of motor programming necessary for speech formation. The patient with verbal apraxia has difficulty in managing and sequencing the muscles involved in the voluntary production of letters.

A patient may have more than one type of apraxia at the same time. Verbal apraxia is the most commonly diagnosed type, while Limb apraxia is considered the least diagnosed type (Shiple and et. 1992).

1. Cranial Nerves

The 12 cranial nerves perform important tasks such as transmitting sensory and motor information to all muscles of the body. When evaluating neurological disorders, knowing these nerves and their functions will be useful for our understanding of the disease. This information is summarized in Table 1. The

cranial nerves directly related to hearing, speech, tongue, or swallowing are shown in the table with an asterisk (Shibley and et. 1992).

Sinir	Tipi	Fonksiyon	
V*	Trigeminal	Mixed	Tactile facial sensation, muscle movements to chew
VII*	Fasiyal	Mixed	Taste, facial muscles movement
VIII*	Acoustic	Duyusal	Hearing and balance
IX*	Glossopharyngeal	Mixed	Elevation of the palate and larynx for taste, swallowing
X*	Vagus	Mixed	Taste, palate height, pharynx and laryngeal movements
XI*	Accessory	Motor	Dizziness, shrug, palate movement, pharynx and larynx
XII*	Hypoglossal	Motor	Language Movement

2. Childhood Apraxia of Speaking

Apraxia of speech in childhood is a known or unknown neurological pediatric speech disorder. Not all children with apraxia of speech in childhood are seen with similar symptoms. All the symptoms and signs listed below may not be for every child. It is important that your child be evaluated by a speech and language therapist who has knowledge of childhood apraxia of speech to rule out other causes of speech problems. General conditions to look for in childhood apraxia of speech are given below (Jeanne Buesser, 2010):

In Young Children;

- First words may sound late and missing
- Just a few different consonants and vowel sounds
- Problems of combining letters; Ability to show long pauses between letters
- Simplifying words by replacing difficult letters with easier ones or deleting difficult letters
- They may have eating problems.

In a Big Child;

- Creating inconsistent misspellings that are not due to maturity
- A much better language perception than you can speak

- Difficulty imitating speech
- May appear to glow when trying to produce sound or coordinating lips, tongue, and chin
- Difficulty saying long words or sentences compared to short ones
- Having more difficulty in anxious situations
- Sounds are choppy, monotonous, or emphasize the wrong syllable or word.

Potential other situations;

- Delayed language and speech development
- Other expressive language problems, such as confusing sentence order or not remembering words
- Difficulties in fine motor movement / coordination
- Children with speech problems or those with childhood apraxia of speech have problems learning to read, write and write.

2.1. How Is Childhood Apraxia of Speech Diagnosed?

It is important that a hearing care professional perform a hearing assessment to rule out hearing loss, which is one of the causes of the child's speech disability. A speech and language therapist with knowledge and experience in childhood apraxia of speech should also be evaluated. Evaluate the child's oral-motor muscles, speech rhythm and speech sound development. When the speech and language therapist obtains a speech sample in childhood speech apraxia, they can diagnose and rule out other speech disorders.

2.2. An Oral-Motor Assessment Includes:

- Assess for weakness or low muscle tone of the lips, chin, and tongue. Children with Childhood Apraxia of Speech usually do not have the weakness, but controlling the weakness will be instrumental in a speech and language therapist's diagnosis.
- Seeing how well the child can do the lip movement, imitating the lip movements (eg tongue moving from side to side, smiling, frowning, wrinkling the lips)

A speech sound (sound pronunciation in words) assessment includes:

- Evaluation of vowels and consonants
- Determine how well the child expresses individual sounds and combinations of sounds (syllables and word forms)

- Determine how well others can understand when the child states single words, phrases and expressions.

A speech and language therapist may also assess a child's receptive language development, visual language skills, and literacy skills to see if there are co-existing problems.

Differential diagnosis is difficult; because behaviors related to childhood apraxia of speech may also be related to other communicative disorders. These can be stated as dysarthria, delayed speech, fluency disorder, expression and perception disorder, literacy disorder and phonological disorders. This is difficult to distinguish as childhood apraxia of speech is often associated with one or more of these other communicative disorders. Behaviors associated with childhood apraxia of speech may vary from one child to another and may also differ according to the child's maturation.

Table 2 shows the behaviors and characteristics associated with childhood apraxia of speech. Although there are currently no definitive diagnostic criteria to completely distinguish Childhood apraxia from other speech disorders in childhood, there are certain characteristic behaviors of Childhood apraxia of speech in particular. The American Speech Hearing Association (ASHA) ad hoc committee has specified the following criteria for Childhood apraxia of speech:

1. Inconsistent errors in vowels and consonants in the repeated reproduction of repeated syllables or words
2. Extended and distorted transitions between sounds and syllables
3. Inappropriate prosody, especially in word or phrasal emphasis (ASHA, 2007)

Table 2: Behaviors and characteristics associated with Childhood Speech Apraxia (adapted from the American-Speech-Language-Hearing Association, 2007))

	Communicative Behaviors Associated with Childhood Apraxia
Unmotivated Motor Behaviors	General incompetence or clumsiness Some deficiencies in motor skill development Insufficient muscle tone Hyper- or hyposensitivity in the oral cavity region Oral apraxia
Speech Motor Behaviors	Difficulty with repeating syllables and difficult words slow speech development Speech sound errors in sentences low intelligibility Less use of vowels vowel errors Inconsistencies in errors Increase in the number of errors in long or complex words and sentences Errors in sounds, words or sentence order
Prosodic Features	Too many distortions of syllables Intermittent speech (splitting into syllables) Differences in proportions, including pauses between long sounds, syllables, or words Lower loudness or monotony Variable nasal resonance
Speech Detection Features	Decreased auditory perception Decreased auditory discrimination Decreased auditory memory
Language Features	Marked language deficiencies Morphological deficiencies Meaningful and receptive language explanations are openings that consistently lag behind receptive language Having a family history of language impairment
Metalinguistics / Literacy Traits	Decreased phonological awareness Difficulty defining words Seeing typos Recognizing the inadequacy in his speech

2.3. Warning Signs for Childhood Apraxia of Speech:

- Still using vowels, murmurs or monosyllabic to communicate at 15 months and older

- Less number of words in 15 months and older months (under 5)
- Increase in the number of errors in words or sentences with more syllables compared to monophonic or syllable words
- Difficulty imitating speech
- Making choppy, monotonous sounds or emphasizing the wrong syllables or words
- Less good perception than speech errors
- Difficulty or inability to make mouth shape regularity required to produce letters
- Having trouble reading or learning to write.

3. Methods Of Treatment

What treatments are available for children with apraxia of speech?

Research shows that children with childhood apraxia of speech achieve more success when they receive intensive therapy 3 to 5 times a week. Children who receive individual therapy receive more benefits than children who receive group therapy. As the child progresses, there may be less need for therapy and group therapy may be a better option.

The goal of therapy for childhood apraxia of speech should be determined as the development of planning, sequencing and coordination of muscle movements for speech production. Exercises such as “strengthening” the muscles needed for verbal speech will not help speech much. Because childhood apraxia of speech is a lack of coordination of speech, not a loss of power.

To develop a child’s speech, speaking practice is required. In addition, tactile “tactile” cues and visual cues (such as seeing oneself in front of a mirror) and some sensory feedback such as sensory feedback will be beneficial for the development of the process. With this multi-sensor feedback, the child will be able to repeat syllables, words, sentences and longer speeches, developing the muscle coordination and sequencing needed for speech.

Continuing and repeating the therapy method used at home is of great importance for development. Family members often need to be involved in helping the child develop and using the child as support outside of therapy and to make the best progress in treatment. Another important aspect for the family is time and regular work in the treatment of apraxia of speech. Children with childhood apraxia of speech need a supportive environment that will help them feel successful with communication.

3.1. Approaches

Any of the different therapy techniques incorporating motor learning principles can be used, choosing a therapy method based on a child's speaking needs and strengths. Some traditional approaches consist of speech motor learning principles for children with childhood speech apraxia. In everyday speech, many of these techniques can be combined in speech therapy for children with childhood speech apraxia (Caruso, A. J and et., 1999).

Multi-sensory sending techniques use different sensory cues to enable the child to see, hear, feel and/or understand the target speech movement movements while using words or sentences.

- **Integral stimulation approaches** use a well-defined and structured hierarchy of speech goals, and the child is asked to imitate speech (syllables, words, or phrases) modeled by the therapist in a “look, listen, do what I do” approach. In this approach, the child tries to listen to the words by giving attention through hearing, and in visual attention, it is done by looking at the therapist's face. As the child's skills develop, the therapist may change the timing of the child's repetition and, as a result, reveal the child's goals, such as initiating speech on their own.
- **Phonetic placement techniques** provide verbal information and instruction to the child about what to physically do with their mouth, tongue, lips or jaw during speech attempts to establish more accurate positions for some of the sounds they can produce. However, the target point of speech therapy is speech movement sequences.
- **Tactile facilitation approaches** use touch or manipulation of the head, face, lips, and chin during speech; this way the child can ‘feel’ better and remember how to properly move the articulatory organs to create speech movements. Often, support is given at first, and the child's movements are eliminated as he gains independence in gestures.
- **Rhythm and melody** are used for prosodic facilitation, timing or rhythmic structure for speech movements (Caruso, A. J and et., 1999).

In summary, an experienced therapist should evaluate their knowledge of childhood apraxia of speech by evaluating each child individually and taking into account their personal skills when determining treatment plans. Whatever the therapist, he or she should explain to a family why he or she chose this approach for the child, depending on the nature of the disorder and the child's individual strengths and needs.

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CHAPTER II

NORMAL MOTOR DEVELOPMENT IN CHILD

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1. Introduction

Motor development is the continuous change in motor behavior that occurs throughout life. It is defined as the individual's gaining mobility with the effect of physical growth as well as the development of the central nervous system and environmental conditions. (Goodway, Ozmun, & Gallahue, 2019).

The first years of life are important for basic motor development. Basic motor skills gained in this period are important for health, cognitive ability, and self-confidence in the later years of life (Han, Zhao, Kong, & Xie, 2022). The infant's motor development follows a certain sequence. This order is important to know the deviations from the normal (Rendle-Short, 1962). However, factors such as environmental conditions, experiences, nutrition, and cultural differences affect motor development (Caçola, 2014; Gabbard, Caçola, & Rodrigues, 2008). In addition, individual differences can be observed between infants. While 90% of healthy babies start with crawling and then progress to walking, 4.3% can

move on to other motor development stages without crawling. This explains individual differences (Tupsila, Siritaratiwat, Bennett, Mato, & Keeratisiroj, 2022).

2. Theories of Motor Development

Various theories have been developed to explain the interaction of infant development with the environment. Neuro-maturation theory and dynamic systems theory is the most accepted among the theories of motor development (Formiga & Linhares, 2015).

2.1. Neuro-maturation Theory

Neuro-maturation theory was developed on the hypothesis that motor development is influenced by central nervous system development. In this theory, motor development is explained based on the development of the embryo in the cephalocaudal direction. It is stated that motor development is also in the cephalocaudal direction, and movement control progresses from proximal to distal. In addition, complex movements take place after primitive movements. In addition, according to this theory, the stages of motor development proceed in a certain systematic and occur at similar times (Gesell, 1945; McGraw, 1943).

2.2. Dynamic System Theory

Dynamic systems theory states that, contrary to maturation theory, motor development is not only affected by central nervous system development. According to this theory, the interaction of internal and external systems is important for motor development. In order for movements to emerge, interaction with the environment is necessary, as well as many subsystems in the body structure. For this reason, movements that were previously more uncontrolled become more complex and controlled with the restrictions coming from the internal and external environment (Case-Smith, 2013; Formiga & Linhares, 2015; Wehmeyer & Schwartz, 1997).

2.3. Neuronal Group Selection Theory

In neuronal group selection theory, neuronal groups are formed as a result of the grouping of neurons belonging to certain functions in the nervous system. These groups are responsible for certain motor movements and receive sensory information from certain centers. This theory supports the emergence of motor

behavior in children based on the balance between neuro-maturation theory and neuronal group selection theory (Hadders-Algra, 2000).

2.4. Hierarchical Theory

While this theory explains motor development, it states that the upper centers are a control mechanism over the lower centers. However, any part of the nervous system can activate other centers. Therefore, it is stated that the theory needs to be updated (Shumway-Cook & Woollacott, 2007).

2.5. Reflex Theory

In reflex theory, motor behavior is based on reflexes. Complex movements emerge as a result of the interaction of reflexes with each other. However, this theory has lost its validity as it cannot explain the movement in the absence of sensory stimuli (Shumway-Cook & Woollacott, 2007).

2.6. Ecological Systems Theory

There are 4 basic elements in this theory. These are process, setting, person and time. And motor development happens thanks to the interaction of these elements with each other. Objective and subjective experiences in an environment are important elements. The environment is the critical element and consists of 5 layers. The first layer, the microsystem, expresses the child's interaction with his family. The mesosystem influences indirectly. In the exosystem, the social and educational status of the family, and in the macrosystem, the cultural status and lifestyle are important. The chronosystem includes social and cultural conditions. These systems are classified to affect the development of the child (Bronfenbrenner, 1994).

3. Physiological Development

3.1. Physical Development

Development continues throughout life and progresses as a whole. In fact, physical, cognitive, and sensory development all affect each other. The stages of physical development actually mirror motor development. Physical development is studied as cephalocaudal and proximodistal. In cephalocaudal development, there is a development that starts from the head and progresses distally.

Developing head control first and then moving to sitting control explains the relationship between cephalocaudal physical development and motor

development. In proximodistal development, there is the development from the inside out. The development that starts with the brain first progresses to the hands and feet. In this way, fine motor skills are acquired later (Neaum, 2010). For this reason, it will be important to address musculoskeletal and brain development before motor development.

3.2. Development of the Musculoskeletal System

The skeletal system is important for the protection of organs, the production of bone marrow cells, and mineral storage. Muscles have roles such as providing mobility. Muscle and skeletal structure occur with significant differentiation of cells, especially in the first 3 months of the embryogenic period. This is followed by development and development continues until the age of twelve (Paxton & Murray, 2017). In the first month of fetal development, the adult bone matrix is determined and bone begins to form in the second month (Walker, 1991). Most of the fetal bone development is gained in the last trimester. Gestational age, birth season, and maternal lifestyle (smoking, alcohol, caffeine intake, and diabetes) may affect bone development (Cooper, Harvey, Javaid, Hanson, & Dennison, 2008). When looking at muscle development, primary myotubes begin to form in the fifth week of pregnancy and the first muscle fibers begin to form in the eleventh week. Muscle fibers are mature at birth. But muscle growth and change continue. While slow-twitch type I fibers are active in the early period, the rate of fast-twitch type II fibers increases towards birth (Walker, 1991). The position of the muscle and the fiber direction also changes in parallel with the development of the skeletal system. To illustrate, a muscle of the hand around the bone extending along the long axis makes the proper attachment point diagonally to perform pronation of the hand (Paxton & Murray, 2017).

3.3. Brain Development

Brain development begins in the 3rd week of pregnancy and continues into adulthood. In the embryonic period, the primitive basic structure of the brain and central nervous system is established. Central and peripheral nervous system structures are roughly formed. In the fetal period extending until the end of pregnancy, the pathways of cortical and subcortical structures are formed. This development continues after birth. By the time a child is around 6 years old, the child's brain is around 90% of the normal adult brain. Changes in the

gray and white matter of the brain continue until old age. These changes cause functional changes. Sensory input is required for normal brain organization. For this, postpartum experience is important (Stiles & Jernigan, 2010).

4. Motor Development Stages

It is possible to examine the stages of motor development in different ways. It can be analyzed as reflexive movements, primitive movements, basic movements, and specialized movements. In this classification, the first 3 steps refer to the periods up to school age, and the period of specialized movements refers to after-school age (Goodway et al., 2019). In addition, it is possible to examine according to age (Shepherd, 1995) or body posture, such as 3-month or 6-month periods (Formiga & Linhares, 2015). In this section, gross motor development will be explained by classifying it according to body posture.

4.1. Gross Motor Development

Gross motor development refers to the control of a wide variety of movements that use the body's large muscles. These; activities such as turning, sitting, creeping, crawling, standing, walking, running, jumping (Neaum, 2010).

4.1.1. Prone Development

Since the newborn is in a flexion posture physiologically, he cannot raise his head back. Later, as the extensor tone begins to increase, he begins to lift his head back (Goodway et al., 2019). The infant, who starts to raise his head, can perform a head extension of 45 degrees in the 2nd month and 90 degrees in the 3rd month. In fact, the infant's desire to raise his head in the prone position is a protective action to keep his mouth open and keep the airway open. Increasing head control also increases visual attention. Infant can follow horizontal objects (Formiga & Linhares, 2015). Extension in the prone position is important for static stability. It is also necessary for the development of raising on elbows and hands in the prone position, standing and sitting in the quadrupedal position (Horowitz & Sharby, 1988).

After head control, the baby starts to stand on his prone elbows (forearms).

The baby can turn from the prone position to the supine position at 5 months. In the 6th month, the hands begin to stand on it, and in these months, it gains the ability to rotate around its own axis. In the 7th month, he can stand on one arm and reach for objects with the other hand (Formiga & Linhares, 2015).

4.1.2. *Supine Development*

From birth, the flexion posture is dominant in the baby. The midline of the head is achieved in the 3rd month and flexion/extension movements begin to develop in the 4th month. In the fifth month, the baby begins to roll from supine to prone. In addition, the baby begins to bring his feet to his mouth and may come to sit when his hands are held (Formiga & Linhares, 2015; Goodway et al., 2019; Piper & Darrah, 1994).

4.1.3. *Sitting*

Sitting skills begin to form in the 5th month. The periods for sitting without support are between 3.8 and 9.2 months. Sitting balance starts to be controlled between 2-9 months. It is stated that trunk control is closely related to sitting balance (Sangkarit, Keeratisiroj, Yonglitthipagon, Bennett, & Siritaratiwat, 2021).

4.1.4. *Crawling*

Crawling is an important step in gross motor development. Between 6-7 months, babies learn to come to the crawling position. But not every child learns to crawl. On average, in 8.5 months, crawling can be performed synchronously as knee-hand. Early crawling provides many advantages. It provides better cognitive function, upper extremity control, proprioceptive and kinesthetic skills (Choi et al., 2022; Shepherd, 1995).

4.1.5. *Standing and Walking*

Babies start their preparations for standing at 9 months. At 10 months, it can stand by holding on from one place. In the 11th month, it starts to stand independently. In the 12th month, independent walking begins. At 15 months, it can climb stairs. At 18 months, babies can run (Formiga & Linhares, 2015).

4.2. *Fine Motor Development Steps*

Fine motor development is related to the use of the upper extremity. It is closely related to gross motor development and cognitive development stages. Babies first use their hands in supine positions, and as their balance skills develop, they begin to use their hands more comfortably in different positions. Newborns cannot use their hands freely. The palmar grasp reflex is dominant, so it closes its hands. In the 3rd month, the baby realizes hand-hand coordination by connecting his hands to the midline. The first grip is performed by closing the fingers on

the ulnar side of the hand and then by closing the fingers on the radial side. In the 5th month, the effect of grasping reflex decreases, and can let go of objects. While the thumb is not involved in grasping at first, the thumb begins to be used synchronously with the other fingers in the 8th month. At 12 months, the baby now gains the ability to give objects. Around 15 months, he can stack objects on top of each other, and at 20 months he can start eating. Around age 3 they can circle and at age 5 they can put on and take off their clothes independently (Amiel-Tison, 2001; Formiga & Linhares, 2015; Gerber, Wilks, & Erdie-Lalena, 2010).

4.3. Oral Motor Development

Oromotor function includes the function created by the movements of the mouth, tongue, jaw, and lips. Oral motor skills include swallowing, sucking, biting and chewing, and speaking functions (Sampallo-Pedroza, Cardona-López, & Ramírez-Gómez, 2014). In infant development, sucking is examined in two stages suckling and sucking. Suckling is gained during the second and third trimesters of pregnancy. It includes forward and backward movements of the tongue and up and down movements of the jaw. In the sixth month, sucking begins to be active. There is a down or above movement of the tongue and stronger mouth closure. Swallowing is a reflexive process. The gag reflex begins during pregnancy and decreases in the sixth month after solid foods are ingested. But it lasts for life. The search reflex starts to disappear between 3-6 months. The forward movement of the tongue (protrusion reflex) disappears between 4-6 months (Arvedson, Brodsky, & Lefton-Greif, 2019). In the same months, the extension of the chin increases with the acquisition of head control. In this way, the baby can easily open the mouth to take the food into the mouth. Around the 24th month, the balance between flexion and extension is achieved in the chin (Morris, 1985). Between 4-6 months, as the forward movement of the tongue decreases, spoon-feeding behavior becomes easier. While the first chewing behavior, which is up and down, is acquired around 6 months, rotational chewing movements begin at the 7th month. With the rapid gains in motor development between 6-12 months, the eating behavior becomes easier and the baby self-feeding begins to develop (Arvedson et al., 2019; Pridham, 1990).

5. Reflex Movements Period

Reflexes and reactions provide protection from the environment and rapid response in infancy. This period is important for further development. In

this period, reflexes leave their place for more complex movements with the development of the upper centers (Berne, 2006).

5.1. Primitive Reflexes

The Moro reflex occurs in response to a stimulus or threat. As a result of a loud sound or sudden movement, the baby first opens his arms to the side. Then the arms are joined to the midline again. It begins to develop during pregnancy and disappears between 3-7 months after birth.

The grasp reflex allows the fingers to be closed when the baby's palm is touched. It is expected to start before birth and disappear around the 4th month.

The sucking reflex allows the baby's mouth to show a sucking behavior when touched. The search reflex, on the other hand, causes searching behavior when the baby's mouth is touched. Both reflexes begin before birth and the sucking reflex disappears in the 3rd month. The search reflex disappears in the 12th month.

Asymmetric tonic neck reflex describes the extension of the upper extremity on the side of the rotation and flexion on the opposite side when the head is turned to one side while the baby is lying in the supine position.

It begins to disappear 4-6 months after birth.

The stepping reflex enables the baby to show stepping behavior when the baby is held under the armpit or when the feet are in contact with the ground. This reflex can continue until the 5th month.

In the labyrinthine reflex, extensor tone is dominant when the baby is placed in the supine position. There is an increase in flexor tone when lying face down (Bukatko & Daehler, 2012; Haywood & Getchell, 2021).

In the Galant reaction, while the infant is held face down on the evaluator's hands, the torso curls towards the stimulus side as a result of the stimulus from the side of the trunk. It should disappear after 9 months.

The symmetrical tonic neck reflex describes flexion of the arms and extension of the legs when the head is flexed while the infant is lying in the supine position. The opposite occurs when the head is brought back into extension. Occurs in the first 6 months (Berne, 2006).

5.2. Righting and Equilibrium Reactions

The Landau reflex provides the extension of the trunk with the extension of the head when the baby is held prone on the abdomen. It disappears at 42th months after birth.

In the amphibian reflex, when the hip is flexed while lying prone, it also causes flexion in the lower and upper extremities. This makes crawling easier. It begins to form between 4-6 months after birth and continues throughout life.

The gradual trunk rotation reflex causes the body to rotate. It occurs in the 6th month after birth and continues throughout life (Grzywniak, 2016).

The parachute reaction is elicited by imitating a sudden drop in the baby's prone position. The response occurs in the form of a sideways opening of the arms and hands. It is completely formed in the 6th month and is completed in the 9th month. It lasts for life (Romeo et al., 2009).

Equilibrium reactions begin to occur 6-8 months after birth. It continues throughout life. These reactions allow the body to be positioned according to the center of mass in different positions. Includes balance reactions during supine and prone positions, crawling, sitting, and standing (Grzywniak, 2016).

6. Factors Affecting Motor Development

The motor development of the child is affected by birth characteristics, environment, and cultural conditions (Gabbard et al., 2008). In addition, the child's general health status such as vitamin and mineral deficiency or chronic diseases are among the conditions that affect motor development (Çaçola, 2014). The home environment is a particularly important factor for motor development. It has been shown that motor and cognitive development are better in babies with a good home environment (Ferreira, Godinez, Gabbard, Vieira, & Çaçola, 2018). The environment in the school, the society in which they live, family structure, and socioeconomic level are important. Considering the family-related situations, the socioeconomic status of the family stands out. It has been stated that the education level of the mother, communication with the mother, problems in the family, urban life, and malnutrition are effective in motor development. In addition, sibling status and the child's position in the family are other factors. School attendance was also examined for motor development. Better motor development, including fine motor development, has been observed in children with school communication from the age of two and a half. In addition, training and environments that encourage physical activity in the school environment provide great advantages. Social structure, attitudes towards the baby, and lifestyle are other factors that affect development. (Venetsanou & Kambas, 2010).

Apart from these, other factors affecting the baby's development are parental employment, mother's leave time, sleeping position and equipment use, and movement experience (Tupsila et al., 2022). Babies lying in the supine position while awake have difficulty in standing or antigravity positions because they do not experience movement against gravity. It has been argued that this may cause delays in gross motor development (Majnemer & Barr, 2005). However, as a result of the study in which children placed in different positions and children lying in the supine position were compared, it was shown that there was no delay in motor development (Darrah, Bartlett, Maguire, Avison, & Lacaze-Masmonteil, 2014). In a study, it was shown that the use of hammocks in infants causes an increase in gross motor development scores. However, opposite results are also available. For this reason, it is emphasized that the motor development of babies who use hammocks from an early period should be evaluated. Another outcome of this study was related to the use of walkers. It has been found that the motor development of babies using a walker is behind. It is argued that this situation is related to excessive support of the trunk as a result of placing the baby on the walker in the early period. This causes a delay in gaining body control as a result of reduced body movements (Tupsila et al., 2022).

7. Evaluation of Motor Development

Evaluation of motor development is important in order to determine the differences in motor development of children compared to their peers, to provide early intervention, to plan treatment programs, and to determine the changes that occur after treatment (Gabbard et al., 2008). Different tools are used for this purpose.

General movements assessment performs movements of babies up to 6 months using the video analysis method. It is important to evaluate 2 movements here. These are writhing and fidgety movements. Writhing movements cover movements up to the 9th week. Then fidgety movements occur. These movements include small amplitude movements of the trunk, neck, and extremities. During this assessment, the baby should be in a calm and comfortable position (Prechtl, 2001).

The Alberta Infant Motor Scale is used to evaluate the gross motor skills of infants aged 0-18 months. The scale has 58 items assessing the spontaneous movements of infants in prone (21 items), supine (9 items), sitting (12 items), and standing (16 items) positions (Albuquerque, Guerra, Lima, & Eickmann, 2018).

The Denver II Developmental Screening Test evaluates children between the ages of 0-6. It has sub-dimensions that evaluate gross motor, fine motor, language development, and social status (Glascoe et al., 1992).

Bayley Scales for Infants and Toddlers III (Bayley-III) is used to evaluate the cognitive, language, gross motor, and fine motor development of infants aged 1-42 months (Anderson & Burnett, 2017).

The Peabody Motor Development Scale was developed to evaluate infants aged 0-72 months. It has sub-dimensions that evaluate gross and fine motor skills (Gill et al., 2019).

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CHAPTER III

REFLEXIVE THINKING IN CHILDREN IN THE CONTEXT OF P4C

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1. Introduction

As a cultural, social, and psychological individual, the child tries to make sense of being itself and itself as a being by asking questions and turning to the questions he asks again and with the intellectual faculty, he has realized. With every question he asks, he strives to reinvent himself and address life in a chaotic existence called meaning. Lipman, who is aware of the importance of this cognitive effort, has succeeded in opening the way to bring a different perspective to the education system with a brand new method by combining the concepts of children and philosophy with the Philosophy for Children (P4C) education he developed at the end of the 1960s.

When it is considered that one of the problems faced by the education system is the inability to use high-level cognitive abilities; It can be said that the way for them to be equipped in every way in the face of existing problem situations is through schools as a practical area of education systems (Akkocaoğlu and Akkoyunlu, 2016). It can be seen that this situation increases the importance of philosophy even more.

UNESCO published a statement in 2007 on the aims of Philosophy for Children (P4C) education as the field where children and philosophy meet; free-thinking, being a diligent citizen, supporting individual development, developing language and discussion abilities, and conceptualizing philosophy.

The field of philosophy is in a constant reckoning with itself and everything that exists; considering that it can enable the acquisition of the ability to analyze and synthesize and think reflexively (Başara, 2008), it can be seen that the importance of the child's place in the intellectual world is even more prominent.

In this study, first of all; P4C training and its importance have been mentioned in America and on his long journey with Matthew Lipman in the late 1960s. Then, the concept of child and the cognitive development of the child was briefly examined, thinking and philosophy were briefly discussed in relation to thinking, reflexive thinking was defined as a higher level of thinking, the possibility of reflexive thinking in children was analyzed and finally, the ability of reflexive thinking to children in the context of P4C education was examined.

2. P4c Training

2.1. Definition

P4C or Philosophy for Children is a learning and teaching approach that develops thinking as a cognitive feature in children, strengthens communication, and paves the way for academic success linked to the development of empathy and self-confidence. The 4Cs in the Philosophy for Children (P4C) method, pioneered by Matthew Lipman, emphasize the following four thinking acts that begin with the "C" in English:¹ Critical Thinking, Creative Thinking, Caring Thinking, and Collaborative Thinking.

Although it is known that the concept of "Children's Philosophy" was first used by the French thinker Karl Jaspers, although it is known that it emerged systematically, this concept corresponds to "Kinderphilosophie" or "Philosophic Kinder" in German and "Philosophic Children" in English. In Turkish, this is translated as "Children's Philosophy" or "Philosophy for Children", but "Children's Philosophy" refers to children's philosophical thinking, while "Philosophy for Children" refers to the philosophy developed by adults for children (Önal, 2017). With his work titled "Children's Philosophy and Child Education", Zeki Karakaya has given various names related to Children's Philosophy;

- The philosophy that adults do from a children's perspective, including the study, analysis and evaluation of children's philosophical abilities.

¹ See. *The official website of "Sapere Philosophy for Children, Colleges, Communities": <https://www.sapere.org.uk/about-us.aspx>*

- Prepared by adults for children; philosophy for children, consisting of programs, stories, textbooks and children's books that offer them philosophical methods.
- Philosophy with children, where intellectual conversations are held over the basic questions in their world and help them develop their questioning skills by using their minds.
- Children's; childish philosophy or philosophy of childhood is based on the intellectual products they produce on their own or with the help of others (Karakaya, 2006).

P4C education can be seen as a pedagogical method in which the development of philosophical thinking in children is aimed at developing philosophical thinking through the form of philosophical dialogue. The foundations of this method, which aims to improve thinking skills in education, were laid by the American philosophy professor Matthew Lipman at the end of the 1960s. Lipman; Despite his efforts, he emphasized the lateness in this age group due to the inability to eliminate the deficiencies in reasoning and questioning abilities that he noticed in undergraduate students and focused his studies on scientific process skills with fifth-grade students and obtained positive results. This education, which has become widespread on this basis and accepted in many countries, has also become widespread and implemented in Turkey (Soysal and Pullu, 2020).

Depending on the originality and creativity of children in asking questions, the aim of P4C education, which is based on the assumption that they are natural philosophers and aims to place philosophical thinking on a traditional basis in children's curriculum, can be seen as creating a climate where thinking is adopted as the norm.

2.2. Short History

The history of P4C, or Philosophy for Children, can be traced back to the Socratic method of the ancient Greek philosopher Socrates, and even earlier. However, in the historical background of its emergence as a pedagogical method, it can be stated that John Dewey and his constructivist approach² (Öğüt, 2019). Dewey

² *Constructivism; For the first time on the axis of the idea of "to know something is to be able to explain it", G. It was put forward by Vico and was founded by Rousseau; It has become evident with its empirical-based epistemological view, which structures and treats information as an active participant through experimental actions instead of the subject receiving it as a passive spectator; drawing attention to the constructivist aspect of the mind as an active processor rather than a passive receiver (Bakır, 2014).*

emphasizes the importance of the democratic environment and democratic community in terms of the development of knowledge and states that the foundations of this democratic community can be laid through the education of children (McCall, 2017:102-103). As it can be said that Lipman was influenced by many thinkers such as Ludwig Wittgenstein, Montaigne, John Lock, McCall (2017), Lipman's P4C education was based on Dewey's philosophical views on democratic society.

When examined in this context, it is seen that the foundations of the systematic philosophy of children were laid by Matthew Lipman in America at the end of the 1960s and developed throughout the following processes. With this method, in which the concepts of philosophy and childhood are synthesized in relation to each other, Lipman has concluded that formal logic should be taught from the early stages of childhood. After the first book with philosophical content "Harry Stottlemeier's Discovery" for children between the ages of 11-12 in 1969, Lipman published numerous books with application guides for different age groups, prepared handbooks containing philosophical exercises for teachers as well as theoretical books related to the philosophy program for children and together with his friends, he founded the Institute for the Development of Philosophical Education for Children (IAPC) in order to accelerate his work (Okur, 2008; Akkocaoğlu, 2015). The thinker, conducted his first applied philosophy lesson with fifth-grade children between the ages of 11-12; In practice, she read stories with children and conducted inquiry-based discussions on the questions she prepared about these stories (Karakaya, 2006; Okur 2008).

Influenced by Dewey's pragmatic approach and embodied in his educational program, Lipman's P4C education is an approach that aims to introduce philosophy into schools from early childhood by creating a field based on philosophical inquiry based on concrete life (Vansielegem and Kennedy, 2012; derived from 2015: 26).

After Lipman, who approached the understanding of philosophy for children through the eyes of an educator, the second important name who made important studies on this subject from the point of view of a philosopher is Gareth Matthews (Özkan, 2020). According to Matthews, the neglected and ignored understanding of childhood should be revised and the child's natural curiosity should be taken into consideration (Matthews, 1980; derived from Akkocaoğlu, 2015: 26). Unlike Lipman, Matthews uses the term "Dialogue with Children" instead of "Philosophy for Children", which means having philosophical

conversations with children who are born philosophers, and the aim of this approach is to eliminate these ideas of schools that defend the traditional view that children cannot think abstractly (Matthews, 1980; derived from Akkocaoğlu, 2015: 27). Based on Matthews' approach; In 1985, the Council for Philosophical Inquiry with Children (ICPIC) was established, in 1996 the Philosophy Center for Children (NWCPC) and in 2009 the Organization for Learning and Teaching Philosophy (PLATO) was opened (Öğüt, 2019).

The history of philosophy and the fact that it is not intended to teach philosophers as a whole; P4C education, aims to develop a sense of responsibility in addition to the skills such as philosophical inquiry, reflexive thinking, criticism and empathy in children; It has also gained momentum and developed with the support of researchers such as Edward Glaser, Carl Boodman, Allan Root, Robert Root, Edward Anglo, John McPack, Hardy Siegel, Catherine McCall and Richard Paul (Splitter and Sharp, 1995).

In Turkey, the Turkish Philosophical Association; He opened a unit called "Philosophy for Children Unit" in 1993 and the same institution addressed the necessity of a course called "Philosophy for Children" at the Philosophy Symposium held in 2004 and proposed to add it to the primary education curriculum. The Ministry of National Education Board of Education decided to add an elective course called "Thinking Education" to the curriculum of grades 6-8 in 2006, but it could not be implemented as expected. In order to introduce the P4C method in Turkey and to spread it in the field of application, Philosophy for Children workshops were opened in 2013 at the Empatika Personal Development Center and for the first time, the workshop was supported to carry out studies in this field. Although it is seen that Opus Noesis is another institution working in this field in Turkey, it is seen that Little Thinkers Society was established within the body of Boğaziçi University Lifelong Education Center (BÜYEM) in 2016 and P4C training programs were organized within the framework of the needs of non-governmental organizations, schools, companies and other organizations as well as the P4C expertise certificate within this institution (Öğüt, 2019).

The importance of P4C education, which is systematized with Lipman in the historical process by centering on childhood and child education, is also closely related to the method of how it is applied.

2.3. Method of Application of P4C

Considering the fact that even the most powerful systems can disappear in the hands of their practitioners, it is important how P4C training should be

applied in the education process as a method. According to McCall (2017), the implementation phase of Lipman's P4C training is as follows: A circle seating arrangement is created so that all participants are physically equal and in a position to see each other. The training starts with a story and after the story is read aloud, questions are asked from the children. The questions received are put on the chalkboard with the names of the individuals who asked. The facilitator (although there are no teacher-student definitions in P4C education, the term "facilitator" is used for session administrators) groups the questions that have been put on the board and selectively asks the child who is asking the question to talk about the question and manages the discussion dialogue by switching to other questions when he finds it appropriate (McCall, 2017:103).

The primary purpose of the facilitator, who tries to ensure that the participants question, criticize, investigate and realize reflexive thinking while doing all this, is to waste the children's questions.

to prevent it from going away and to help the child to apply concepts in using their mental processes (Direk, 2002).

In this context, what is the place of the concept of "child" in P4C education, which is associated with the education system as a method and is thought to play an important role in the child's reflexive thinking? It is thought that the examination of the concept of "child", which is known to form the center of P4C, will further clarify this study.

3. Child And Thinking

It should be seen that the concept of a child is a concept that has a meaning far beyond being a psychological and biological entity and that needs to be examined in anthropological and philosophical contexts as well as sociological in essence.

The concept of "child" is defined in the United Nations Convention on the Rights of the Child (1989) as all individuals under the age of 18. The stage of human life between the ages of 2 and 14 is called "childhood" in Developmental Psychology (Oğuzkan, 2001: 12) In the literature of educational sciences and psychology, childhood is seen as a stage with its cognitive, physical, and psychosocial dimensions (Öğüt, 2019).

According to Oğuzkan (2001), who deals with childhood in three stages although there are different perspectives; The first childhood, which is also

called the play phase and covers the age range of 2-6, is the school stage that appeals to the 6-10 or 6-12 age range, and finally the adolescence stage, which can be included in the 10-13 or 12-14 age range.

According to Piaget, who examined the child in four cognitive stages with the dimension of cognitive development; The “Sensory Motor” phase, which covers the age range of 0-2 years and is the stage of recognizing objects, separating one’s subjective existence from objects, and performing purposeful actions; The “Pre-Process” phase, which covers the age range of 2-7 years and in which language is used functionally, egocentrism dominates mental processes, objects are met with concepts; It is the “Concrete Processual” phase, which covers the age range of 7-12 years and is the “Concrete Processive” stage as the stage of being able to think logically about objects and situations, to group objects according to their characteristics, to give social reactions, and finally to the “Abstract Processive” stage, which corresponds to the period of 12 years and above, and where competencies such as testing hypotheses and probable thinking and dealing with ideological problems can be gained in addition to abstract-logical thinking (Suat, 2011: 2-5).

Mengüşoğlu (2013), examines the child with its philosophical anthropological dimension within the framework of the fact that childhood should be handled in the context of the potential it carries as an entity, not as a stage that needs to be overcome in the developmental dimension, the child is the transmitter of human phenomena and achievements as a form that can be “lithesome”.

The child is both as a social, historical, and physical being, as well as a cultural and bio-psychoic being; it can be seen both as the carrier of the phenomena of human essence and as a value in its own right. It can be said that seeing the child as a value is an important step in the humanization process. The fact that the act of thinking of ourselves as our basic faculties, which distinguishes us from other beings by virtue of being human, is itself an existential richness may be remarkable. In this context, the question of whether reflexive thinking, which we can call the essence of philosophical thinking, begins from childhood, is encountered.

As it is known, Piaget’s theory of cognitive development; It suggests that children before the age of 11-12 do not have philosophical thinking because they cannot perform the reflexive thinking act, which can also be described as “thinking to think” (Longaria, 2014; derived from: Öğüt, 2019). In this context, when the literature is examined, it is clear that epistemological views, which

may be called the basis of philosophical thinking in children, have developed from an early age with various studies (Collins & Princh, 1993; Yang & Tsai, 2010; derived from Ögüt, 2019). Gelman and Markman (1986) tried to show that as a result of their research at the primary school level, most of the intellectual faculties realized by adults can also be done by children. Willingham (2008) noted that early age, characterized as childhood, is very clear to critical thinking, which is characteristic of philosophical thinking. Kennedy, Fisher and Ennis (1991) came to the conclusion that although critical thinking, which can be seen as a form of reflection of reflexive thinking, can develop with age, critical thinking education should be started from childhood. Similarly, Silva (2008), as a result of his studies, has revealed that children cannot be given any age restrictions for the learning paths of the complex structure called thought. As McCall (2017) points out, although some children and adults do not have the practice of philosophizing, everyone has this capacity.

In this context, when the psychology literature is examined, it can be found that children realize the philosophical infrastructure of the act of thinking from a very early age, and as Leon (2015) points out, the foundations of critical thinking are laid from infancy and this ability is developed throughout life. When research was conducted on the behavior of infants, it was concluded that even in six-month-old babies, perceptions, especially human perception, existed and that human behavior was not random behaviors but intentional behaviors (Galinsky, 2010). In children around the age of three; It is known that they can understand and feel that others may know things differently from themselves, and thus they started to tell their first lies during this period, which is an indication that the cognitive ability of empathy has developed (Yaralı, 2020). Children around the age of four and five cognitively comprehend that, unlike children around the age of three, people act according to their beliefs, even if they are false (Miller, 2008). It has been determined that preschool children are able to realize reflexive thinking, which is called thinking at a simple level, and in this context, children between the ages of three and five can get the view that one of the claims made is the expression of belief (Olson and Astington, 1993), which is the central force of philosophical thinking; prepares the basis for its ontological, ideological and cognitive dimension (Ormrod, 2018; The Elder and Paul, 2002). It can be said that this plays a critical role in the development of higher-level cognitive thinking that is moving towards reflexive thinking. Again, in preschool periods, children; It has been determined that he is cognitively aware of the possibility of being

deceived and understands that what is real and what is seen can be different and that people can acquire false beliefs (Moses and Baldwin, 2005). Unlike preschool children, middle childhood individuals see the mind as an active factor that selects and transforms information rather than as a passive store of knowledge (Kuhn, 2000).

In this period, the perspective on how knowledge emerges differs, and the children of this period realize that the knowledge and opinions of two individuals who see the same existence may also differ (Eisbach, 2004). It is seen that there is a progression in the levels of consciousness at the point of cognitive strategies in middle childhood individuals and therefore upper cognition evolves into a more complex structure (Berk, 2013). Children between the ages of 9 and 11 may develop different awareness of how and why various ways and methods work, and when they encounter various examples, they may see it as more appropriate to evaluate the possibilities and reason that leads to an undesirable result instead of reaching and responding directly (Amsterlaw, 2006). Adolescence is critical for reflexive thinking as a philosophical thinking ability. In this phase, which Piaget called the abstract operational stage, the child; According to Piaget, it manages to get rid of the concrete by developing possibilities and reasoning about concrete events and phenomena within the framework of interests and expectations for the future (Gander and Gardiner, 2010). In this stage, where they can become more self-reflective by moving away from the prejudices in middle childhood and gaining awareness, adolescents are; they acquire a capacity to think in their broad dimensions and to think in a more strategic and complex form (Blakemore and Choudhury, 2006).

When considered in all these contexts, it should be seen that the importance of the mental organism called the human as the “carrier of phenomena” cannot be denied the importance of the effort it has made by activating its cognitive ability to understand and make sense of the complex structure of existence from a young age. Considering all the dimensions of thinking, it should not be neglected that the importance of reflexive thinking and related philosophical thinking as a form of thinking that the individual can realize his individual subjectivity emerges from an early age. In this understanding, it is possible to say that philosophical cognition as a reflexive thinking competency should be given to children from an early age on the education-teaching portal.

Before addressing the importance of reflexive thinking in the context of P4C for children, it was necessary to briefly touch upon the act of thinking and philosophical thinking itself.

4. Thinking And Philosophy In A Brief Context

Although the concepts of thinking and thinking are often confused, it should not be forgotten that the two are different concepts, as Mengüsoğlu (2013) summarizes; they are the products of thinking, and these are two concepts that are separate from each other both in terms of their qualities of being and their connection with the subject. According to him, thinking and thought are divided ontologically, so that thinking takes place in the dimension of “real being” while thought takes place in the dimension of “ideal being”. As a result of the relationship with the subject itself, thought breaks away from the subject and takes its place on the plane of logic, while thinking does not have an existence independent of the subject. Cevizci (1996) aims to think; It treats it as the cognitive activity that the individual activates with symbols such as concepts, images, and terms that he has acquired during the learning time.

It can be said that the importance of thinking, which can be defined as a two-pronged link established between the subject and the object (Mengüsoğlu, 2013), which can be defined as the act of knowing itself, which is the form of obtaining the product called knowledge, gains even more value when combined with philosophy. Although it is difficult to give a general and precise definition of philosophy, it can be stated that philosophy is a theoretical, conceptual, abstract, and reason-based thinking activity (Çüçen, 1999). Philosophy, as a cultural and human enterprise that needs to be analyzed and examined rather than just a concept that needs to be defined (Randal and Buchler, 2014: 37), is an activity that requires deep reflection on itself and the human being in historical anthropology (Sponville, 2006: 14).

Given that philosophy, as the “love of wisdom,” is a hands-on activity in solving problems related to almost every plane of human life (Good, 2018), it should be seen that the relationship between philosophy and thinking is important. As the only discipline that sees thinking itself as both the subject and the method of inquiry, philosophy focuses on the standard form of correct thinking without falling into contradictions with logical reasoning (Beyer, 1990).

In this respect, philosophy, which makes everything its subject, also makes itself the subject, which means that it turns to itself, and it can be said that this point is related to reflexive thinking, which can be called a higher dimension of thinking. This feature is called the basic feature that distinguishes the discipline of philosophy from disciplines such as art, science, etc. (Öğüt, 2019). In philosophy, with this peculiarity, not only the thinking about the being

itself but also the subjective thinking itself that relates to that being. This is related to reflexive thinking, which can be described as second-order thinking of philosophy, thinking about thinking (Collinwood, 1990, derived from Çotuksöken, 1995: 176).

5. Reflexive Thinking

5.1. Definition

Reflexive thinking is when something turns on itself. It is the state in which a context affects each other within the framework of a cause-effect relationship and expresses the nature of the phenomena that return to it with cause and effect relationship. In other words, it can be expressed as the cyclical movement between cause and effect on the cognitive plane (“Reflexive”, 2022).

When examined etymologically, the reflexive corresponds to the English group of reflective thinking terms; it means repetition and evolving and twisting on itself. Although concepts such as reflective used in the literature, it is thought that these concepts do not meet the full meaning of the reflexive concept (Kızıltan and Dombaycı, 2020). As the subject’s attitude in the context of analyzing himself (Çiftçi, 2017), reflexive thinking can be defined as the reckoning with the act called thinking, which is a mental faculty.

Reflexive thinking, which can be seen as an indispensable element of experience in the life of the ancient Greek philosopher Socrates; gaining the ability to think philosophically can be expressed as making philosophical analysis and putting cognitive activity on a cyclical path (Başara, 2008: 31).

5.2. Reflexive Thinking in Children

When the cognitive inquiries that can be made on being and nothingness are examined, the question of whether children can philosophize from an early age is encountered. As a result of the literature reviews, it is seen that children have similar characteristics to philosophers, although they cannot philosophize as philosophers do. At the beginning of these features, endless and exhaustible curiosity, the questions they ask about the beings they observe in their environment, the simple and unadulterated observational phenomena of the child towards the world of pure perception, their astonishment towards understanding existence, etc. can be shown as examples. It can be stated that this curiosity and questioning ability, where the philosopher and the child meet on common ground, reveals the end result that children have a philosophical point

of view. As Droit (2014) states, asking the question “what is it?” in this universe of inquiry requires a philosophical point of view.

Although an obvious questioning attitude can be observed in the early stages of childhood, it can be stated that this curiosity and questioning attitude can be noticed as the child ages. Matthews (2000) states that philosophical questioning is more dominant in children between the ages of 3 and 7, but when the child reaches the age range of 8-9, he expresses his ideas less and pushes philosophical questioning to the background. Worley (2009), who agrees with the idea that philosophy begins with curiosity, but touches on the point that philosophy is not equal to curiosity, states that the fact that the child is naturally curious does not mean that he will become a natural philosopher. It can be stated that children, as individuals who tirelessly question curiosity and curiosity, have a natural predisposition to philosophy. It can be said that this cognitive ability in children can be transformed into reflexive thinking, which is the ability to question what they are questioning with purposeful programs that can be applied through the P4C sample.

McCall (2017) also touches on the fact that the philosophical capacity of inquiry in children cannot emerge without being face-to-face, and expresses it through the example that an individual who has this potential despite never swimming in his life cannot swim immediately upon first contact with water intended to swim.

This cognitive analysis in philosophy (Droit, 2014) not as a purely expressive form of thoughts, but as a reflexive examination on thinking, is possible with questioning methods to be carried out in the classroom throughout primary education (Lipman, 2003). The child who lives in the short period of childhood like a miniature of the history of his species (Yavuzer, 1984: 35) can be a competent individual with the questioning-based philosophical perspective he will acquire with the philosophical programs he will receive.

The importance of asking questions in children and directing the mind to reflexive thinking in the context of these questions; As Karl Jaspers (1971) points out, it manifests itself in the statement that losing children’s philosophical genius, which will be manifested by not asking questions during the course of their development, is one of the greatest evils that can be done to them.

As Jaspers also touched on the importance of the question, it can be said that the concrete data of the question of whether reflexive thinking exists in children passes through “questions”. Similarly, Wartenberg (2018) expressed how the natural predisposition of philosophical thinking in children emerges

from questions about where the first human came from when his son was only five years old and the limitlessness of time and space. Children's; Just like philosophers, the attempt to reach a conclusion by reasoning, criticizing, questioning a subject or concept logically (Mathews, 2000) can be seen as a simple form of reflexive thinking in the sense that the questions turn on themselves.

Considering that not every question asked is a philosophical question, and that the questions of the discipline of philosophy (Çotuksöken, 1995), which tries to investigate and ground the self of what makes something on the cognitive plane, have accordingly questions of meaning and what, and that reflection is carried out at the cognitive level in this concept.

When it is taken, it can be said that the questions that the children have asked are also questions at the level of meaning and meaning, and that a similar cognitive reflection has been carried out by the children. Because the child; "What is that?", "How does the sun burn?", "How does it work?", "Who is the first human?", "Where did I come from?" It can be seen that he showed an example of simple reflection with the questions he asked in a simple way. This cognitive tendency, which the child who is thinking about being and himself, knowingly or unwittingly, can be expressed as philosophical thinking itself in its purest form.

P4C education, which emerged under the leadership of Lipman in order to apply this natural philosophical thinking competence in children on the basis of education, is to show the way for children to learn how to think. Because the world of children is a world of fun and games and the purpose is; it should not be to cut them off from this world, but to include them in this game universe (Gaedi, 2015). That is why the facilitator, also known as the practitioner; P4C sessions should include mutual respect, open-mindedness, listening to each other with respect (Lone, 2017: 61), directing dialogue when necessary, and facilitating children's correct thinking, and can be a factor that can pave the way for the child to see himself or herself.

6. Result

It is seen that the child, who tries to acquire his existential identity on the plane of cognition by asking questions, gains the reflexive dimension of the cognitive power called thinking from an early age when the literature is examined. Reflexive thinking, as thinking about thinking within the framework of developmental psychology, is related to the concrete operational stage, one of

Piaget's developmental stages (Inhelder & Piaget, 1958). Subsequent research shows that reflexive thinking cannot be limited to the concrete operational phase (Matthews, 2000; McCall, 2017; Moshman, 1998). There are various studies on how children perform critical and questioning thinking, including reflexive thinking about a subject that attracts their attention and cares about. This can be cited as an example of McCall (2017)'s ninety-minute dialogue with five-year-olds within the framework of the method of questioning in which children are able to gain abstract ideas, perform logical reasoning and show reflection on thinking.

In this context, it can be said that Lipman's P4C education is effective in revealing the importance of giving children the ability to think philosophically at an early age. Research has shown that P4C training, which is done effectively at the appropriate time and conditions, provides children with; In addition to reflexive thinking, it shows that it provides competencies such as language development, creativity, empathy, question-answer relationship, self-esteem, self-confidence, critical thinking and mathematics skills (Gür, 2011). Similarly, in a remarkable study conducted by Malboeuf-Hurtubise et al. (2021), it was observed that online P4C education applications, which aim to prevent the negative reflections of the Covid-19 pandemic process on the mental health of primary school students, can help reduce the problems related to children's mental health.

P4C education as a systematic method of education, in which the concepts of "philosophy" as a systematic form of thinking activity and "child" as a potential historical carrier that contains all the phenomena of the being called human being are synthesized and whose philosophical foundations emerged with Karl Jaspers and systematized with Lipman in the late 1960s; It can be said that one of the biggest achievements for children is to gain the ability to think reflexively. Reflexive thinking can be expressed as the formalization of free thinking. When considered in this respect, it should be seen that the purpose of education is to raise free individuals and that individuals who cannot think freely cannot produce thoughts.

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CHAPTER IV

CHILD AND CHILD FRIENDLY CITIES

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Introduction

Industrialization, consumption, population growth, poverty, environmental degradation, crime and war; The deterioration of the atmosphere, water and soil, in other words the impact of worldwide urbanization, is increasingly reducing the chances of children participating fully and freely in urban life. Today, children face many negative problems in cities. Especially in industrialized and developed cities, children live in crowded, unsafe and polluted environments. These environments offer little opportunity for learning, play and recreation for children. All these components, such as family breakdown, poverty, vandalism, limited access to local resources, show many cities as negative and threatening places for children and youth. Play, which develops spontaneously and irregularly, especially in dense residential areas of cities, has become a thing of the past. Children are only encouraged to participate in regular play environments at home, friends' house, and commercial venues (Mc. Kendrick, et.al., 2000).

Not all segments of society can benefit from the opportunities offered by cities in the same way. The main reason for this situation can be shown as rapid and unplanned urbanization. Articles that are seen as one of the basic dynamics of

children's rights accepted by the majority of the world's countries are expressed as follows; Every child has the right to live and develop, to be protected and to participate in decisions without discrimination. It is the most basic right of the child to develop in a city where they can live in a safe and healthy environment without any discrimination. Respect for human rights starts with how societies treat their children. Communities that respect the rights of all living things will be formed in societies that treat their children by observing their rights. The most basic approach in the realization of this situation is the child-centered approach. In other words, it is important to keep in mind that the child is an independent individual. In this direction, being able to answer the question

“what should we do” is very important in terms of shaping our behaviors. Improving children's lives can only be achieved by recognizing, understanding and realizing their rights. Creating a child-friendly city is a process that actively engages children and their lives. A child-friendly city cannot be realized by management alone. It is a situation that should be carried out in partnership with children, their families, institutions and organizations in a comprehensive and collaborative manner.

1. Child And Child Rights

“If you're not yet 18, you have a chance”

Every individual who has not completed the age of 18 is called a child. This is the common opinion and definition of scientists working on children today. However, when the historical processes related to children are examined, we can say that the concept of child and childhood has undergone a great change and even an evolution.

The concept of child, childhood life and childhood are among the most discussed and changed concepts throughout history. When the old societies were examined, they did not distinguish the childhood period of the people as a different period of life and did not define them as a different individual from themselves, and they did not think that the first eighteen years were decisive and formed the basis of later development and functioning (Gander & Gandiner, 1993).

The change in the perception of children throughout the history of world societies has been tried to be expressed with a few items from various sources in order to have a general knowledge in this long period measured in centuries (Erkut 2017): In prehistoric times, people had a power-oriented understanding.

Reflecting the evolutionary point of view, the dominant view was that the strong survived, the weak disappeared and were left to die. Later, the view that the figure symbolizing power was the father and that the father had an unwavering authority over the child came to the fore. The father could either enslave or sell his children into slavery, maim them by violence, or impose severe punishments. In this period, education began to come to the fore, but only men could benefit from this right.

- In many ancient societies such as Mesopotamia and Rome, the fate of the child was under the father's dominance, as the father had an unshakable power within the family. The father could sell his children as slaves, abandon them, mutilate them, and impose severe punishments on them. In addition, education was important in the Antiquity; however, only boys are educated.
- French demographer and social historian Ariès, one of the pioneering researchers in the history of childhood, criticizes the traditional assumptions that childhood is an unchangeable phenomenon in his book "Child and Family Life in Ancient Times" and argues that there is no modern concept of childhood in medieval western societies. While expressing childhood to Ariès as the period of addiction, he sees the period of 5-7 years, when he got rid of addiction, as the period when childhood ends. In other words, they state that the childhood period ends when the child reaches the maturity level to be able to meet his basic needs and to ask for help in solving the problems that he cannot solve. In the Middle Ages, however, the "feeling of childhood" is lacking. In this age, children are seen as "miniature adults" (Ariès & Baldick, 1962 ; Onur 2005).
- As a result of the increase in child deaths due to reasons such as war, famine and epidemic in the late Middle Ages, children are not seen as members of the family until the age of six. The process of discovery of childhood started in the 13th century, and its reflections were in the 15-16th century. It can be seen in the art history of the 17th century. From the beginning of the century, children began to have their own unique clothes, games, stories, music and pictures. Thus, they are kept away from adult activities and the worlds of adults and children are separated from each other. However, all these were seen in wealthy families belonging to the high class. The old way of life continued among the poor class children, both in terms of dress and play, work and sharing the adult world. In this period, it is stated that

children participate in all aspects of adult life such as drinking, gambling and sexual exuberance (Plumb, 1976).

The concept of child has increased its importance with the understanding of Humanism that emerged in the Renaissance and its continuation. Rich and noble families began to establish closer relations with their children. In this period, important books were written and applications were seen in pediatrics.

- The change that started in the cultural and intellectual environment with the Renaissance continued in the 19th century and the understanding that children are a different class from other adults was reinforced. Factors such as the shift of the economy from agriculture to industry, the development of the middle class, the change in the structure and role of the family, the decrease in child mortality, the increase in leisure time, and the importance of emotional bond in the parent-child relationship played a role in this change. Enlightenment philosophers put forward new views on the understanding of childhood and child education. Thus, a unique and progressive understanding of childhood emerged. In line with this developing understanding, children were tried to be protected from the negative effects of migration, industrialization and urbanization, and measures were taken for their health and well-being.
- In the 20th century, the child was considered as the most important human resource that determines the future of society. This century has also been called the “century of the child”, as philosophers, educators, psychologists, and lawyers study children and put forward ideas about their development and rights (Gander & Gandiner, 1993). It can be seen that the transition from an age in which there was no awareness of childhood to a concept of childhood protected within the framework of legal, social and educational institutions took about four centuries (Postman, 1995).
- The 20th century has been an era in which science has advanced, education has gained importance, scientific studies have increased and technology has been developing rapidly. During this period, scientific studies increased in many fields including pediatrics, pedagogy, and psychology with increasing scientific studies, and thanks to these researches, the child was almost discovered in the 20th century (Erkut 2017).

Children’s Rights : The Convention has four guiding principles and these principles are essential for the fulfillment of all rights. These basic principles are expressed as follows;

Non-discrimination : Article 42 of the CRC, regardless of their religion, race or ability; regardless of what they think or say; whatever their culture; It is a comprehensive article on the rights of all children, regardless of whether they are girls or boys, rich or poor.

Best interests of the child : Any decision or action that may affect children should always give priority to their best interests.

Ensuring the survival and development of the child: Every child naturally has the right to live. It is the responsibility of individuals with decision-making powers to provide them with every opportunity to grow and realize their potential.

Participation : Children are experts in their own lives and experiences and should be consulted on decisions that affect them. Every child has the right to express their own opinion and can provide advice and valuable information on how to best protect and fulfill their rights.

Although these basic articles are common rights for all children living in the world, they cannot vary from child to child or society to society. Every child is special and these basic articles are their most natural rights. In this context, decision makers and policy makers regarding individuals whose profession and area of expertise are “ *childhood* ” should also seek the views and opinions of experts in this field, should not differentiate them in any way, should prioritize their best interests and ensure their safety.

2. Child-Friendly Cities

Child-friendly city approach ; It has undertaken the task of fully implementing the Convention on the Rights of the Child. For this reason, a child-friendly city offers to each of its young citizens; influencing decisions about the city they live in; express their opinions about a city they want to exist; participation in family, community and social life; benefiting from basic services such as health, education and housing; drinking clean water and enjoying decent sanitation; protection from exploitation, violence and abuse; walking around safely on their own; meeting and playing with friends; having green spaces for plants and animals, living in a pollution-free environment; participating in cultural and social events; should guarantee their right to access all kinds of services as equal citizens of their city without any discrimination such as ethnicity, religion, income, gender or disability.

In every period and culture, the definition of childhood and children’s rights have been given a different place. The Convention on the Rights of the Child, adopted by the United Nations General Assembly on 20 November 1989, has an

important place in this sense. In this convention, childhood is defined as a period that includes every individual between the ages of 0-18. The Convention on the Rights of the Child defines the duties and responsibilities of society, the state and their parents in raising children (Çukur, 2003). Necessary studies should be carried out to raise awareness of all segments of the society on this issue. The “right to equality”, which includes the non-discrimination among children for any reason, the “right to life” that allows them to benefit from adequate living standards and health services, the “right to development”, which includes education, information, playing games, participating in social activities, freedom of thought, religion and conscience. The “right to protection”, which includes all forms of abuse, exploitation and persecution, the separation of the child from their parents voluntarily, the “right to participate”, which includes the right to express their opinions freely, to have a say in matters that concern them, and to take an active role in society, constitute the basic principles of the CRC (Kirazoğlu, 2012).

Attitudes and behaviors towards children’s needs and rights are changing rapidly. Especially in European countries, many city administrations try various ways on issues that concern children. Many countries have signed the Convention on the Rights of the Child, which was accepted at the United Nations General Assembly in 1989. In the agreement Turkey also signed in 1994, children are shown not only as a group in need of care, but also as a citizen. There are efforts and studies all over the world that take this new vision of childhood into account. Many international initiatives took action after the HABITAT II conference in Istanbul to improve the quality of life of children in cities. In the output of The New Urban Agenda of the Habitat III Conference, “to promote well-being and quality of life for all; by building safe, healthy, accessible, economical, resilient and sustainable cities and human settlements, based on the equitable use and use of cities and human settlements, while promoting inclusiveness to the extent that present and future generations can live their lives without discrimination; It is stated that a common vision is shared, which translates into ‘cities for all’ (United Nations Conference on Housing and Sustainable Urban Development 2017). UNICEF’s Child-friendly Cities initiative and UNESCO’s Growing up in Cities initiative are doing important work in this regard. Similar initiatives in Canada, Australia and the United States continue to work on creating child-friendly environments. The European Child Friendly Cities Network (ENCFC) was established in 2001 to fulfill the United Nations Convention on the Rights of the Child. This network organized “Child in the City” conferences in Antwerf-

Belgium in 2002, London-England in 2004, Stuttgart-Germany in 2006, Rotterdam-Netherlands in 2008, Florence-Italy in 2010, and in Zagreb-Croatia in 2012. In Turkey, the “Child Friendly Municipality Project”, which started as a European Union project, was created by the Association of Solidarity with Youth Deprived of Freedom. Within the scope of Child Friendly Municipality Project, it is carried out by Çankaya Municipality (Sivri Gökmen, 2013; Riggio, 2002).

Being child friendly is no easy task. In order to be child friendly, it is necessary to have produced serious and stable policies, developed strategies and established programs and plans. For this reason, it is much more important to give place to children in local governments, to involve them in decisions, and to do something on their behalf. A child-friendly city means the structuring process, as well as the implementation of the Convention on the Rights of the Child in local government environments, and observes a number of features that place children at the centre. With the Child Friendly City initiative; It is aimed to create a non-discriminatory, healthy and safe environment where children in the 0-18 age group have a voice (Topsümer, 2009; Sivri Gökmen, 2013). It is stated that the harmony between the child and the environment and the harmony between the groups and the environment are important criteria for a place to be child-friendly (Haikkola et al., 2007).

In this context, it is aimed to realize the rights of the child and the basic rules required for the establishment of a local government system are listed as follows ;

- a. Creating child-friendly legal regulations,
- b. Ensuring the participation of children,
- c. Establishment of a children’s rights unit
- d. Adopting awareness of children’s rights,
- e. Evaluation of the effects of implemented child policies,
- f. Children’s budget allocation,
- g. Regular analysis of children in the city,
- h. Supporting voluntary communities that make children’s lives favourable. (Unicef Innocenti Research Center, 2004)

3. Examples Of Child-Friendly Cities In The World And In Turkey

The environment in which the child grows up is very effective on the holistic development of the child. To the extent that children feel happy and free in the

city they live in, their social and emotional development areas will be developed at that level. The social and physical development areas of the child will be supported to the extent that the city in which he lives provides active indoor and outdoor spaces for the child. In order to support the holistic development of the child, it is very important to provide places where he can socialize safely and communicate with people in a healthy way. On the other hand, in an article published in the world-famous *The Guardian*, the challenges faced by children living in the city are listed as follows: Traffic and air pollution, crime rate, social fears; vertical architecture, social isolation and intolerance, and finally, unequal or inadequate transportation opportunities to the city (*The Guardian*, 2018). At this point, against all the above-mentioned threats to the city and the child, the concept of a child-friendly city offers the world a glimmer of hope and continues to gain importance day by day. Cities become more livable places, at least for children, thanks to the projects implemented under the leadership of the society or local governments. Various opportunities offered by child-friendly cities directly or indirectly support the development of self-confidence of children; they contribute to their development such as cooperation, communication skills, fun, relaxation, self-control, social and individual awareness. Children pay more attention to their environment thanks to child-friendly cities, which allows them to explore, explore and sometimes learn by playing.

In this context, explaining the concept of child-friendly city with examples from the world and Turkey will help to better understand the concept of child-friendly city. Within the scope of Unicef Child-friendly cities initiative, it continues to support a wide variety of projects in 36 countries. It has operated in 8 countries within the scope of this initiative in the past and states that it plans to implement the child-friendly cities initiative in 5 more countries in the future (Unicef, 2022).

3.1 Child Friendly City Initiative Practices in the World

When you first look at the list of child-friendly cities in the world, it is seen that the list is somewhat long. Although it is not easy to mention the steps taken by all of this long list to become a child-friendly city, it will be tried to refer to good examples within the scope of the child-friendly cities initiative in order to set an example for similar studies that are desired to be done in the future.

First of all, if we look at the work done within the scope of the child-friendly city initiative of Tirana, the capital of Albania; The effects of children on local government are striking. Tirana has a municipal council for children,

where children meet and discuss with the mayor and report their feedback to the school. In this way, children can convince their parents about the steps they want to take in the city, such as recycling and building more walking areas. Apart from these, families plant trees for children's birthdays and contribute to making the city a more oxygenated place. Getting sponsorship support from companies, increasing car-free pedestrian-friendly areas and thus reducing air pollution are among the projects carried out by Tirana as part of its child-friendly city initiative, so that kindergartens will cease to be places like cells and become better places.

Rotterdam, which houses Europe's largest port, has spent about 15 million Euros on the path of becoming a child-friendly city, providing safe traffic routes, providing housing for financially disadvantaged groups, and making public areas suitable for children. One of these works is the forest playground for children called 'Natuurspeeltuin de Speeldernis'. In this area, children can observe wildlife in its natural environment, set up camp and enjoy nature.

Bogota, the capital of Colombia, is one of the cities where the child-friendly cities initiative is implemented. As part of this initiative, a project called 'tactical urbanism' was implemented in Bogota. In this project, the road between the kindergarten or school and the parks was painted and colored. In this way, a new playground was created for children and it was ensured that the cars moving in the traffic slow down as they approached this area.

Child- and family-friendly exteriors are designed as part of the child-friendly cities initiative in Lexington, Kentucky, USA. One of them is an application called SplashJAM. Within the scope of this application, an entertainment and picnic area has been established around the dancing fountains, where the family can have fun. Thus, a place where families can spend time with their children by having fun and rest has been offered to the community service (Laker, 2018).

3.2 Child Friendly City Initiative Practices in Turkey

It is seen that the foundation of child-friendly city initiative practices in Turkey was laid between the years 2006-2010, but the project was implemented in the years 2014-2015 (Tandoğan, 2014). The project was carried out with 10 Municipalities. These municipalities are Adana-Yüreğir, Ankara-Mamak, Bitlis, Erzurum-İspir, Giresun, İzmir-Bornova, Kırklareli-Lüleburgaz, Manisa, Mersin and Şanlıurfa-Eyyübiye (UNICEF, 2022). Within the scope of the child-friendly cities initiative; It is planned to establish children's councils, to provide parent support service training, to raise awareness about children's rights, to establish

playgrounds for disabled children and to carry out projects for the benefit of children.

One of the cities hosting the Child Friendly Cities Initiative in Turkey is Yüreğir district of Adana province. As part of the initiative, a playground for disabled children was established in Yüreğir. The municipality organized activities for Syrian children. And also Child Coordination Mechanism was implemented by strengthening the capacity of staff and existing systems.

Within the scope of the child-friendly cities project, the Child Action Plan Workshop was held in Mamak, Ankara in 2015, and a total of 63 representatives from universities, non-governmental organizations and municipalities gathered, expressed their views on the deficiencies in implementation in the field of children's rights and offered solutions. A Child Action Plan was developed in line with the suggestions developed. Moreover, the Children's Assembly was established in order to enable children to have a say in the programs designed for them, to facilitate their active participation in the planning process of these programs, and to receive their opinions and feedback at regular intervals.

In Eyyübiye district of Şanlıurfa, parenting education was provided through a strengthened program to support Syrian parents living in host communities in acquiring better parenting practices around children's physical, psychological and cognitive needs.

The Renewable Energy and Mechatronics Laboratory, which will include child-friendly equipment, has been established in order to provide good practice opportunities and technical standards for children to use robotics, autonomy, linear and non-linear control and automation technologies in Bornova- İzmir.

Another district that works within the context of the Child Friendly City initiative is the Lüleburgaz municipality of Kırklareli. Within the scope of this initiative, it is aimed to raise awareness in all segments of the society, especially children, with both practical and informative contributions regarding environmental problems such as carbon emissions and climate change, by proclaiming the 2017 Lüleburgaz Bicycle Year. In addition, various arts and sports academies were established in the city, contributing to the development of children. In addition, the Democracy School Project contributed to the children's acquisition of a democracy culture. Also, the Children's Street Project was carried out on Özbek 1st Street in the new neighborhood, and the street was decorated with signs about children's rights. In this way, it is aimed to increase the awareness of children's rights. The Children's Assembly, which has been working in Lüleburgaz since 1999, has become more active with the projects

within the scope of the Unicef child-friendly city initiative (Aydoğan, 2020; Alkılınç, 2022, Karakuzu & Aksu, 2022).

Conclusion

As a result, it can be said that; Unicef has taken into account the best interests of children within the scope of its child-friendly cities initiative and has supported taking steps in this direction. With the realized projects, it has supported children to receive basic services, to provide access to green areas they need, to support children socially and culturally by participating in various activities, to benefit from equal and fair opportunities, and to spend their time safely in streets and parks.

Studies have shown that as children present their ideas about the city they live in, their level of awareness about the environment they live in develops. In this way, children become more sensitive to their environment. On the other hand, it is seen that all development areas of children are supported holistically with the projects carried out. It is believed that future studies in the field of children's rights will contribute to making children more conscious about their own rights. Considering all these, it may be beneficial for children to take part in the planning, execution and evaluation stages of the projects that are planned to be made in the future, and may contribute to the development of their self-consciousness in terms of owning both the implemented projects and the environment they live in.

On the other hand, when the child-friendly city approaches are examined, one of the most important results is; All stakeholders (neighborhoods, districts, metropolitan municipalities, district governorships, governorships, EU-UN units, etc.) should fulfill their duties and responsibilities in all matters. It is believed that providing all support to the plans and projects related to the "Child Friendly City" and rewarding successful projects will be of great benefit to the society.

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CHAPTER V

THE RELATIONSHIP BETWEEN POSTURAL CONTROL AND VESTIBULAR SYSTEM IN CHILDREN WITH CEREBRAL PALSY

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1. Cerebral Palsy

Cerebral palsy (CP) comes about when the immature brain is affected for any reason in the prenatal, natal, or postnatal period. It is defined as a picture caused by neurodevelopmental problems that cause activity and limitations caused by loss of movement and function (Little, 2012). Its prevalence was reported as 2.11 per 1000 live births. Sensory, perception, cognitive, communication, behavioral disorders, and epilepsy, secondary musculoskeletal system problems are often accompanied by motor disorders in CP (Rosenbaum et al., 2007). In recent studies, the motor problems seen in CP are associated with the effects of the vestibular, proprioception, and tactile systems. The main problem is defined as sensorimotor disorder (Christine et al., 2007). The etiology of CP varies according to the causes of brain involvement

in the prenatal, natal, and postnatal periods (Table 1) (Bangash, Hanafi, Idrees, & Zehra, 2014; Linsell, Malouf, Morris, Kurinczuk, & Marlow, 2016).

Prenatal Factors	Natal Factors	Postnatal Factors
- Metabolic disease	- Low birth weight	Respiratory distress syndrome
- Substance use	- Asphyxia	- Hypoxia/ artificial respiration support
-Malnutrition	- Cesarean delivery	- Trauma
- Poisonings	-Prolonged or difficult childbirth	- Coagulopathies
- Infections	- Delivery with the help of vacuum and forceps	- Hyperbilirubinemia
-Immune system diseases	- Post-term birth	- Intracranial hemorrhages
- Infertility treatment	-Meconium aspiration	- Neonatal convulsions
-Spontaneous abortions	-Prematurity	- Infections
- Socioeconomic factors		- Meningitis
- Genetics		- Encephalitis
- Alcohol consumption		- Sepsis
- Smoking		
- Multiple pregnancies		
- Maternal factors		
- Intrauterine infections		

2. Classification In Cerebral Palsy

Many classification methods are specified in CP: according to the lesion site, the affected body parts, the functional level, according the severity of the involvement.

2.1. Classification By Clinical Type

The most recent classification is “Surveillance of Cerebral Palsy in Europe (SCPE)” (Figure 1).

According to the “Surveillance of Cerebral Palsy in Europe (SCPE)”, hemiplegic type and monoplegic type are classified as unilateral, while triplegic, diplegic and quadriplegic ones are classified as bilateral CP. According to the dominant neuromotor disorders, it is classified as spastic, dyskinetic, and ataxic (Sadowska, Sarecka-Hujar, & Kopyta, 2020).

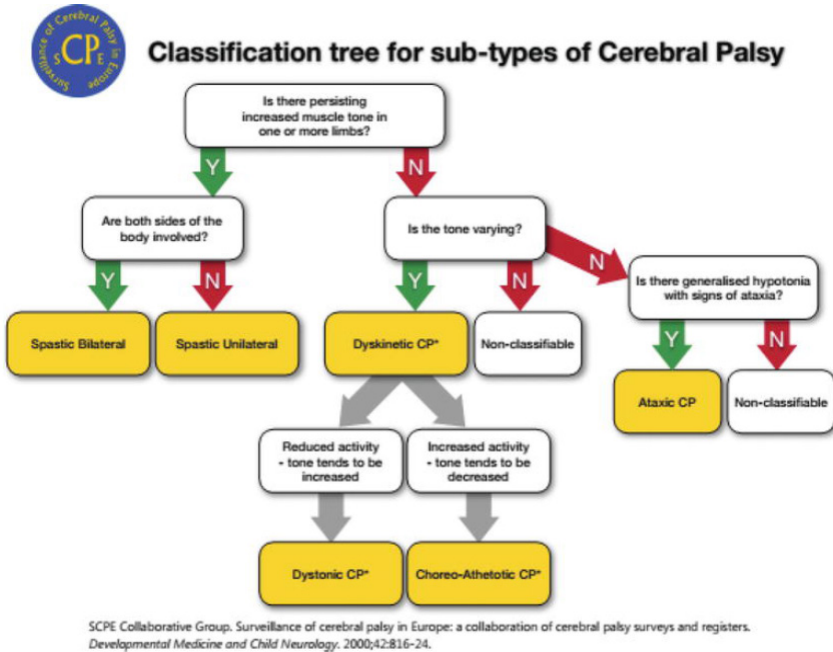


Figure 1: The Surveillance of Cerebral Palsy in Europe (SCPE)

2.2. Classification By Functional Level

It is a type of classification based on the functional skills of children with CP in their daily living activities. The gross motor level of children is classified according to the “Gross motor function classification system (GMFCS)”, and is measured by the “gross motor function measure (GMFM)”. Eating and drinking skills (EDACS), fine motor skills (MACS), and communication skills (CPSP). All these scales are ordinal; as the level increases, the level of functional independence decreases (Hidecker et al., 2011; Öhrvall, Krumlinde-Sundholm, & Eliasson, 2014; Palisano, Rosenbaum, Bartlett, & Livingston, 2008).

2.2.1. Spastic Type Cerebral Palsy

The most common (70-80%) type of CP, known as the spastic type, creates the clinical picture that becomes evident with increased muscle tone. Spasticity is defined as a “sensory-motor control disorder resulting from intermittent or continuous involuntary muscle activation as a result of upper motor neuron lesion” (Bar-On et al., 2015). Spastic-type CP arises in association with deterioration in the motor cortex. There are overactive reflexes in the early period. Pathological

reflexes such as clonus and babinski and increased deep tendon reflexes are seen. Primitive reflexes may not disappear for a long time. If both lower extremities are affected by the upper extremities, diplegic; is classified as hemiplegic if the unilateral half of the body is affected, and quadriplegic, if all four extremities are affected (Sadowska et al., 2020).

2.2.2. Dyskinetic Type Cerebral Palsy

Perinatal asphyxia occurs as a result of basal ganglia damage or erythroblastosis fetalis. It occurs with symptoms such as athetoid, chorea, ballismus, dystonia, rigidity, or tremor as a result of extrapyramidal system involvement. There is uneven muscle tone. Although this type can be seen in all four extremities, three extremities, or a single extremity, it is frequently affected by the whole body (Linsell et al., 2016).

2.2.3. Ataxic Type Cerebral Palsy

The presence of a pathology originating from the cerebellum is revealed. It is mainly characterized by coordination and balance disorder (Sadowska et al., 2020).

3. Postural Control In Cerebral Palsy

Postural control sensory is the effort to maintain the stabilization and orientation of the body position in space by the function of the motor process. To provide this complex postural orientation, the functional relationship between body segments and the environment can be maintained (Herrington & Davies, 2005). Postural control has two main purposes: orientation and stabilization. Functionality to ensure orientation; For functional tasks, the perception of verticality has a very important place (Keshner & Cohen, 1989). The vertical perception of the body is controlled by the vestibular system. To preserve and maintain the vertical position, the vestibular system and gravity, the visual system and the ability to distinguish the surrounding objects, and the somatosensory system and the support surface information are processed (Gurkinfel et al., 2006). Another purpose of the postural control system is postural stability. It also refers to the term equilibrium or stability limits. Postural stability is defined as the body's ability to keep its center of mass within the limits of support. In other words, it is said that the body maintains its position without changing the support surface (Samuel, Solomon, & Mohan, 2015).

Postural control many factors such as neural structures, postural muscle tone, and sensory mechanisms affect it. Visual information from the periphery and stimuli from the vestibular system plays a role in the formation of postural control and the maintenance of tone.

4. Vestibular System

It establishes a dynamic communication between the vestibular system, peripheral sensory organs, ocular system, brain stem, postural muscles, cerebellum, and cortex, which is a complex sensory organization (Ayres & Robbins, 2005). It puts the incoming sensory stimuli about the movements and position of the head into the central processing process. It consists of two parts, the central (cerebellum and brainstem) and peripheral (vestibular nerve and inner ear) vestibular system. Vestibular nuclei and cerebellum make up the central vestibular system; The otolith organs (utricle and saccule) and semicircular canals are located in the vestibular labyrinth in the inner ear from the peripheral vestibular system (Cathers, Day, & Fitzpatrick, 2005). Semicircular canals detect and process changes in the angular movements of the head due to its acceleration. The otolith organ, on the other hand, is more sensitive to linear motion than to angular motion. In this way, it provides head and body posture, balance, and postural control. The vestibular nuclear complex and the cerebellum are parts of this process. Thus, it integrates with eye movements and postural harmony and ensures the continuity of the image and posture (Figure 2) (Leigh & Zee, 2015). To achieve this, vestibuloocular reflex, vestibulospinal reflex, and vestibulocolic reflexes are used (Boyle, 2001).

Vestibuloocular reflex: it regulates the posture during head movements and ensures that the image remains stable (Bronstein, 2003).

Vestibulospinal reflex: It takes part in the regulation of muscle tone by stimulating the antigravity muscles. It provides balance while standing and on the go. It provides postural smoothness (Nandi & Luxon, 2008).

Vestibulocolic reflex: Adjusts the position of the body in space during a sudden movement of the head. It also regulates ocular activity by working with the VOR (Nandi & Luxon, 2008).

In CP, reflexes become more dominant as voluntary movement decreases during movement. Somatosensory inputs that change with reflexes activated by changes in head position affect postural tone distribution (Sabir, Alshomrani, Alqarni, Bamusa, & Johnson, 2022)

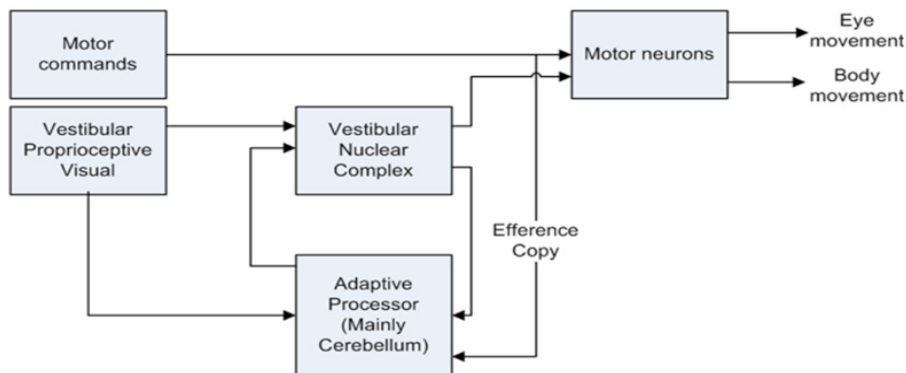


Figure 2: Organization of the vestibular system

5. Postural Control And Sensory Organization In Cerebral Palsy

The somatosensory system provides information to the central nervous system (CNS) about the support surface and the proprioceptive state of the body. It is particularly sensitive to sudden changes in joint positions. The somatosensory system provides information about the positions of the body while standing on a stable surface. If it is on moving or uneven ground, it needs a vestibular system as it will not be sufficient alone. The information generated in the vestibular system is evaluated by the semicircular canals and otolith organs. This information from the vestibular system is an important source for balance and postural control. While semicircular canals detect angular movements and acceleration of the head; the otolith organ detects linear movements and acceleration. Thus, the somatosensory system helps to establish postural control together with the vestibular system (Plishka, 2015).

Vestibular, visual, and somatosensory information comes to the brain to maintain balance and maintain postural control. It gives information about the person's current location. The cerebellum coordinates the flow of information and thus ensures smooth movement (Plishka, 2015). Somatosensory system weakness has been revealed in many studies conducted on children with CP (Kurz, Heinrichs-Graham, Arpin, Becker, & Wilson, 2014; Kurz, Heinrichs-Graham, Becker, & Wilson, 2015; Kurz, Wiesman, Coolidge, & Wilson, 2018). Movement and posture disorders as well as vision problems have been investigated. Different problems such as limited visual fields decreased visual defects and strabismus have been reported (Almutairi, Cochrane, & Christy, 2019; Ghasia, Brunstrom, Gordon, & Tychsen, 2008). In children with

CP, the vestibular system cannot function properly because somatosensory, proprioceptive, and visual information transmitted to the upper centers are weak.

6. Vestibular System In Cerebral Palsy

The vestibular system is the first sensory system to develop in the womb. It contributes significantly to gross motor system development as well as cognitive development in the newborn period (Ayres & Robbins, 2005). Vestibular tracts form a large part of the extrapyramidal system. The vestibular apparatus is closely related to the cerebellum and affects the vestibulospinal reflex and peripheral muscles, and is involved in the regulation of muscle tone and postural control. This system, which is responsible for controlling balance and movement, works together with the somatosensory and visual systems (Butterfield, 1986). The proper functioning of the system allows children to properly interpret what is happening around them. Sensory, somatosensory, ocular, or auditory impairment in CP may cause a peripheral or central vestibular lesion (Almutairi et al., 2019). The affected vestibular system adversely affects muscle tone and gross motor development, postural control, and balance (Sabir et al., 2022). Therefore, early detection of vestibular lesions in CP is important for appropriate intervention. While investigating the cause of movement, posture, and sensory disorders in CP, the somatosensory system and proprioceptive evaluations were emphasized, but vestibular involvement has not been investigated much (Brun, Traverse, Granger, & Mercier, 2021; Santana, Dos Santos, & de Campos, 2022; Zarkou, Lee, Prosser, & Jeka, 2020). Torok et al. In the study, a total of 518 children (403 CP; 115 with various neurological disorders) were evaluated and almost equal levels of vestibular defects were found in all subtypes of CP (ataxic, spastic, and athetoid). Children with vestibular lesions account for approximately 40% of all children. In the same study, vestibular abnormalities were seen at a rate of 20% in children with hypertensive CP; It was found to be seen in 71% of children with hyposensitive CP. In addition, athetoid type (81%) in the hyposensitive group; spastic type (61%); Vestibular lesions were detected in the ataxic type (61%) (Torok & Perlstein, 1962). Bare et al. found that children with CP had more body oscillations during visual stimuli than the healthy control group (Barela et al., 2011). In a study, it was found that children with CP have abnormal oculomotor and ophthalmic abilities, and it was found that as the functional level worsened, the defects increased (Lew et al., 2015). Similarly, Boot et al. They concluded that visual-spatial perception is impaired in children with AI CP (Boot, Pel, Van

der Steen, & Evenhuis, 2010). According to Akbarfahim et al. In their study, the effect of the vestibular system on postural control in children with CP was compared with healthy controls. Cervical vestibular evoked myogenic potentials (cVEMPs) were used in the evaluations. As a result, they revealed that the c(VEMP) values were decreased when compared to the healthy control group and there was a significant difference (Akbarfahimi et al., 2016). Based on this, we can say that the cVEMP test will be used in the evaluation of the vestibular system in children with CP. On the contrary, Almutairi et al. evaluated the vestibular and oculomotor findings in children with CP who are between GMFCS I-III and suggested that the existing functional impairment originates from the central vestibular system, not the peripheral (Almutairi et al., 2019).

7. Conclusion:

When the studies are examined, two theories can be suggested underlying the motor and sensory deficits of children with CP: the first is the disorder of the signals coming from the peripheral vestibular system, and the other is the disorder originating from the central vestibular pathways. Accordingly, it causes poor oculomotor findings, poor movement control, loss of balance, and postural control. More comprehensive studies are needed in the future to better understand the effects of the vestibular system on postural control, balance, and movement disorders in CP.

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CHAPTER VI

THE DEVELOPMENT AND SUPPORT OF MUSIC IN INFANCY

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1. Introduction

“Music is the joy, spirit, pleasure and everything of life.”

Mustafa Kemal ATATÜRK

Infancy is called as the critical period for the development of the baby (Atli, 2018). It covers the period from birth to 24 months. This period begins with the recognition of vastly different changes in physical and brain development. Babies are dependent on adults during this period (Schibe et al., 2007; Berk, 2013). If babies do not receive warm and loving care during or after this period, their development will never be completed in a healthy way (Berlin et al., 2008). Sleeping and feeding are significant for the development of the baby as well as his basic needs for the development in the game (Kılıç, 2019). Besides, parents may contribute to the development of the babies through using music as a tool for meeting their needs.

Babies use their senses as an influential tool to recognize the environment (Taygur Altıntaş & Yılmaz, 2015). Music needs to be used

to support babies' senses, play, movement, language, social and emotional development. It is a branch of art that allows the emergence of creativity. Mustafa Kemal Atatürk addresses that music is the joy, spirit, pleasure and everything of life. It is among the activities we prefer to relieve the fatigue in our souls. This section reports on the significance of music, its place in our lives and its impact upon the developmental areas of the baby considering the infancy period. In addition, the importance of music in infancy is emphasized, some considerations for supporting music development are addressed, and significant points about the baby and music are explained in accordance with the relevant literature.

2. Music and its Significance in Our Lives

Music is a branch of art that may vary across people's moods and that is the spice of life. Turkish Language Association (2022) defines music as "the art of expressing feelings and thoughts with harmonious sounds within the framework of certain rules". Besides being universal, music is also used as a form of communication in the structures of existence of cultures (Soysal et al., 2005). It enables to touch one's soul and illuminates its essence (Vickers, 2022). Ekong (2008) noted that the language of music is universal, and it is designed and used to describe people's feelings, cultural structure, thoughts and experiences.

While music reduces negative emotions (anxiety, life anxiety, restlessness or anger, etc.) (Akin & Iskender, 2011; Cohen et al., 1983; Pittman & Kridli, 2011; Pritchard, 2009), it may increase positive emotions such as happiness (Jäncke, 2008; Juslin & Västfjäll, 2008). Listening to music has been strongly associated with reduced cortisol levels, lower heart rate and mean arterial pressure reduction, (Burrai et al., 2016; Koelsch et al., 2016; Kreutz et al., 2012; Linnemann et al., 2015) and reduced physical arousal.

Music is a tool that offers the opportunity to experience our emotions. When we are sad or happy, we use music as a tool to reflect our feelings outward. Significant in the development of the individual, music is also a method used for treatment and education.

Music education, on the other, is the process of gaining a musical behaviour, creating a change in this behaviour and developing it in the field of music (Uçan, 1997). It provides support for cognitive skills such as solving existing problem situations, cooperation and analytical thinking. It also facilitates the child's hand-eye coordination, rhythm skills and recognition of symbols along with supporting individuals' attention and cognitive processes (Şendurur and Barış,

2002). Rauscher et al. (1995) highlighted that piano training supports perceptual development in brain cortex through training and supporting the nerves. While it is used for rich stimuli to increase inherited cognitive process and intelligence capacity, rich environmental stimuli are of great importance for recognizing and supporting musical abilities (Özdemir & Yıldız, 2010).



Music Therapy and Medicine

Music therapy can be defined as the clinical and evidence-based use of music interventions within a therapeutic relationship to achieve physical, emotional, mental, social and cognitive needs by identifying individualized goals (Aalbers et al., 2019; Agres et al., 2020; American Music Therapy Association [AMTA], 2018; de Witte et al; 2020a). Music medicine is music listening interventions offered by healthcare professionals (Witte, Pinho, Stams, Moonen, Bos & Hooren, 2020)



3. Infancy and Music

“The uterus is the baby’s first concert hall” (Silberg,2012).

Infancy covers the period after the new-born period, namely, the period between the first four weeks and the 24th month. It is a stage that precedes the first

childhood period (Yavuzer, 2017). Babies adapt to the environment they live in and the individuals around them in the first three years of their lives; moreover, they try to keep up with the speed of growth and development (Cited in Santrock, 2016). Music, on the other hand, is as natural as breathing and walking throughout the human process (Levitin, 2008). A colourful piece of life, music is considered as the first mediator of the positive relationship between mother and baby and provides communication between them during infancy and pregnancy.

Kisilevsky et al. concluded that the fetuses can recognize their own mother's voice (Kisilevsky et al., 2003). The baby can use its hearing at the 8th week of pregnancy (Tüzün, 2013). The fetuses hear their own mother's voice, music, etc. in the uterus in the last two months of pregnancy (Kisilevsky et al., 2009; Morokuma et al., 2008). They respond first to external sounds from the 25th week (Chorna et al., 2019). The mother's voice gives confidence to the baby from the day of birth. The baby's focusing can be increased by using loving words and soft tones (Silberg, 2012). Music reduces the stress of babies and mothers, and thus behavioural changes occur (Çetin et al., 2017).

Babies become uncomfortable when exposed to a very noisy environment after birth, and therefore they prefer quieter environments. In this regard, they perceive the differences across tones of voice, the reflection of mood on the tone of voice, the rhythms in the music, the decrease and increase in the tone of voice, and they start to respond to these situations (Kranowitz, 2014). When they hear a sound, they can turn their head in the direction of the sound, recognize the music and they mostly calm down thanks to music in the first years. After their first month, they have a tendency to react to an audible stimulus by using their arms and legs (Dikici Sığırtmaç, 2018).

The effect of music on child development has been a hot topic for years. An experiment called the "Mozart Effect" refers to the first research to explain the effect of music on child development. This research was published in the journal "Nature" in 1993 and attracted great attention in a short time (Uluğbay, 2013). Siregar et al. (2022) applied baby spa to 20 babies aged 3-6 months by combining the "Baby Spa" method and "Mozart" classical music. The findings revealed that the simultaneous use of the baby spa method and Mozart classical music had an effect on the baby's gross motor development.



Mozart Effect



Shaw and Wisconsin (1993) examined the relationship between music and IQ. 36 high school students listened to re major sonata written by Mozart for two pianos. The results suggested an increase in the IQs of the experimental group children (Rauscher, Shaw, & Ky, 1995).



Western and Turkish classical music was identified to clearly increase brain activities with its positive effect on the human brain (Yener, 2011).

3.1. The Effect of Music on Cognitive Development in Infancy

Piaget's theory (1954) regards infancy as a sensorimotor period. Babies try to understand the world by using their sensory experiences and adapting to their physical and motor movements during this period (Cited in Santrock, 2017). The role and effect of music education is paramount in the baby's understanding of the world and the experiences as well as the best use of attention, perception and cognitive processes such as memory (Şendurur and Akgül Barış, 2002). According to the report published by OECD in 2007, children's brain development is rapid from birth to 6 years old, and 90% of brain development is completed during this period (OECD, 2007).

Uluğbay (2013) implicated that babies' talking, listening to music and playing with brightly coloured toys strengthen the nerves in the brain and

support their intelligence development. The correct use of music in early childhood enhances not only children's cognitive development but also their social-emotional, language and motor development areas (Aral & Can Yaşar, 2015). The activities performed by using music enable the child to learn concepts (related to numbers, colours, space and time) more easily (Babaç & Yıldız, 2018).

Shaw and Rauscher (1995) affirmed that the preschool children's piano education has an effect on displaying more distinctive features in the field of science and mathematics and expands the maturation of their mental processes. Gün et al. (2016) analysed the relationship between music and cognitive development and concluded that music has positive effects on cognitive development process. They also emphasised that music increases thinking skills and brain activities in cognitive processes, and that the brains of these individuals were larger than normal.

Researchers examining the brain in infancy determined supportive activities and points to be considered in order to develop the brain.

Singing, lullabies, talking with the baby and reading stories are among the identified considerations. The mentioned activities accelerate the baby's brain development. Lullabies supporting brain development also improve comprehension and attention. When babies hear a lullaby, they try to understand what their mother is saying and watch her carefully (Güneş, 2010). Music is also effective in cognitive development. If the concepts in the words of the music are shown to the baby during the song and is reinforced afterwards, it will make the concepts easier to understand. Learning can become permanent thanks to music by making concept-teaching fun.

3.2. The Effect of Music on Language Development in Infancy

Language is an organ that provides people to express themselves. It comes first among the characteristics that make humans unique. The speed in other developmental areas during infancy is also in question in language development. Undiyaundeye and Julius (2018) clarified that children commence to learn a language when they are fetuses and when they recognize their mother's voice. These researchers stated that language development begins before birth and lasts throughout life. Musical development begins with the sound that babies perceive in the outside world in the uterus, and language development begins when they are born and cry (Ertek Babaç & Yıldız, 2018).

Babies make many vocalizations before producing recognizable words (Sachs, 2009). Lock (2004) implied that the tasks of these vocalizations are to prepare to utter the words, to communicate and attract attention. Calm music including classical music and nature sounds may be an option for babies, who establish their first communication by crying, to relax in the first months (Yavuzer, 2010b). Language and music cannot be considered independently of each other. One of the building blocks of music, sound takes the first place in the language development system. The effect of music on children's language development is indisputable (Ertek Babaç & Yıldız, 2018). Gordon (2000) revealed a significant relationship between rhythm and language and reading proficiency in infancy. Leydier argued that lullabies help to accelerate language development. Lullabies, which are melodically sung in a plain language that contains the basic rules of our language, are proof that language education commences from birth (Demir and Demir, 2010; Karagöz and İşcan, 2016). Babies mostly hear lullabies from their mothers starting from the day they are born. Lullaby is preferred as it calms the baby before sleeping.

Children develop their own repertoire of words by learning an average of 5-8 words every day from 12 months to six years of age (Yavuzer, 2010a). Considering that they have the capacity to learn three languages at the same time until the age of three, it is natural for them to easily learn the language of existing music like a different language (Yener, 2011). The words in the music and the rhyming words will help the babies to focus their attention. Music provides children with comprehending and coding the basic structure of their language. They can learn the meanings of newly heard words and add them to their vocabulary. Music is an imitation phase of language use in language development.



“CITIZENS OF THE WORLD”



The study conducted by Kuhl in 2007 has demonstrated that infants are "citizens of the world" from birth up to 6th months of age. They are aware of the change when sounds change no matter what language the syllables come from. Infants are good at perceiving the differences in sounds from their "own" language (the language that parents speak) between 6th-12nd months. However, they lose their ability to recognize insignificant changes in their own language over time.



3.3. The Effect of Music on Social and Emotional Development in Infancy

Social development includes an individual's relationship with the environment and various concepts such as its role in society, self-esteem and social skills. The attachment process with the parent also plays a significant role.

Social development, which commences with birth, shows its effectiveness throughout life (Sanson et al., 2004). Babies' sucking behaviour is their first social act, which may be the first step of parent-infant relationship (Görgü, 2019). Music also supports the development of children's social identities and duties (Aylaz, 2018). It reduces both the baby's and the mother's stress and leads to behavioural changes (Coşar Çetin, Tan, & Merih, 2017).

Development is faster at the age of 0-3 than at any other time. In other words, children's personality and abilities grow rapidly. Children at this age

may start their education by listening to carefully selected classical music and singing songs together (Yener, 2011). In this vein, music is quite effective in gaining many social skills (Tezel Şahin, 2006). Learning and using emotions can also be achieved through music.

Listening to music is acknowledged as a complex brain process as it involves auditory, cognitive, motor and emotional functions that demand widespread activation of various neuronal networks (Koelsch, 2014; Sihvonen et al., 2017). Studies have shown that listening to music reduces stress and anxiety in healthy adults (Linnemann et al., 2015a; Panteleeva et al., 2018) and newly born babies (Rossi et al., 2018); furthermore, it has positive effects on reducing pain in patients with chronic pain disease (Linnemann et al., 2015b) or postoperative patients having undergone various types of major surgery (Hole et al., 2015). These studies demonstrate that music intervention can improve self-regulation abilities. Music appears to be a relevant intervention in the management of stress, anxiety and pain in vulnerable populations such as infants born preterm, which provides information regarding positive effects on their long-term neurodevelopment (Anderson and Patel, 2018).

4. The Role of Music and Movement in Baby's Development

Music activates people with the rhythm and beats. Şen (2011) showed that the child's reaction to music with bodily movements, creating dance figures according to the rhythm of the music, accompanying the music by singing and recognizing the voice support cognitive and psychomotor development. Listening to the works of composers such as Bach, Mozart and Beethoven contributes significantly to the intelligence and physical development of babies (Bales, 1998).

The interaction behaviours between mother and infant includes the mother's dancing with rhythmic movements as a model for her baby. Babies show their reactions by shaking their arms and legs, imitating sounds and showing their reactions to their mother who repeats rhythmic movements in the first months. These reactions are not rhythmic according to the mother's movement. They imitate sounds and movements thanks to model behaviour. They swing, take the sitting position and clap their hands with the rhythmic movements (Dikici Sığirtmaç, 2005). The use of musical instruments during infancy has a positive contribution to the development of the baby's large and small muscles. The baby responds to the music by using his body, which positively affects his psychomotor development (Kandır, 2006).

The fact that toddlers want to stand while dancing with the rhythm of the music may have a positive effect on their balance. Confident baby has a facilitating effect on standing and balancing with music. Besides, rattle toys make it easier for them to grasp the object and support small muscle development.

5. Parenting and Music

The birth of a baby is an emotional time for parents. They take on the role of parenting and try to adapt to this period. Parents serve as the red flags in baby's development.

The stress and anxiety during pregnancy are closely associated with children's physical and neurological developmental delays (Glover & Connor, 2006; Field et al., 2003). In the study conducted by Chang and Chen (2005), pregnant women received two weeks of music intervention such as lullabies, classical music, natural sounds and Chinese children's songs. The results showed a significant decrease in stress, depression and anxiety levels. Hence, music therapy during pregnancy has a healing power in reducing anxiety (Sidorenko, 2000).

There may be sudden changes in the mothers' emotional state after birth, which is called baby blues. It can be observed in 30-75% of women (WHO, 2008). Widyanto Putri and Putri (2022) recommended that a support system be prepared for mothers experiencing baby blues and that classical music and breastfeeding education should be included in the content of this system to encourage mothers to have a healthy life. They also reported that mothers can control their emotions, sleep well, and thus breastfeed their babies after treatment. They advised listening to classical music in order to cope with baby blues. If they are not treated immediately, insomnia will increase. In other words, baby blues can negatively influence their children. The child will have cognitive delays, speech problems and difficulties in learning school. Emotional and social problems may also emerge (Widyanto Putri and Putri, 2022). In a study carried out by Chan et al. (2009), music therapy was given to mothers experiencing postpartum blues. The mother felt more comfortable after treatment. The researchers argued that music has an effect on the limbic system. The support of the husband can also lighten the mother's burden in terms of baby care. The husband's role should not only be to protect the baby, but also to maintain the mother's health both physically and psychologically. Kuruçırak (2010) suggested that husbands take role in the care of their babies on weekends, whenever they want and when their wives are busy.

The depression mentioned above for mothers is also experienced by husbands. Those with the excitement of first paternity may experience depression during the adaptation process. The feeling of inadequacy related to new born care or the change in the new family order after birth leads to various problems (Da Costa et al., 2017; Helle et al., 2015; Tissot et al., 2017). Parents play a crucial role in the babies' healthy emotional development. Attachment with a single parent is insufficient for the development of the baby.

As in the attachment established with the mother, that of the babies with their father affects their future life (Aslan et al., 2017; Beesley et al., 2019; Wong et al., 2019). Studies have shown that depressed fathers spend less time with their babies, play less and sing less (Goyal, 2017; Sethna, 2018). Music therapy and music medicine should be used for parents during treatment. Mentally healthy parents are representatives of good society.

According to the Declaration of the Rights of the Child (1959), the child shall complete his development under the responsibility of his parents to meet the living standards (UNICEF, 2021). In this context, parents hold great duties to support the development of their children and to maintain their mental health. They can add music to these roles and make this support fun.

The relevant literature suggests that the effect of music on the development of the baby is undeniable. Ersoy (2006) stressed that music is a significant element in the development of the baby. Music experience gained at an early age can also affect an individual's entire life. Therefore, the baby should meet music and gain music experience in the early period (Ersoy, 2006). Parents should be informed about music during pregnancy. Active participation of parents, who play an important role in this process, can be ensured by providing infancy music education to parents.

6. Considerations for Supporting Music Development

When children spend time with quality music at a very young age, they will be individuals who choose quality music and love it even if they are not musicians in their later years (Sun & Seyrek, 1993). In this regard, a few things are recommended to consider when supporting babies' musical development. These considerations are depicted as following:

- Lullabies and songs preferred by mothers should be chosen in accordance with the structure of Turkish.
- Music should be appropriate for the purpose.

- If the selected lullabies are being played, they should be listened at a low volume.
- Lullabies should be sung by the mother in a low tone so as not to disturb the baby.
- The melody, songs and lullabies chosen for the sleep routine should be suitable for the purpose.
- Since the children remember the music through the association method, the music chosen as the symbol of some routines used during the day should describe that routine. (For instance, the music to be used in situations requiring hand washing must contain cleanliness.)
- Music selection should be made according to the time period. To exemplify, soothing music can be used in this time period as it will be more effective in pre-sleep use.
- It should be used in teaching a new skill by using music and gaining skills.
- There should be no stimuli to distract the baby in the environment where musical games will be played.
- Technology can be used to learn musical movements. Once the movements are learned, screen use can be eliminated.

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CHAPTER VII

SWALLOWING FUNCTION AND SWALLOWING DISORDERS IN CHILDREN

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1. Introduction

Nutrition is one of the essential functions of the survival of the organism. Nutritional function in humans normally requires a healthy swallowing function. While the swallowing function in humans passes through various stages from birth, this process proceeds quite effortlessly and naturally in babies with normal development (1). When examined anatomically, both swallowing and respiratory functions proceed on the same anatomical path. For this reason, it is very important that the swallowing function is performed perfectly in order to protect the respiratory tract during feeding and to continue breathing without any problems.

Swallowing disorder is clinically called dysphagia. Dysphagia is not seen as a stand-alone disease, but it is an important symptom especially in neurodegenerative or developmental diseases (2). In 2007, ASHA started to use the concept of Feeding and Swallowing disorders, which is a more inclusive definition for eating, drinking disorders and dysphagia in the pediatric group. Accordingly, while malnutrition is defined as insufficiency in activities such as

sucking, chewing, drinking, and spoon-feeding, dysphagia, that is, swallowing disorder, refers to disorders that occur at any stage of the four physiological stages of swallowing (3). Although the prevalence of swallowing disorders varies depending on age groups and underlying etiology, it has been reported to be 6-7% in general (4).

Swallowing disorders may be seen due to many different congenital or acquired diseases. While it is associated with premature birth, congenital anomalies and neurological disorders in children and infants, decreased muscle activity and mass are important factors in elderly patients. Cough, choking and wheezing are important signs of swallowing disorders in newborns and children. Early diagnosis and intervention of swallowing disorder is important in terms of maintaining both normal nutritional function and healthy respiratory function. Since neglected swallowing disorders cause recurrent lung infections, they not only disrupt the development of the child, but also reduce the quality of life and even affect the survival time (1, 4). Therefore, understanding the normal mechanism of swallowing and the anatomical structures responsible for swallowing is important for effective evaluation of swallowing pathologies and rehabilitation of the problem.

2. Anatomy and physiology of swallowing

The swallowing system is formed by the combination of many different anatomical structures. These structures include many different units, from striated muscles to intraoral structures, from peripheral nerves to different parts of the central nervous system. The swallowing process takes place within seconds. This vital system consists of both voluntary and reflexive processes in terms of neural functioning. It is initiated by the stimulation of the nerves by the food or saliva in the mouth. Although an adult person swallows an average of 600-1000 times a day, this is about 150 for nutrition (5).

2.1. *Cavitas oris*

The oral cavity, called *cavitas oris*, is a two-chambered cavity bordered with the lips at the front and the throat passage called the *isthmus faucium* at the back, the palate (*palatum*) on the ceiling, and the mouth floor at the base. In this space, there are teeth, gums, tongue, salivary glands, muscles, mucosa and nerve and vascular structures in the mucosa (6).

The teeth and gums divide the *cavitas oris* into two cavities when the mouth is closed, the *vestibulum oris* and the *cavitas oris proprium* (main oral

cavity). The vestibulum oris is a space limited by the lips anteriorly, the teeth and gums posteriorly, and the cheeks laterally (fig. 1.1). The salivary ducts of the lip, cheeks and parotid gland open into this space (7).

The main oral cavity, called the Cavitas oris proprium, is the space found behind and medial to the teeth and gums. At the back, it is connected to the part of the pharynx called the oropharynx by a passage called the isthmus faucium. The salivary glands that open into the cavitas oris proprium are glandula (gl) submandibularis and gl. sublingualis. The upper border between it and the nasal cavity is formed by the hard palate (palatum stans) anteriorly, and the soft palate (palatum molle) and palatal muscles posteriorly. At the base of the cavitas oris proprium, there is the mouth lining called the diaphragma oris. The diaphragma oris mainly makes the suprahyoid muscle called the musculus (m.) mylohyoideus. Other suprahyoid muscles participating in the structure of the floor;

- M. geniohyoideus
- M. digastricus (anterior part)

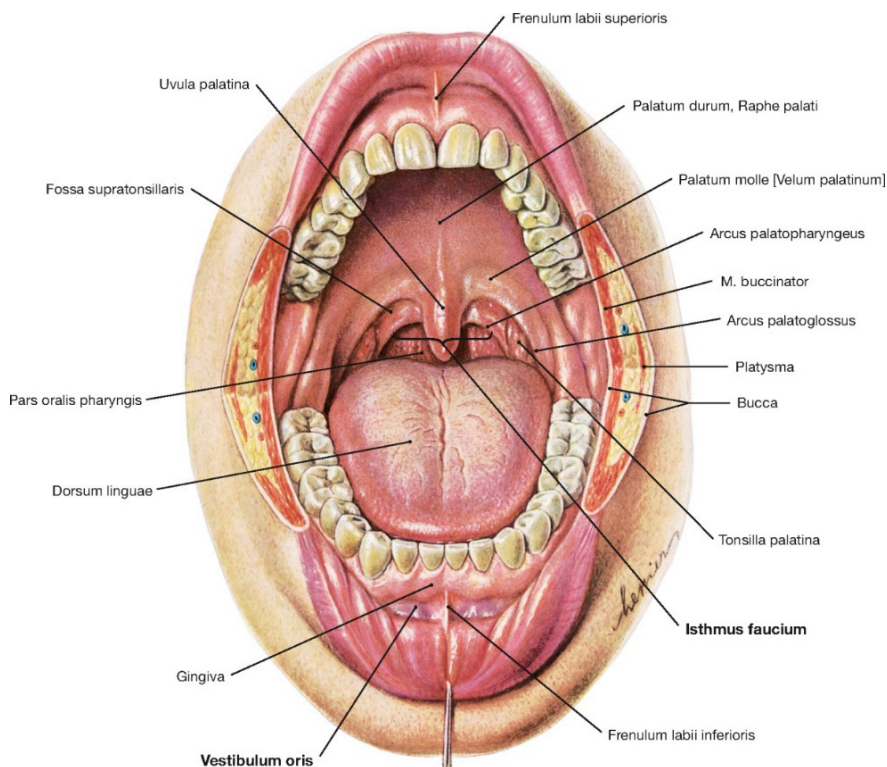


Figure 1.1. Cavitas oris anterior view (8)

The isthmus faucium, which connects the cavitas oris to the oropharynx, consists of two arches of muscle covered with mucous membranes on the sides and a small tongue called the uvulae above. The arches bordering the isthmus faucium from the sides are formed by the muscles that coordinate the movements of the palate and tongue root during the voluntary phase of swallowing. Both muscles are innervated by a nerve heavy called the plexus pharyngeus. These muscles;

- ***Arcus palatoglossus (Anterior)***: It is formed by M. palatoglossus. This muscle narrows the isthmus faucium by pulling back the base of the tongue and the soft palate during swallowing.
- ***Arcus palatopharyngeus (Posterior)***: It is formed by M. palatopharyngeus. During swallowing, it pulls the pharynx up and forward and the soft palate down.
- ***Passavant Sphincter (Palatopharyngeal Sphincter)***: The Passavant sphincter is a sphincter formed by the action of the muscles that control the soft palate, tongue, and pharynx during swallowing. Some anatomists define it as a separate muscle originating from the palatal aponeurosis, while others consider it as a part of m. constrictor pharyngeus superior and m. palatopharyngeus. Although there is a confliction about its structure, the function of this sphincter is clear. During swallowing, it forms a bridge called the passavant ridge and construct a border separating the respiratory tract from the digestive tract (6, 9).

Other palatal muscles that function during swallowing and chewing are as follows.

- ***M. tensor veli palatini***: It starts from the skull base and ends at the soft palate aponeurosis. It pulls the soft palate upwards and laterally during swallowing. By opening the Eustachian tube with activities such as swallowing and chewing, it allows the middle ear to be ventilated. While other palate muscles are innervated from the plexus pharyngeus, this muscle is innervated by the mandibular branch of the V. cranial nerve
- ***M. levator veli palatini***: It starts from the skull base and ends at the soft palate aponeurosis. It raises the soft palate
- ***M. uvulae***: It starts from the protuberance behind the bony part of the palate and ends in the uvulae. When it contracts, it pulls the uvulae forward (6, 7, 10).

2.2. *Tongue (lingua)*

The tongue, located in the *Cavitas oris propria*, is an important organ in terms of both the digestive system and speech. In the first phase of the digestive system, the preparation of food in the mouth and delivery to the pharynx is one of the functions of the tongue.

The root part of the tongue, called the *radix linguae*, is attached to the *os hyoideum*, the only free bone in the body. The body part of the tongue that fills the mouth floor is called the *corpus linguae*, and the free end part is called the *apex linguae*. There are important lymphoid structures of the tongue around the *sulcus terminalis*, which separates the *corpus* and *radix* parts from each other posteriorly. In addition, the receptors for the sense of taste are located on the tongue.

With all these complex functions, the innervation of the tongue originates from five different cranial nerves. These nerves control taste, general sense, muscle activity, and salivation.

The tongue itself is an organ made up of muscle and connective tissue. These muscles that make up the tongue are called the intrinsic muscles of the tongue. In addition, there are extrinsic muscles that control the movements of the tongue in functions such as breathing, chewing, swallowing and speaking.

Intrinsic muscles that control the length, width and rolling of the tongue are as follows;

- *M. longitudinalis superior linguae*
- *M. longitudinalis inferior linguae*
- *M. transversus linguae*
- *M. verticalis linguae*

The extrinsic muscles of the tongue control the movements of the tongue in the oral cavity. Except for *M. palatoglossus*, all of the muscles of the tongue, the twelfth cranial nerve, *n. XII*. It is made by the hypoglossus. (5, 7) These muscles;

- **M. genioglossus:** Moves the tongue forward and out from the mouth
- **M. hyoglossus:** Moves the tongue back and down through throat.
- **M. styloglossus:** Moves the tongue back and up through the throat
- **M. palatoglossus:** Moves the tongue back and up through the throat

2.3. Teeth (*Dentes*)

One of the structures that have important functions in swallowing is the tooth. Digestion is the task of the small portion separation phases. The teeth are located in pits called alveoli dentes in the maxillary bone. They are not found in the new nature. It is shaped as lower and upper semicircular sections. The lower teeth are located symmetrically on both of the mandible and jawbone, while the upper teeth are arranged in the maxilla. The naming of the teeth are as follows from the midline (6, 11);

- ***Dentes incisivus:*** Single rooted two teeth, located anteriorly
- ***Dentes caninus:*** Single teeth for each half jaw
- ***Dentes premolares:*** Teeth find as pairs and also called small molar teeth.
- ***Dentes molares:*** Three of teeth that grows as permanent teeth. Also named as big molars. Only finds in adults and youngs. Third of them is also named as wisdom teeth is seen as latest one.

2.4. Pharynx

The pharynx is involved in both respiration and digestion. It can be considered as a channel consisting of muscles and membranes. Pharynx extend along skull base to esophagus, 13-15 cm long in adult. Three separate spaces, named according to their neighborhood with the organ along its course, are examined. These are the nasopharynx, oropharynx, and laryngopharynx. It is at the level of the 6th neck vertebra in the lower neck.

The nasopharynx, which faces the nasal cavity, is related to the respiratory and hearing organs. This part of the pharynx opens to the nose through a passage names as *choane*. Laryngopharynx is adjacent to the larynx cavity through the *aditus laryngis*. *Recessus piriformis*, a small fossa, located on each side of laryngeal entry called as *aditus laryngis*, is the place where nutrients pass directly from the pharynx to the esophagus. Two important structure lies beneath the mucosa surround it, sensory branch of superior laryngeal nerve and a. laryngea superior. In case of food lickage to this part of larynx clinican must be careful during removal of body in order not to damage this structures. (2)

Structure of pharynx consist of three layered wall. These are called as, tunica mucosa, tunica fibrosa ve tunica muscularis from most inner part to the external. Muscles of the phraynx depart as constrictors and elevators according to their functions. Constrictots of phaynx also known as internal muscles of pharynx an

act like a sphincter for pharynx. Their rhythmic persithaltic movements help the sending food to the oesophagus. Constrictor muscles of pharynx are;

- M. constrictor pharyngis superior
- M. constrictor pharyngis medius
- M. constrictor pharyngis inferior

Elevators of phaynx modulate pharynx position during activities like swallowing, speaking (6).

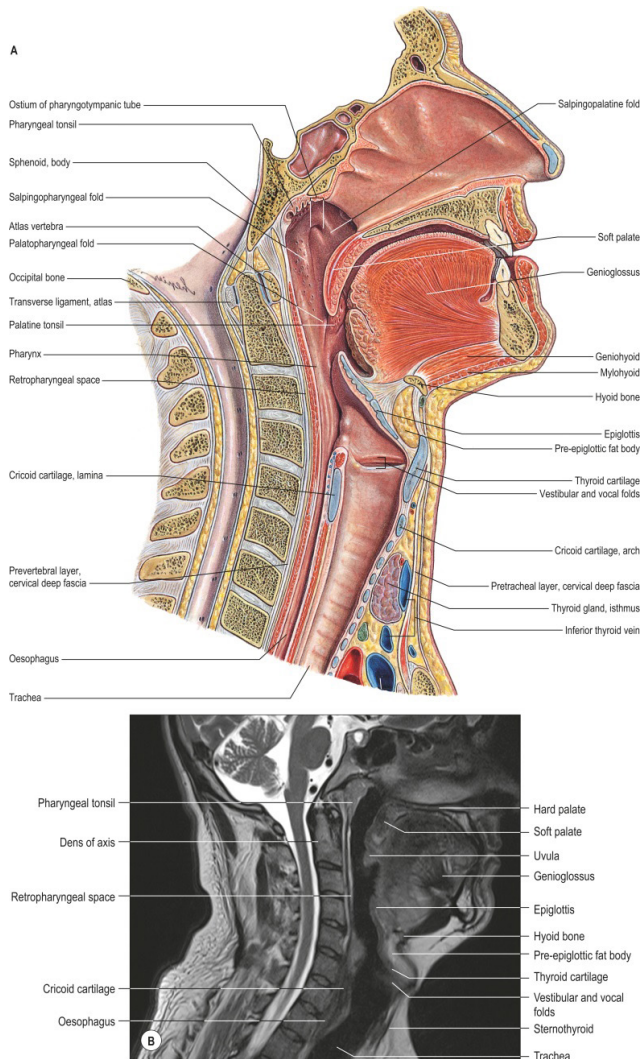


Fig2: Pharynx and oesophagus lateral view (5)

2.5. *Oesophagus*

The Oesophagus, is a musculoelastic tube consist muscle fibers extend through different directions. Its length is approximately 25 cm. Lays down from 6th cervical vertebra level and conjuct to the cardia of the stomach at level of the 11th toracal vertebra. The place where it passes through the diaphragm is at the level of the 10th thoracic vertebra. It is the narrowest part of the digestive tract after the appendix. It shows narrowing in four places throughout its course. The first of these is at the begining. The second is where it crosses the aortic arch, the third is located on where it crosses the left bronchus principalis and the last one is where it passes through the diaphragm. Knowing the distance and location of these narrowness from the teeth is important for endoscopic processes.

3. Normal mechanism and pathology of swallowing

Swallowing is evaluated at four stages. These are oral preparation, oral transit, pharyngeal and esophageal phases.

The oral preparation phase is the phase in which the food is chewed and becomes a bolus with the contribution of salivation. Pushing the bolus into the oral passage is a voluntary movement. In babies, from the beginning of life to the three-month period, the sucking reflex is also dominant in this stage. However, after the third month, as the central nervous system develops, the reflex mechanism begins to give way to voluntary control, and the baby should be ready for solid feeding around six months of age . With growth, the anatomical features of the oral cavity and the structures within it change. Likewise, the larynx begins to descend to the adult level between 6-12 months. Thus, swallowing becomes more functional. The settling of the mechanism in adults occurs when the pharynx returns to its adult form with puberty (3, 12) .

During the oral transition phase, the mobility of the tongue affects the pushing of the bolus into the pharynx. The soft palate muscles must contract effectively to close the passage between the nasopharynx and the oropharynx. At this time, the expiratory phase of breathing is stopped. If this mechanism does not occur effectively due to anatomical or neurological deficiencies, there is a risk of food aspiration to the airway.

When the bolus passes the plica palatopharyngeus, the pharyngeal phase of swallowing begins and the swallowing reflex is triggered. The triggering of this reflex takes place at the level of the brainstem. The most important event of the pharyngeal phase is the velopharyngeal closure and it must be active in

this initial phase. After the pharyngeal reflex begins, the velopharyngeal closure loses its importance. This phase also creates the necessary pressure to push the food down. Anterior and posterior movements of the tongue and hyoid bone initiate the esophageal phase by pushing the food.

The esophageal phase takes place with peristaltic movements resulting from the alignment of the muscle fibers of the esophagus in different directions. Swallowing is completed when the bolus passes the gastric sphincter (6).

4. Evaluation of swallowing

Swallowing disorder can occur at any stage of swallowing. For this reason, it is important to evaluate the baby or child during the “natural” feeding activity. The cause of swallowing disorder may be an anatomical problem such as cleft lip and palate, or neurogenic causes such as cerebral palsy and nerve damage. Therefore, a detailed clinical history should be taken. However, the assessment of the child’s normal motor development is also an important element. The physical development of the child should also be carefully monitored. Additional radiological and clinical evaluations should be obtained if necessary. It should be evaluated whether the swallowing problem is specific to a specific food or is it a general problem (3, 13).

5. Conclusion

Swallowing is a complex process involving many different anatomical structures. It progresses in direct connection with the neural and physical development of the child. The diagnosis of swallowing disorder and the coordination of a treatment plan should not be neglected. Swallowing disorders in children negatively affect both physical and mental development. In addition, it negatively affects survival by causing significant respiratory infections.

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CHAPTER VIII

DIGITAL ADDICTION AND ITS EFFECTS IN EARLY CHILDHOOD

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1. Introduction

With the world of technology developing day by day, some changes have occurred in the way people acquire information, their understanding of communication, shopping and entertainment, their behavior and attitudes. These changes are seen in the way the child experiences life and the way he looks at the game, as in all areas of life. Games have an important role in children's lives as they have functions to increase their creativity. Children fulfill their physical, social, emotional and cognitive development through play. Today, however, the way children experience life and the way they play games have changed. This differentiation manifests itself as the transition to the digital world.

Children who are fascinated by the digital world can see themselves in the colorful and stimulating environment of the abstract world without experiencing the concrete world yet. Moreover, children can transition to this environment at a very young age. Children who enter the digital world at a young age and are in the position of a passive spectator, move into the position of active play with a little growth. They tend to become addicted by being exposed to digital stimuli for hours. This is due to changes in the way children play and their play habits. This change is from concrete to abstract. Since it is known that play has very important effects on the physical, social, emotional and cognitive aspects of the child, the transformation from concrete to abstract can have different effects on these aspects.

Digital addiction can lead to deprivation of physical activity, underdeveloped physical features, to become withdrawn and asocial, to feel emotionally empty, and to experience negativities such as cognitive speech and language disorders, obsessive-compulsive disorder and autism. Considering this point, in this period when the child is necessarily digitalized, the attitude of the parents and making suggestions to both parents and the environment and directing them to guide their children correctly are very important for the future of both the child, the family and the society. In this context, this study aims to provide information on reducing the effects of digital addiction.

2. Digital Addiction

The term digital normally means numbers and relating to numbers. However, this concept has different meanings in society. This concept is frequently used in many environments and in many situations, especially due to technological developments. These uses are generally associated with transactions made with devices such as computers, tablets and mobile phones.

Therefore, this concept, which has changed and transformed over time and its frequency of use has increased, today finds meaning around children's preoccupation with television, computers, tablets and phones, especially when considered in relation to our subject. The fact that these digital devices are in every aspect of our lives and are indispensable for us has led to the emergence of many concepts such as digital addiction, internet addiction, smartphone addiction, online game addiction, social media addiction and technology addiction. Frequent and long-term use of digital devices brings the risk of addiction in early childhood. Addiction can generally be understood as a person's loss of control over certain things, being unable to control himself, not being able to set boundaries, and becoming tense and aggressive in his absence.

In that case, digital addiction can be defined as the inability of a person to limit himself in using devices such as television, computers, tablets and phones, wanting to use them unplanned excessively, not being able to break away from them for long hours, and being aggressive and angry in case of their deprivation.

3. Effects of Digital Addiction

Play is very critical for children. Children learn through play, and their physical, social, emotional and cognitive development takes place largely through play. Games also have various functions related to children's creativity. The

development of these aspects of their children takes place according to the harmony of the parent-child-play trio. Today, strict changes are observed in games and gaming habits. The fact that these changes are generally from concrete to abstract poses some problems. Since it is known that play has very important effects on the physical, social, emotional and cognitive aspects of the child, the transformation from concrete to abstract can have different effects on these aspects.

The change in children's play habits is observed in two ways. The first of these is to play virtual games on a computer, tablet or smart phone, leaving aside the games that children are physically in a game, either alone or with toys or with friends and peer groups, and secondly, by imitating the games played in the virtual environment, the children's game characters can be created physically. playing by making features or similar behaviors. This type of game is generally realized by pretending to have the characteristics of the characters of games like minecraft, and by spending time with friends and peers, talking and acting. Likewise, spending most of the time people spend with their friends or family members in front of television, computer, tablet and phone can be seen as a part of children's changing worlds. This issue does not only occur in children. Likewise, in many adults, these changes can be clearly seen and observed. However, since the study is about children, the situation of adults on these issues is not mentioned.

Play, which is an indispensable part of childhood, is transformed by the change of daily life. With the effect of technological developments, it is seen that the way children play and their game preferences differ. (2, 23) Of course, technological developments are not the only reason for children's transition from concrete to abstract. However, especially the attitudes and behaviors of families appear as important factors in this regard. Because it is known that the negative expression of technological developments in this way does not reflect the truth, and that technological developments have positive aspects and benefits more than negative. When this is the case, it is necessary not to overlook other factors while addressing the changes that occur in children's worlds. For example, it is stated that reasons such as the restriction of children's playgrounds due to urbanization have very important effects on children's transition from concrete to abstract in terms of play and time management. (8) Children's interest in the digital has naturally caused the society and technology and application companies to make changes in terms of supply and demand. As such, access to digital has become accessible to very young children. (12)

According to the findings of a study conducted with parents who have children between 6 months and 6 years of age (18), children are introduced to the digital environment at an early age and the time they spend in the virtual environment increases as time goes on. This situation has increased with the Covid-19 pandemic, the effect of which we have felt a lot recently, and this has caused children to become addicted as the time spent by younger children with such digital devices (such as smartphones, televisions, tablets, computers) has increased. Especially with the spread of the pandemic, the conversion of face-to-face education and training to online has left both parents and educators in a difficult situation. It is one of the situations where even people who are sensitive about this subject bring their children to the screen and expose them to the internet due to online education. In this process, children's getting used to the screen and digital has formed their first steps towards addiction. Children who spend a long time of the day in front of a computer, tablet, phone or television may also want to spend their time here outside of education and training activities. Especially at this stage, it can be very difficult for parents to control their children. Because the technological devices/tools are a part of education and training, the issue of which time is the lesson time, which time is the time when the child receives various trainings and which time is free time has escaped the attention of many parents. Thus, children felt less in control and accessed digital tools more easily, spent more time than normal and strengthened their bonds with these tools. In this way, the Covid-19 pandemic has both affected people's lives due to its virus nature and negatively affected people's lives as it has a great role in children's digital addiction.

It is also necessary to mention the effects of the virtual environment where many people/children spend time at the level of addiction. The fact that children can access the content in the virtual environment without any filter and control increases the possibility of their exposure to violence, sexuality, and content that does not comply with ethical and moral values. (14) Because of this, it is stated that the virtual environment may cause problems by affecting the sensory, emotional and psycho-social aspects of children. (3) According to studies on this subject, spending too much time in the virtual environment prevents the connections of the nervous system of children. (4) Secondary and tertiary effects can also be seen due to connection problems in the nervous system. Observing attention and focusing problems in early childhood (20, 19) is one of these effects. In addition, it is stated that the personality and life success of children who become addicted as a result of being in an uncontrolled virtual environment

are negatively affected. (10) It is stated that the digital addiction caused by being in the virtual world disrupts the reward system in the brain, the situations of being detained and blocked from the virtual world cause angry behavior, and the rates of disorders such as major depressive disorder, attention deficit and hyperactivity, and obsessive-compulsive disorder are high in children with this condition. (24) In this regard, it is especially necessary to emphasize the lack of attention. The fact that the videos shot on social media and video sharing platforms are twenty seconds long has led them to become conditioned in terms of attention and perception durations of children. It is thought that the videos taken (youtube shorts, tiktok, instagram) are realized in a limited time (20 seconds) and the next video is switched to the next video, which causes the perception and attention span of people to be at the same level. That's why videos, conversations and dialogues longer than this time seem too long and impossible to follow for children in this situation. Digital addiction, seen in this way, has very effective and harmful consequences that hinder the ability of people to think.

Spending too much time online makes parental control difficult. Because the possibility of the child being under parental control for a long time becomes very difficult. When this is the case, it is possible to encounter other effects, as far as we have observed, in addition to the effects mentioned above. Children behaving selfishly in the environment of friends or peers, behaving aggressively, wanting other children's toys and things and being very insistent on this, having a nervous breakdown when they cannot obtain these toys or their wishes are not fulfilled, having speech delays despite their age, inability to speak clearly even if they speak. Although they can speak clearly, their vocabulary is quite limited, they have feeding disorders, they have sleep problems, they do not want to sleep until late, they have nightmares, they are afraid of the dark, they talk about cartoon or animation characters they are exposed to in their daily conversations and are afraid of them, they ask parents questions about them, being violent, making the toys fight each other while playing with their toys, using a violent and aggressive language, constantly complaining when talking to their parents and crying and asking for a smart phone or tablet. Many examples such as waking up crying at night, incontinence of urine at night, delaying urination during the day can be counted as the effects of digital addiction. This situation can lead to digital addiction over time, when various features of the mother, father and society are involved.

4. Causes of Digital Addiction

Various factors are effective in the fact that children, especially 0-6 year olds, spend a lot of time with digital tools and become addicted to digital games. These; especially the behavior of the family at home, the absence of family boundaries and rules, the time parents use technological devices, the way they take care of the child, their indifferent or authoritarian attitude towards the use of technology, the way they spend their free time, the lack of knowledge or low awareness of the harms of technology, in short, the parents' attitudes and socio-economic levels of families.

In addition, according to other studies on the subject, the family does not supervise the child, cannot be an exemplary model, the family has little or no digital literacy, does not meet the physical and emotional needs of the child, makes the child do what they want by crying, the family exhibits inconsistent and indecisive behaviors, the child's reaction to the toys at home and his social environment. Decreased interest in children's interests, urbanization, and the decrease in the areas where children can play safely outside and spend time (25) are listed as the reasons for children's attachment to digital.

The child's living space is initially limited to the family. Relationships and communication of family members with each other have a great impact on all members. This effect is most geared towards children. In families with healthy and correct role models, children develop dreams in conversation, while in those who do not, children's dreams do not develop and their developed dreams are destroyed. (6)

Since the personalities and futures of children are largely dependent on family relations, parental attitudes have an important position for children. In the early childhood period, which is a particularly sensitive period, the development of children's social skills and their acquisition of basic values depend entirely on parental attitudes. (21) Today, digital games (13), which are at the center of many children's entertainment world, and the lack of a control mechanism in terms of spending time in the virtual world, or the lack of sensitivity of the parents in this regard, are closely related to the digital addiction of children as a parental attitude. (11) Because what the child watches when and how much constitutes the basis of digital addiction. (1) In this case, family members being role models can be considered as positive or negative parental attitudes. The attitudes of parents towards technological devices in the home increase children's addiction to the digital world and exhibit negative behaviors on children. Parents forget what they say yes to and what they say no to during the day.

There is an increasing number of environments where children do not have difficulty in accessing the Internet. In such environments, children can browse the virtual environment as they wish, download games and watch videos. In such an environment, parental attitudes can either end or increase the child's digital addiction. It is possible to see many examples of this in our daily life. In addition, there are situations where negative attitudes of parents become widespread and the relationship with the digital one becomes very ordinary. In many places such as streets, cafes, restaurants, it has become commonplace to see that many people give the child a smart phone in order to silence the child, to talk/talk more comfortably to the people next to them, and to make the child eat more easily. For this reason, parents do not offer their children a clear and distinct time opportunity to use digital devices, and parents give their children phones and tablets according to their moods and occupations. This situation negatively affects the frequency and duration of the child's use of digital tools (not knowing when to take it and when to give it) and causes them to use digital content as they wish, without their parents' knowledge. The fact that parents are unaware of how much the pre-school children are exposed to during the day with the tablet and phone they are exposed to, and how much they affect their mental health, exposes children to the risks and harms of the digital environment more and encourages children to use digital tools.

According to the study of Saltuk and Erciyes (22) generally, parents make their children use television, computer, tablet or phone. When children's habits of being in the virtual environment around them are observed, it is seen that children exhibit persistent behaviors in spending time with technology when they cannot go out and mothers cannot take care of themselves. When their demands on this issue are met, it is seen that a path that turns into technology addiction is entered. When children are removed from the virtual environment, an aggressive watching/playing behavior draws attention. In this regard, it is important how knowledgeable the parents are about child development and what attitude they have about the child's use of technology. (22) According to studies, children of families that do not respond to the emotional-physical needs of children are more likely to use digital technology and depend on phone and tablet games than the children of families with a democratic, protective and oppressive attitude. Due to the attitudes of families, the frequency of children's use of digital tools and their desire to turn to these tools are also increasing. (7)

Some of the results of other studies on the causes of digital addiction are also quite remarkable. According to these studies, there are more electronic

devices in children's rooms when parents' education level or socio-economic level is low. (5, 9) There are also studies showing that parents with a low level of education and income use a restrictive guidance strategy more frequently than parents with a high level of education and income. (16, 17)

Since it is easy for children growing up in extended families to find someone who listens to them and takes care of them, it is stated that the need for digital tools is a little less common. (27) While this is logically true, the charm and appeal of digital gadgets can make them more desirable than all family members and friends. At this point, rather than the excess of family members, the quality of the time the family members spend with the child comes into view. For this reason, studies have stated that the development of a healthy relationship between the child and the parent prevents digital game addiction. (26)

5. Conclusion

It has been observed that the games played by children have changed and transformed over time. How this change occurs and how these changes affect children physically, socially, emotionally and cognitively are discussed in the light of studies. Parental attitudes were discussed within the framework of the relationship and communication of the parents with the child and their importance was emphasized. In this context, it has been concluded that it is very important for children to have parents and role models in terms of digital addiction. It has been concluded that digital addiction may occur or disappear according to the parent's attitude. It has been concluded that the first years of development of children in early childhood take direction depending on the communication within the family.

Protecting children from the risk of digital tools, enabling them to use digital tools efficiently, being a positive role model for them, not neglecting children while parents are using digital tools, and not neglecting children while using these tools are important issues that parents should pay attention to. Protecting children from digital addiction in early childhood, how they will use technology and how often they will be exposed to technology are among the important duties of parents. The fact that parents have media literacy, visual literacy and digital literacy information will have a positive effect on the development of children. This will cause parents to keep their children away from the harms of technology and to encourage the benefits of technology.

In order for parents to be role models for their children, they first need to use technology and technological tools carefully and sensitively. The time

children spend in front of the television, computer, tablet and phone should be controlled, and what the children do, watch and play during this period should be carefully monitored. It is also very important that parents act together on child education and development, that both parents are consistent when making decisions and that they do not make decisions that would refute each other's decisions.

It is also important for parents to stay away from environments that require children to be in a virtual environment, to direct children to different activities instead of virtual environments, and to provide this environment. Time and environments should be created where all family members, together with children, can spend time in touch with nature and engage in physical activities. It is also very important to make children love these environments.

In cases where children need to be in the virtual environment, this will be done in the presence of all family members and in an environment where everyone can see it, and this will prevent the child from losing himself in the virtual environment. In addition, in such a case, it will be beneficial for parents to watch with their children or to watch them in advance, in terms of controlling what the child is watching. Checking the history of the watched or entered pages and checking what the child is doing will prevent the child from navigating in the wrong environments. Supporting children's sports activities and holding family meetings will also be beneficial for them to stay away from the digital environment.

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CHAPTER IX

DEVELOPING IMAGINATION AND CREATIVITY IN THE MUSIC CLASSROOM: PERSPECTIVES ON INTUITIVE LEARNING AND MEANINGFUL MUSIC EDUCATION FOR CHILDREN

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1. Introduction

In recent decades adverse developments in political and economic areas have created various social changes in society. Crucially, enormous environmental problems have been increasing daily in our world. These challenges create an uncertain future for all of us. In the context of sustainable development and social cohesion, individuals need a variety of competencies to cope with today's complex problems (OECD, 2002). Therefore, the competencies in the 21st century have particular importance for the young generation to manage social issues they encounter in this challenging world. Schools play a vital role in developing children and youth's 21st-century skills and competencies.

Today's education is based on the constructivist approach, in which student-centred learning and teaching play a fundamental role. The constructivist approach is a cognition-based learning approach based on the understanding of transferring knowledge, reinterpreting existing knowledge, and creating new knowledge (Erdem & Demirel, 2002). Primarily, the learner must actively build knowledge and skills (e.g., Bruner, 1990), and information exists within these built constructs rather than in the external environment; "learners construct new ideas or concepts based upon their current/past knowledge. The learner selects and transforms information, constructs hypotheses, and makes decisions,

relying on a cognitive structure to do so” (Kearsley, 2001; as cited in Lutz & Huitt, 2004). With this aspect, the responsibilities and competencies of teachers come to the fore in planning and implementing interactive lessons, which will make students more effective in the classroom and develop their ability to work independently as critical and creative thinkers. Therefore, as for all disciplines, “music teaching methodology requires talent, skills and enthusiasm from the teacher because art pedagogy is a difficult and very responsible field” (Mamirdjanovich & Nikolaevna, 2022; p.142). The composer and educator Carl Orff’s philosophy emphasises that the first goal of music education is to “cultivate the human being.” This profound understanding puts the importance of music and music education more and more at the core of education.

Several empirical research indicates the effects and benefits of music lessons on children’s holistic development. Bastian (2000) revealed the impact of music and music-making at the end of his six-year study. In this experimental study conducted with children between the ages of six and twelve, the effects of music education on children’s social-emotional competence, cognitive-psychomotor development, and general school success were investigated. Findings indicate that music-making (such as singing and playing an instrument) at school and with the family improves children’s social competence. These social competencies can be listed as working together, learning from each other, being present for each other, and taking responsibility. A high correlation was found between musical ability and intelligence scores of children aged six and seven. The previously mentioned results indicate music education’s impact on cognitive development and academic success.

Furthermore, the research findings show that music education improves children’s attention and ensures the overcoming of fear. Cose-Giallella (2010) emphasises that listening and making music improves children’s emotional expressions. According to Giallella’s study, children do not see music as just a means of entertainment; they also want to engage in musical activities and actions such as singing, playing, and acting-moving-dancing. Therefore, in this period, when children are susceptible to music, there is a need to implement musical activities which are meaningful to them.

Moreover, it is essential to integrate body, movement, language, dance, improvisation, and other art forms and dynamics in the music classroom at an early age. This way, children will be sensitive to their desire to move, play and learn by having fun. Every child has many unique ideas and immense potential for imagination. Body, movement, language, play, and dance bring these ideas

to life with enthusiasm and joy. One benefit of music activities involving such holistic approaches is that children can authentically discuss their musical choices in the classroom. This critical and creative learning process may develop the child's musical potential and offer them rich personality development experiences (Gursimsek et al., 2004).

This chapter describes perspectives for developing imagination and creativity in the music classroom by addressing the importance of meeting the vital components for intuitive learning and meaningful music education. These components create the whole and multidimensional existence of the human being, primarily; the body, movement, voice, language and all senses. Children and people of all age groups need to be empowered to use all their senses and skills when expressing themselves or engaging in creative activities. This way, they can become aware of their versatility and integrity (Haselbach, 2003). Therefore, in this chapter, some implications were drawn about the critical aspects of integrative music teaching in the early years of primary education.

2. Main Components for Intuitive Music Learning: Body-Movement-Language-Voice

The music begins inside the human being.
Carl Orff (1895-1982)

Body movement plays a role in the construction, execution, and perception of musical performances (Davidson & Correia, 2002). However, before we think about the role of the body in the arts, we must understand that we primarily try to understand the world around us through our body, voice, movements, and senses. Although the developments in technology and artificial intelligence, our internal bond gradually disappears due to the stimuli that occur around us. The consequences may be frightening, as we can not imagine (Jungmair, 2003). For instance, individuals find virtual reality and fiction more remarkable and exciting through electronic devices, social media, and the Metaverse. However, we may say that, as artificial intelligence evolves, one part of us is still the primitive intuitive human being. Therefore, we first need to listen to our inner voice and senses; as Orff describes, *The music begins in the human being...The first is one's stillness, listening to oneself, being ready for the music, and listening to one's heartbeat or breathing.* In this context, music education in the early years should first contain the main components of intuitive learning. Children should

learn music in school with an integrated approach, where body, movement, voice, and improvisation meet each other to release their imagination and creative potential within their intuitive conceptions. The book *Understanding and Teaching the Intuitive Mind: Student and Teacher Learning*, edited by Torff and Sternberg, examines divergent theoretical and methodological approaches to the structure, function, and development of intuitive conceptions. The authors indicate the limited psychological literature about educational issues and the lack of how intuitive conceptions influence classroom learning. Furthermore, the teachers' intuitive beliefs about learning and teaching are as essential as students' intuitive conceptions; most important, the intuitive mind is a powerful force in the classroom (Torff & Sternberg, 2008).

2.1. Intuitive Learning

The word 'Intuition' is defined as "an idea or a strong feeling that something is true although you cannot explain why" (Oxford Learners Dictionary, 2022); "an ability to understand or know something immediately based on your feelings rather than facts", "easy to use and learn without any special knowledge" (Cambridge Dictionary, 2022). The American psychologist, researcher and educator Jerome Bruner emphasise that students should make predictions with incomplete evidence to strengthen their intuitive thinking and then systematically investigate these predictions. His learning theory is based on the learner's past experiences and knowledge, using their intuition, imagination and creativity to search for new information to discover facts and new truths. According to Bruner, intuitive thinking is an important factor to be considered in the teaching process. Students will be able to translate into the desired expression, explain, and predict certain features about the Future and the past, etc. Analogy, dialectical processes and inductive processes can be used to acquire behaviours. Teaching methods and techniques that can be used with this process require intuitive thinking (Yesilyurt, 2019). Considering the intuitive perception in schools may put the learner (student) much more forward (Goethe, 1976). Intuitive learning requires individuality; this means students' individual experiences, thoughts, feelings, ideas, and much more have value in the classroom. Thus, student-centred activities and a student-friendly atmosphere have to place in the learning process to develop students as intuitive thinkers. However, Fromberg (2008) argues that teacher-centred activities cut off the intuitive mind. Therefore, the need for practices in early education is to develop and integrate the analytic mind and the intuitive mind.

Bamberger (1978) emphasises that formalised music learning in school causes children to lose touch with their intuitive musical sense or ‘knowing’, and according to Bamberger’s study with students (1982), findings indicated that as students learned to read and write music, they lost their ability to be sensitive to their intuitive figural sense of rhythm (as cited in Dunn 2014). Importantly, Fauconnier and Turner (2002) emphasise that “young children are intuitive thinkers who are at their zenith of flexibility for thinking and ordering the world” (p. 57). Children experience isomorphic relationships directly and intuitively because their analogical thinking and isomorphic imagery are powerful and fluid. The researchers explained the capability of children’s experiences as “blend images that are evident in such experiences such as pretence, fantasy, humour, expectation, prediction, analogy, and problem-solving” (p. 57, cited in Fromberg, 2017). Furthermore, children (pre-kindergarten/kindergarten) learn themes/concepts by using their imaginations, making connections with familiar concepts, and using analogous thinking.

Analogies, which are created from cognitive connections based on personal experiences, help children to merge the connections (Fromberg, 2017).

According to Maycock (1988), a variety of research show that intuitive abilities can be improved through purposeful and meaningful education within a holistic approach. In this context, Bamberger’s (2003) case study about the development of intuitive musical understanding may be a good example of how students can make explicit their intuitive criteria for compositional decision-making. In this case study, two musically untrained college students participated in a new approach to music fundamentals in an interactive computer music environment. Bamberger (2002) argues that when “students work at their own pace with immediate sound feedback, can modify given materials and have access to multiple representations at differing levels of detail... They can make explicit their intuitive criteria for compositional decision-making, as well as proposing an intuitive model of a sensible tune” (p. 7).

Dunn (2006) stresses that children entering preschool come already with their past experiences and knowledge, which are also obtained intuitively from formalised experiences. Sims (2001) emphasised that children already have a relationship with music before starting school. As he metaphorically explains, this interaction with music has already begun to fill a ‘personal mental library’ of intuitive musical knowing. According to Bamberger (1978) and Theiss (1990), intuitive musical knowing is a result of intuitive music listening and experiencing (as cited in Dunn, 2014). With respect to this, education should

first embrace intuitive learning, where students feel free to express their emotions in an intuitive music learning process. Bamberger (1978) emphasises that formalised music learning in school causes children to lose touch with their intuitive musical sense or ‘knowing’, and according to Bamberger’s study with students (1982), findings indicated that as students learned to read and write music they lost their ability to be sensitive to their intuitive figural sense of rhythm (as cited in Dunn 2014). Importantly, Fauconnier and Turner (2002) emphasises that “young children are intuitive thinkers who are at their zenith of flexibility for thinking and ordering the world” (p. 57). Children experience isomorphic relationships directly and intuitively because their analogical thinking and isomorphic imagery are powerful and fluid. The researchers explained the capability of children’s experiences as “blend images that are evident in such experiences such as pretence, fantasy, humour, expectation, prediction, analogy, and problem-solving” (p. 57, cited in Fromberg, 2017). Furthermore, children (pre-kindergarten/kindergarten) learn themes/concepts by using their imaginations, making connections with familiar concepts, and using analogous thinking. Analogies, which are created from cognitive connections based on personal experiences, help children to merge the connections (Fromberg, 2017).

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Dunn (2006) stresses that children entering pre-school come already with their past experiences and knowledge, which are also obtained intuitively from formalised experiences. Sims (2001) emphasised that children already have a relationship with music before starting school. As he metaphorically explains, this interaction with music has already begun to fill a ‘personal mental library’ of intuitive musical knowing. According to Bamberger (1978) and Theiss

(1990), intuitive musical knowing is a result of intuitive music listening and experiencing (as cited in Dunn, 2014). With respect to this, education should first embrace intuitive learning, where students feel free to express their emotions in an intuitive music learning process.

3. Imagination and Creativity: Making Meaning in the Music Classroom

“Without new art, there can be no new man.”

Lev Vygotsky (1896 – 1934)

In his book titled *Imagination and Creativity in Childhood*, translated from the Russian text “Voobrazhenie i tvorchestvo v detskom vozraste” (Moscow: Prosveshchenie, 1967) and published in the *Journal of Russian and East European Psychology* (2004), Vygotsky discusses the issue of creativity in children, the development of this creativity and its significance to the child’s general development and maturation.

... We can identify creative processes in children at the very earliest ages, especially in their play. A child who sits astride a stick and pretends to be riding a horse; a little girl who plays with a doll and imagines she is its mother; a boy who in his games becomes a pirate, a soldier, or a sailor; all these children at play represent examples of the most authentic, truest creativity... (Vygotsky, 2004, p. 11)

Vygotsky emphasises the enormous role of imitation in children’s play and describes children’s play as an echo of what adults/parents do in life situations. But he clarifies that the previous experiences of children they bring into their plays are not reproductions of what they experienced in reality; it is more a creative reworking of their impressions. Children combine them to construct a new reality for their needs and desires. Vygotsky articulated that all human beings, even children in their early years, are creative. He described the creative ability as “imagination”; therefore, imagination is the basis of every human creative action (Lindqvist, 2003).

... In everyday life, fantasy or imagination refers to what is not actually true, what does not correspond to reality, and what, thus, could not have any serious practical significance. But in actuality, imagination, as the basis of all creative activity, is an important component of absolutely all aspects of cultural life, enabling artistic, scientific, and technical creation alike. In this sense, absolutely everything around us that was created by the hand of man, the entire world of human culture, as distinct from the world of nature, all this

is the product of human imagination and of creation based on this imagination. (Vygotsky, 2004, p. 11)

The above quotation is significant to profoundly understand the crucial role of imagination and creativity in our lives. Especially to appreciate children's imagination and allow them to transform their imaginations into creative forms in every discipline, whether in the field of technology, art or science.

One of the leading professors in education in the 21st century, Sir Ken Robinson (2015), describes creativity as “the process of having original ideas that have value” (p. 141). Along with creativity, he underlines two important concepts. These are imagination and innovation. Primarily, imagination is the root of creativity and the ability to bring to mind what we cannot feel with our senses. According to Robinson, imagination takes action, and innovation puts new ideas into practice. Creativity also contains knowledge and a high level of practical skills. However, developing imagination and creativity in the classroom may be challenging for teachers. Some research findings indicate the lack of creative activities in schools (Kettler et al., 2018; Langley, 2018; Gajdamaschko, 2005; Joubert, 2001) and the uncertain place of imagination and creativity in today's education (Eckhoff & Urbach, 2008). Despite these, the primary source of creativity is the desire to explore and the passion for doing the work. When students are motivated to learn, they naturally acquire the skills they need to do the work (Robinson, 2015).

In one of his speeches, Carl Orff (1961) emphasized the importance of the whole development of personality in a child's education; *It is at the primary school age that the imagination must be stimulated; and opportunities for emotional development, which contains the experience of the ability to feel, and the power to control the expression of that feeling, must also be provided* (Salmon, 2012; p. 2). For this, factors of intuitive learning in the music class which first contains working with body-movement-voice and all of the human senses, have an enormous role in developing and supporting the individual's potential for creativity. Children's spontaneous expressions during daily play cover the whole body, including mimics, gestures, body posture, melody and voice dynamics, speech and language (Haselbach, 2003). Therefore, music education in the early years should integrate all the intuitive expressions children have to nurture their imagination and creativity in the learning process.

One remarkable aspect of children's musical potential is Segler's (1984; p. 44) interpretation of the question of whether there can be “children's music”. The precise answer would probably be no since children are shaped by their

culture and show behaviours such as imitations of adults and their surroundings. Music is seen as an achievement of grown-up people, and it must first be taught to children using appropriate methods. Nevertheless, children also are people! Research and various observations show that children have a sense of pitch and time/rhythm without consciously using our rational tonal system. Their musical potential is not organised in advance and then “designed”, but they arise in the existential process. Segler indicates (p. 46) children are “music” within their actions; so to say, “completely full of music” (a 10-year-old girl’s statement). In recent decades, research on young children’s developmental growth and musical potential has shown children’s strong interaction between movement (flow of movement, motor coordination) and voice production (vocalisation of tonal and rhythm patterns). Moreover, significant interaction within fine motor control areas affects intonation and pitch accuracy (Gruhn, 2002).

In this chapter, the beforementioned research and related perspectives on children’s music education bring the essence of making meaning in the music classroom forward. First of all, music education aims to enhance each individual’s ability to interact meaningfully with music over a lifetime and, therefore, to engage students meaningfully in the music classroom, their intuitive learning and independent ability should be taken into consideration (Dunn, 2006). Salmon (2012) concludes that researchers and teachers may see in their research, observations and/or experiences how much trust, repetition, and support individual students need to join in, try out and learn new things, play and dance together or invent their ostinati, melodies, accompaniments or movement sequences.

Therefore, teachers need to encourage students to find new ways of exploring meaningful sounds through their imagination (Kokotsaki, 2012).

Integrative music teaching and learning is another critical aspect of developing imagination and creativity and allowing children to learn within their intuitive expressions. Davidova (2020) asserts that an integrated approach to teaching/learning promotes holistic education. Furthermore, when music is integrated into the curriculum, children experience the learning process as stimulating. As a result of this, integrated teaching and learning promote creativity.

In the book, *Visual Art and Music in Dialogue (Bildende Kunst und Musik im Dialog)*, Brandstaetter (2009) emphasises some methodical and didactic perspectives toward the interdisciplinary approach of music with other art forms. She argues on the concept of whether visual art and music can create

a variety of experiences and learning spaces in schools. Music education that establishes connections between different art forms constitutes one aspect of aesthetic education and opens a window for integrative education.

...Aesthetic education is an independent part of education. Aesthetic experiences create aesthetic insights...The specific possibilities of music as an aesthetic form of expression lie on the level of the aesthetic effect - in its unique physicality and the associated emotionality. Musical experience is essentially also a physical experience. Music has a direct effect on the body and thus influences our emotions (Brandstaetter, 2009, p. 244).

Haselbach (2003, p. 99) indicates that an “integrative aesthetic education enables learning in three ways. These are;

- learning through bodily experience,
- learning by encountering a work of art, and
- learning in the process of creative formation”.

According to Sungurtekin’s (2021) study, findings indicate the gap in the integrative curriculum at the pre-primary school level, where music activities are integrated with other subjects and disciplines such as visual art, drama, dance, science, and maths. The classroom teacher’s statements were about the need for detailed instruction for music teaching and integrative music activities that would stimulate students’ meaningful music-making. The research findings showed the challenges pre-primary school teachers they encounter during their music teaching. Teachers perceived themselves as not musically competent, which may block the development of children’s musical creativity.

4. Conclusion

This chapter underlines perspectives about developing imagination and creativity in the music classroom by addressing the importance of intuitive learning and searching for ways where children can express their immense potential within meaningful music education. Music learning is not only “teaching in or with music, but also through music and from music” (Davidova, 2020; p.4181). Therefore, emphasis on integrative teaching and learning was highlighted for the development of ‘imagination’ and ‘creativity’. The two phenomena are studied together in this article within the context of music education for children, as creativity is related to the development of imagination (Higgins,

2008). Besides, an overview of the theoretical background and definitions are given from different angles.

Music education is one of the fundamental rights of children (Jungmair, 2003). However, music teaching should be in a way that has meaning for each child. Meaningful music education allows children to make their own musical decisions and engage in music through intuitive and integrated learning approaches that would support their holistic development. “Meaningful musical experiences during youth can leave a lasting impression on an individual by shaping their identity and place in the World” (Peck & Gealey, 2020; p. 1).

Teachers need to foster children’s musical engagement in order to provide meaningful and transformative experiences. According to Brown et al., 2015, meaning may occur from musical engagements in personal, social and cultural contexts. Accordingly, music can be enjoyable for the individual and support self-identity and relevant meanings (Peck & Gealey, 2020); music can also build good social relationships and sensitivity to cultures. Some research shows that fostering students’ creative attitudes may stimulate their curiosity, change their perspectives and help them manage personal and social domains (Schiavio et al., 2022). As educators in higher education, we need to support pre-and in-service teachers to explore and improve their teaching attitudes toward intuitive actions associated with interpersonal relationships with students (Powell, 1996). Therefore, developing pre-service music teachers’ attitudes toward imagination and creativity during their education is essential for their future profession. We know that individuals may need both logical-thinking and creative experiences (Goethe, 1976) and, most of all, imaginative experiences.

In conclusion, through the magical power of the arts, we gain profound experiences with our inner and outer world and may find ways to explore and understand who we are. As Victor Frankl (1945/2011) emphasises, we constantly try to search for the “ultimate meaning” in life.

Everything you can imagine is real...
Pablo Picasso (1881- 1973)

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