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Editors
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DEVELOPMENTAL EDUCATION IN CHILDREN

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CONTENTS

PREFACE vii
Selman YILMAZ

CHAPTER 1
CHILD AND ART EDUCATION: APPROACHES AND MODELS IN MUSIC EDUCATION
Mehtap DEMİR GÜVEN
I. Introduction 2
II. Early Childhood Music Education Models and Techniques 5
III. Conclusion 10
References 11

CHAPTER 2
CONVERSATION IN CHILDREN'S EDUCATION: WHY DOES IT MATTER HOW WE TALK?
Bilge GÖZ ÇENGELLİ
I. Conversation in Children's Education: Why does it matter how we talk? 14
II. Why it matters how we talk: The importance of talking about the past 14
III. How parents talk about the past: Elaborative and Repetitive Style 15
IV. Daily Activities for Kids: Play and Shared Reading 17
V. Shared Reading 19
VI. Parent-Child Conversations: How was your day? 20
VII. Parent-Child Talk and Self-Construals 22
VIII. Age and Gender 22
IX. The Importance and Compensation of Socio-economic Status 23
X. What can you do for your child as a parent? 24
XI. Conclusion 25
References 26

CHAPTER 3
EDUCATION OF DEVELOPMENT IN MULTIPLE CHILDREN
Serpil Sare EMEK
I. Introduction 34
II. Concepts of Child and Childhood 34
III. Mother's Relationship with her Single-Born Child and Multiple Children 35
IV. Behavioral Developments and Disorders in Multiple Children 35
V. Cognitive Development in Multiple Children 36

CONTENTS

VI. How Should Multiple Children's Education Be? 39
VII. How Should Multiple Children Be Given Education and How Should Their School Be Chosen? 40
VII. What Should Be Considered When Choosing Classrooms for Multiple Children? 40
A. Twins' Rooms at Home 40
B. Choosing Hobbies and Friends in Twins 40
C. Tips for Buying Twins Presents 41
IX. Conclusion 41
References 42

CHAPTER 4
HEALTH EDUCATION IN CHILDREN
Hikmet Gülşah TANYILDIZ, Zeynep KARAKAŞ
I. Health Education in Children 48
II. The Role of Parents in Health Education in Children 51
III. The Role of Teachers in Health Education in Children 54
References 57

CHAPTER 5
KIDS AND SPORTS
Bülent BAYRAKTAR, M.Zeki GÜLTEKİN, Engin DİNÇ
I. Introduction 60
II. The Effects of Physical Activity on Child Development 60
III. Growth and Development in Children 61
A. Weight Gain 62
B. Body Development and Related Changes 62
C. Flexibility: 63
D. Muscle Growth and Endurance: 63
E. Sexual Development 65
F. Cognitive, Spiritual and Social Development: 65
IV. Orientation to Sports in Children and Selection of Branch 66
A. Factors Affecting the Level and Choice of Physical Activity in Children: 67
B. Exercise Types and Selection in Children: 68
C. Protection from Sports Injuries in Children 68
References 69

CHAPTER 6
MANAGEMENT AND LEADERSHIP IN CHILDREN
Hülya KESİCİ ÇALIŞKAN
I. Introduction 74

CONTENTS

II. Management and Leadership in Early Childhood 75
A. Early Childhood..... 75
B. Management and Leadership Formation in Early Childhood..... 76
III. Management and Leadership in Second Childhood 78
A. Second Childhood Period (7-11) 78
B. Management and Leadership Development in Second Childhood and Adolescence..... 79
IV. Conclusion 80
References 81

CHAPTER 7
SOCIAL AND EMOTIONAL DEVELOPMENT EDUCATION IN CHILDREN
Seval ERTUĞRUL
I. Introduction 86
II. Different Parenting Styles 87
III. Impact Of The Close Surroundings 88
IV. Emotional Development 91
V. Results 96
References 96

CHAPTER 8
STEM EDUCATION AND ADDICTION OF TECHNOLOGY IN CHILDREN IN THE DIGITAL ERA
Çiğdem Börke TUNALI
I. Introduction 100
II. The Concept of STEM Education 100
III. STEM Education in Early Childhood..... 102
IV. Addiction of Technology in Children..... 104
V. Conclusion..... 107
References 108

CHAPTER 9
TEACHING A FOREIGN LANGUAGE TO YOUNG LEARNERS
Gözde DEMİREL FAKIROĞLU, Mehmet Yalçın YILMAZ
I. Introduction 112
II. Bilingualism and Language Learning 113
III. Factors affecting language development 116
A. The Effect of the Mother Tongue on Second Language Learning 116
IV. Theories About Language Acquisition..... 117
A. Nativism 117
B. Behaviorism..... 117

CONTENTS

C. Cognitivism 117
D. Social Interaction Approach 117
V. Periods of Language Learning 117
A. Pre-Language Period 117
B. Language Period 118
VI. Language Teaching Approaches for Young Children 118
VII. Language Teaching for Young Children 118
VIII. Key Learning Principles for Children 120
IX. The Importance of Language in Identity Formation: 120
X. Discussion and Conclusion 121
References 122

CHAPTER 10
THE NUTRITION EDUCATION OF CHILDREN
Gülden Fatma GÖKÇAY, Mehmet Cihan BALCI, Tuğba KOZANOĞLU
I. Introduction 124
II. Prenatal Period and Infancy 124
III. Responsive Feeding 125
IV. Complementary Feeding 126
V. Toddlerhood and Preschool Period 127
VI. Factors That Affect The Nutrition of Toddlers and Pre-schoolers: 128
VII. Nutrition Education Solutions 129
VIII. School-Age Period 130
IX. Adolescence Period 133
X. Teenage pregnancy 135
References 135

PREFACE

We present our book "Developmental Education in Children," as part of the academic studies conducted by the İstanbul University Center for Research and Practice in Child Education, i.e., Child University. The book is authored by academic members of the University and the members of the Advisory Board of the University's Research Center.

This book is the intellectual property of the Research Centre's Board of Directors. The editors of the book are myself, the Director of the Research Centre, and Assoc. Prof. Dr. Birce ARSLANDOĞAN, the Assistant Director. The book's goal is to contribute to the literature and suggest scientific methods and programs to improve students' knowledge and experiences in academic disciplines in the most accurate manner.

The book contains a wide range of topics, such as art, speech, development, health, sports, management, leadership, social and emotional developments, technology, foreign language, and nutrition. The diversity of topics increases accessibility by ensuring a broad framework of scientific knowledge.

Learning and education contain an emotional dimension. Children are passionate and open-minded. In this context, ensuring that the children's education is efficient and effective is our responsibility, that is, scientists and educators. Education during child development is a human capital investment made for their and the country's futures.

As the Editor, I would like to express my gratitude to the administration and staff of İstanbul University's Chancery, the Research Centre team, and the respected scientists who have made valuable contributions as authors. I hope this book will benefit research on this subject and other researchers and readers...

Prof. Dr. Selman YILMAZ
Director of İstanbul University Center for Research and Practice in Child Education

CHAPTER 1

CHILD AND ART EDUCATION: APPROACHES AND MODELS IN MUSIC EDUCATION

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ABSTRACT

This chapter of the book presents a corpus about the approaches and methods in art education for children. The conclusive purpose of this chapter, following the main objective, is to regard the fundamentals of child education. Hence, this chapter emphasizes the main education methods and purposes and includes definitions of the methods used, especially in music education. In the 2000s, when global interaction increased, the effective sharing of art education methods worldwide increased the information and experiences about the primary methods for children to discover their creativity, especially in painting, music, and drama. With this in mind, this compilation is formed on two bases: Firstly, it indicates those main methods and approaches in art education used worldwide for the behavioral, mental, and cognitive development for children between 0-8 years. Secondly, this chapter gives examples of the main learning models used in the world of education for teaching music. This chapter comprises a preliminary evaluation of the assumptions of art in child education, and after that, explanations of structure of the Dalcroze, Kodaly, Orff, and Suzuki methods, prominent worldwide, especially for music education. Methodologically, this article is based on the literature that shares education methods, assumptions noted, and experience about the applications.

Keywords: Child, Art, Music, Education

I. Introduction

What do we mean by art? Do we mean those fields such as painting, music, and drama fundamentally? Or is art a lifelong production process in which people improve hand skills, mindfulness, cognitive, physical, and sensorial development? For these questions, there are different theoretical assumptions and perspectives. These can be summarized as essentialism (versions one and two), functionalism, artifactualism, institutionalism, and historical contextualism (Andina, 2013). Ontologically, what is at the core of the discussions is the definition of art and the class and identity of production. On the other hand, notions such as aesthetics, property, norms, and judgments added to the question of whether production is art or not provide different interpretations in each period (Andina, 2017).

In social sciences, the conception of art varies. The considerations of art critics and historians and those of ethnology and anthropology about art are different. Sociocultural context is the awareness of considering art as a component of cultural production, reproduction, and culture. It allows interpretation of texture, motifs, colors, tone, motions, style of an object, or a visual or audial input without being reductionist and permits analyzing and eventually enjoying. Art anthropology, which prioritizes sociocultural parameters, does not omit status quo, patronage, education process, economic and market context, and the input's producer, receptor, material, and symbolic value. In it's entirety, subjects like aesthetics, beauty, originality, and imitation reveal themselves (Demir, 2020: 348).

We are talking about an understanding that is consolidated primarily with the concept of visual arts, which include notions that create the contents of the "art world" such as history reading, schools, patronage relations, status, economic value mechanisms, and the emergence of structured environments like exhibitions and galleries. We are speaking of a quality that refers to a society different from the general public and institutions that produce artists in society. In many countries, this convoluted concept causes the distinction between artisans and artists, discourses about art for the public's sake, art for art's sake, induces institutionalism, and the formation of learning methods that manifests in education (Demir, 2020: 348).

The history of humanity maintains the process of learning and teaching art with two different assumptions. On one hand, it underlines the importance of production formed in an ideocratic way, a relative process by geography, and manners and mentality engendered by elements of environment in a fabric of culture (Dissanayake, 1980; Shusterman, 2004). On the other hand, it puts forward the idea of a technical education that is structured around a systematic construction aimed to raise individuals linked with art or having knowledge of

it and artists ahead of the curve because art education is a key factor in the development of community, innovation, and economic growth. Politics are set up on this (Winner, Goldstein and Vincent-Lancrin, 2013).

In this way, those methods acknowledged in education and learning were constituted in the economic, political, institutional, and social flow. Pedagogically these methods have two bases. The first one is exemplification: Students are exposed to art masterpieces. In this way, the mark of the past is found in each new production, and schools continue to live. Another assumption is a search for principles and authenticity, starting from the beautiful to the design. In the end, whether amateur or professional, students of art education become voyagers of a field of application of skills (Arnstine, 1966).

The assumptions are that art education can generally be categorized as progressive, discipline-based, and modern (Efland, 1990). Art education, experienced in all the elements that affect the learning process (pedagogy, culture, education level, objective of education, etc.), has written down methods of teaching that can create artistic quality.

The progressive approach for art education in early childhood associates artistic expression with a child's natural development. Especially that approach affected by Piaget's theory of child development (1950) that approved of a child-centered process (Feldman, 1995). Starting with this objective, the Lowenfeld and Brittain approach (1970) focused on artistic expression via natural behaviors, and hence it assumed a *laissez-faire* attitude. Because beyond consisting of secret meanings, the artistic behaviors of children were pure free expressions (Levick, 1986).

Another approach that has been effective in art education for many years is discipline-based. Contrary to the basic ideas of creativity and self-expression, educators promoting this approach suggest that art education is a discipline. Hence, art education steps into the subject-centered teaching path from a child-centered perspective. Following art educator Elliot Eisner, this approach is known as discipline-based art education (DBAE). From this point of view, art studies should be taught systematically, just like other courses, and should aim to produce art history, criticism, aesthetics, and artwork (Eisner, 1988).

After the 1980s, the post-modern period pointed out the role of art in the reconstruction of society. The view in this period promoted diversity, and subjects such as multiculturalism, feminism, and popular culture took place in the art education curricula of schools. Thus, community-based art education (CBAE), which sees art as a human and cultural experience, created its curricula (Bolin, Blandy, and Congdon, 2000).

The methods that bring children closer to art activities and art production in the preschool period have systematic programs and application techniques created in light of the approaches we summarize above.

The High/Scope Training System is a student-centered program that considers children as active learners and runs the plan-do-remember process. The"Art (Painting) Movement," "Appreciating the Arts," "Music," and "Pretend to Play" compose the structure of the program (Epstein, 2012).

The Waldorf Education Program (Anthroposophical education), which Rudolf Steiner formed following the idea that "education should be art, not science," carries the principle of "The Art of Education." According to this principle, art activities should find more places in teaching and learning than science. In the student-centered Waldorf school program, the teachers also consider themselves artists. The principles of thinking, sensing, and wanting transform into the functions of understanding and comprehending with the mind, heart, and hands (Steiner, 1965; Prescott, 1999).

The Reggio Emilia method accepts art as a language and allows children to use it as an integral part of the cognitive/symbolic expression of learning. The curiosity-based method is based on a 'long-term project.' It considers the environment as a third teacher. Instead of a specific and stereotyped curriculum, there is a flexible program based on children's interests, needs, or previous activities. The output of studies for children to understand beauty and esthetic is defined by the idea that every child has their own art (Edwards, Gandini & Forman, 1993).

The school-wide art integration, which stands out among the current models in art education in children, prioritizes a school structure integrated into art. What is meant by this is to teach theater, dance, music, visual arts, and creative writing by associating them with humanities, science, and math classes. The strong point of this method is that in schools and classrooms where art is used to teach the curriculum, it is more likely that students will remember what they have learned weeks and months later (Duma and Silverstein, 2014). According to Ulbricht (Ulbricht, 2005), there are five cases for educators to think about community-based education:

- When citizens think about the ways to support or transform the art programs at schools.
- Administrators of art institutions aim at increasing the number of their students.
- When citizens attempt to remove art education from the curricula of schools.

- When teachers are intent on offering "real-world" situations for their children.
- When the public challenges educators and artists after their artistic works.

Another contemporary assumption of art teaching is a program called "Artist Residency," or "Artist-in-residence." This program invites artists from different countries or cities to perform in another country or city. Moving away from their home environment, artists can observe new works and means of production. In some cases, the artist's expenses are funded, but, in some cases, artists are expected to pay the majority of the costs themselves. This program can take many different forms (Lehman, 2017).

Another model that is currently being researched and included in school curricula is "Children's Responses to Professional Artists." It is a model that evaluates children's responses to professional artists and encourages them to be present in art venues, in artists' workshops, to experience and interpret an artist's work (Gibson & McAllister, 2005). "Museum Learning" is another model used and featured in art education, where children can connect life with art and explore art venues rather than being exposed to art merely in school life. (Piscitelli, Weier and Everett, 2003).

In art education, in the axis of a progressive process, systematic art education, student-centered art education, and community-based art education were prominent in different periods. Based on these foundations, there are experiences in many other models and art elements such as pictures, music, and drama. These models allow the child to meet and experience art during early education and have a game-centric understanding. These models are designed to help children realize their ability to multi-think, gain intellectual perspective, and have creative experiences.

II. Early Childhood Music Education Models and Techniques

Gooding and Standley (2009), handled musical development of a child in periods, classified as follows: 0-40 weeks of pregnancy, pre-delivery musical development; 0-12 months of age, musical development of baby age; 1-5 years of age, early childhood musical development; 5-11 years of age, medium childhood musical development; and 11-20 years of age as musical development of the adolescence period.

The first half of the 0-11 period is important in music education, this training is given as 'activities' in the nursery and preschool groups. These 'activities' are a series of studies where a child can improve their skills and increase awareness, including rhythm studies, listening, and trying to distinguish sounds, singing, singing games, and dancing. However, these stu-

dies have a teaching power and purpose beyond the 'activity.' The systematic music teaching methods applied during preschool and primary school, teaches all students about music and is a starting point for children who want to be musicians. The main methods are from Dalcroze Eurhythmics, Off, Suzuki, and Kodaly. The two methods that specifically highlight the relationship between music and body and apply music with physical awareness for both the learner and teacher in the learning and teaching phases are the Dalcroze and Orff approaches.

The first method is Emile Jaques-Dalcroze's musical teaching approach, also known as Eurhythmics. This approach is a Geneva-based music education model that believes the body is a bridge between sound and thought and is an instrument that allows us to express our emotions without equivocating (Dalcroze, 2000). Emilé Jaques Dalcroze (1865–1950) is a Swedish musician and music educator who developed the method of learning and living music through movement, "Eurhythmics."

The Eurhythmics method has three foundations: Motion, ear training (solfege and rhythmic solfege), and improvisation. Principles and strategies are essential in this one-to-one teacher-related method. Creativity is based on listening and uncovering musical impact.

The first stage is movement. In musical movement, where children demonstrate their muscular and nervous system skills that can understand the smallest length, time, intensity, and structural expression differences in music, consists of a combination of hands, arms, heads, shoulders, and many parts of the body. Children process pace, rhythm, and meter with their bodies. They learn to adapt to sudden changes in music (measure, rhythm, dynamics, or length) and make progress. Rhythmic gymnastics movements like walking, running, leaping, jumping, and bouncing is in this phase (Naumburg, 1914).

Another phase of the Eurhythmics method is ear training-solfege. The solfege signs the exercises and practices that develop the capacity of listening, hearing, replying, singing, playing, remembering, and describing. It is the awareness of associating the sounds of the musical notes with the sounds heard in daily life and hearing the musical notes of the voiced tools, such as the horn, the doorbell, etc. The auditory sense is related to recognizing the limits of sound, octave, and melody (Kemalbay Eren, 2019).

The improvisation phase is where many elements are used together. The learning outcomes are applied in two ways: the instrumental and movement improvisation are to explore space, time, and energy through exercises; to express images or stories in creative action; to apply movements with a specific body part (head, shoulder, elbow); to follow the voice of yourself or someone else on the go; to accompany the movement with sound or an instrument; to turn a rhythmic sentence into motion (Kemalbay Eren, 2019).

The second is the teaching method known as the Orff Schulwerk approach, named after German composer Carl Orff, where music, movement, drama, and speech are set up. Orff defined his method as elementary music (elemanterius). This approach is not just about music education. It is about human education. According to this, early-age creativity and experience affect the individual's entire life. The Orff approach also respected the child's structural characteristics while following individual development.

It is not about information loading; it is about ensuring the child's development to take initiatives. At the core there is improvisation and composition. Children familiarize themselves with all material related to sound and reach large music forms through listening, adaptation, repetition, memorization, and short rhythmic and melodic structures (American Orff-Schulwerk Association, 1977).

Active hearing, commenting, and improvisation is musical activities in the Orff approach. The methods of expression are sound, motion, rhythm, and instrument. First, there is the application, and then the theory comes after the experience. The most important experience is listening because learning to listen creates a lifelong sense of pleasure. In the improvisation phase, language, music, and motion are presented as music material. There is no mistake at this stage, and there is no concern about saying the right musical note. In the movement phase, body movements and expressions, which is to say, emotions, are essential. In addition to the music, the story is also significant, so creative drama elements are used. The early years of Orff training focus on sound and motion, while advanced classes add simple percussion instruments such as drums, gong, triangle, and bell. Then the spinet, portative organ, metallophones, glockenspiels, timpani, cellos, viola da gambas, guitars, lutes and a mixture of un-pitched percussion is added to meet the need for the melody (Shamrock, 1986, 54).

There are methodological similarities in the motion based Dalcroze and Orff music education approaches. The main difference is that Dalcroze wants to create musicians while Orff wants to present music to everyone. Both methods include exercises such as listening, attention, coordination, reaction, memory, and social integration. Both forms of music teaching regard individual awareness and social harmony.

A third approach that stands out among music teaching methods is the Suzuki teaching method created by the famous Japanese violinist and pedagogue Shinichi Suzuki and named after him. It relies on the philosophy, "Talent is not innate. As long as one doesn't have a physical problem, any child can play an instrument, just know to teach it right and with love." The idea that "If children have the skills to learn their own language, they also have the skills to play an instrument," made this approach known as the Mother Tongue Method (Suzuki, 1969).

According to Starr (Starr, 1976) Suzuki attributed the functionality of this method to the environmental conditions in which a baby is born, and how it becomes acquainted with the "mother tongue". This acquaintance is maintained by the constant repetition of the first sounds, usually being "mama mama mama" and its derivatives and the daily attitudes of the parents after a baby starts talking. A natural progression follows this daily practice. The ability to talk depends on the parents' competence in providing enthusiasm for speaking and the happiness of the child.

There are Suzuki methods for piano, violin, viola, cello, flute, and guitar. These methods form a common repertoire prepared for their respective instruments. The teaching of the Suzuki repertoire has fundamental stages. These are from easy to difficult, the simple to complex works to teach technical skills and theoretical knowledge. In the Mother Tongue Method, it is about improving skills. Therefore, the child should start training before the age of five. The three factors that make up the Suzuki triangle are teachers, students, and parents. The teacher is responsible for the student's learning process. The teacher's responsibility is to identify materials to work and listen to and ensure that the instrument is introduced and taught to the student and the parents. Children and their families attend classes together to listen, watch and imitate (Suzuki and Nagata, 1981: 23).

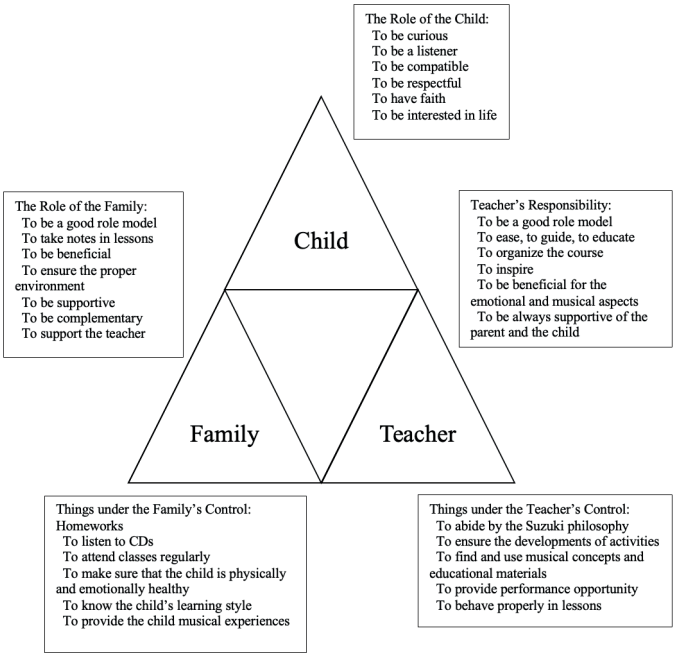


Figure 1: Suzuki Triangle*:* Based on Suzuki & Nagata, 1981.

The Suzuki method has a curriculum and a course flow plan for the teacher. The teacher trained in this method knows how the child stands in the instrument to exercises, positions, and repertoires every detail and expression, which expressions to use, and how to make analogies and technical definitions.

Another powerful method in music education is the model of music education that Hungarian composer Zoltan Kodály shaped by following solely the developmental approach (child-development approach), taking into account the child's natural development.

This approach is built on the principle of literacy of music. Its primary purpose is to maximize each child's music capacity and inform children about their own cultural music and language. Hence folk songs and unaccompanied singing are essential to this method. In Kodály's philosophy, the child must first learn his own folk songs before listening to and learning Western music, an advanced type of music.

The teaching tools of the Kodaly method are solmization, hand signs, and rhythm syllables. Accordingly, solmization is used as movable Do. This system is a method of making solfeggio by transferring music in major tones other than C (Do) major to C (Do) major and music in all minor tones except A (La) minor into A (La) minor. All songs are read according to the treble clef, and this system has two main types of solfeggios in absolute pitch and relative pitch. With hand signs, the objective is to reveal the tonal memory more quickly and safely. Rhythm syllables, enabling duration values to be apprehended, are primarily taught as patterns. It is a method of reading musical notes with rhythm sticks. In Kodaly classes, children learn true rhythm values after they start reading rhythm with the syllable system (Choksy, 2001: 81).

According to Choksy, there are four objectives of Kodály's musical training:

- Cultivating the musical ability intrinsic in all children as much as possible.
- To make children music literates by assisting them in acquiring skills to read, write, and compose with the language of music.
- To inform children about their "musical heritage" (folks songs composed in their language and culture)
- To enable children to appreciate the "masterworks" of the music world through listening, studying, investigating, and performing them and the knowledge they acquired. (Choksy, 2001: 83).

III. Conclusion

In early childhood education, on one hand, some ideas follow the natural flow, which prioritizes the concept of cultural texture, which are proportional to the cultural environment where children are born, while on the other hand, there are class teaching models that are based on discipline-centered, systematic education.

In child education, approaches to art, especially in the areas of painting, music, and drama, can be categorized in general as progressive, discipline-based, and contemporary. We can summarize these approaches as child-centered teaching models, subject-centered teaching models, and community-based art education models. Some of the programs, where educators can teach their favorite arts, are implemented today in preschool and early education classes.

It is important to emphasize that art studies are widely considered 'activities' in the preschool and early teaching periods. Disciplines such as music, painting, theater, and dance are considered 'activities' and separated from other courses like math and grammar. However, with current models and applications, visual and auditory arts are more likely to be used to teach areas considered non-art and support children's creativity. For this reason, the models offered in this article are holistic programs that influence other course content, even though they are often used in the field of art.

The High/Scope Education System and Walldorf School Program from student-centered programs are often used in the field of art. Reggio Emilia, which positions the environment and nature as a third teacher, created the School-wide Art Integrated and Artist-in-Residence Programs as examples with a social basis. Children's Responses to Professional Artists and Museum Learning are up-to-date programs in which children, subjects, and sociality are eclectic.

We believe that children meet music when they are born and it is a natural mechanism engraved in their cultural code. While methods vary by geography, religious melodies or lullabies sung when putting children to sleep show that the first place a baby meets art is music. The education of this baby begins within the family and social environment where it was born. However, then formal education begins. The proven achievements of formal music education can be summarized in three headings. These are its impacts on cognitive and language development, emotional and social development, and physical and psychomotor development. Listening to sound, differentiating sounds, producing sound, breathing studies, rhythm studies, song teaching and singing, creative dance studies, musical drama studies, musical stories, and music listening are part of the musical learning process as a whole.

The Carl Orff, Zoltan Kodaly, Shinichi Suzuki, and Emile Jaques-Dalcroze education models can be described as 'eclectic' programs that are constantly reproduced and implemented in different parts of the world.

In music education models, where children are seen as equal talents and each child discovers their own potential the major program approaches are: the approach focused on singing (Kodaly); the approach focused on playing instruments and accompaniment with rhythm instruments (Orff); the approach focused on dance-movement and body movements (Dalcroze); and the approach focused on playing instruments and improving musical talent (Suzuki).

These four major approaches to music education: Dalcroze, using the whole body to understand and express music; Kodaly, singing, playing music while singing and being part of a community; Orff using rhythm, rhythm instruments, and improvisational actions that enable children to express themselves; and Suzuki, developing the ability that the child is significant in both raising people who love music and exploring children with unique skills.

These programs enable children to have the ability to listen, notice, and apply within a discipline beyond considering music merely an activity in early childhood education.

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CHAPTER 2

CONVERSATION IN CHILDREN'S EDUCATION: WHY DOES IT MATTER HOW WE TALK?

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ABSTRACT

In this section, we mainly discussed why it is important for parents to talk to their children and play with them. Additionally, we clarified the elaborative and repetitive conversation styles and emphasized that the effect of these two styles on children's cognitive development is different. We also stated that parents must be informed on the importance of playing with children which is a crucial activity for children's cognitive development. And lastly, parents who are aware of the significance of these two activities can support their children's language and cognitive development regardless of their socio-economic status (SES). Additionally, we pointed out that parents can help their children's cognitive development via simple activities which are beneficial in the long run.

Keywords: cognitive development, language development, elaborative talk, repetitive talk, parent-child talk

The child begins to perceive the world
not only through his/her eyes but
also through his/her speech.
-Lev Vygotsky

I. Conversation in Children's Education: Why does it matter how we talk?

Almost all parents spend time with their children, as much as they can, in order to bring them up. This interaction mostly would be possible via language (Bates, 1999). The advantage of interaction between parents and child is so unique and important that it is possible to see the effects even many years later (e.g., Gilkerson, Richards, Warren, Oller, Russo & Vohr, 2018). Nowadays, we understand very well that having conversations with our children about their past experiences improves their cognitive abilities. Additionally, we explain that *the way we talk to them* is as important as the talking itself for their cognitive development. For this purpose, based on findings from the literature, we will discuss what parents should do and what they can do to support their children in order to develop their cognitive functions.

II. Why it matters how we talk: The importance of talking about the past

Imagine that you met someone somewhere and began to talk. Interestingly, throughout this conversation, it was forbidden to talk about any past events. What would the conversation be like? It is obvious that it would be quite difficult. Talking about past events is particularly important for the formation of memories (Nelson, 1996). This is crucial not only for adults' memory, but also for children's memory development. Talking to children about past events both enables them to form new memories and improves the quality of the memories. Furthermore, children learn how to organize their own memories (Fivush, Haden, & Reese, 2006). For example, a child who talks about a past event to his/her parents learns how to frame that specific event (Öner, Ece, & Gülgöz, 2020). In general, the more you talk about the past, the more childhood memories you have. This cognitive skill begins to develop through parent-child conversations in early ages (Nelson & Ross, 1980).

Language has strong relations with cognitive development; for example, it is closely related to the Theory of Mind (ToM), which is one of the corner stones of cognitive development, especially around the age of five (e.g., Karakelle & Ertuğrul, 2012). Conversations between parents and a child not only improve language and cognitive skills including memory, but also

contribute to the development of the child's self-concept (Fivush, 2001; Haden, Haine and Fivush, 1997) because memory and self are closely related to each other (Conway & Pleydell-Pearce, 2000). Thus, while language nourishes memory, it also nourishes the self-concept. The interaction happening between parents and children by talking about past events also helps children to integrate those events with their life stories (e.g., Bernsten & Rubin, 2004).

One of the most important factors affecting the development of expression skills and child's independence is the way parents talk to their child (Küntay & Ahtam, 2004). This is because children's speech pattern is affected by the speech pattern of their parents (e.g., Farrant et al., 2000; Wang, Leichtman & Davies, 2000). After a child begins to speak for the first time, the adult's accompaniment to him/her improves the language and cognitive development more than initially hypothesized (e.g., Engel, 1986). So, we will discuss conversation styles about past events.

III. How parents talk about the past: Elaborative and Repetitive Style

Generally speaking, we see that parents use two styles when talking to their children about past events. The first of these is elaborative talk. In this style, parents encourage their children to take part in the conversation and point out the details of the subject (Farrant & Reese, 2000; Fivush et al., 1988). In the second style, called repetitive style, generally, parents repeat their questions until they get an answer without giving any helpful cue (e.g., Farrant et al., 2000). According to many studies, elaborative speech has many advantages over repetitive speech. Children whose parents talk to them in an elaborative style remember more detailed and specific aspects of the event later (Fivush et al., 1988; Reese, Haden & Fivush, 1993). In another study, it was found that children between the ages of 2-3.5 whose mothers talk to them in elaborative style can give longer and more detailed explanations for the event (Farrant et al., 2000). In general, mothers talking in elaborative style both provide new information to their children and help them to remember their past experiences by asking open-ended questions, integrating and connecting different aspects of their experiences as well as encouraging them to evaluate the experience in question. Additionally, parents who use elaborative style help the children when they could not remember any part of the event, and teach them how to integrate it with the whole event; thus, parents and children remember the event together (Fivush, 2011). Below are examples of mother-child conversations fulfilled in both elaborative style and repetitive style (Küntay et al., 2004; p.21).

An example of *elaborative* style

Mother: Darling, do you remember when you were circumcised?

Child: xxx (says an unclear word)

M: Do you remember my boy?

C: I remember, my brother was too.

M: Your brother too?

C: Yes.

M: What happened then? What did you experience?

C: Hmm...can't tell.

M: Why can't you say? We went to the hospital, didn't we?

C: Yes, to the hospital where I was born.

M: Huh, we went to the hospital where you were born, what happened there?

C: I was circumcised.

M: You were circumcised, but they dressed you first, right?

C: Yes.

An example of *repetitive* style

Mother: Do you remember we went to village? How did the cow kick you? Do you remember mommy?

Child: (looks ahead)

M: How did the cow kick you?

M: Come on, look...

M: How did the cow hit you?

M: You know, you ran away together with your grandma...

Note that in the repetitive style, the mother focuses on only one part of the event ("how did the cow hit you?") and aims to understand if her child remembers it or not by using mostly the word "yes" and "no".

The more elaborately the parents speak, the more elaborate the child's speech becomes (e.g. Fivush et al., 1988). Children who experience this style in preschool can recall more detailed and more coherent memories (Haden 1998; Reese et al. 1993). In addition, reminding the child of past events in an elaborative style ensures both to reinforce those memories and to make it easier for them to remember later on (McGuian & Salmon, 2004).

By considering the advantages of the elaborative style, it is important to introduce and teach this style to parents, and this was carried out via short-time and low cost training programs. For example, in a study (Boland, Haden, and Ornstein, 2003), the mothers who watched elaborative conversation style on a video understood how to do it easily, and when the researchers rechecked the mothers' speech styles after weeks, they saw that the mothers maintain elaborative speech style.

So far, we have discussed how the elaborative speech supports the language and cognitive development of children. What other ways are available to support children's cognitive development? Among other activities that support children's cognitive development, *play* and *shared reading* are in the lead.

IV. Daily Activities for Kids: Play and Shared Reading

Among the activities that support language development, including narration, play is undoubtedly the most entertaining one. According to Nelson (1996), play facilitates language development. Piaget (1962) put forward that it is certainly not a coincidence that both play and language remarkably improve towards the age of two. Famous play therapist Garry Landreth describes the significance of play as follows "Toys are children's words and play is their language" (Landreth, 2002, p.529). Everyone well knows how important the play is for children as an activity and a way of self-expression. The play itself is interesting, and it requires interaction with others and supports learning (Weisberg, Zosh, Hirsh-Pasek & Golinkoff, 2013). Learning via play improves linguistic, cognitive, and social skills while entertaining them and, in turn, these skills predict academic success (Roskos & Christie, 2000). The effect of play on learning may well be observed in language development (Lillard, Lerner, Hopkins, Dore, Smith, & Palmquist, 2013).

Another cognitive skill related to play and supporting the language development is narration; narration also helps children to express themselves. Narration may be simply described as the ability to integrate semantically related small episodes in a certain flow at a certain time (Ilgaz & Aksu-Koç, 2005). The logic of narration is to organize information within the frame of a causality (Trabasso, Secco, & van der Broek, 1982). Even in the brain activity of an 18-24

months old child, we can see some processes related to language. Based on these processes, a 7-year-old child can easily organize a story within the frame of a causality (Nelson, 1996).

There are many techniques to improve young children's narration skills, and the most prominent one of them is play. Play helps children to put their thoughts in order hierarchically. While expressing themselves in a play, they use language and action together (Ilgaz et al., 2005). A child can tell a story through performance as well as by creating certain themes via toys (e.g., Eckler & Weininger, 1989), but he/she learns more words when adults accompany the play than when the child plays alone. This is due to the fact that the child uses the words together with the adult during play and learns their meaning. In addition, the adult and child are likely to ask questions to each other and answer them together; these dialogues improve his/her vocabulary (Toub et al., 2018).

Since children relate lively while they narrate, it provides them an opportunity to develop their language and cognitive skills. For example, under normal circumstances, a detailed narration can be performed at around age of five whereas the same skill can be observed at around age of four in the case of play (Ilgaz et al., 2005). This means that children are able to tell more complex narratives at an earlier age with the play and the animating opportunity provided by it. Play also helps children to reduce their memory and cognitive load during narration. Children explore many relations and interactions among toys by considering the context they are in. Toys provide many clues for the story to be told. By doing so, they reduce memory and cognitive load.

Learning in the context of play is more efficient than direct teaching, but not all kinds of play support language and cognitive development equally. For example, although free play is seen as the best one to support cognitive development, that is not the case because there is no adult supporting the children in this kind of play (Chien et al., 2010). The role of play in language and cognitive development increases sharply when adults take part in it. In other words, although it is not wrong that all types of play are more efficient than direct teaching, adult supported play (including guided and directed play) is the most helpful one. And, if a play takes place catechetically, its contribution to language and cognitive development sharply increases (Toub et al., 2018; De Rivera, Girolametto, Greenberg & Weitzman, 2005).

In addition to the significance of play accompanied by adult, the importance of symbolic play also needs to be mentioned. It has been shown that symbolic play has a significant effect on cognitive development. The major similarity between symbolic play and language is that they are both "symbolic", which produces an interaction between them (Miller & Almon,

2009). Vygotsky (1967) says that children shape and improve their language through the fantasy world they build in play.

Another study demonstrating the effect of play on language development also provides a finding that play can predict language. Ogura (1991), in her study with Japanese children (cited in Ha, 2021), showed that children who play thematic symbolic play could construct their first word combinations in a few weeks. Even a single-object symbolic play has been found to affect language development positively (Orr and Geva, 2015). There are many studies investigating the relationship between symbolic play and language development, and almost all these studies agree that symbolic play supports language development in several ways such as syntax, word organization etc. (Ha, 2020). And lastly, it was found that these relations are strong and long-termed (Quinn, Donnelly, & Kidd, 2018).

There are also some studies investigating the effect of symbolization by way of toys (Pellegrini, 1986). For example, we have stated that a child can narrate a story in a more detailed way with the help of toys (Ilgaz et al., 2005). However, if the toys are "replica" (for example, a toy apple to describe the apple), the benefit of the play will be limited since the child cannot use it as another object (Pellegrini, 1986). In other words, using a toy apple to tell a story is not as useful as using a little red ball as an apple. However, even in this case, the child takes advantage of that replica toy in terms of cognitive processes (Pellegrini, 1986).

V. Shared Reading

Although it may not sound as entertaining as play, shared reading is also a good way to improve your child's language and cognitive skills. Compared to other activities with adults, shared reading involves much more interactive talk and provides a "unique" linguistic stimulus (Clemens & Kegel, 2021). Despite the fact that shared reading covers a small amount of daily activities, it is of great importance due to its rich linguistic input (e.g., Clemens et al., 2021; Montag, Jones & Smith, 2015).

It has been observed that the sentences used by parents during shared reading are more complex and longer than the ones they use other times, and they use a wider variety of verbs (Demir-Lira, Applebaum, Goldin-Meadow & Levine, 2019). Moreover, the positive effects of parental reading on the child's language development were found to be independent of socio-economic status (SES) and the child's previous language skills. Furthermore, during the shared reading, also an emotional warmth occurs between parents and the child, and they can focus on the same thing simultaneously (Farrant & Zubrick, 2012). In another study, it was shown that a child who participates only one page of shared reading a day is exposed

to about one million more words than a child who does not when they reach the age of five (Logan, Justive, Soft & Chaparro-Moreno, 2019). Clemens et al. (2021) found out that the positive effect of shared reading on the cognitive development is greater than the total effect of daily activities such as singing, self-care, and playing with toys.

VI. Parent-Child Conversations: How was your day?

Play and shared reading are important activities to support children's language development. However, parents and children also spend a lot of time apart from each other throughout a routine day. For example, in a family where the child goes to kindergarten and the parents go to work, they experience many events separately. In this context, events experienced together are called "shared", and events experienced separately are called "unshared" experiences (Fivush et al, 1988; Reese et al., 1993). Now we will discuss how children share their unshared events with their parents, and how parents may respond to them to support children's cognitive development.

Marvin (1995) found out that preschool children aged 4 to 5 most often shared their school experiences on the way back home. Although children generally talk about the "present", it has been reported that they also talk about the past and the future during this five-minute travel. When a child sits next to his/her parent, this kind of conversations become probable. Parents talk to their children about many shared and unshared experiences. Even when an unshared experience is discussed, it may be connected to a previous shared experience. For example, let's say that when you get together with your child in the evening and you learn that your child fell down at school; this is an unshared experience. In this case you may talk about a shared past event in which again your child fell down and was injured, and you may refer to this shared previous experience to relax your child. In this example, we can see how two different experiences can be connected in a parent-child conversation (Şahin-Acar, Bahtiyar-Saygan, Alsancak-Akbulut & Sagel-Çetiner, 2019). At this point, let's briefly touch on another issue related to the way of parents' talking style. Should parents talk to the children in motherese (or parentese) style or in an *adult* style? (Richards, 1994; Snow, 1972). In a motherese talking style, the parent uses more concrete words, prefers simple sentences, and uses a high pitch. This way of speaking helps children to focus on the speech. One of parents' important tasks in spoken language is to modify their language in accordance with children's developing cognitive capacity as they grow up (Dominey & Dodane, 2004). However, it is a controversial issue whether "motherese" speaking style is beneficial for infants' language learning (Papalia, Olds & Feldman, 2009). While some researchers put forward that this is really helpful to support children's language development (Kuhl, 2004), others are of the

opinion that infants also benefit from the conversation that takes place between their caregiver and older sibling as well as with them directly (Oshima-Takane, Goodz & Derevensky, 1996).

Another important parental characteristic related to children's cognitive development is responsiveness (Tamis-Le Monda, Bornstein & Baumwell, 2001). A responsive parent is sensitive to the child's needs, emotionally supportive, able to pay attention to the child, and provides appropriate "language inputs" for the child's development level (Landry, Smith, Swank & Miller Loncar, 2000). Considering the importance of the adult accompanying the child in the language development, it turns out to be that parents' responsiveness is of great importance (social interactionist perspective) (Warren & Brady, 2007).

Then, can responsive parenting which is so effective on language be taught to parents? Definitely yes! An intervention program developed by Girolametto and Weitzman (2006) is frequently applied to parents in North America. This program basically aims at improving children's language, social skills, and the quality of parent-child interaction. In compliance with this program, parents become skillful at encouraging the child to initiate, participate, and control an activity. By doing so, the parent can monitor a child's attention, accommodate his/her child's needs, and show a response consistent with his/her child current interest. As a result, a harmony may occur between parents and children.

It may be helpful to draw parents' attention to one more point: You may be allocating less time to your child than you think, and this misconception may lead you to underestimate what you can do for your child's language development. However, as we mentioned above, whether you are with your child at home or you have spent the day apart, there are still many things you can do together. If a therapist tells you that you are not spending enough time with your child, do not feel yourself bad, instead, take advantage of this warning to create new opportunities to spend more time with your child (Richards et al., 2017).

We have discussed so far the variables such as the parent's conversation style, play, and shared reading, which have been shown to affect children's cognitive development positively; and lastly, we explained their importance for children and made suggestions to the parents. It should be noted that these variables directly affect children's cognitive development. However, there are some variables that indirectly affect children's cognitive development among which self-construal, age, gender, and socio-economic status (SES) first come to mind. We will now briefly explain these variables and discuss how they are related to children's cognitive development.

VII. Parent-Child Talk and Self-Construals

According to many studies most of which were carried out in Western societies, mothers' personalities and values affect how they talk to their children (e.g., Miller, Wiley, Fung, & Liang, 1997; Wang, 2001). Self-construal, which is an important individual difference and influenced by culture, is considered to be another possible variable affecting mother's conversation style (İmamoğlu 1998; Kağıtçıbaşı 2007; Wang, 2007). For example, mothers in an individualistic culture were found to speak more elaboratively with their children compared to those in a collectivist culture (e.g., Schröder et al., 2013; Şahin-Acar et al., 2019; Wang et al., 2000). However, it seems reasonable to make this distinction in terms of individual level rather than cultural because the differences in self-construals are also available within the same culture (Şahin-Acar & Leichtman, 2015). In other words, being individualistic or collectivistic should not be considered as the trait of a society, but that of individuals. Both in Turkey and North America, the conversation patterns of mothers with individualistic self-construal are similar. These mothers exhibit a more active participation when talking to their children about their past experiences (Şahin-Acar & Leichtman, 2015).

Individualistic mothers attach importance to independent self; therefore, their conversation patterns are in consistent with this purpose (Wang, 2007). For example, if an individualistic mother realized that her child is not interested in the subject, she immediately changes the subject and encourages him/her to take part in the conversation (Coppola et al., 2014). On the other hand, relatively older mothers with interdependent self-construal use more repetitive style for past experiences (regardless of shared or unshared) (e.g. Şahin-Acar, Bahtiyar-Saygan, Alsancak-Akbulut, & Sagel-Cetiner, 2019).

VIII. Age and Gender

Parents' support for children's language development varies also according to the age of both parents and children (Anderson, Graham, Prime, Jenkins & Madigan, 2021). For example, "quantity" (the total amount of speech) is important when the child is young. But as the child gets older, "quality" (for example, the complexity of sentences, the amount of rare words) becomes more important than "quantity". In other words, quantity is necessary to initiate and accelerate language development, but after the child reaches a certain capacity (for example, after eighteen months), he/she benefits much more from the quality and diversity of speech (Anderson et al., 2021; Jones & Rowland, 2017). Although quantity is still an important determinant after eighteen months, the quality of speech used by the parents (for example, the use of rare words) affect the child's language development in the future (Rowe, 2012). This effect is specially outstanding at the age of 3.

Age is important not only for the child, but also for the parents in terms of language. For example, it is known that older mothers' children have better cognitive skills (Tearne, 2015). Older mothers talk to their children in more detailed and less repetitive way (Şahin-Acar et al., 2019). This, in turn, helps the child to improve her/his cognitive and social skills in the future. Older mothers mostly had a longer education life, and this education level may affect the quality of the conversation between the mother and the child.

According to a recent meta-analysis (Anderson et al., 2021), contrary to general opinion, girls' language skills are not better than boys' (Huttenlocher, Haight, Bryk, Seltzer & Lyons, 1991), and the small difference observed between them disappears around the age of two. The findings on whether the conversation patterns of mothers or fathers are more developed related to a discussion ("Is mothers' or fathers' conversation pattern more developed?") are controversial because the effect sizes of quality and quantity are not large enough (Leech, Salo, Rowe, & Cabrera, 2013). Briefly, it seems that the gender of the children or parents has no effect on language ability.

IX. The Importance and Compensation of Socio-economic Status

One of the primary environmental factors affecting the language development is the socio-economic status (SES) which is defined as the level of education and job status in western cultures. An outstanding example of this effect was observed by Hart and Risley (1995). They found that the number of words used by low- and high-income families when talking to their children is quite different. This difference reaches about 32 million until age of four. Now that the amount of conversation is very important in the early years (Anderson et al., 2021), this difference found by Hart and Risley may be considered as an impressive one. The effects of SES level on language development are not limited to the number of words; families with high SES use less imperative forms, and their overall response rate is higher than those families with low SES. Also, mothers with high SES give clues to remind their child when they see his/her difficulty, whereas mothers with low SES change the subject in such a situation and ask closed-ended questions; the repetitive style among them is more common than that of mothers with high SES (e.g., Küntay et al., 2004).

A child who grew up in an environment with low SES receives less response from his/her parent, and the interaction between them is low. These parents ask their children fewer questions and talk less (Hart et al., 1995; Rowe, 2008). In general, directive speech both weakens the fluency of speech and reduces interaction between parents and a child (Hoff-Ginsberg, 1992). As a result, child's vocabulary remains limited (Hoff, 2003). However, this difference

can be easily eliminated. Cognitive development of children with low and middle SES can be supported, and it is important to develop easily applicable and low-cost intervention programs for this purpose (Ridge, Weisberg, Ilgaz, Hirsh-Pasek & Golinkoff, 2015). For example, in some districts where low and middle SES families live, some signs and questions have been put up in several places of supermarkets. These signs and questions have the potential to initiate a conversation between parents and children: *Question for your child: Where does milk come from? What's your favorite vegetable*? It was found out that in the absence of these signs, parents in the low SES group spoke significantly less with their children compared to the middle SES, but in the presence of these signs and questions, low SES parents talked to their children as much as middle SES parents did. Additionally, the children spoke more about the objects in these questions and asked more questions to their parents, and parents explained them in more detail compared to the absence of signs and questions case (Ridge et al., 2015, p.130). Even these modest amount of conversations are crucial for children in low SES families as these types of linguistic interactions are known to develop neural connections in children (Kuhl & Rivera-Gaxiola, 2008). It should be added that the abovementioned question effect did not affect middle SES parents, that is, they did not talk more to their children in the presence of signs and questions; probably they were already had frequent and qualified conversations with their children. These findings suggest that additional language input can be an important supportive factor for children' language development, especially for those who are growing up in low SES families (Anderson et al., 2021).

X. What can you do for your child as a parent?

✓ As a parent, you do not need to schedule a specific time to talk to your child. You can talk on the way to school or on the way home, and whenever you can. This not only strengthens your relationship, but also provides you an opportunity to exchange information about what you did throughout the day. You can also share your "unshared" experiences you had during the day with your child.

✓ Develop your own language skills and vocabulary; this will positively affect your child's language development.

✓ Read together with your child. It is a valuable activity not only for its positive effects on your child's language development, but also for its positive effects on reducing the stress of parenting. Moreover, this activity strengthens the relationship between you and your child.

✓ We recommend you ask questions to your child rather than using imperative sentences while talking to him/her. This would both increase the time you spend with your child and strengthen the interaction between you.

✓ Play with your child as much as you can. It is much easier for children to talk about a past event via toys and strengthens their memories which, in turn, makes it easier to recall that event later.

✓ Ask questions on all occasions and do not forget that open-ended questions, specifically those which are based on your child's previous answer, improve his/her verbal skills.

✓ Although devices such as phones, tablets, and computers have many advantages, they may also negatively affect our other relationships (e.g., social relations); this fact is called *technoference* (McDaniel, 2015). Technoference is also harmful for parent-child relations and may cause some behavioral problems (McDaniel & Radesky, 2018). A parent who is frequently on the phone indirectly weakens the interaction with his/her child (McDaniel & Coyne, 2016; Kirkorian, Pempek, Murphy et al., 2009). Therefore, it is necessary to set screen time limits.

XI. Conclusion

Talking to preschoolers about past events supports both their language and cognitive development. However, the benefit of these conversations substantially depends on the parents' conversation style. Let's say that a mother talks to her child about a past event and the child could not answer one of her mother's questions. In situations like these, the parent can either repeat the same question to get the answer or help the child to remember. He/she may give clues, draw attention to different aspects of the event, show how to connect the fragments, that is, organize them. This kind of conversation style is called elaborative style. The alternative conversation style is called repetitive style in which the parent repeats the same question until he/she gets the correct answer.

Other leading activities supporting children's cognitive development are playing games with them and reading to them. Play improves the children's memory and their ability to narrate events, which supports both language and cognitive development. This expected benefit of play is obtained perfectly when the parents participate. Children are more likely to learn during play than direct verbal teaching.

Reading together with children significantly enhances the child's vocabulary. Parents use more complex sentences and various words while they are reading together with their children. And, although total time of talking is important, it becomes more important to use more complex sentences and richer vocabulary as children get older. Reading a book together with children largely gives them this opportunity.

Finally, it should be especially noted that these activities which are stated to affect the language and cognitive development positively can be conducted even in families with low SES. Parents with low SES may talk to their children in elaborative style, play, and read together with them as long as they are taught its importance. However, if one point is not emphasized, all the other conclusions made thus far in this chapter lose their significance largely: Spending time together with the child.

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CHAPTER 3

EDUCATION OF DEVELOPMENT IN MULTIPLE CHILDREN

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ABSTRACT

Multiple pregnancy is a type of pregnancy that occurs when more than one egg cell is fertilized and begins to develop separately in the same menstrual cycle, or when a single egg cell divides into more than one cell after fertilization and the dividing cells develop into separate embryos. In this type of pregnancies, two or more children can be born. The meaning that parents attribute to being a parent, and the effects of parenting responsibilities and duties on parents are among the factors that cause stress. In addition, parents' expectations about the child and about the child's interests, expectations, and personality also influence parental stress. The stress levels of parents who constantly perceive and evaluate their children's behavior negatively are thought to be high. As children grow up, parents tend to hold their children more responsible for their behavior, since they see their children's behavior as more conscious and controllable. This tendency especially affects parents' reactions to negative behaviors in children. The tendency of children to have problematic behaviors is related to their skill to adjust. If parents do not have sufficient knowledge about how to communicate with their children, the quality of the parent-child relationship decreases. Thus, behavioral disorders in the child and parental stress affect each other.

Keywords: multiple pregnancy, multiple childhood, child development

I. Introduction

Raising multiple children is more challenging when compared to parenting single-born children (Alidosti, 2016). There are various reasons for this situation. Economic difficulties, time, and isolation of the mother from social life create some of these complications (Gueritault, 2008). As these difficulties can cause stress in the mother, the situation caused by parental stress can cause behavioral disorders in children (Nelson et al., 2006).

II. Concepts of Child and Childhood

The attitudes and behaviors that people show in social life can vary in every community. Since the concept of childhood has a cultural side, it is generally agreed that a general definition for the concept of a child cannot be made (Öktem, 2012). When defining the term "child", which is a crucial and tough task, we must consider whether this definition should be made by evaluating it in light of sociological and biological information or in terms of positive law (Kök, 2002), as the definition directly affects the perspective of society and the laws towards children. The modern concept of "child and childhood" was not encountered in the Middle Ages, because childhood was defined as a relative rather than the period between infancy and adolescence, and children were perceived as seemingly small adults (Gander & Gardiner, 2010). For many years the term "childhood" was seen as a biological transition phase in which a "child" was immature and could not make its own decisions, and this understanding made the childhood period temporary and deficient As a result, a system without the qualities of free existence has emerged. At the same time, people's attitudes and perspectives towards children directly affected children's childhood experiences and their reactions to the adult world (Allison, 2001).

In the United Nations Convention on the Rights of the Child, every individual is defined as a child until they reach the age of eighteen, except for cases of majority reached earlier (Şirin, 2011). In addition to this general statement, the experts have different perspectives on the definition of a child. When describing the concept of child, Yörükoğlu draws attention to the fact that it can differ surprisingly and rapidly along with its unique characteristics (Yörükoğlu, 2011: 21). In another definition, it is expressed as an entity with continuous development (Altınköprü, 2003) while it is also defined as an entity that has value for the continuity of the culture. The term child, which is stated as a young boy or girl by the Turkish Language Association, is also defined as a human cub.

The people working in different parts of the law, in which there are debates about the concept of child and childhood in many legal texts, make different evaluations on the definition

from their fields and define child differently depending on the age, being an adolescent, or the actions of him/her. The term child, which can be defined as a being who has lived through the phase of human life from birth to adolescence, a human cub in the process of development and change, or a small citizen who still has not reached the required maturity and is not accepted as an adult, is also described as a human who is irresponsible and has no authority to do any work due to his/her young age. (Çelik, 2005; Reid, 2011). In all the definitions, it is thought that children have a different structure from adults, and thus, the attitudes and behaviors towards them should not be the same as those shown to adults (Bağlı, 2003).

III. Mother's Relationship with her Single-Born Child and Multiple Children

Freud suggests that the most important part of our personality is shaped in early childhood. What he means when he used the phrase a "child is father of the man" is that the things that influence the shaping of our personality in early childhood make us the people we are in adulthood. In other words, according to Freud, our character in adulthood stems from our childhood experiences. Thus, Freud's personality theory is based on childhood. Freud explains child development with certain stages. He argues that if the needs of the stage a child is in are not met on time, s/he may not be able to move on to the next stage in good health. Therefore, the individual responsible for caring for the child must meet these needs regularly from the moment of birth, so that healthy characters can develop (Öztürk, 1997). Freud states that a mother has an important role in the life of her baby. In this period, a child who establishes a loving, warm, and trusting bond with his/her mother is theoretically expected to establish similar bonds with other people throughout his/her life (Geçtan, 2004).

Studies have addressed two main dimensions of parental behavior. The first is the dimension of acceptance-rejection. This centers on the parents' behavior which can be warm (approving/accepting) or hostile (disapproving/not accepting). A warm bond helps children develop a responsible character that can control themselves, while a hostile relationship encourages aggression. Control-autonomy represents the second dimension. In this dimension, how permissive or restrictive parents are while executing the rules of behavior is the question (Gander & Gardiner, 2007).

IV. Behavioral Developments and Disorders in Multiple Children

Behavioral disorders occur as a result of children transferring their internal conflicts to their attitudes due to different physical and mental reasons. Namely, the relationships these children establish with their environment are always tense and conflictive (Yörükoğlu, 2014).

When children adjust to their environment by acquiring new abilities every time they move to a new developmental period, they also face some problems that need to be solved. Adjustment is expressed as a person's ability to establish a transition between his/her own self and the world s/he is in. If a child struggles to cope with the tasks in the developmental age, behavior and adjustment problems will inevitably appear (Yavuzer, 2014).

According to Yavuzer (2014), when trying to understand problematic children, it is necessary to distinguish between children who have normal behaviors and children who exhibit behavioral disorders. Emphasizing this issue, Yavuzer proposes some criteria to determine whether the attitudes of children and young people are normal or behavioral disorders. These criteria can be listed as age-appropriateness, continuity, the intensity of behavior, sexual role expectation, and cultural factors.

The problems faced by children in the developmental stage are very different. The majority of these are specific to that period, which can be resolved with parental support. But if the parents' attitude towards the child is not appropriate and the child does not receive support, the problems grow (Yörükoğlu, 2014).

Children with adjustment disorders are usually the result of a failed parent-child relationship. Children who grow up without their parents' love and attention feel a great hunger for love. This hunger can cause some adjustment and behavioral disorders. The love and attention that is needed at the character formation stage can be gotten from close members of the family. But, if an adult in the family, such as a parent or uncle, has a problematic personality, there is a possibility that this wrong behavior example will also appear in the child (Yavuzer, 2014).

V. Cognitive Development in Multiple Children

Early childhood education has an important place in child development and education. Knowing the child and his/her development can be described as knowing the person. The first years of life are of great importance as they form the basis of the individual's development, and basic knowledge and skills are acquired in these early developmental years. The first years of life are critical years in which child development is rapidly shaped. One of these developments, the foundations of which are laid in the early years, is cognitive development. In multiple children, this developmental stage is more difficult to achieve(Altınköprü, 2003).

Cognition is one of the human abilities, the definition and importance of which make a person human. With this ability, s/he becomes superior to other living things and dominates them. By trying to cope with nature, producing cultural values, and developing technology

(Adler, 2002), cognition makes life easier and meaningful. Education guides the development of human cognition. Cognition includes advanced mental processes. “Mental processes” is a broad term including attention, perception, memory, language development, reading and writing, problem-solving, remembering, thinking, intellect, and creativity. Cognitive development is a field that includes all mental processes which help us to acquire, use, store, interpret, reorganize, and evaluate information that enables us, starting from birth, to interact with the world around us and aids us to understand our world. An individual becomes increasingly competent in terms of quality and content in mental processes. There is a close relationship between mental activities and the method of gaining knowledge which is an important element of this development. Cognitive development refers to a child’s thinking about the objects s/he sees, hears, touches, and tastes. This thought process includes the action-reaction relationship, the sequence of events, understanding the similarity and difference among objects, being able to categorize objects, and reasoning out answers. The purpose of cognitive development is seen as reasoning abstractly, thinking logically about hypothetical situations, organizing rules in a complex and higher structure.

According to Piaget, cognitive development is defined as an organism having regular qualitative changes, passing through different stages from birth to death. Cognitive development is important for children to examine, try, and apply their own knowledge, and the role of adults at this stage is crucial.

Early childhood learning is different from learning in adults when we examine the cognitive characteristics of a child. Children have a unique worldview and mindset. The cognitive system receives inputs from the environment, perceives the inputs, and stores what it perceives in its memory. With thinking, they use what they perceived by recalling them from the memory. They conceptualize and generalize information to think even better. They give outputs with new ideas. Also, they get feedback from the outputs, improve their cognitive abilities with the feedback, and balance themselves when they receive different inputs.

Since the desire to marry late and have children late is due to a modern lifestyle, it can reduce the possibility of a couple having children later in life, which necessitates the use of assisted reproductive technology more frequently. The statistical data on this technology is observed to have increased with the geometric mean from the years the first IVF children were born to the present day. Encountering remarkable data in the future is a possibility.

There is a natural way for a woman to carry a baby in her womb. Instead of adapting the nature of women to our “lifestyle”, we should adapt our lifestyle to “women’s nature” and if

there is no compelling reason, the assisted reproductive technology should not be used outside the natural course which disrupts the natural balance, because as the number of babies in the womb increases, the probability of the babies being born healthy decreases and maternal health is also seriously threatened. Each added child pushes the birth time four weeks forward, which can cause both a premature and difficult delivery.

Multiple children are more likely to face different health, social, and psychological problems compared to normal children, which shows that multiple pregnancy is not a situation to be envied or desired.

Every child should be fed breast milk from the moment of birth. The medical world states that breast milk can be enough for twins. Unfortunately, the milk production of mothers who are tired and in chaos can be adversely affected, and the children do not benefit from this natural food sufficiently.

Another factor that is as important as physical health in multiple children is "Identity Development". Identity development is a cause for both curiosity and anxiety in parents. For the development of independent identity, it is important that family and society, but especially parents, approach each child as a different "individual" since children have different innate characteristics (Freud, Horney).

Although each child should be given individual attention, it is difficult to spend "quality time" when there are multiple children involved, because of time and the amount of care required. The collective energy spent on children's care can cause "burnout psychology" in parents. This scenario makes it difficult for children to gain an independent identity.

Thus, this burden can be alleviated with the "extended family" and a "neighborhood culture", care can be provided with a shift system, which helps ensure that parents are not disconnected from life, and if necessary, children can be separated from parents and their ability to socialize is encouraged in this way. Also, it will help each child to gain a separate identity:

· They should be addressed directly by their first names rather than twins or triplets, and their names should not be similar.

· It should be ensured that they are separated from each other and put in different environments from time to time. This will contribute to their language and personality development, as well as preventing negative effects on each other with behavioral patterns such as being dominant, talkative, daring, introverted, etc.

· It should be ensured that everything that falls within their interest, such as toys, clothes,

classrooms, and schools, should be made different and should be chosen according to their characteristics.

· Especially until the age of three, parents should concentrate on the individual differences of their children, reveal their differences, and try to support them.

· Each one should be ensured to feel “different and special”.

· It should be ensured that they are “connected to”, not “dependent on” each other.

· Other people trying to compete for “finding the difference between them” should not be allowed, and the concept of “sameness” should be removed.

Having multiple children is quite a troublesome and tiring process. The burden of triplets is about six times, not three times, that of one child. For example, if you take care of a child in twenty minutes at night, you have to spend sixty minutes for three children. Twenty minutes after the last child’s care, it is the turn to care for the first one again.

Support starting before birth and financial aid, health support, and helpers after the birth, as well as psychological and stress management supports, are important.

Prof. Paul THOMPSON from the University of California conducted some experiments and research on the quality of intelligence with a group of twenty-three identical and twenty-three fraternal twins. According to this research axons sheathed with high-quality myelin are claimed to transmit impulses faster with higher quality and increase intellectual performance.

There are many types of foods that can benefit myelination. These are foods such as fish oil, flaxseed, and olive oil, which contain Omega-3 fatty acids and vitamin B12. As a result of healthy myelination, nerve signals accelerate thirty times and reach a speed of about one hundred meters per second.

VI. How Should Multiple Children’s Education Be?

Multiple children have different physical formations, mental development, emotional characteristics, social needs, character and personality structures, and inner worlds. Thus, it is necessary to see multiple children not as the same, but as two or three different siblings growing up in the same family, and to educate them as two or three separate individuals.

When raising multiple children, it is important to make them connect, not depend on each other; to raise them in cooperation and solidarity, not in competition with each other; to help them to feel tolerance, rather than jealousy towards each other; not to allow them to oppress each other; and to ensure that they are in harmony instead of imitating each other. To achieve

these goals, it is essential to meet the needs of each on time according to their characteristics, to help them have different friends and hobbies, to give them love separately, to spend time with them separately, to give equal value and trust to each, and not to compare them.

VII. How Should Multiple Children Be Given Education and How Should Their School Be Chosen?

Multiple children experience different successes and failures as they are born with different abilities, interests, and academic potential. Thus, multiple children can study in different schools, classrooms, and educational institutions. When beginning primary school, one of the multiple children can be ready to go to the first grade, while the other two may not have the maturity for school yet. If one of the multiple children is ready for school, it would not be right for the other two to start early, or if one of the twins is not ready for school, it would not be right for the other to start late. Families think that they do not do an injustice by sending twins to the same school at the same time. They do not realize that they do an injustice by not choosing the right school for the characteristics of each of the twins.

VII. What Should Be Considered When Choosing Classrooms for Multiple Children?

Especially in big cities, it is a great convenience for families to have their children study in the same schools. Should twins be in the same classroom? Or would it be better if they study in different classrooms with different teachers and classmates? There is no definite or correct answer. However, it is appropriate for twins to be in separate classrooms so that they do not overshadow each other, compete with each other, or are not constantly compared with each other. In schools with only one classroom for each grade, twins study in the same classroom. In this case, the classroom teacher has several important duties to ensure that twins can be separated. Being placed in different classroom environments can encourage individuality and independence.

A. Twins' Rooms at Home

If the family has enough rooms in the house, it is beneficial to give twins separate rooms. If giving separate rooms is not possible, they should sleep in separate beds. If they need to share the same room and the same bed, a space for each of them to put their personal belongings should be created.

B. Choosing Hobbies and Friends in Twins

Usually, it is thought that both twins will like the same games and activities that the other

enjoys since twins are not treated as two separate individuals. However, each has different interests and tastes. Therefore, the same game and activity should not be offered to both. While one of the twins may enjoy activities done at a desk, the other may enjoy active games, or one of the twins may be successful in sports and the other may be successful in the arts like painting and music. As in the education of every child, care should be taken to guide twins in line with their abilities and interests in their education, too. In addition, when different fields of activity are chosen, twins will have the opportunity to develop in different environments and make different friends. Each of them will have the chance to satisfy themselves and to be accepted through their success. Each of them will have the opportunity to make different friends and develop in different social environments.

C. Tips for Buying Twins Presents

Often, families buy identical presents for twins to avoid jealousy and fighting. Thus, they believe that they make them happy. However, while one is happy, the other may not be. When buying presents for twins, it is just like buying clothes, their characteristics and tastes should be taken into account. Present selection should be made considering the type of activity that each enjoys. The most important point to remember when raising twins is that twins are different individuals with different characteristics.

IX. Conclusion

- According to the study findings, there is a relationship between maternal stress and somatic disorders in children.

- According to the study findings, there is a relationship between maternal stress and thinking problems in children.

- According to the study findings, there is a relationship between maternal stress and disobedience in children.

- According to the study findings, somatic disorders in the children of women who gave birth to multiples are significantly higher than those in the children of women who gave birth to a one child.

- According to the study findings, disobedience observed in the children of women who gave birth to multiples is significantly higher than that observed in the children of women who gave birth to one child.

- According to the study findings, thinking problems in the children of women who gave

birth to multiples are significantly higher than that in the children of women who gave birth to one child.

- According to the study findings, the stress level of women who gave birth to multiples is significantly higher than that of women who gave birth to one child.
- The stress level of women who gave birth to multiples does not differ significantly according to age.
- The stress level of women who gave birth to one child does not differ significantly according to age.
- The stress level of women who gave birth to multiples does not differ significantly according to education level.
- The stress level of women who gave birth to one child does not differ significantly according to education level.

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CHAPTER 4

HEALTH EDUCATION IN CHILDREN

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ABSTRACT

Protecting a child's health before being sick is much more important than regaining it after being sick. For this purpose, the first topics to be addressed should be nutrition, hygiene, self-care, sleep, physical activity, psychology and social relations. These needs are met first under the supervision of her/his family and then her/his teacher. Health education should not only aim to meet their self-care needs, but also to protect their individual rights and ensure their personal safety. In addition, a child must learn to express when they are exposed to behaviors that they do not want. Teachers play a huge role in the psychosocial development of a child both in the preschool and school-age period. They are with their teachers for almost half of their days and nearly the whole week. That's why the task of teachers is as important as that of parents in the child's health education. Health education in children includes not only the education of the child, but also the education of the family and teachers who take care of them.

Keywords: Child, Health, Education, Family

I. Health Education in Children

According to the World Health Organization, the definition of health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition.

WHO has defined health education as "any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes". Health education in children includes not only the education of the child, but also the education of the family and teachers who take care of them.

Society needs to be educated so that people can access their rights to health. In short, children should be educated first for a healthy society. Education begins in the family for a child. It then continues into school age. At the same time, those who educate children should be trained for example; parents and teachers. A healthy society is happy and productive. A healthy society consists of individuals who can use their full potential. Once basic needs and rights are met, science, technology and art will flourish. Civilization evolves as health improves. Today, doctors and health professionals should reach all segments of the public with the support of the government. Initiatives to protect and improve health in all kinds of platforms such as homes, schools, streets, media, internet and social media provide a lot of benefits for little cost.

Protecting a person's health before being sick is much more important than regaining it after being sick. It provides many physical and psychological contributions to individuals. At the same time, protecting an individual's health is much more efficient and also economically sound for the government than trying to restore health after an illness. In short, the first goal should be the protection of health.

For this purpose, the first topics to be addressed should be nutrition, hygiene, self-care, sleep, physical activity, psychology and social relations. These needs are met first under the supervision of the family and then the teacher. The most important thing is that the child must be able to meet their own needs during this process. Thus, they takean important step in becoming an independent and free individual.

The experiences, habits and skills that an individual acquires at an early age affect an individual's personality, habits and worldview in adulthood. If children get an effective education,

she/he is expected to develop in the same direction. You can't teach an old dog new tricks. Therefore, a child's health education is an important factor affecting their future. Another important factor is culture. There may be practices originating from false beliefs and traditions in underdeveloped and developing countries. For this reason, the health education of society should not be ignored along with the health education of the child.

The first years of childhood are of great importance physically, mentally and emotionally. At this age, all organs and systems in the body develop and change at an incredible rate, especially the brain. Correct interventions at this age are of vital importance.

First, the state should provide every mother with an opportunity to give birth under the supervision of a doctor, then tests for genetic diseases should be done. Early diagnosis can save a child's life. A strict vaccination schedule should be followed. Finally, vaccinations should be done and should not be interrupted.

The doctor should carefully inform the mother and family of possible health issues. If the family sees indications of illness, they should take the child to the nearest health institution. These are symptoms such as: fever, discomfort, decreased sucking, loss of appetite, fatigue, jaundice, bruising of the lips, pallor, prolonged vomiting and diarrhea, excessive crying, changes in respiratory sounds (such as moaning, wheezing), and excessive sweating. If it is discovered early, it can both save the baby's life and ensure that they can continue their life in full health without any problems in the future.

The family and the environment play the most important role in the development of the child in the preschool period. In this period, the more physical, mental and emotional capacity develops, the more productive a child will be at school age. On the contrary, if there are negative experiences during this period, problems that affect both the child and their environment and society may arise in the future. For this reason, projects that reach all segments of society should be implemented or increased for the health education of the family. School age is a more controllable period for the government. Children spend most of the day at school. There is also access to many children in one setting. Reaching a child means reaching a family. Schools are the ideal environment for observing and sustaining public health.

Considering that every family and child's access to a doctor is less frequent than access to school, it is a great opportunity for health professionals to provide health education in schools, both for doctors and the public. This training should continue at regular intervals and should be shaped according to feedback.

Schools are the ideal environment for children to acquire healthy habits when the right policies are applied. Because the child has many friends of the same age, a child may be more influenced by school friends as compared to older people such as a mother, father, or teacher. When an effective health education is given, it can create a domino effect among students.

What can be done by the state and various institutions is activities such as medical examination while registering, periodic physical examination, health screening, diagnosis, treatment and monitoring of students with acute and chronic diseases, first aid training against accidents, mental health studies, and sports.

School is an environment where attention should be paid to public health. Crowds schools and classrooms with students in close contact can transmit diseases very easily. This environment threatens not only their own health, but also public health. At this point, health education should be given by doctors, health professionals and teachers, then necessary precautions should be taken. If necessary, the child and family should be thoroughly informed about the benefits of vaccination.

In preschool and primary school, the child learns social rules. The skills of reasoning, questioning and establishing cause-effect relationships develop. A child learns to express themselves correctly. Learning like this prepares the child for life. It's like a mini simulation of real life. If this period is completed successfully, they are more likely to lead a successful life as an individual as well.

Health education should not only aim to meet their self-care needs, but also to protect their individual rights and ensure their personal safety. In addition, the child must learn to express when they are exposed to behaviors that they do not want.

As childhood ends, hormones and anatomy change. This period is as sensitive as childhood. They should no longer be seen as a child but as an adult. Communication should be established as if we are dealing with an adult, not a child. With this approach, many emerging problems can be solved much more easily.

Nutrition can be affected first, as the body and hormones change during puberty. Their diet can be more difficult to follow. For this reason, symptoms such as weight gain, weight loss, dental caries, acne etc. should be followed closely. Especially young girls should be taught that in order to look beautiful, it is necessary to eat not a small amount, but a sufficient and balanced diet. It should be emphasized that they should not compare their bodies with anyone. In addition, sports activities should be done for both physical health and socialization.

Sport is also a good choice to protect them from bad friendships and bad habits. It also helps reduce the time spent with electronic devices. In terms of psychological health, social media, games, ,and other factors should be considered. Attention can be drawn to all these articles with public service announcements and suggestions that can be broadcast on social media. If possible, try to find a solution by converting it into something useful without prohibiting it.

II. The Role of Parents in Health Education in Children

The health of mothers, babies and children is the most important factor that determines the health of the next generation. Their health problems help predict future public health problems. Therefore, improving their well-being should be an important public health goal.

The conditions of the places where people live affect their health. Environmental and social factors such as access to healthcare and early intervention services, education, employment and economic opportunities, social support and the availability of resources also affect maternal health. Factors affecting maternal health also affect pregnancy, infant and child health.

Above all, a child needs a mentally and physically healthy parent to be healthy. A child cannot be healthy or happy without a healthy and happy mother. It is also a great chance for the child and society that parents are conscious and willing to learn what they do not know and what needs to be done from the doctors.

Maternal and infant mortality and pregnancy-related complications can be reduced by increasing access to quality preconception (preconception), prenatal (during pregnancy), and interconception (between pregnancy) care.

Care and control before and during pregnancy are the most important steps to prevent complications. Women who are considering becoming pregnant should visit a doctor before becoming pregnant and current health risks should be determined. Evaluation of both parents in terms of sexually transmitted diseases, maternal immunization and genetic diseases before pregnancy is of great importance for child health.

In order for all these to be done by parents, it is necessary to raise the consciousness of society.

Depending on the gestational week, it is indispensable for the health of both the mother and the fetus to follow good healthcare requirements such as ultrasound examinations, blood tests and imaging tests during pregnancy. At these appointments, diseases that carry risks for expectant mothers are also determined and precautions are taken.

Women need to be sure of the safety of any medications or herbal remedies they use during pregnancy. They should not take certain medications, including some acne treatments and herbal supplements, as they may cause fetal malformations. In addition, many studies have shown that tobacco smoke and alcohol use during pregnancy increase the risk of Sudden Infant Death Syndrome. Alcohol use can also cause various deformities such as abnormal facial features, small head, and mental problems. And , the recommended amount of folic acid consumption before and during pregnancy reduces the risk of neural tube defects. In addition, it is very important to educate mothers so that they can easily transition from pregnancy to motherhood. For this reason, prenatal courses should be organized. In these courses, the mother should share her pregnancy-related concerns with her healthcare professional. Mothers should be given basic information about infant care, the importance of breast milk, the importance of following the child's routine immunization schedule, and in which situations they should be concerned about an infant's health. Before leaving the hospital, mothers should be taught by healthcare professionals about breast care and how to keep the baby in a position while breastfeeding. Parents should be told when to bring the child for postnatal checkups. Especially in the first week-10 days, they should be taught which situations can be urgent and in which cases they should apply to the health institution. In addition, the parent should be told that he should not listen to hearsay information in society and that she should consult a doctor in case of a problem that they are worried about.

A cross-sectional study was done on women who visited three randomly selected PHCs in Al-Khobar over a two-week period in April 2001 by Rasheed P and friends [1]. Women of childbearing age (15-45 years) were selected. Pregnancy-related questions were asked to the 581 women selected through the prepared questionnaire. Demographic profiles and parity were noted. Their awareness of vaccination and breast care, recommended nutrition during pregnancy, safe maternal age, tobacco use during pregnancy or rubella infection, and the importance of prenatal controls and routine laboratory tests were questioned. The data show that many women are well-informed about certain aspects of pregnancy, such as dietary requirements, the importance and timing of prenatal visits, and the harms of smoking during pregnancy. However, it turned out that many were unaware of rubella infection during pregnancy, with more than half unaware of the results of a blood test and the importance of prenatal procedures such as vaccination with tetanus toxoid and breast care during pregnancy. According to this study, as the literacy level of the women in the research population increased, there was a significant positive improvement in the level of knowledge ($p<0.01$). In this study, it was revealed that doctors and nurses did not give enough information to these

mothers. The results of this research highlighted the need for intensive activation of health education programs through the mass media and local PHCs (primary health services).

In order to understand a child's problem in the best and fastest way and start the treatment process, the doctor should be able to give the parent the comfort of speaking and asking questions. Parents should take an active role during the examination. The parent should have a command of the child's health history and be able to talk clearly. They should ask the doctor what they do not understand, make sure that they understand, and bring a notebook with them and write down what they hear from the doctor. In addition, before the examination, they should write down in the notebook what they want to ask the doctor. The parent knows their child's needs best. The parent should share with their doctor what they think is best for their child. The parent should be honest with the doctor and respect their advice. If a parent still has concerns, they should not hesitate to consult another doctor ("should be able to get a second opinion"). Parents giving detailed information about the child's condition to the doctor and the doctor patiently listening cause fewer medical errors, shorter hospital stay, shorter recovery time, fewer emergency room visits, and less anxiety for children and their families. They also indirectly contribute to a country's economy.

Routine doctor visits for children are very important in terms of monitoring the growth and development stages of children and not overlooking any health problems. The importance of routine control of the child should be explained to the parent and the next appointment can be determined at the last appointment of the parent to the clinic so that it is not neglected. As soon as the appointment approaches, the secretaries can reach the parents to remind them that the child needs to come for a check-up.

Although childhood and adolescent cancers are rare, early symptoms of cancer can be mistaken for infectious disease, accidental swelling and bruising. Cancer symptoms do not heal on their own, they worsen over time and are persistent. Parents should be reminded that a single symptom alone is less likely to be a sign of childhood cancer, and parents should not be unduly worried. However, if the child have an unusual mass or swelling, unexplained paleness or worsening rash, loss of energy for no apparent reason, unusual behavior or movements, a tendency to bruise or bleed easily, pain that does not go away, unexplained fever, frequent headaches, vision changes, unexpected rapid weight loss, they should consult their pediatrician for a more comprehensive evaluation. Depending on the doctor's findings, blood tests or imaging studies may be helpful. It should not be forgotten that regular check-ups with the pediatrician help children stay healthy and get an early diagnosis which increases survival.

In fact, it is of great importance for the child's survival that not only the parents but also every individual in society know the numbers to call in case of an emergency and that they can manage the situation until the emergency team arrives. In terms of public health, every individual of society, especially parents, should be trained on what to do. Every parent and caregiver of the child should be taught to initiate CPR when the child is not breathing, to apply constant pressure with a clean cloth if bleeding is present, to lay the child on the floor with the head and torso turned to the side, and not to put anything in the mouth if the child has a seizure. Also, parents should be taught that poisons or other drugs suspected of being ingested by your child should be brought to the emergency room.

Families need to be able to incorporate healthy habits into their busy lives. It is not always easy to get children to consume healthy foods. For this reason, it is necessary not to put junk food in places where a child can see it and eat it. Healthy food should be made easily accessible. Cut up fruit and vegetable sticks can be placed in the first compartment of the refrigerator. Colorful fruits can be stored on the kitchen table. Care should be taken not to skip meals in child nutrition and color counting can be done with the child at meals. The more colors on their plate, the healthier it is, so make it a game or a contest and have them count how many colors are on their plate. (For example, two green vegetables, one orange, one yellow etc.). Research has shown that the risk of obesity increases in children who do not get enough sleep. The fact that parents do not leave their work at home until very late and create a general night mode at home makes it easier for the child to fall asleep. It is important for sleep habits that the room where the child sleeps is dark and there is no television. Children often do what they see, not what they hear. Therefore, being healthier should be a family goal.

III. The Role of Teachers in Health Education in Children

Teachers play a huge role in the psychosocial development of the child both in the preschool and school-age period. They are with their teachers for almost half of the day and nearly the whole week. That's why the task of teachers is as important as that of parents in the child's health education.

When a child starts kindergarten in the preschool period, this is a very new environment for them, it is the first time that they are away from their family and they have taken the first step to a place where they will make a lot of new friends. During this period, the child is nutritionally dependent, eating whatever is put in front of them. Consequently, it is up to the parents and teacher to develop healthy eating habits. Children are especially prone to imitate their parents' eating habits. That is why it is so important that the people around a child eat

healthy. Breakfast, which is a very important meal for growth and development, should never be skipped, teachers should definitely ask the children if they had breakfast. In preschool education, snacks should be given at the same time every day (no junk food) and this can be the first step a healthy and balanced diet. The child should never be forced to eat, children should eat their own food, and portions should be as much as they will eat. Lunches prepared for children at school should contain the five main nutrients for healthy eating: milk and dairy products, meat and meat products, as well as dried legumes, fresh fruits, fresh vegetables, bread and cereals. This scheme should always continue like this, and parents should also be taught this scheme and be encouraged to implement it at home. During this period, the child should consume three main meals and two snacks. A child's excessive sugar intake should definitely be avoided because there is a significant relationship between excessive sugar intake and tooth decay. To prevent this, it is the right choice to replace sugary foods with fresh fruit. It is very important to teach children the habit of washing their hands and brushing their teeth for a healthy life. Especially in such education places, washing hands before and after meals with friends, brushing teeth after eating allows them to make a habit of them. Habits made together in collective environments become more permanent. Unbalanced nutrition causes harm to the body, including excessive thin or fat appearance, deterioration of skin health, lack of various vitamins and minerals, loss of appetite and fatigue. In order for these results not to develop, healthy eating habits should be instilled in children and should be followed in terms of growth development.

School age and adolescence are completely different periods. The child is nutritionally independent during this period, they have already begun to move away from the family and enjoys being with friends a little more, and eating with them. During this period, the contribution of friends to eating habits has increased a lot. Friends usually want to eat whatever the other is eating. At this age, growth is very fast, so it is very important that the diet is healthy and balanced. In addition to healthy eating, young people should be encouraged to adopt a more active lifestyle, spend less screen time and lead a daily life with more physical activity. In young people of this age, fast food style eating or skipping meals is very common. Unfortunately, breakfast is also the most skipped meal. Breakfast is very important to start the day fit, to have a positive day.

Again, during this period, nutritional disorders (anorexia nervosa, bulimia nervosa) are especially common in girls. It is very important to detect nutritional disorders and seek psychiatric help at an early stage. In order to instill eating habits in children of this age, first of all, three meals should be regularly taken out in schools. In addition, school canteens should

be inspected regularly, and health-harmful foods should not be sold. Meals that are regularly given to students should be monitored for calorie and nutrient balance. Teachers should be told what nutrients may be lacking in the body when children are fed irregularly and what may happen as a result of this deficiency, and this issue should be constantly considered by hanging posters in classrooms and school corridors. Teachers should be able to recognize these shortcomings. The student's attendance or course success in the lesson decreases, he/she becomes sluggish, looks pale / yellow, sleeps constantly, or does not eat, weight loss / gain, etc. these can be a warning symptom. In other words, if the existing findings affect the child's daily activities, they should be taken seriously and they should definitely be referred to a health facility. Monitoring of growth and development both at preschool and school age should be monitored by teachers at intervals. If there is a pause in growth or weight loss is detected, the child should be sent to the health facility again.

In order to adopt a healthy lifestyle, teachers are required to inform parents during preschool and students if they are of school age. In this regard, seminars on this subject can be given to teachers by specialists. In order to instill this in society, informative posters can be hung in crowded environments that are constantly passed by, and public spots can be placed on televisions to encourage families to have a healthy life. In preschool periods, children can be told about it with games, theater, music etc.

If we instill healthy eating in children, we can also prevent obesity, which is a major health problem today. Preventing obesity should be done not only by eating a balanced and regular diet, but also by physical activity. Teachers should regularly detect students with an elevated body mass index or obesity during height and weight monitoring and support them with healthy eating and exercise. They need to stick to a diet that their children will follow and be aware of the possible consequences of obesity. Every time a child loses weight, his motivation can be increased by giving him small rewards. Obesity is not just a disease that goes with weight gain, it is a disease that can affect almost all systems.

Another important problem in children today is a sedentary life. Regular physical activity improves mental health, reduces anxiety, increases self-confidence, improves knowledge of responsibility, allows you to control weight, strengthens the skeletal system. It is necessary for every child to move actively every day. These are tasks for both parents and the school in establishing the habit of physical activity. Firstly, the child's digital screen time should never exceed 2 hours during the day. Physical education classes should be supported in schools and each child should be allowed to play sports in accordance with their interests. Playing games in the preschool period makes a significant contribution to the child's psychosocial develop-

ment. Communication with friends is strengthened, the child acquires a sense of responsibility, learns to be a team player and set rules. It is very important for teachers to play games with children and teach them new games for their development. In particular, a child should be given the opportunity to try various activities to discover their own abilities; football, volleyball, gymnastics, folk dances, yoga. In schools, areas should be created where children can safely play games and play sports. Various competitions and sports festivals are organized so that we can further encourage children to play sports.

Another important point for children's health is the cleanliness of the air in the environment where the child lives and breaths. Smoking should be strictly prohibited at school, which is the environment in which the child spends most of the day. Children, especially adolescents, should be told about the harm of smoking or even told by a doctor if necessary. Because exposure to or smoking cigarette smoke at this age can lead to cancer or even death in the future. Teachers can tell parents not to smoke next to the child or even refer them to a health facility if they want to quit.

In addition to a child's physical health, it is very important for the general condition that the child's mental health is also good. A child's psychology is very sensitive. It can take damage from all kinds of factors around it. Unfortunately, peer bullying in school age children is a common occurrence. Children can be very cruel at that age. Peer bullying can not only be physical, sometimes verbal, sometimes it can also manifest itself in the form of exclusion, unwillingness. The self-confidence of the bullied child may be shaken, they may have difficulty making friends. Peer bullying negatively affects the child both psychologically and academically. Teachers are supposed to direct both students to the school's guidance unit at separate times when they notice this incident. Children should be taught to honestly tell their feelings, thoughts, without fear. In particular, it should be instilled in the student who is being bullied that it is not his fault that he is being bullied. Education should also be given to parents. Another point that should not be missed is that families who find out that their child is being bullied may want to punish their children, it should be conveyed to them that this is wrong. Various activities can be planned to improve the communication skills of students with each other, a positive atmosphere should be created. As a result, teachers should be able to understand any changes in the child's mental state and intervene at an early stage, so that severe depression can be prevented. Teachers have a lot to add in the health education of a child.

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CHAPTER 5

KIDS AND SPORTS

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ABSTRACT

Today's lifestyle has become more and more sedentary due to technological developments and economic prosperity. One of the age groups affected by this sedentary lifestyle is children. Movement is very important for a child's physical development. Participation in physical activities during childhood has many positive effects. Among these positive effects, we can count healthy growth and development, gaining an active lifestyle, and reducing the risk of chronic diseases that may occur in the future. In this context, it affects psychomotor development positively in daily physical activities as well as professionally dealing with a sports branch. We can give children's games as an example of these physical activities. In the research, the effect of the games on child development has been discussed in terms of developmental psychology, motivation and sociology. In this context, studies have shown us that the child's regular involvement in activities that include physical activities such as sports or games positively affects psychomotor development parameters such as self-confidence, self-confidence, and motor development.

Keywords: Child Development, Movement, Physical Activity, Sports

I. Introduction

Childhood is one of the most rapid periods of development. The gains obtained in this period form the basis of the attitudes and behaviors that individuals will exhibit in their future years. Especially mental, cognitive and spiritual developments gain importance in this period. Movement is one of the factors that support this process and directly affect a healthy psychological maturation and physical development. Today's technological developments have caused individuals to prefer a more sedentary lifestyle, and this new sedentary lifestyle has also negatively affected children. However, it is in the nature of children to move, and they are happy being active. It is known that physical activity has many benefits in terms of the physical, mental and spiritual development of children. Generally, children whose physical activities consist of a game from birth can reach a level where they can train in certain sports from the age of six. This age group is considered to be the right time when children have reached the physical and mental proficiency to be able to do a certain sport branch. In addition, it should be left to the children to choose which type of sport they would like to do. If possible, they should be able to attend trial classes of sports clubs and try different types of sports before starting a particular type of sport. Parents and trainers can guide children regarding the sport they will prefer, but they should leave the decision to the children, and respect their decision. Children should be able to have fun in the sports branch they participate in and children should feel good about themselves. Long and intense exercise programs should be avoided.

II. The Effects of Physical Activity on Child Development

Personal Effects: First of all, he recognizes his own body. It allows him to know his body, become aware of his physical abilities and develop a self-defining picture. (Eckloff, 2012).

Social Effects: Being able to play with other children, communicating, helps children gain flexibility and self-confidence in their behavior. (Eckloff, 2012).

Productivity Effects: Child's ability to do physical activities (e.g., sports skills such as handstand or dance) adds productivity to his/her life (Eckloff, 2012).



Picture 1: Social effects of participating in sports

III. Growth and Development in Children

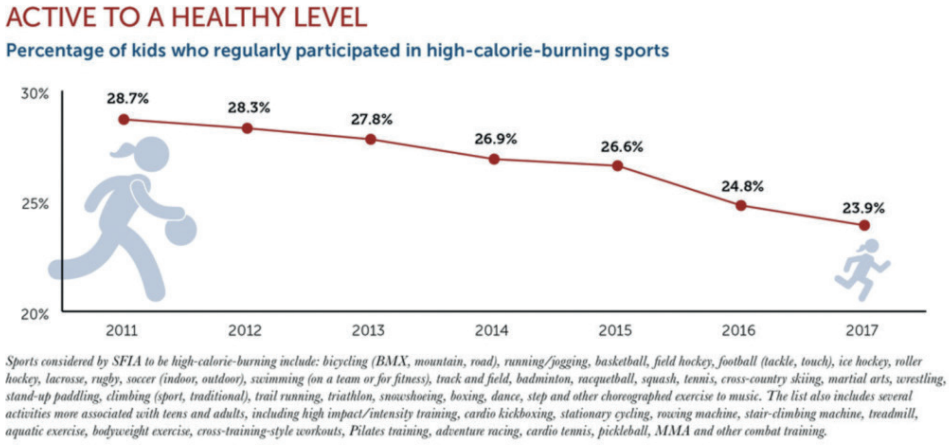
As chronological age is not necessarily associated with physiological or somatic pubertal changes, it is clinically important to assess an individual's Tanner or sexual maturity stages (SMR-sexual maturating rating) (4). Bone age is the ideal method to assess skeletal maturity. There are studies evaluating the effects of somatic growth, sexual development, skeletal-muscle growth and maturation, especially on sports participation and performance during adolescence (Brown, Patel, & Darmawan, 2017; D, 2000).

A child's growth and development can be classified under the following subheadings:

- Weight gain
- Body development and related changes
- Flexibility
- Muscle growth and endurance
- Height increase and increase in bone mass
- Sexual Development
- Cognitive, spiritual and social development.

A. Weight Gain

Average weight gain in adolescent males varies between 6-12.5 kilograms (kg) per year, with an average weight gain of 9 kg per year. Similarly, weight gain for adolescent females ranges from an average of 5.5-10.5 kg per year (MD., 2000). In men, height growth, weight gain and muscle development occur at the same time, but in women this occurs in a sequence (Malina, 1994). During these periods of maximum growth rate, sports ensure that the weight gain in children is distributed optimally between fat, muscle and bone tissue. Children who participate sports feel less hungry than children with a sedentary lifestyle. Therefore, they have fewer problems with obesity. On the other hand, exercise and sports accelerate metabolism. Even with a few hours after exercise, many more calories are consumed than when we are stationary. Weight control is better with regular exercise. Thus, being overweight can be prevented. Regular exercise supports healthy weight gain in preschool children (de Vries et al., 2015; Torun & Viteri, 1994).



Picture 2: Metabolic effects of sports

B. Body Development and Related Changes

Body composition during adolescence varies according to gender. Body composition consists of fat mass, lean mass and body fat distribution. During early and middle adolescence, boys and girls both tend to increase in fat and lean body mass (JE, 2000). The increase in fat mass and lean body mass continue during the peak of height growth, but fat accumulation in the extremities may decrease temporarily during this period. According to Tanner staging, girls in Stages 4 and 5 continue to have an increase in fat body mass in their lower extremities

(Julia Pápai, 2012). In general, it has been shown that body mass index, which is calculated by dividing weight (in kilograms) by the square of height (in meters), has a better correlation for obesity. (McArdle, 2012). In general, it has been shown that body mass index, which is calculated by dividing weight (in kilograms) by the square of height (in meters), has a better correlation for obesity. (McArdle, 2012). Muscle mass and bone mass also contribute to an increase in the calculation of body mass index (BMI). This can lead to a falsely high BMI in individuals with low fat and high muscle mass (Malina RM, 1991).

C. Flexibility

In general, adolescent girls have more flexibility in their musculoskeletal systems than adolescent boys. Flexibility tends to decline in males by mid-adolescence. However, flexibility tends to increase slightly in women, especially in early adolescence, i.e. 14-15 years of age (Smoll FL, 1996). Skeletal growth typically occurs in boys during early to mid-adolescence; this growth pattern partially contributes to a relative reduction in muscle-joint flexibility. (Roemmich & Rogol, 1995). Physical internal factors that affect an individual's flexibility include muscle volume, bone structure, and elasticity of tendons and soft tissues. External factors that affect an individual's flexibility include environmental factors such as temperature or the athlete's warm-up time.

D. Muscle Growth and Endurance

Muscle mass growth occurs during puberty in both males and females, resulting in a linear increase in muscle strength. However, muscle growth may be relatively more pronounced among men due to greater androgenic factors. While adolescent females reach a steady plateau in muscle strength gains around the age of 15 (RE., 1994) (Beunen & Malina, 1988), males show an acceleration in muscle strength around 13 years of age. This is followed by an increase in muscle mass that lasts for about 12 months (RE., 1994; Roemmich & Rogol, 1995). Researchers have found that adolescents have the most appropriate response to strength training during Tanner 4 and 5 stages of sexual development in both male and female athletes (Lillegard, Brown, Wilson, Henderson, & Lewis, 1997). In addition, some studies have shown that high-intensity exercise in primary school children positively affects musculoskeletal mass and metabolic parameters in prepubertal girls (Lillegard et al., 1997).



Picture 3: Strength training for kids

Bone densitometry studies have shown that children who exercise regularly develop better bone quality and strength than children who do not exercise. (Specker, Mulligan, & Ho, 1999). According to their characteristics, the types of sports can be defined as osteogenic (weight bearing exercises) and non-osteogenic (non-weight bearing exercises). As a common sport, football is considered an osteogenic sport as it increases bone mass during childhood and adolescence (Ara et al., 2006; Krustrup, Dvorak, Junge, & Bangsbo, 2010). In contrast, it has been shown that sports such as cycling (Olmedillas, González-Agüero, Moreno, Casajus, & Vicente-Rodríguez, 2012; Vlachopoulos et al., 2015) and swimming (Andreoli, Celi, Volpe, Sorge, & Tarantino, 2012; Tenforde & Fredericson, 2011) do not have a positive contribution to bone mass of children but are also associated with a decrease in bone mass. This shows that children who are interested in these sports may have problems in the future to reach peak bone mass (Andreoli et al., 2012; Tenforde & Fredericson, 2011). Lifetime bone mineral density gain occurs primarily in the second decade of life (Hergenroeder, 1995). Physical activity increases bone strength in children and adolescents, especially in weight-bearing areas (Julián-Almárcegui et al., 2015). Activities that involve weight bearing increase bone growth and fracture healing.

In addition to exercise and nutrition (including calcium intake), factors such as genetics and hormonal status influence peak bone mass. Regular exercise in childhood helps prevent diseases such as osteoporosis, which are seen in older ages, because when bone density increases by 10% during adolescence, the risk of femoral neck fractures in the elderly may decrease to 50% (Zahner, 2013). Bone mass in children is more durable and dense in the first

years of their lives due to activities such as jumping, climbing and running. It has been shown that children who are physically active in daily life have more energy than other children and are more resistant to many other diseases (Saleschke, 2017).

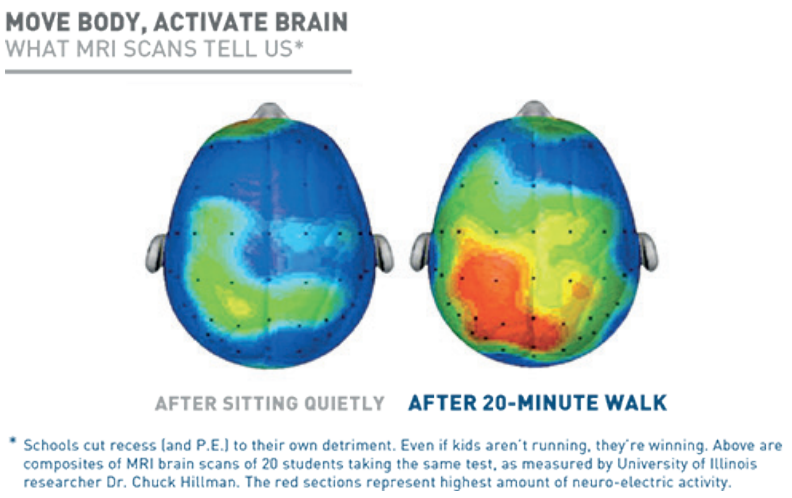
E. Sexual Development

As mentioned earlier, exercise-induced menstrual dysfunction can negatively affect growth rate and peak bone mass gain. High ghrelin and low leptin secretion (associated with low fat mass) have been shown to be associated with lower luteinizing hormone (LH) secretion in amenorrheic athletes compared to normomenorrhoeic athletes (Ackerman et al., 2012). Some studies have suggested that younger female athletes have a higher prevalence of menstrual disorders (Bruinvels, Burden, Brown, Richards, & Pedlar, 2016) and that the prevalence of premenstrual syndrome in young women increases with the duration-intensity of competitive exercise (Czajkowska, Drosdzol-Cop, 2016). Gałązka, Naworska, & Skrzypulec-Plinta, 2015). However, other studies have shown that physical activity can improve dysmenorrhea but reduce the need for analgesics to improve dysmenorrhea in women aged 18-28 years (Homai, Shafai, & Zoodfekr, 2014).

Maximum height growth before the age of 11 in women and before the age of 13 in men can be seen as a harbinger of precocious puberty (Smoll FL, 1996). Although early puberty in males and females may seem to have an advantage for sportive performance, the inability of motor development to adapt to this situation can lead to anxiety and lack of confidence. Male and female athletes who develop late may have to struggle more in order to catch those who develop early in sportive performance. This can potentially lead to anxiety and frustration. All these physical performance differences are more affected by the age of puberty and environmental conditions than the chronological age of the individual (Marshall & Tanner, 1969).

F. Cognitive, Spiritual and Social Development

Habitual exercise makes individuals feel good. During exercise, the body's own messenger molecules, neurotransmitters, are released. One of them, serotonin, makes people happy and reduces anxiety. Also, moving helps children use their physical strength properly. E.g.; children learn to struggle with their own selves in a competitive environment. A child who has been defeated learns to never give up and to try again and again, with the motivation of his parents and trainers. A child with this awareness will become a self-confident individual over time (Andreoli et al., 2012). On the other hand, sports branches that include physical activity support the development of social skills (justice, solidarity, tolerance, thought, conflict reconciliation, benevolence, etc.), help reduce stress, and increase learning ability by increasing concentration.



Picture 4: Physical activity and brain function

Physical activities and sports allow family members to stay together and spend quality time together. Here, parents should not always be guiding. Children should be encouraged to take an active role in this process. This allows family members to get to know each other better. Children should be appreciated during their physical activities; their motivation should be protected and should be made to feel safe. In particular, the importance of moral rules (such as honesty, respect for the opponent, benevolence and patience) should be explained with the help of sports and games.

IV. Orientation to Sports in Children and Selection of Branch

Overweight and obese children are at higher risk of diabetes, hypertension, hypercholesterolemia and asthma (Daniels et al., 2005). The American Academy of Pediatrics recommends 1 hour of moderate to vigorous physical activity (jogging, basketball) per day and vigorous (tennis, soccer) physical activity 3 days a week for children aged 5-10 years to prevent obesity and cardiovascular diseases (Stracciolini, Myer, & Faigenbaum, 2013). Low levels of moderate and vigorous physical activity in children are defined as lack of exercise (Faigenbaum, Stracciolini, & Myer, 2011). It is thought that strength and endurance exercises affect linear bone growth negatively in school-age children. However, many studies have shown that such exercises do not have any negative effects (Jáuregui, Villalpando, Rangel-Baltazar, Lara-Zamudio, & Castillo-García, 2012).

A. Factors Affecting the Level and Choice of Physical Activity in Children

There are many environmental factors that affect physical activity behavior and sportive branch selection in children. Some of these are listed below.

-The child's personal characteristics; It includes individual characteristics such as communication with friends, self-confidence, courage, interests and abilities of the child.



Picture 5: Sports and child's personal character

- The approach at school; The child's physical activity orientation at school, school teams, activities within the scope of the course are effective in the child's physical activity level and sports selection.

-Social life and environment; Physical and social facilities such as parks and gyms, where the child can spend time in the environment where he/she lives, affect his/her sportive abilities and activity level.

-Family structure; The family is the structure in which the most basic education and first personality of the child is shaped. The family's perspective on sports seriously affects the physical activity level of the child (Dobbins, De Corby, Robeson, Husson, & Tirilis, 2009).

B. Exercise Types and Selection in Children

Sports activities are of great importance in supporting development, especially in childhood. Physical education lessons are beneficial for the mental development of children as well as their physical development. For this reason, it is an important issue to prepare appropriate exercise programs for school-age children. But besides this, human movement begins from birth. While these are childhood and infancy games, they continue in the form of sportive branches whose rules become more stringent in later ages.

Families may have various reasons when directing their children to sports activities. For example, families believe that basketball will make them taller. However, there is no scientific basis for the very popular belief that certain sports can alter an individual's ultimate height, just as basketball training increases height and gymnastics decreases it. The choice of these sports depends on the individual's biotype, and thus, taller people are more likely to succeed in playing basketball, while shorter people are more likely to practice and succeed in gymnastics (Bass et al., 2000). The fact that children acquire the habit of exercise at a young age is more important than anything else for their future lives.

-Aerobic Exercises: It includes moderate-intensity physical activity every day and at least 3 days a week for more than 1 hour. This type of sports activities are very important for cardiovascular system health. (Brooke-Wavell & Stensel, 2008).

- Strength Exercises: Includes exercises performed for 60 minutes, 3 days a week or more. E.g.; Weight lifting, TheraBand exercises, push-ups and climbing. This type of sportive activity reduces injuries, improves body composition and self-confidence.

- Bone Strengthening Exercises: It includes exercises performed 3 days a week or more for 60 minutes. E.g.; Basketball, tennis, skipping and resistance training. This type of exercise improves body composition and increases motor skills.

C. Protection from Sports Injuries in Children

While sports branches that are not suitable for the development of children or sports activities that are selected according to the development of the child but contain inappropriate training techniques often cause injuries; some of these injuries can cause permanent damage to children such as epiphyseal injuries.

However, the main purpose of sports activities should be to contribute to the physical and mental development of the child. For this reason, the education of both families and coaches is very important. Focusing on the ambition to win in sports activities will increase the risk of

injury. The main thing is that the sports branches are actually done properly. Even in contact/impact sports such as American football, the risk of injury for young people aged 6-12 is far below the risk of injury in typical recreational activities such as cycling or playing on the playground.

In the past, children started sports activities with more spontaneous and unstructured physical activities (self-regulated free play) and physical education (physical training, sit-ups, push-ups, jumping tables). Both provided regular opportunities to develop basic movement skills (running, jumping, jumping, balance, agility), muscle strength, making friends and having fun. But right now, this algorithm is broken and has a faster transition process. Educational programs designed to improve sports performance for children and youth are implemented on children. This form of exercise has recently become the top 10 fitness trends in the USA. Meanwhile, there has been a worldwide trend towards reducing time for physical education in schools. The development of basic movement and motor skills is an important factor in protecting children from injuries before they turn to sports performance. In order for children to have a healthy sports life, it is important that they are exposed to the appropriate training load and that their training is modified during their growth period. For this, it is important that the parents of children, physical education teachers and trainers at school should be equipped both in terms of pedagogical and training science.

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CHAPTER 6

MANAGEMENT AND LEADERSHIP IN CHILDREN

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ABSTRACT

When we look at the emergence of the leadership phenomenon, we see that an answer is sought to the question of who will assume the role of manager-participant among people who need to live together. Questions such as the emergence of the phenomenon of leadership and what characteristics do leaders possess have been studied by psychologists and sociologists for years. As an even more important distinction, the questions of whether the leadership and management phenomenon is innate in humans or whether it is acquired later have brought the studies to different points. Our experiences and decisions in childhood affect our adulthood very strongly. The questions of when the management and leadership phenomenon occurs in children or whether these leadership characteristics are abilities that can be acquired by children later made it necessary to work in this field. In this study, the development of management and leadership phenomena of children through childhood will be discussed with an analysis of certain periods. Childhood includes the early childhood period (3-6 years) and the second childhood period (7-11 years). During these periods, the development and change in a child will be different, as well as the development of leadership and the management phenomena will show through from early childhood.

Keywords: Child, Leadership, Early childhood, Management

I. Introduction

Leadership and the management phenomenon that develops accordingly has been one of the subjects that have been studied frequently from the past to the present. In particular, the field of psychology, which examines the behavioral structure of human beings, has tried to understand the emergence process of this formation by considering the reflections of this phenomenon, which is as old as humanity.

Manager and leader have different concepts. In order for a person to be defined as a leader, he can influence the feelings, thoughts and value judgments of the people in a group and see to the needs of his followers by exceeding certain sources of authority (Aydın, 2010); the leadership role should also be accepted emotionally by all of the group members (Erdoğan, 1996).

Leadership and the concepts related to leadership have been the subject of much research, have been widely discussed in different fields and have been studied for centuries (Boulais, 2002; Paradise, Ceballos, & Hall, 2010). Bernard Bass (2007) stated that leadership is 'one of the world's oldest interests'. Leadership is a universal and multidimensional social concept that started with the history of humanity. The development of leadership is necessary for the progress of society (Karnes and Bean, 2010; Karnes and Stephens, 1999; Manning, 2005). Because leadership is called the basic component of social interaction (Trawick-Smith, 1988). The concept of leadership is encountered in almost every area of social life. The concepts of leadership and management show themselves actively in every field from politics to sports in human life. We see that the leadership and management phenomena occur in the games that make up the social life of children. Leadership is also an important social behavior for children (Fu, 1979).

The place and formation of the leadership phenomenon in human psychology have been studied for years, and whether leadership is a genetic condition or a skill that can be acquired by studying has allowed new studies in this field. In the studies, it has been determined that genetic factors have a 30% effect on the emergence of leadership roles and leadership style, and environmental factors such as early opportunities and exposure to different role models have a 70% effect (Arvey, Rotundo, Johnson, Zhang, & McGue, 2006; Arvey, Zhang). , Avolio and Krueger, 2007; Ilies, Gerhardt and Le, 2004).

When we look at famous people known for their leadership in the world, it is possible to say that their genes, as well as their efforts and experiences, provide them with this feature. Although the genes are genetic codes taken from the mother and father, the environment of the children and the external factors affecting them affect the child's ability to be a leader and have a management phenomenon. (Beceren & Cetin, 2007)

From the moment they are born, children first begin to learn, perceive and get used to certain situations and feelings within the family. Afterwards, children gradually continue to perform learning and perception actions in social areas, which we can call external factors. This is why researchers have progressed through external factors while addressing the development of leadership and management skills in children.

Although effective leadership skills continue to develop throughout the life of the individual through experiences, many basic skills and abilities begin to develop at much earlier ages (Murphy & Reichard, 2011). The leadership potential in childhood and adolescence form the basis of the individual characteristics of leadership that emerge later in life, and this turns into an important contribution to society (Black, 1984: as cited in Sacks, 2009).

When we look at leaders and managers, we see that they have several common features. Leaders often share common traits such as being a good speaker, being apt to work with the community, and having self-confidence.

While making friends, playing with friends, participating in conversations and activities in the family, children begin to learn and gain by imitating the above-mentioned features over time. From this point of view, the state of having leadership qualities in children is primarily related to the family structure and then to the social environment outside the family. (Farmer, 2018)

The management and leadership learning process for children in certain age ranges will be explained, and the phenomenon of leadership that develops in this process will be discussed. Early childhood and the second childhood periods will be examined in this context. In addition to these, an answer will be sought to the question of what family attitudes support children's management and leadership skills.

II. Management and Leadership in Early Childhood

A. Early Childhood

Children begin to perceive sounds and feelings during their development in the womb. With abilities gained over time during infancy, babies explore their surroundings. In order to meet their basic needs, they start to establish their first communication with body language and cries. During infancy, children realize that they will be contacted with their cries, and they acquire social communication skills primarily within the family institution. Therefore, since early childhood is accepted as the formative years of cognitive development by researchers, educators and parents, it is accepted that providing a supportive space to a child in

the early stages of life will have a positive effect on the child's general development (Hailey & Brunson, 2020).

Early social relationships, especially peer relationships, have long been considered a vital basic element in terms of social, emotional and cognitive development for children under the age of five (Duran, 2019). The fact that children spend time in the same classroom environment with their peers in pre-primary institutions such as nurseries and kindergartens from an early age enables them to socialize at an early age. Socialization, which starts at an early age in these institutions, also affects the success of the child at school in later periods.

NSCDC (The National Scientific Council on the Developing Child), an organization of Harvard University that conducts brain-based research for infants and children, states that the positive relationships that individuals establish with each other maximize the developing neurons in the brains of pre-school children and that they have a lifelong effect on learning. (NSCDC, 2004) (Duran, 2019).

B. Management and Leadership Formation in Early Childhood

Since children interact with each other in institutions such as nurseries and kindergartens, social skills develop in two ways. Children exhibit the attitudes they see in the family and the skills they acquire in these institutions, which are a common socialization area. Every attitude and behavior that families show in the presence of their children affects their skill development. Since mothers are more concerned with the care of children, the mother's attitude towards her child plays an active role in the leadership and management activities of the child in his later years.

We can say that children whose opinions are asked within the family and who feel that they are valued, take a more active role in the leadership position in socialization environments. Children who are brought up with their own opinions disregarded tend to be more submissive.

Leadership is a trait that emerges between the ages of 3-6. The leader initiates the action at games or other activities, while the other children follow his lead. The child who is a leader is self-confident. (Duran, Leadership education in preschool children, 2014).

Children who exhibit submissive attitudes will not be in a leadership position, and self-confident children in their environment will want to achieve a leadership position in groups.

Situations such as feeling the presence of children primarily in their families in the early period, being valued as an individual in the family and recognizing an environment in which

children can express themselves affect their status as administrators and leaders in later ages. The same conditions should be given importance in schools, which is another important institution apart from family and home.

The pre-primary education period, that is, the period that includes the 0-6 age range, is very important because the personality development of children is experienced, and the newly learned knowledge and abilities are of great importance in the lives of children in later ages. During this period, children get to know themselves better, know their differences and begin to recognize their shortcomings.

The pre-school period, which constitutes the first step for all stages in human life, is also expressed as the period in which the development in every domain is the fastest (Guven & Azkeskin, 2014). Researchers argue that early development of some skills may be more important (Avolio & Vogelgesang, 2011; Gardner, 2011). The foundation of strong leadership in adulthood is laid in this age. Because the development of being a leader is a self-reinforcing process. Just like a snowball effect, small developmental experiences at an early age (when the snowball is small) can have a profound effect on future outcomes, given the empowering nature of leadership development (Murphy & Johnson, 2011).

Parten has produced important studies in the field of leadership. In his thesis written in 1929, a group of preschool children in America were observed while playing, and inferences were made from their movements and interactions. In this study, the origin of children's leadership, the characteristics and actions of each child as an individual has been emphasized. With the observations made in this study, leadership behaviors in children were determined. The existence of children managed by another child in the group, the existence of children who want to do what they want by being indifferent to leading and participating, the existence of children who adapt as administrators or participants, followers, and finally the existence of children who can share management and leadership with another person. has drawn attention. (Parten M.1929) The study also drew attention to the existence of children managed by another child in the group, the existence of children who do what they want and are indifferent to leading and participating, the existence of children who adapt as administrators or participants and followers, and finally, the existence of children who can share management and leadership with another person. (Parten M.1929)

In the study conducted on children by Mawson in New Zealand, the focus was on leadership in the games children play in cooperation. In this study, it was revealed that there are differences in the leadership and management skills of boys and girls, and that children's

leadership skills were affected by cultural and contextual situations. (Cerrato, Thornton, & Haggerty, 2018).

All studies conducted in early childhood focused primarily on whether leadership is innate or an unprovable skill. Since the middle of the 20th century, researchers focused on leadership in children, not ignoring the effect of genes in children, but it highlighted the effects that we define as external factors in children's leadership development. From an early age, children first begin to examine and discover the behavior of their parents in the family. As the child becomes self-aware, they begin to imitate the movements that are repeated in the family and acquire them as a skill. Therefore, the first place of development for children is their families. Considering this fact, families should not go through this process in a messy and careless way. Everything that children learn by imitation and record in their memory during this period will be a part of them in their future lives.

III. Management and Leadership in Second Childhood

A. Second Childhood Period (7-11)

This period, which we call the second childhood period, is the period when the child starts primary school and is in a different social environment, apart from his relationship with his family. The child, who is in primary school and the second childhood period, continues his development in this period until adolescence. The school period, which starts with separation from the family, provides an environment for the development of independence and some cognitive skills in a different area while the child moves towards adolescence.

In this period, the place of physical activities in the lives of children who start to develop physically begins to increase. They participate in more sporting events and their communication with their peers improves in this process. The ability to get along and communicate with peers in a group greatly influences children's social skills in later life.

Boys and girls play in groups among themselves. On one hand, he enjoys being together with his peers, on the other hand, there is an effort to stand out in the group and to prove his superiority. (Aral & Baran, 2001).

Towards the end of the second childhood period, situations such as the separation of children from the family and less communication may occur. During this period, families should support their children who are extroverted and begin to seek identity and try to pass this process in the most correct way.

B. Management and Leadership Development in Second Childhood and Adolescence

This period, which starts with primary school age, ends with the onset of adolescence towards the end. The child's search for a new identity by starting to move away from the family and the communication with the family, which starts to decrease, affect the development of the child. The child's attitudes and the attitudes of parents towards their children between the ages of 7-11 affect the formation of their personalities in this period. It has been observed that children who can communicate well with their parents and who are not lacking in love develop harmonious relationships in social groups other than their families.

Research shows that the quality of parenting is the most important determinant of the child's psycho-social development, and for the child's healthy personality development, it is far from excessive control and overprotective behaviors; It is very important to be brought up by parents who have emotional closeness. (Aslan, Yalçın, Sarp, & Akarçay, 2017)

Children who are supported by their families grow up to be self-confident individuals. Children who are self-confident and able to express themselves freely become leaders. These leaders begin to show themselves in primary school. They can take the floor without hesitation and express themselves in front of the community. In primary and secondary school, children's awareness of their physical development and the increase in their physical movements can lead them to various fields of sports.

Some studies have highlighted a different characteristic of the child leader. For example; Lee, Recchia, and Shin (2005) stated that leader children have advanced social and cognitive abilities, high verbal skills, dramatic skills, creativity, imagination and independence. Perez, Chassin, Ellington, and Smith (1982), on the other hand, found that children with high leadership skills have high verbal abilities, therefore they easily convey their ideas and feelings and guide others, and these children are sensitive to the needs and concerns of other students. Rosselli and Sisk (1996) defined leader children as responsible, self-confident and free.

Some children may be interested in painting or music and can participate in activities by forming groups in these areas. All these social activities bring children together and enable the emergence of the leader child in these communities. The leader child contributes to other participating children in these groups. They share tasks with other participants in the group, listen to the feedback of other children about activities, and help their peers who have difficulties with activities in the group.

Children who have just started secondary school can continue and develop their education as leader children, when leadership in children is supported by parents, school principals, administrators and teachers, especially in the pre-school period. Supporting leadership skills in children at an early age ensures that basic behaviors are settled in their personality. Leadership education should be given to children until this age. It is difficult, if not impossible, for a teenager to acquire leadership skills. Children who are open to learning, curious and at an age where information can be grasped easily should be given leadership skills. Studies have revealed that there is a high correlation between school success and antisocial student behavior at school (McEvoy & Walker, 2000).

Instilling some attitudes and behaviors that improve leadership skills in children in early childhood and in the second childhood affects their later education and working lives. It is very difficult to teach the attitudes and behaviors of leadership skills to young people who have reached high school or university level. Because until they reach their youth, they have determined their own attitudes and behaviors in their families, schools, friends, and other social groups they join.

If the family is not a strict follower of the process of gaining leadership skills from the very beginning until adolescence and does not act accordingly at home, the child begins to take shape according to the family structure. They may be introverted, shy or unable to express themselves well. For this reason, families' awareness about leadership development at an early age, making the right decision and stable behavior will ensure the lifelong development of children in this direction and the continuity of their behavior.

IV. Conclusion

Children who express themselves with hand and arm movements and cries during infancy establish their first communication with their families. When children reach the age of two, they begin to recognize objects and their surroundings. It has been one of the most discussed issues that information can be transferred to children even in the mother's womb. Although the acquisition of leadership skills does not begin inutero, as soon as children get to know their environment and increase their social interactions, they start to acquire leadership skills, attitudes and behaviors, starting from within the family, which is their first communication area. In the period between the ages of 3-6, which is called the early childhood period, it is easier to transfer information and to place this information in the memory of children. If families can provide an encouraging environment for their children by acting on this awareness, children can start to acquire leadership skills from an early age. In the period called the second

childhood, school takes a more active role in the lives of children and requires teachers and administrators to encourage children in this direction. Various studies in the first half of the 20th century indicated that the management and leadership development of children beginning with their families was effective in their relations with other people at school and in other social environments. Recognizing the leadership potential of children in the early period creates a basis for the development of leadership skills that will emerge in the later years of life, and this makes significant contributions to the individual and society (Black, 1984: cited in Sacks, 2009). Since leadership characteristics can be seen from an early age, it is necessary to support these skills in children and to create an environment that will provide them (Hensel, 1991; Karnes & Bean, 1996; Karnes & Stephens, 1999; Maxcy, 1991). Although management and leadership ability in children is associated with their genes, there is no study showing that either genes alone or the majority of them are effective in this ability. More than half of this skill that develops in children is associated with the relationships of children with their families and the intense social relations experienced in the period we call the second childhood. The acquisition of management and leadership skills by children depends on the support of the family for this skill, and then on the educators in schools to display an attitude that will continue to support this skill in children. This skill, which children acquire at an early age, will be very important in their academic and individual lives. Studies have shown that leadership experiences in childhood and adolescence are related to leadership behaviors that emerge in adulthood (Schneider et al., 1999).

A family that wants to raise a true leader should stop being overprotective and help their child gain self-confidence by treating them with respect. When a child is unsure of his abilities, he should be encouraged to take risks and strive for leadership. He should be supported to dream, make plans, and find solutions when faced with problems. Develop leadership qualities by participating in teamwork (in sports, the arts, at school and in leisure time). A child's horizons should be broadened, and he should be taught to be kind to people. To show the child a true model of a leader, parents should set an example by changing their own behavior if necessary. Leadership qualities can be developed in every child. The feeling of being loved will increase the feeling of being safe. Of course, the most important factor that develops the qualities that will help the child to be successful and a leader in the future is the parents.

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CHAPTER 7

SOCIAL AND EMOTIONAL DEVELOPMENT EDUCATION IN CHILDREN

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ABSTRACT

The desire to be accepted, approved, and appreciated by society lies at the center of human existence and is directly related to social and emotional learning. The emotions one has in the moment directly affects what, how and how much one learn in the learning environment. One of the most important things that is fundamental to individuals' self-fulfillment, inner respect, and desire to learn and love is social and emotional development. All individuals feel the need to live together with other people and to be in harmony with their environment. Although we don't know it, the behavior of the person in our mix, the thoughts, the way we interact, somehow feed us. The spirit becomes richer, the perspective is expanding.

Keywords: Self-Confidence, Empathy, Communication, Cooperation, Prosocial Behavior

I. Introduction

A socially and emotionally healthy childhood is important for the progression of life. Social development is expressed as a social individual as a result of the child's support from the environment in which he communicates and interacts, beginning with the introduction of the family environment as soon as he opens his eyes to life (Aral & Kadan, 2019). Social competency, which begins with the baby process, increases the importance of the interaction and participation of peers with the natural environment in the future of life (Campbell vd, 2016).

All individuals feel the need to live together with other people and be in harmony with their environment. Although we don't know it, the behavior of the person in our mix, the thoughts, and the way we interact, somehow feed us. The spirit becomes richer, the perspective expands, the person socializes in the process by observing the behavior of himself and someone else, learning how to act in their position, situation, time and conditions (Prefix, 2006).

Children need positive social-emotional skills to adapt to society. The process of positive social and emotional development will enable positive relationships with the environment, respect for social values, empathy, building your own personal space, cooperating with other people, understanding other people's feelings, and being accepted by a circle of friends.

The social and emotional interaction that started in the family at birth continues with friends and school lives. In the period of adulthood, it gains a different dimension with its responsibilities and work life. Family relationships shape the social and emotional behavior and understanding of children. When parents are warm, sensitive and have balanced control with child autonomy, children learn to trust others and to regulate their feelings of immortality. Both incompatible and supportive family interactions contribute to the development of social skills and social science (Repetti vd, 2015).

The first signs of social interest in children are seen in behaviors such as showing love and proximity reactions to people around them from the first age, sharing their toys with friends in the next few years, and helping parents (Gectan, 1995). Sharing, charitable giving, collaboration and sacrificial behaviors are called prosocial behaviors. People act in a prosocial manner when they help others without any apparent benefit to themselves. Young children can act in a prosocial manner by sharing a toy or by rubbing their back when a friend is hurt. In recent years, many researchers of social learners have studied the fundamentals and nature of prosocial behavior. As a result of their work, they stated that prosocial behavior can be easily influenced by appropriate models (Eisenberg, Lennon, & Roth, 1983).

II. Different Parenting Styles

Bandura argues that the model of adults will increase the willingness of children to imitate prosocial behavior (Hall, Lamb, & Permutter, 1982; Bandura, 1986). For example, children who see a teacher take a used paper that falls on the floor and throw it into the Recycle Bin copy this behavior into their minds. The findings of the research conducted by Rutherford and Mussen revealed that children who respected and were modeled by their family are more self-sacrificing and more social than their peers (Wittmer, & Honig, 1994).

Children and adults often act in a prosocial manner to be approved and appreciated. In addition, the strengthening of prosocial behavior in children prevents them from demonstrating anti-social behavior (Honig, 1982).

Research shows that to be most effective, such praise should only be done intermittently and only after very little time has elapsed after the behavior. This will help small children to generalize their prosocial behavior and apply it to new situations. Many studies have shown that children are affected by encouragement to act positively by those who are important to them and that their willingness to behave well and frequency of good behavior increases.

Experts agree that encouragement is an effective strategy for creating positive social behavior in children (Wittmer, & Honig, 1994). Holmberg (1980) observed children's play behavior and found that some children collaborate better than their friends and are superior to others in developing good relationships. Holmberg argued that children who have established good relationships have developed a healthy sense of trust during their infancy (Cuceloglu, 1994).

Based on the research findings above, the role model, incentives, reinforcement, and confidence has a key role in developing prosocial behavior in children.

Prosocial behaviors, such as sharing and showing empathy, are key indicators of emotional and social competence. In response, a lack of prosocial behavior in small children can lead to negative relationships with peers and result in them becoming outcasts from their group of friends. A student who is not accepted by a group of friends may try to draw attention in different areas by demonstrating aggressive behavior. Some small children show this behavior more than others, it is important that adults encourage prosocial behavior as it leads to positive social developments (Biddle, Garcia-Nevarez, Henderson, & Valero-Kerrick, 2013).

The family has an accelerating effect on the social and emotional development of children (Gilkerson, 1992). In the development of social relationships in children, the mother-and-child dialog has an important role. Healthy communication between the mother and child allows

the child to develop a healthy personality and is the basis for building positive relationships with others (Flannagan & Hardee, 1994). In a study, it has been found that the safe connection between the mother and the baby during the baby period contributed to the acceptance of children by their peers in the preschool period (Szewczyk-Sokolowski, Bost, & Wainwright, 2005).

According to researchers, the role of parents changes with the development of the child. During early childhood, parents closely monitor their children's activities. After children start school, parents play fewer supervising roles. Parents start to wait for their children to become cooperative members of the family by avoiding conflict and sharing domestic affairs. Parents and children start negotiating when making decisions and resolving family problems. During adolescence, parents observe children's participation in the wider social world, school and community activities, and their close personal relationships with peers. Parents may have more control over areas such as social activities while encouraging independence in areas such as school success (Bukatko, & Daehler, 2012).

Table 1 shows the results of different parenting styles. Three parenting styles, excluding the style of governess/democratic parenting, are said to have failed in the United States culture to improve the social competence of children (Biddle, Garcia-Nevarez, Henderson, & Valero-Kerrick, 2013).

Table 1.
The Results of Different Parenting Styles (Biddle et al., 2013)

Parent behavior formats	**Middle childhood**	**Adolescence**
Authoritarian parenting style	Average cognitive and social competency	Average academic and social skills
Democratic parenting style	High cognitive and social competency	High self-esteem, excellent social skills, strong prosocial interest, high academic achievement
Tolerant parenting style	Low cognitive and social competency	Poor self-control and academic performance; drug use
Apathetic parenting style	Low cognitive and social competency (aggressive and destructive)	Poor self-control and academic performance; hostility, rebellion, drug addiction

As a result, parents socialize their children in many different ways.

III. Impact Of The Close Surroundings

Children who have gone through different social and emotional learning processes through the influence of their families and their close surroundings are influenced by different lives within a group of friends, creating new styles of positive or negative behavior. Findings ob-

tained from an investigation conducted by Johnson, Gillicuddy-Delisi (1983) show that the lack of opportunities for children to interact with their peers may also be a factor resulting in their inadequate knowledge of social rules.

In the early years, the child who has had a hard emotional interaction with his/her parents and other family members begins to show a social trend toward his friends from the age of three. At this age, no matter how well the conditions around the family are, the child needs a suitable environment with peers and guidance from expert educators.

Kindergarten brings children of their own age together to create opportunities for grouping and in-group interaction. Through group activities, children recognize themselves, develop the strength and skills to accept themselves into a group, and learn the rules of living together. While defending their rights in group games, they also accept the rights and freedoms of others. Develops active group membership and leadership skills. These skills are learned behaviors that enable the child to develop healthy social relationships with the environment. Hence, the child switches from a self-directed world to a socially oriented sensitivity (Cartledge & Milburn, 1986; Jersild, 1974; Mangir, 1987; Oğuzkan and Oral, 1983).

Pre-school education institutions allow children who are afraid to express themselves through group interaction efforts to be more assertive and secure. In addition, the selfish behavior of spoiled children in a family environment is eleminated by education and interaction in kindergarten. Preschool education institutions start teaching the rules of living in society.

“The purpose of kindergarten is to arouse interest in learning,” Froebel said. Kindergarten helps develop the skills that exist within the child, rather than passing information on to the child. The child finds the best play environment in kindergarten and develops collaboration and intercourse with peers. Kindergarten teaches the child how to protect other children, to share and not to undermine the freedom of others.

Children playing with children of different age groups and disadvantaged cognitive and physical development contributes to the social and emotional development of students. Playing games with disadvantaged students contributes to the development of their prosocial behavior. The child learns to play together with children of both his/her age and those older and younger than himself/herself, and to achieve this without hurting anyone when their wishes conflict with their own desires. Having a child socialize with children with advanced developmental capabilities over his/her own level of development creates the opportunity for modeling of their advanced behaviors. It is therefore possible to say that experiences in different age groups will contribute to the socialization of the child and the development of

communication skills (Metin, 1993; Oktay, 1984).

In some families, a positive attitude toward the child's own personality is not allowed due to protective behavior. All the child's needs are met by the family, all possible problems are eliminated in advance, preventing the child's confidence from developing. Children raised in this way have a hard time leaving the family when they start in the school environment because they have no faith that they can support their own needs. In kindergarten, however, children are given the opportunity to meet their own needs and find ways to solve their own problems. So, preschool lives help the child to break away from their mother and to increase their independent behavior.

Examining the effects of preschool education on social development, researchers have determined that children benefiting from preschool education opportunities have positive developments in their behavior, such as independence, initiative, participation, curiosity and interest in their environment. In addition, it has been observed that anti-social behavior decreases as the time children continue with the preschool education institution increases (Gürkan, 1982; Türkoğlu, 1993; Yavuzer, 1995).

Hacettepe University Department of Child Health and Education has conducted research to determine the expectations of parents of 90 children in the 3.5-6-year-old group who are attending kindergarten. The findings found that 35.6% of mothers, and 41% of fathers expecting their children "to learn social behavior" were first in line. Parents stated that they thought kindergarten would prepare their children for social and academic primary school (Metin and Ari, 1993). These findings suggest that parents expect kindergarten to help their children develop socially.

It is possible that kindergarten can help the child develop socially and respond to parents' expectations of a good education program as well as a teacher who is constantly updating them. The appropriate physical environment for children, adequate tools and a well-prepared training program make sense with a teacher who has the desired behaviors and can model these behaviors to children (Cass, 1975).

Teachers encourage positive social behavior and encourage children to act on these behaviors, increasing social interaction in children, and reducing anti-social behavior. The fact that the teacher is a model by demonstrating prosocial behavior increases the willingness of children to demonstrate these behaviors (Bandura, 1986; Honig, 1982).

Different lives within the group of friends help children develop new patterns of behavior.

The interaction within the group of friends allows the child to learn some social behaviors that he does not see in his family. Playgroups are also important for children to express themselves within their group of friends and to develop confidence. In addition, interaction in peer groups reduces shyness in children and facilitates social harmony (Asendorph, Marcel, & Aken, 1994). Observations of preschoolers revealed that boys who did not feel safe in their communication with peers were more scrappy and challenging (Turner, 1991). Profilet and Ladd (1992) stated that girls are more successful in peer relations than boys.

They try to solve problems they can't share with their families by supporting each other. Close friendship relationships take the child away from the feeling of being alone and incomprehension in public. They provide emotional support so kids can handle the strele. Making friends can teach kids how to manage and control their emotions and help them interpret their own emotional experiences. Friendships in middle childhood provide a training area for communicating and interacting with others. It can also encourage cognitive development by increasing the experience of children (Akt. Feldman, 2018).

The third stage of friendship begins toward the end of middle childhood. During this period, children begin to develop the friendships they have during adolescence. The basic criteria of friendship shift toward sincerity and loyalty. Friendship at this stage is often characterized by feelings of intimacy that arise by sharing personal thoughts and feelings through mutual disclosure. And it's a little special. When they come to the end of middle childhood, kids look for friends who will be loyal. Fifth and sixth-grade students are most interested in those who invite them to attend events and are both physically and psychologically helpful.

IV. Emotional Development

Emotional development includes the child's ability to recognize, express and manage emotions and to understand and respond to others' feelings. Emotional development is closely related to social development and the child itself expresses his feelings about the people in his life, and the environments he plays and lives in. Healthy emotional development is the ability to handle a wide range of emotions appropriately, from joy to sadness to frustration to anger. Learning to manage strong emotions and maintain attention, also called self-regulation, is a process that develops over time through interacting with adults in children's lives (NYS Department of Health early intervention Coordinating Council, nd)

Table 2.
Messages Sent by Emotions to Children (Kostelnik et al., 2012)

Emotion	The message sent to the child
Happiness	I'm safe. Everything about the world is true. I need to continue or repeat this.
Love	I'm cute and precious.
Pride	I'm efficient.
Rage	Something's wrong. I need to overcome this obstacle.
Sadness	Something's wrong. I lost something. I need to adapt to this damage.
Fear	Something's wrong. I'm in danger. I have to run. I need to protect myself.

Recent scientific evidence shows that neural circuits that regulate emotions in the brain are very interactive with areas associated with cognitive activities such as attention to detail, targeting, planning, problem-solving, and decision-making. Emotions can support or interfere with these cognitive tasks. Poorly controlled emotions and negative emotions tend to move away from intellectual functionality; strong positive well-organized emotions tend to support more advanced cognitive activity (Kostelnik, Gregory, Soderman, & Whiren, 2012). The emotional state of a child can affect cognitive processes. An example is the relationship between emotion and learning. Research has shown that children who are interested in specific topics or titles -- a strong attraction or sense of pleasure -- are paying more attention to these stimuli, and remember better than those who are not interested in memory testing (Akt. Bukatko, & Daehler, 2012).

The learning perspective is particularly useful in explaining individual differences in emotional expression. In general, different emotional expressions have different beginnings, frequencies and densities in different children. The frequency of children smiling and laughing depends on the nature and culture of the environment where they grow up. Parents can only reward certain emotional demonstrations to help their children learn to manage and understand their emotions. Or they can intervene by punishing and rejecting the emotional expressions and experiences of children. One common idea shows that parents who respond enthusiastically to their smiling babies tend to encourage the baby to smile more.

According to Lewis and Michalson, socialization plays an important role in shaping the way and time of emotions. Children learn that when they receive gifts, they need to feel happy

and feel sad when their friend gets hurt and have a smiley face and sad expression under these circumstances, respectively. Socializing also drives the way emotions are managed.

From a cognitive point of view, L. Theorists like Alan Sroufe have linked emotional development to the developing world of children. Sroufe argues that understanding is achieved through the development of mental representations or schematics. After a warning, as with a toddler and fire example, some of the child's fever schemes will include "people are worried" and "heat." 'Fire' is assimilated and 'fire' is given a new meaning (Bukatko, & Daehler, 2012; Bornstein, Arterberry, & Lamb, 2013; Doherty, & Hughes, 2014).

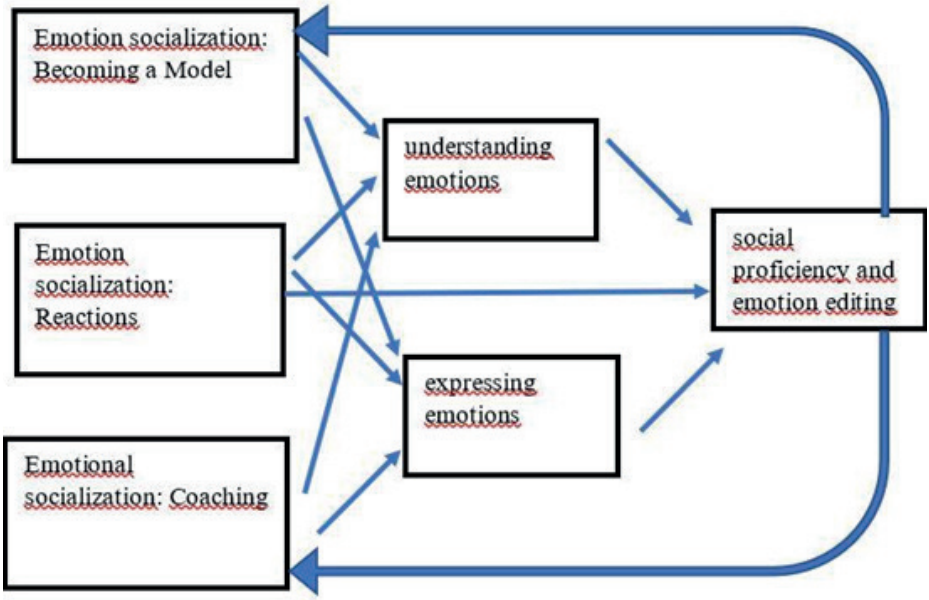


Figure 1: Provide title here.

"Children's games are the core of life. All people thrive there, grow up and build up there, where one's best and most positive abilities rise." Frobel

Game-based activities play a supportive role in a child's holistic development.

The game, which has a separate place in every period of life, has a critical and different role, especially during childhood. Early childhood and middle childhood, at each stage of these periods, differentiate the importance of games, but they remain an important part.

It is important for children to use the game as both a supporting element of development and an educational method. From infancy, children explore their surroundings through play. The child is able to live and learn through play, preparing for their future life (Poyraz, 2011).

Kids have fun playing games, and that mood brings them to be more flexible and creative when solving problems. The game is to give the child an opportunity to learn about the things that no one can teach them with their own experiences (Yavuzer 2007).

According to Freud, the game is the experience of the child's unawareness of instinct and emotions. Children demonstrate their personality through the guidance of their instincts in the game, reflecting their dreams, emotional needs, trauma, and the world of emotions. Games allow them to explore ways to deal with the problems they face, explore alternative solutions, and think creatively. An experienced teacher can observe the games children play, identify the social and emotional needs of children, and take appropriate measures in a timely manner.

Children are physically and cognitively active in the game. When playing games, movement is essential and children are active. The development of power, speed, caution, coordination and flexibility skills takes place during play. Depending on the type of game, children's vocabulary expands, problem-solving skills develop, and as a result, their cognitive development is supported. In addition to these areas of development, the game's critical contribution to the social and emotional development of children cannot be ignored to recognize the emotions of the game and to position themselves in public. In these gaming environments, raising positive adult attitudes and gaining experiences is a strong foundation for supporting personal, social and emotional health throughout their lives (Thwaites, 2008).

Research shows that preschoolers perform better at activities defined as "games". In the same way, activities called "games" have been identified in other studies where children can better focus and maintain their attention compared to other activities they attend (Thomas, Howard & miles, 2006; McInnes, Howard, Miles & Crowley, 2010).

To identify any activity as a game, the game's features need to be known. These features can be sorted by (Sevinc 2004):

The game is a deep-rooted act. It has its own integrity. The event itself is important, not intended for a particular purpose.

Joining the game is the child's free choice. It is important that the game activity is not directed by others, but is the child's choice.

The child should have fun playing games.

The game is distorted to fit the child's life, not impersonating real life, but altered as if it were the child's life.

The child plays an active role in the game. He lives all by himself, he can't be manipulated by others.

There are some things that adults should consider. The first and always priority is ensuring the safety of the environment and materials of play. Security is essential to playing in a safe environment, and then there are issues that adults need to look out for when communicating with children and the needs of children.

Gaming Points

An adult can communicate best with the child through play. The child can express his true feelings and thoughts through play. This is how he unwittingly opens his inner world to adults (1992). In this process, what can be done to support children is provided below (Kostelnik, Gregory, Soderman & Whiren, 2009).

Be warm, welcoming, empathetic and respectful of the kids' attempts to play humor, role-playing or games.

Relax and enjoy the game with the kids. Kids play best when they're relaxed and with no external pressure.

Provide the materials for children to create socio-dramatic game scenarios.

Children play with anything, and the interesting ones are sand, water and mud found in nature. Qualified game materials are provided to encourage children to explore and dream. With these materials, they can use their creativity more. When playing with realistic accessories for little kids – they use the way they mimic social events like the best. Encouraging children to set up games that include camping, gardening, travel, community events, and social media features such as postal services, hospitals, and veterinary clinics will support their imagination skills.

Encourage the research of materials.

Using body language to communicate with children will encourage them. Assume that children can do anything with the materials allowed to play unless the other children's well-being is at stake. Postpone the display of any use of materials until children ask for help: Avoid enforcing limits until children are actually using the ingredients beyond their intended purpose.

Be there for the kids during the game

Observing children a little further away from their playground will eliminate the pressure

of the educator watching them during the play process. When you are an active participant in children's games, it will keep the relationship between adult and child warm and strong, depending on the game's characteristics.

Adults need to be good observers to take care of the needs and attention of children. This is possible by putting the child in the focus of the game. When adults are playing with children and judging their actions as adults, the focus of the game is lost. Therefore, children's play must be observed with serious consideration. The discovery that children make in their own way, and the excitement of adults as if they were discoveries in their own world, will make the child feel valued and understood. At the end of each game, it is an important step to live through the process with children and see what makes them happy or interested (Sheridan, 1999), as adults do not expect a concrete product or a result to be achieved. It should also be noted that regardless of which game it is in, adults should be patient and encouraging, making children feel psychologically safe and well.

V. Results

Depending on the research, the impact of ensuring that children are in healthy social and emotional development with parents, teachers, and peers of young children is very important. Therefore, parents should constantly update themselves on their child's development and teachers' field of competency levels should be evaluated at a certain level at a certain time.

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CHAPTER 8

STEM EDUCATION AND ADDICTION OF TECHNOLOGY IN CHILDREN IN THE DIGITAL ERA

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ABSTRACT

Today, technology plays a crucial role for the success of firms and the competitive power of the countries in international markets. Hence, science, technology, engineering and mathematics (STEM) education has become one of the most fundamental factors to maintain economic growth both in developed and developing countries. Although STEM education is a necessary element for the development and the success of individuals, firms and countries, the concept of STEM education and designing effective STEM education in early childhood are still debated in the literature. While some definitions of STEM education focus on only one or two subjects such as science or technology, other definitions emphasise an integrative approach and put forward that all the subjects (science, technology, engineering and mathematics) should be taken into account as a whole. Although there is not a generally accepted definition of STEM education in the literature, STEM education in early childhood provides a number of benefits that increase children's abilities such as creativity, collaboration with others and problem solving. Hence, both developed and developing countries should design an effective STEM education curriculum and take the necessary steps in order to apply this curriculum in their education system. In spite of the fact that technology is an inseparable part of our daily lives, excessive use of technology and technology addiction in children lead to a number of physiological and psychological problems which may create negative effects on children's lives and their educational success. Thus, both parents and teachers should implement required measures in order to prevent technology addiction in children while encouraging technology usage. The aim of this study is to shed light on the concept of STEM education, STEM education in early childhood and technology addiction in children.

Keywords: STEM education, STEM education in early childhood, Technology, Technology Addiction, Technology Addiction in Children

I. Introduction

Since the beginning of the 1980s, technology has switched from tools, machines and products to systems and problem solving, and it has become closely associated with science and mathematics (Dugger, Yung and Eldon, 1995: 11). In today's world, technology is accepted as the most significant element of the success of firms and the competitive power of the countries in international markets. As a result of these developments, teaching of science, technology, engineering and mathematics (STEM) has become one of the most fundamental factors for innovation and sustainable economic growth both in developed and developing countries.

In the existing literature, there is not a single and generally accepted definition of STEM education (Fallon, Hatzigianni, Bower, Forbes, Stevenson and 2020: 369). While some researchers focus on one or two elements of STEM education, other researchers suggest an integrative approach and argue that STEM education should cover science, technology, engineering and mathematics as a whole (Bybee, 2013: x). Although there are different definitions of STEM education in the literature, STEM education in early childhood provides many benefits. Hence, both developed and developing countries should design an effective STEM education and take the necessary measures to start STEM education in early childhood.

In spite of the fact that technology is an inseparable part of our daily lives, excessive use of technology and specifically technology addiction in children are the significant problems that teachers and parents face. The results of existing studies show that technology addiction in children causes both physiological and psychological problems. Thus, parents and teachers should implement necessary measures in order to prevent children to be addicted to technology while encouraging technology usage.

This chapter examines STEM education and technology addiction in children. The structure of the chapter is as follows: section two explains the concept of STEM education and the different approaches with regard to the definition of STEM education, section three analyses STEM education in early childhood, section four discusses technology addiction in children and finally section five concludes the chapter.

II. The Concept of STEM Education

The term STEM was originally used as SMET for "science, mathematics, engineering and technology" by the National Science Foundation in the US in the 1990s, and since an NFS program officer stated that the acronym sounded too much like "smut", the new acronym "STEM" was born (Sanders, 2009: 20). In this acronym, science is mainly about what exists

in the natural world (Dugger, 2010). The processes used in science in order to find out the meaning of the natural world are "inquiry", "exploring" and applying "the scientific method" (Dugger, 2010). Technology is the transformation of the natural world to fulfil human wants and needs (Hasanah, 2020: 1, International Technology Education Association, 2007: 7, Dugger, 2010). Technology generally focuses on what can and should be designed and developed from the materials of the natural world to meet human wants and needs (Hasanah, 2020: 1). Engineering is based on mathematics and basic sciences, and it develops knowledge to create the application needed for solving engineering problems (Accreditation Board for Engineering and Technology (ABET), 2020-2021). Last but not least, mathematics is the science of patterns and relationship, and it depends on logic and creativity (American Association for the Advancement of Science, 1993: 23, Dugger, 2010).

STEM education emerged as a result of a number of historical events (White, 2014: 2). The earliest initiative was establishing West Point, the first military academy of the US, whose main aim was to train army engineers (Butz, Kelly, Adamson, Bloom, Fossum and Gross, 2004: 50). Another intervention was the Morril Act of 1862 which aimed to improve agricultural practice and work skills (Butz et al., 2004: 50). In addition to these events, World War II and the launch of the Soviet Union's Sputnik leaded to the growth and development of STEM education (White, 2014: 2). In today's world, the need for improved education and especially STEM education continues (Ritz and Fan, 2015: 430).

In the existing literature, it is difficult to find a single and generally accepted definition of STEM education (Fallon et al., 2020: 369). While some researchers refer to the four disciplines altogether, others only focus on one discipline in their definitions (Bybee, 2013: x). In earlier definitions which lack an integrated approach, STEM is often thought to be a traditional disciplinary coursework (science, technology, engineering and math) (Breiner, Johnson, Harkness and Koehler, 2012: 5). According to these definitions, four elements of STEM (S, T, E, M) have common characteristics, but there is no need to blend them instructionally (McComas and Burgin, 2020: 808). Hence, in this view, STEM education is a field which centres on any of these four elements (McComas and Burgin, 2020: 808). The progress of the term STEM education caused some researchers to put forward the concept of "integrative STEM education" (Martin-Paez, Aguilera, Perales-Palacios and Vilchez-Gonzalez, 2019: 802). Integrative STEM education views the separate disciplines of science, technology, engineering and mathematics as one unit and teaches these disciplines as an integrated entity (Breiner et al., 2012: 5). Sanders and Wells (2010) define integrative STEM education as *"technological/ engineering design-based learning approaches that intentionally integrate content and pro-*

cess of science and/or mathematics education with content and process of technology and/or engineering education." Sanders and Wells (2010) state that integrative STEM education may be augmented through further integration with other school courses such as social studies, arts etc. Integrative STEM education is suited for all K-PhD students, and it is not aimed to replace S, T, E and M instruction which is more effectively taught without integration (Sanders, 2012: 3). Moreover, integrative STEM education might be implemented by one or more S, T, E and M teachers in one or more classrooms during and/or after the normal school day (Sanders, 2012: 3).

STEM education provides a number of benefits both to students and countries. According to the proponents of STEM education, by raising math and science requirements in schools, the performance of students for advanced education or jobs in STEM fields will be better (Brown, Brown, Reardon and Merrill, 2011: 5). In addition to this, since science plays a crucial role for technological innovation and sustained economic growth (Xie, Fang and Shauman, 2015: 332), STEM education is of vital importance for the competitive advantage of countries in international markets. Hence, all of the countries in the world should create an effective STEM education at all grades of the education system.

III. STEM Education in Early Childhood

Similar to the industrial revolution which required children to learn how to read, technological revolution made it necessary for children to understand STEM (Mclure et al., 2017: 4). The results of existing studies show that early meaningful participation in science presumably increases the children's motivation for science (Patrick, Mantzicopoulos and Samarapungavan, 2009: 166), and a good early childhood start in mathematics plays a crucial role in later mathematics success (Hunting, Mousley and Perry, 2012: 40). Hence, in today's world, a great number of industrialised countries try to pull people into and to sustain the workforce for science, engineering and technology (Fleer and March, 2009: 24).

STEM education provides a number of benefits both to students and countries. The main benefits of STEM education are explained as follows (Lynch, 2019):

- STEM education promotes ingenuity and creativity. Ingenuity and creativity are the main factors which lead to significant technological developments such as artificial intelligence and digital learning.
- STEM education creates resilience. Failure is an inseparable part of the learning process within STEM education, and this leads students to embrace their mistakes.

Hence, students build confidence which helps them to continue in spite of facing difficulties.

- STEM education promotes experimentation. Since STEM education encourages trial and error process, students are able to take risks during the learning process.
- STEM education fosters teamwork. During STEM education, students can work in teams and learn how to collaborate with others.
- STEM education promotes knowledge application and technology use. During STEM education, students learn skills that they can employ in the real world. Moreover, students are taught about the power of technology and innovation. So, when the students come across new technologies, they can get adapted to them quite easily.
- STEM education teaches problem solving. Students learn how to investigate problems and they are equipped with abilities to find solutions as a result of STEM education.
- STEM education fosters adaption. Students gain the ability to adapt to a variety of scenarios during STEM education.

STEM education in early childhood focuses on fruitful material environments that children can search, and it helps them with the development of concepts (Van Keulen, 2018: 1). Thus, instead of explaining the laws of gravity, STEM education in early childhood guides children to experiences in which gravity plays a crucial role (Van Keulen, 2018: 1).

In the existing education systems, many teachers use learning materials such as textbooks and paper and pencil exercises or abstain from STEM education at all (Van Keulen, 2018: 2). As a result of this kind of education, a lot of children will gain knowledge, but they will not know much about investigation, making models, testing, improving and explanation (Van Keulen, 2018: 2). Hence, teaching STEM education at an early age and existence of a good quality STEM education are crucial determinants of good teaching (Van Keulen, 2018: 2).

There are a number of characteristics of STEM education in early childhood. These characteristics are summarised as follows (Mirtschewa, 2020: 26-28):

- Laboratories or big experiments are not required for STEM education in early childhood. Following children's questions and developing children's STEM conceptions based upon real life situations are sufficient for good STEM education in early childhood.
- Children cannot apprehend facts and existing relationships without inquiry. Thus,

research should be a leading force in STEM education in early childhood.

- Children should be inventors, should consider, analyse and explain their conceptions in a clear way to discover the facts. The learning process is a significant factor in STEM education in early childhood.
- The teacher has a significant role in STEM education in early childhood. Adults can help the children by giving, prompting, questioning, modelling, discussing and explaining during this process.

In order to improve the educational outcomes for the STEM disciplines for young children, an urgent, well-coordinated, and cross-sector work is needed (Mclure et al., 2017: 38). Mclure et al. (2017) put forward a number of recommendations to create efficient STEM education for early childhood. These recommendations are stated below (Mclure et al., 2017: 39-44):

- The confidence and efficacy of parents should be supported with regard to STEM education since they are the first and the most significant STEM guides for their children.
- Training and institutional support should be provided to teachers.
- The available web of STEM learning "charging stations (parents, teachers, technology, libraries and museums)" should be promoted and expanded.
- A sustainable and well-organised system of early learning through age eight should be constructed.
- Early STEM research should be prioritized, and the funds allocated for this research should be increased.

In a nutshell, STEM education in early childhood has become a crucial element of the education systems both in developed and developing countries in today's digital world. In order to train the workforce which are suitably qualified for the job positions in the future and hence to sustain economic growth, it is required for all countries to build an efficient STEM education system for early childhood.

IV. Addiction of Technology in Children

Addiction can be defined as a process in which a behaviour that creates pleasure or gives relief from internal discomfort is employed in a pattern featured by repeated failure to control the behaviour and persistence of the behaviour in spite of the important negative outcomes (Goodman, 1990: 1404). Addiction leads to an excess consumption or unlimited behaviour

to go on although it has adverse effects that become both a physical and psychological health issue after a while (Yücelyiğit and Aral, 2018: 66). Addiction covers both the consumption of alcohol and other mood-altering drugs which can cause a physical and/or psychological dependence and specific behaviours such as eating, working, gambling and exercising, the addictive potential of which has been recently accepted (Greenfield, 2003: 4).

Technological addiction is a non-chemical (behavioural) addiction that comprises of human-machine interaction (Griffiths, 1995: 14, 15). This interaction can either be passive (for instance, television) or active (for instance, computer games) and generally involves encouraging and strengthening characteristics that may make a contribution to the addictive inclinations (Griffiths, 1995: 15). Technology addiction contains television, media, mobile phone and internet addictions (Meral, 2018: 472).

In today's world, as a result of the developments in mobile technology and internet, the use of technology among children has a tendency to increase (Yücelyiğit, Aral: 2018: 66). Although technology usage provides us a number of benefits by simplifying our lives, technology addiction is a significant public health issue, and it may lead to physiological and psychological problems among children and teenagers (Meral, 2018: 472).

In the existing literature, the number of analyses that investigate the effects of technology addiction are on the rise (Yücelyiğit, Aral: 2018: 66). However, studies that mainly focus on technology addiction among children is still very few (Hawi, Samaha and Griffiths, 2019: 771). Here, the results of the recent studies which examine the effects of technology addiction among children are summarised.

Pontes, Griffiths and Patrao (2014) analyse the problems caused by internet addiction and the socio-demographic and behavioural features of children and adolescents with internet addiction. Moreover, Pontes, Griffiths and Patrao (2014) try to find a model that is capable of predicting internet addiction. 131 Portuguese school children and adolescents attended the empirical analysis (Pontes, Griffiths and Patrao, 2014: 91). According to the results of the empirical study, Pontes, Griffiths and Patrao (2014) put forward that there is an association between internet addiction and loneliness, social loneliness and other variables in relation to educational context. Lin, Kuo, Lee, Sheen and Chen (2014) investigate the impacts of internet addiction on autonomic nervous system by using heart rate variability analysis for school-aged children in China. A cross-sectional data set obtained from 240 school-aged children is used, and the heart rate variability is measured by employing spectral analysis in the empirical study (Lin, Kuo, Lee, Sheen and Chen, 2014: 493). The results of this analysis indicate that there

is an association between internet addiction and higher sympathetic activity, and autonomic dysregulation which is related to internet addiction may partly stem from insomnia (Lin et al., 2014: 493). Chen and Shur-Fen Gau (2016) examine the relationship between sleep problems and internet addiction among children and adolescents over the period March 2013-January 2014 in Taiwan. 1253 children and adolescents in grades three, five and eight participated to the empirical analysis, and parental reports on the Sleep Habit Questionnaire were used in order to measure the sleep problems of the participants (Chen and Shur-Fen Gau, 2016: 458). According to the results of the empirical study, Chen and Shur-Fen Gau (2016) suggest that early and middle insomnias consecutively predict internet addiction, and internet addiction consecutively predicts disturbed circadian rhythm. Ren, Yang and Liu (2017) investigate the relationship between internet addiction, social anxiety and loneliness in China. In this study, 432 junior year one to senior three students participated in the empirical analysis. The results of the empirical analysis indicate that there are positive correlations among internet addiction, social anxiety and loneliness (Ren, Yang and Liu, 2017). Moreover, the results show that social anxiety and loneliness increase the possibility of internet addiction in rural left-behind middle school students (Ren et al., 2017). Lin, Lee, Chen, Hsieh, Yang and Lin (2019) analyse the relationship between internet addiction and sleep quality, and if there are significant variations in sleep quality among students with different amounts of internet use in Taiwan. In the empirical analysis, a cross-sectional data set that includes 503 female students is used, and logistic regression analysis is applied (Lin, Lee, Chen, Hsieh, Yang and Lin, 2019: 1). According to the results of the empirical analysis, Lin et al. (2019) suggest that students with moderate and severe degrees of internet addiction have worse quality of sleep in comparison with the students with mild or no internet addiction. In a recent study, Kawabe, Horiuchi, Oka and Ueno (2019) examine the relationship between sleep habits, sleep issues and internet addiction in adolescents in Japan. A total of 853 students from a local town junior high school attended the empirical study (Kawabe, Horiuchi, Oka and Ueno, 2019: 581). The results of the empirical analysis show that there is a strong association between internet addiction and sleep habits and problems in adolescents in Japan (Kawabe et al., 2019: 581).

Jun (2016) investigates the association between mobile phone addiction and depressive symptoms among Korean adolescents. Jun (2016) uses a longitudinal data set which consists of 1877 responses between the period 2011 and 2013. The results of the empirical analysis indicate that mobile phone addiction and depressive symptoms in earlier years are related to the increasing severity in these conditions over the period under investigation (Jun, 2016: 179). In addition to this, the results show that there is a bidirectional relationship between mobile phone addiction and depressive symptoms (Jun, 2016: 179). Lee, Jang, Ju, Kim, Lee and Park

(2017) analyse the relationship between mobile phone addiction and the incidence of poor and short sleep among Korean adolescents. In the empirical analysis, a longitudinal data set which includes a total of 1125 students is employed (Lee, Jang, Ju, Kim, Lee and Park, 2017: 1166).

According to the results of the empirical study, Lee et al. (2017) put forward that high mobile phone addiction increases the risk of poor sleep quality. Yang, Zhou, Liu and Fan (2019) examine the relationship between mobile phone addiction, anxiety and depression in adolescents in China. Yang et al. (2019) employ a data set including 1258 high school students and estimate a multiple regression model. The results of the empirical analysis indicate that there is a positive relationship between mobile phone addiction, anxiety and depression in adolescents (Yang, Zhou, Liu and Fan, 2019). Park, Yang, Shin, Jang and Park (2019) investigate the long-term relationship between mobile phone use, mobile phone addiction and depressive symptoms in Korean adolescents. Park et al. (2019) use a data set including a total of 1794 adolescents in the empirical analysis and find that Korean girls are likely to use their mobile phones more often, and they are at a higher risk of mobile phone addiction and depressive symptoms than Korean boys. Sahu, Gandhi and Sharma (2019) examine the prevalence of mobile phone addiction and the problems associated with it by doing systematic research. In their analysis, Sahu, Gandhi and Sharma (2019) search a number of electronic databases and find 12 descriptive studies that fulfill their inclusion criteria. According to this review, Sahu et al. (2019) put forward that excessive use of mobile phone is related with feeling insecure, deteriorated parent-child relationship, deteriorated school relationships, low mood, tension, anxiety and hyperactivity.

As it is clearly seen from the above explanations, although technology is a sine qua non vehicle which simplifies our lives considerably, excessive use of technology and specifically technology addiction cause harmful physiological and psychological effects on children. Hence, both parents and teachers should take necessary measures in order to prevent children to be addicted to technology.

V. Conclusion

In today's world, technology is one of the most significant factors both for the success of firms and international competitiveness of countries. As a result of this, STEM education has become a crucial element to maintain economic growth both in developed and developing countries.

In the existing literature, there is not a consensus on the definition of STEM education (Fallon et al., 2020: 369). While some researchers put emphasis on one subject of the STEM

education such as technology or engineering, other researchers suggest an integrative approach and cover all of the subjects of STEM in their definitions (Bybee, 2013: x). Integrative STEM education takes into account science, technology, engineering and mathematics as a whole and teaches these disciplines as an integrated entity (Breiner et al., 2012: 5).

Since STEM education plays a crucial role both for the innovation performance of the countries and for sustainable economic growth, it is of vital importance to teach STEM subjects in early childhood. STEM education in early childhood has some distinctive characteristics which should be taken into account while designing an appropriate STEM curriculum. The most significant characteristics of STEM education in early childhood are as follows (Mirtschewa, 2020: 26-28): Firstly, STEM conceptions should be taught to children by using real life situations. Secondly, research is an inseparable part of STEM education in early childhood. Without doing research, children cannot understand facts and existing relationships. Last but not least, teachers have a crucial role, and they can help children by giving, prompting, questioning, modelling, discussing and explaining during the STEM education process.

Although technology is an essential element in today's world and we should start to teach science, technology, engineering and mathematics in early childhood, excessive use of technology and specifically technology addiction in children are the two most problematic issues that parents and teachers encounter. In the existing literature, there are a number of studies which empirically examine the effects of technology addiction in children. According to the results of these studies, technology addiction leads to both physiological and psychological problems in children. Hence, parents and teachers should take necessary steps in order to prevent children to be addicted to technology while allowing and encouraging technology usage.

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CHAPTER 9

TEACHING A FOREIGN LANGUAGE TO YOUNG LEARNERS

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ABSTRACT

In this chapter, children's language learning and language acquisition are discussed. The differences between language learning and language acquisition are explained in prior chapters. Bilingualism and multilingualism is another important aspect of children's language development. Bilinguals are exposed to two languages while a monolingual child deals with one language. For second language acquisition, Krashen's theories, which address acquisition, and learning theory, natural order hypothesis, monitor hypothesis, input hypothesis and the affective filter hypothesis are explained. The factors affecting language development and language learning periods are also explained and examined. The methods and approaches for teaching a language to young children and key principles for learning a foreign language are addressed and discussed. In addition, the importance of language for identity formation and language with the role of cultural transmission are explained. A number of suggestions for language teachers are also included.

Keywords: Language learning, Language acquisition, Language teaching methods, Bilingualism, Language periods

I. Introduction

Language is a skill which helps us communicate with others. Language includes all forms of communication which are expressed primarily orally, with hand signs, facial expressions, gestures or body movements. Speech is the most important part of communication. Language develops along with a child's physical growth. It starts when the child opens his or her eyes to the world. A child first listens and then imitates the language. Parents and caregivers have always had a very important role for children's language development. They are instrumental in the improvement of a child's potential for language development. Language is the ability to communicate with others (Indrayani, 2016).

Foreign language teaching can be applied at all ages and at all levels, it is a process that must be taken very seriously. Foreign language teaching at an early age is increasingly taught in our country in recent years. Language teaching and learning is gaining great focus and importance. Today, the start of the language learning is begun at five or six years of age. There are certain critical periods or ages in a child's language development. Without the necessary cooperation of the family and the environment, serious issues can arise in successful language teaching.

Krashen states that language development in a child's brain begins at the age of two and development typically continues until puberty. If a child starts learning a foreign language in this period, they can easily learn it like their own mother tongue (İlter and Er, 2007).

Children's brains are conducive for learning a language between the ages of zero to five years. Their brains have the necessary plasticity. The child needs to have good quality and quantity of input. If a child starts learning a foreign language at an early age, the child should be a better language user than his peers who start learning a foreign language at a later age. Getting a qualified first language education helps the child learn a foreign language in the best way possible. The child who knows a foreign language typically has better communication skills and it has positive effects on their social, individual and cultural development. In addition, learning a foreign language at an early age will have positive effects on the child's intellectual and mental development as well. According to Anşın (2006), language teaching should be as follows: The topics chosen for the lesson should address the interests and life of the child. A child's world is composed of dreams, games, animals, friends, close family members etc. The teacher should prepare the learning material before introducing it to the class. The teacher should take the timing, planning, classroom management, expected problems into account when planning a lesson. Language teachers need to target the communicative langu-

age development of all the children. Priority should be given to the communicative language skills of each individual child. Grammar and structure teaching does not mean anything to children per se, and in the end, they will not use grammar in the appropriate places. Language should be given in context and in a subconscious way. The functions of language should be introduced at later stages of development (Ayşın, 2006).

Krashen's (1976*)* theory of second language acquisition theory:

- Acquisition and learning theory

- Natural order hypothesis

- Monitor hypothesis

- Input hypothesis

- The affective filter hypothesis

According to Krashen's theory, there is a clear distinction between acquisition and learning. While acquisition is natural and subconscious, learning is conscious and needs overt explanations. According to the natural order hypothesis, individuals learn the language by following a similar order. In monitor hypothesis theory, while acquiring or learning a second language, individuals monitor production of the language, and pay attention to certain elements such as pronunciation or grammaticality. According to the input hypothesis, learners need to receive a certain amount of comprehensible input to produce the language. In the affective filter hypothesis, personality, psychological, and motivational factors are important for language learning. If there is not enough motivation and psychological readiness for language learning, the brain filters the capacity of learning.

II. Bilingualism and Language Learning

Language and mind development parallel each other. For this reason, a child's language development supports his entire mental development.

Throughout the world, there are more bilingual children than monolinguals. Language education of bilingual and monolingual children deserves closer attention. It is important to pay attention to bilingual language development. Language teachers need to have professional training concerning and focusing on teaching language to bilingual children.

When babies are born, they have the potential to acquire the language spoken in the environment they were born into. While babies all over the world have the ability to make all vocal sounds from the moment they are born, as time passes, they only repeat and retain the

sounds used in the language spoken around them. At this point, babies exposed to different language inputs begin to acquire different languages. Acquiring two different languages in their natural environment provides many advantages. Two different languages develop two different ways of cognitive thought; and the child uses the social advantages of knowing two different cultures.

If the child acquires both languages from native speakers, they can speak these languages without an accent. This will only happen if the child has the opportunity to hear and speak both languages equally. For example, if a child born and raised in England speaks English at school with teachers and friends, but at home his parents use their mother tongue Turkish. If this situation is continuous he will develop literacy in both languages, and he will be able to speak and communicate in both languages without an accent. When explaining bilingualism and the level at which bilingual children can use these languages, it is necessary to mention the threshold theory.

According to Cummins' (1979) threshold theory, bilingual children need to be at a certain level in both languages in order to develop their cognitive skills and benefit from the positive aspects of bilingualism. This is the threshold level, both linguistically and cognitively. Bilingual children must reach the first threshold in both languages to avoid any adverse effects. In addition, the development of two languages is interrelated and therefore the importance of acquiring a mother tongue is emphasized.

According to this theory, which is named "The Developmental Interdependence Hypothesis", the skill and proficiency level to be achieved in the second language largely depends -on the skill and proficiency level of the first language. Conceptual development of the first language contributes positively to the conceptual development of the second language.

Learning a language is one of the magical (instinctual) skills that all human beings are born with. A child has the capacity to learn any language that they are exposed to since opening their eyes to the world. With a number of sounds, a child can create an infinite number of expressions. If a child is born in Germany of German parents, it is inevitable that the child will learn German. If a child is born in a country with a different family language, that child will be exposed to two languages and in the end become bilingual (Feldman, 2019). Children pass through developmental stages when learning their mother language. Bilingual children also pass through the same developmental stages by being exposed to two languages.

The Dependency Hypothesis (Cummins, 1979) plays an important role in the child's first and second language acquisition. If enough appropriate input is given in a language to deve-

lop proficiency in that language, enough motivation provided, and with sufficient exposure it will then affect proficiency in the second language. Language transfer is not only from the first language to the second language, but also from the second language to the first language. According to the dependency hypothesis, appropriate input in a language not only improves skills in that language, but also facilitates the transfer of various cognitive and academic language skills while acquiring other languages. The interaction of the first language and the second language may vary according to the degree of similarity of the two languages and the difference in the level of proficiency of the individual. Language transfer also occurs when a meaning that can be expressed with a complex structure in one language is expressed with a simpler structure in another language. Bilingual children have a higher linguistic awareness than their monolingual peers because bilingual children use language through two separate input channels. Exactly in which cases language transfer occurs is not yet clear (Leseman, 2000).

Individuals who acquire a second language after the age of three or when they start school go through a different process. Children learning language at this stage may behave in the following ways:

-They may continue to use their mother tongue for a while and may not want to use the words in the target language even though they understand them.

-The child may have a quiet period when exposed to the second language. This period lasts longer in children than in older adults. In this process, the child tries to form a general perception about language.

-In the beginning, they only use phrases and short words that they hear very often and that can be memorized (e.g., I don't know, yes, etc.).

-Finally, they make up their own sentences. These are not completely memorized sentences, but new sentences created by the child himself with known words, such as inserting different words into common sentence patterns (…… I want, …. Can I have it, etc.)?

-Then they can over-generalize by using the same sentences for different situations and this causes grammatical errors. These could be transfer errors originating from the first language. However, in general, the developmental process of a second language is the same as first language acquisition.

In bilingualism, the proficiency level of each language may be different, so the child may not be able to use both languages at the same level. Often, bilinguals have a dominant

language or be good in one language and weak in the other. There are many reasons why an individual is bilingual. Some of these are due to the fact that the parents of the individual have different mother tongues, or if the family immigrates to a country where a different language is spoken. Bilingual individuals are evaluated in different contexts and the development of individuals as bilingual are observed in these contexts.

McCarty (2014) stated that there are four different taxonomies in the evaluation of bilingualism. These are; Assessments of the individual, family, societal and school levels. Requirements for qualified mother tongue acquisition: there is a need for exposure to the language to a certain extent, the children need to have the physical ability to acquire the language, and the mechanisms for auditory and acoustic input. Another important point is critical age. The children need to acquire the language and activate language production ability before reaching a critical age.

III. Factors affecting language development

Although the child is born with the physical ability to speak a language when he is born, there are factors that can affect language development. The family, society and opportunities offered to the child will affect language development positively or negatively (Köksal Akyol, 2014). For example, a child cannot learn to speak in an environment where there is no speech heard (MEB, 2013). Individual developmental differences are related to intelligence, personality and learning style differences, socio-economic status, family structure, ethnicity, language spoken at home, and birth order. Some factors, such as intelligence, can be much stronger than others. For example, socioeconomic factors alone may have little effect on the rate of language development. There may be more differences between socioeconomic classes (Owens, 2019). Before puberty, the brain has the elasticity to learn a foreign language in a more fluent way. When the child reaches puberty, the brain loses its plasticity and language learning becomes more difficult (Er, 2014).

A. The Effect of the Mother Tongue on Second Language Learning

There are many studies on the effect of a mother tongue on second language acquisition. For example, it has been observed that the school success of a student whose mother tongue is Turkish is directly proportional to school success in German, the second language. This was not only limited to school success, but also affected functional success (Cummins, 1979; Demirel, 2019).

IV. Theories About Language Acquisition

Language learning and language acquisition needs to be differentiated (Arung, 2016). For children's language acquisition, there are different hypothesis supported by scientists. There are three main hypotheses about children's language development:

A. Nativism

According to Chomsky all children are born with the capacity to learn a language which is referred to as Language Acquisition Device (LAD). Children have the ability to learn the language to which they are exposed. LAD is the physiological part of the brain which is responsible for language learning (Indrayani, 2016).

B. Behaviorism

According to behaviorism, children learn a language by imitating their caregivers. The language develops in the course of stimulus-response procedures. According to behaviorists, children are not born with the capacity to learn a language, but gain this ability in the setting that they grow up in (Indrayani, 2016).

C. Cognitivism

According to Jean Piaget, through experience and reasoning, children develop speaking and listening skills and later on reading and writing abilities.

D. Social Interaction Approach

In this approach, Vygotsky argues that language cannot be acquired without a social and cultural environment; imitation and modeling are important, just like in the behavioral approach. It emphasizes the influence of environment on language acquisition. Here, too, the question of how language is learned by an adult was first formed and cannot be answered. According to Vygotsky, children's language development is closely related with the culture and society that they grow up in (Indrayani, 2016).

V. Periods of Language Learning

Children learn their mother tongue and a foreign language by following developmental stages which are globally similar. These stages are divided into two periods: the pre-language period and the language period.

A. Pre-Language Period

During their first months of life, children cry often; these cries are accompanied by uni-

versal sounds. Babies all over the world make the same crying sounds and they can produce some sounds in their environment that they never use. “Babbling” is an external behavior trait, not a response to external stimulation. Around the sixth to ninth month, children begin to distinguish between sounds and choose sounds that exist in their environment.

B. Language Period

A year later, children learn that sounds are associated with meanings. Words at this stage perform three main functions. First, they are linked to a child’s own action or desire for action. Second, they are used to convey emotions. Third, they serve as a nomenclature. Babies begin to produce two-word phrases that indicate different combinations of word order. At this stage, the words are devoid of morphological and syntactic markers, but we notice that there is a word order. At this stage, word forms begin to change; inflectional morphemes begin to appear in addition to the use of simple prepositions. A child’s pronunciation begins to resemble adult speech.

VI. Language Teaching Approaches for Young Children

Previously language teaching was supposed to be the responsibility of schools and teachers. However, modern teaching approaches using a learner-centered model (Bialystok, 1981).

For different language teaching methods, techniques and materials have been investigated and are presented to learners. These idealized teaching models and materials did not always meet the expectations and did not always lead to achievement of the language. The most important points to remember are the individual differences. The individual differences, which play an important role for language learning, are age, gender, motivation, culture, setting for the learning, attitude, parents or caregivers etc. There is no best teaching model or material. For each class, and each individual, the best teaching model changes. This reality leads to the investigation and development of new teaching techniques and models (Gürsoy and Eken 2018).

There are differences in terms of first and second language teaching for children. When learning a second language, children construct the language based on their first language system. As there is an already learned language, children can make transfer errors, mix codes and other issues (Arung, 2016). Children learn by playing. To draw the attention of young children, the teacher needs to use different games and scripts (Oliveira and Wright, 2014).

VII. Language Teaching for Young Children

Teaching a language to children is not an easy job. However, if the appropriate methods and approaches are utilized, it will result in success. Language teachers need to have some

characteristics to create a good language-learning environment. First, a language teacher needs to be patient, knowledgeable about individual differences, know the techniques and methods of language teaching, know about language acquisition and the learning stages, teach with age appropriate games, and know the nuances of the language. In addition, a successful language teacher should speak clearly and must show native language models, use real language users' conversations in the classroom, bring reality to the classroom, pay attention to the classroom setting and seating arrangement of the children, and use body language effectively. (Hashemi and Azizinezhad, 2011).

For pre-school children, effective language teaching methods can be tailored. At this stage for foreign language learning, children need to be motivated and all activities should be active in play and game-like activities. At the pre-school stage, native language and foreign language can be developed simultaneously. The use of stories, dramas, rhymes and different characters in the classroom will enhance the acquisition of foreign language at the preschool stage. Music is also one of the most helpful tools for creating a warm language-learning atmosphere in the classroom. Children can switch from singing to talking, music to bodily movements, experiment with rhythm and pay attention to intonation with the help of music. Children use body gestures to express their emotions and ideas through drama and role-playing, they will naturally improve their language skills. Using the appropriate drama games and techniques help children improve their interpersonal relationships, provide a good life experience together with valuable linguistic input and output. For children, the learning environment should not be boring; it should be enjoyable and full of movement and stimulation. Children do not learn with drills and grammar explanations; they learn language items subconsciously in context. In communicative language learning, cooperation and interaction is supported which can be improved through games and interactive activities (Achkasova, 2013).

For teaching the language to young learners, the most suitable techniques and activities should be selected to draw and keep the attention of the children. According to communicative language teaching (CLT), real life language activities should be introduced to the class. Rather than introducing a set of grammar rules, language should take place in a social environment where communication takes place. When the language is contextualized, effective and comprehensible communication takes place. In a communicative language-learning environment, learners share the language with their peers and teachers in role-plays, games, songs etc. There are different methods that can be used in the classroom at different times or in an eclectic way. Storytelling, dialogue creation, miming, body movements, memorization of songs, rhyming, games etc. are all helpful for young learners' language improvement.

Usually teachers are the best models for children's language learning, their pronunciation, their attitude, their experience in teaching young children. Adults and children learn a language in different ways and their final production of the language can differ in many ways.

Er (2014) states that "Teachers aim at showing their students everyday language. Teachers use authentic materials, bright and colorful posters and pictures about the target language. It is known that it could not always be possible to conduct the same language teaching strategies to children with adults. For teachers besides the effectiveness of language teaching activities, methods or techniques, the easiness of preparation is also important."

VIII. Key Learning Principles for Children

According to Cameron (2001), children pass through different stages of language development when compared to adults. Children actively try to construct meaning. Children try to make sense of the actively given input. They make sense of the world according to their world knowledge, which is limited and partial. Accordingly, language teachers need to have an understanding of a children's world and assess the activities according to their point of view. Children need space for language growth. Children need the support of adults and also they need time for acquiring language. Adults need to be patient with children's language skills development. Language learning depends on what they experience with the world around them. Development can grow with social interaction in the setting that they grow up in. Children do not learn by formal grammar teaching, instead they learn by doing, by playing games, by questioning. In addition, for children integrated skills development should be encouraged.

IX. The Importance of Language in Identity Formation

Language is the interpreter of a culture, and it has been proven that the first four years are very important for a child's identity formation. At this age, a child places everything he hears in his memory and this forms the basis of values that he will use as he grows up. A child who understands and treasures the values he receives from hislanguage and culture has high self-confidence. In a multicultural society, a citizen with a well-developed identity and thus a strong self-confidence will communicate more easily with citizens from other cultures.

The value given to a language and the value given to the person speaking that language are almost the same. It should be emphasized that families must be made aware of the correct use of language and that they should be guided to read and set a good example for their children.

For best results, both parents and teachers need to correct sentences and repeat them correctly. However, these fixes should not be too frequent. In addition, ensure that the child

learns new words by using different words in a sentence that may have the same meaning. For example, when the child says, “The tree is big.”, the parent or teacher can repeat the sentence “Yes, it is a huge pine tree”. It is important for parents to speak in whichever language they feel the most competent, especially in the first years when children are acquiring the language. If a mother insists on using a “non-dominant language”, this could negatively affect the child’s linguistic development**.**

X. Discussion and Conclusion

Teaching a language to young children requires comprehensive preparations by language teachers. Teachers of young learners need to know the stages of language development very well, appropriate methods and techniques used with young learners, bilingualism, native language teaching and foreign language teaching differences.

A holistic approach should be adopted in foreign language teaching. It is necessary to adopt the most appropriate approach to each students’ needs and learning styles and abilities. There is no single correct approach or method in language teaching. It is extremely important for foreign language teachers to develop themselves both theoretically and practically.

To teach children a foreign language, the teacher has many responsibilities working together with the parents. Teachers need to create an enjoyable learning environment. The activities in the classroom should address the needs and awareness of the children. Teachers need to create a warm and friendly atmosphere in the classroom so that children can be motivated to learn. The activities should be age appropriate for young learners. Children enjoy learning with games. The activities need to include movements, dialogues, etc. Direct grammar teaching does not foster any improvement for children’s language learning. For children, group work and pair work activities produce more positive foreign language results. Teachers can organize drama activities, cases from real life experiences. Teachers may have difficulty in classroom management during the activities, which incorporate speaking and bodily movements. In addition, teachers need to use a wide variety of activities so that children engage in all of them without becoming bored. If an activity or method does not fit, or if it does not address the children’s awareness, the teacher needs to modify it in line with children’s needs and interests (Er, 2014).

Teacher training faculties need to train qualified and motivated language teachers. A language teacher needs to have sound theoretical knowledge before gaining practical knowledge and experience. A language teacher needs to know language acquisition and learning processes, language teaching methods and techniques for different age groups, bilingualism,

testing and evaluation, different activities, different age groups needs and interests, material evaluation and production, and language skills development. A language teacher with a good training can be very successful with practice and experience.

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CHAPTER 10

THE NUTRITION EDUCATION OF CHILDREN

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ABSTRACT

Nutrition education of children is defined as a combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices should begin in the prenatal period and include all phases of childhood to provide healthy nutrition for the child for a lifetime. The prenatal period and infancy, toddlerhood and preschool, school age, and adolescence periods are specific time intervals when different educational strategies should be used. The nutrition of the pregnant mother determines a child's acceptance and choice of foods. Nutrition education, should encourage mothers to exclusively breastfeed for six months, with responsive feeding as a part of the nutritional education of the mother, and to continue breastfeeding for one year and beyond together with complementary foods, to ensure proper growth for the baby. For toddlers and pre-schoolers, informal nutrition education is suggested, which includes parents as models at home and foods used in daily experiences to establish language development, cognition, and self-help behaviours. Nutrition education is important especially for school children and adolescents because it is not possible to make informed choices without accurate knowledge. To establish proper eating habits, behaviour-focused nutrition education is appropriate. The components of this type of education encompass cognitive learning, in which children learn to select healthy foods; emotional instruction to motivate children and caregivers to change their diet, and behavioural components to create healthy food choices. Research studies indicate that such interventions establishing behavioural changes result in more effective changes than a general nutritional education approach.

Keywords: Nutrition education, Children, Healthy nutrition, Adolescents, Responsive feeding, Authoritative feeding

I. Introduction

Nutrition education is defined as "any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices" (Contento, 2010). It should begin in the prenatal period and include all phases of life. Proper nutritional education for parents can provide healthy nutrition for the child for a lifetime. Although society is better informed about nutrition nowadays, a large portion of children and teenagers are not exposed to in-depth nutrition education. Nutrition education is important for children and adolescents because it is not possible to make informed choices without accurate knowledge. To establish proper eating habits, behaviour-focused nutrition education is appropriate. The components of this type of education encompass cognitive learning, in which children learn to select healthy foods; emotional instruction to motivate children and caregivers to change their diet, and behavioural components to create healthy food choices. Research studies indicate that such interventions establishing behavioural changes result in more effective changes than a general nutritional education approach (Ogata and Hayes, 2014).

II. Prenatal Period and Infancy

The nutrition of the pregnant mother determines a child's acceptance and choice of foods. A connection with pregnant mothers to provide nutrition education, through cooperation with gynecologists and first step health providers would be beneficial (Holli, 2012). It has been suggested that fruit and vegetable consumption during both pregnancy and breastfeeding periods increases the acceptance of these foods by the infant (Pérez-Escamilla, 2017). The infant experiences the odors and flavors via the amniotic fluid enabling a fetal learning process that affects both odor and taste preferences (Rioux, 2020). This process has a survival value, contributing to a chemical continuity between the mother's diet and the baby's food preferences (Hetherington, 2017). During pregnancy, nutrient deficiencies might affect both the health of the baby and the mother. Healthy nutrition should prevent excessive weight gain (Holli, 2012). Thus, it is of crucial importance to give pregnant women appropriate nutrition education to ensure better food choices. To guide pregnant women about healthy nutrition, the local nutrition guidelines or dietary pyramids including vegetables, fruits and other food groups as portions may be used.

Nutrition education should encourage mothers to exclusively breastfeed for six months and to continue breastfeeding for one year and beyond together with complementary foods. Mothers may encounter several problems during this period. A survey during the breastfeeding period has demonstrated that parents feel anxious and need support due to factors like

inadequate nutrition knowledge, being unable to understand the physiological needs of the infant, and confusing information from various sources (Redsell, 2010). In a systematic review, the breastfeeding problems encountered mostly were stated as physical breast problems like mastitis, inadequate nutrition, insufficient milk, and poor infant cues perception of the mother (Kavle, 2017). To detect these problems, it would be beneficial to observe the mother while breastfeeding (Contento, 2010). The nutritional education during breastfeeding should include responsive feeding and adequate nutrition of the mother. The benefits of breastfeeding for both the mother and the infant should be emphasized. Incorporating the other family members into the breastfeeding education process is beneficial (Holli, 2012). It has been identified that the inclusion of families, individuals, communities, and health facilities in this process results in a tenfold higher prevalence of exclusive breastfeeding for six months (Kavle, 2017).

III. *Responsive Feeding*

During the first six months of life, while the baby consumes breastmilk or formula, responsive feeding should be a part of the nutritional education of the mother, to ensure proper growth for the baby. Through responsive feeding, mothers can perceive and give a response to infants' cues (Hetherington, 2017). The World Health Organization (WHO) has defined responsive parenting as "prompt, contingent and appropriate interaction with the child". (Eshel, 2006). Responsive nutrition involves reciprocity between the parent and the child in which, the hunger or satiety is signaled by the child, recognized by the parent appropriately and a predictable response is given (Pérez-Escamilla, 2017). This child-centered approach supports the development of appetite control, attendance to biologically driven cues and sensations (McNally, 2016). The hunger behaviors include hand sucking, hand to mouth agitation, opening the mouth with a readiness to eat, and the hunger cry (Hetherington, 2017; Meiselman, 2020a). The cry should be interpreted as a "hunger cry" only if additional cues like fast breathing, or mouthing accompany it (Pérez-Escamilla, 2017). Until a proper nutritional response is given, these hunger behaviors become increasingly active and overt (Hodges, 2013). After a proper nutritional response, the hunger cues gradually give place to satiation cues. During the feeding process, "exploratory gaze behavior" shows a significant increase, whereas, the frequency of "gazing at food" decreases over time. Satiation is signaled through avoidance behaviors like looking away from foods, gazing at other objects in the environment, closing the mouth, arching the back or turning the head away (McNally, 2016). Infants may close their mouths when offered food, or turn their heads away, and the parents should be able to evaluate these various infant cues through nutrition education (Pérez-Escamilla, 2017).

Parents should be informed about the impact of breastfeeding and bottle feeding on

responsiveness. Breastfeeding can facilitate the responsive feeding process both for the infant and the mother. Infants learn to determine the duration, amount, and time of feeding and mothers learn to be responsive to these signs (Shloim, 2017; Hetherington, 2017). Mothers, who bottle-feed their infants with formula or mother's milk, are able to calculate the amount consumed, enabling them to control the feeding process alone, encouraging the infant to consume the whole formula in the bottle. The overconsumption risk increases with bottle feeding, and the self-regulation of the infant decreases (Hetherington, 2020a). Another factor, affecting the mother's perception of feeding cues is her body mass index. Obese mothers are more responsive to hunger and less responsive to satiation, leading to overfeeding (Hetherington, 2020b). The reason may be their lower level of ability to perceive their own satiation signs (Hodges, 2013). Therefore, the responsive feeding education of obese mothers should focus on satiation signs.

IV. *Complementary Feeding*

Complementary feeding is defined by WHO as the period in which, the infant's diet changes from breastfeeding to family foods. This process begins around the age of 6 months and finishes around one year (WHO, 1988). Weaning is the process of introducing complementary foods to an infant's diet (Ohja, 2020). After the age of 6 months, breast milk cannot meet the entire energy and nutrient requirements of the infant, and to complement breastfeeding, "complementary" foods are introduced to the diet (WHO, 2008). Mothers should be informed about the process of complementary feeding through local guidelines. The texture transitions from pureed foods to mashed and soft finger foods and later to table foods during this period is of crucial importance. This process shapes the dietary patterns throughout life (Pérez-Escamilla, 2017).

During complementary feeding, accepting novel foods, odors, and tastes is difficult for the infant. Through repeated exposure, learning the safety of foods enables the infant to make this transition (Prescott, 2020). An appropriate weaning process can protect the infant from nutritional problems, allergic disorders, and dental caries. Early weaning may result in obesity and cardiovascular problems in later life (Ohja, 2020). Through breastfeeding, infants experience flavors from their mother's diet and therefore, they accept new vegetables more willingly (Hetherington, 2020a). The infant may not accept new foods easily, especially foods with bitter or sour tastes. The parents should be encouraged to repeatedly expose the child to new tastes so that the infant learns to like them. In a study, analyzing the relationship between early vegetable exposure and acceptance it was established that vegetables offered as first foods were well accepted. (Chambers, 2016). Informing mothers about these methods will enhance

the acceptance of new foods by the infant, and therefore contribute to healthy nutrition.

V. Toddlerhood and Preschool Period

Healthy nutritional behaviours are gained in the early stages of life and carried on for a lifetime. Accordingly, establishing healthy nutritional patterns for toddlers and pre-schoolers, who, for the first time in their lives, are independent of their caregivers in the domain of nutrition, is especially important. Toddlers try to gain their autonomy by making decisions in every aspect of their lives, including nutrition. They want to be independent in feeding themselves and deciding which foods to eat. In preschool years, they are even more independent (CDC, 2021). Between two and seven years of age, the children's attention is mostly on social growth, language acquisition, cognitive maturation, and eating is a secondary concern (Mahan, 2016). They want to play with other children and are influenced largely by their peers. During these years, families or caregivers may encounter some nutritional issues. Nutrition education of the parents may improve their nutritional knowledge, directing them to have a proper approach to their children's nutritional issues, and therefore, helping them to establish healthy eating behaviours (Mitra, 2013). For toddlers and pre-schoolers, informal nutrition education is suggested, which includes parents as models at home and foods used in daily experiences, to establish language development, cognition, and self-help behaviours (Mahan, 2016).

At two years of age, half of the parents report picky eating behaviours among their children (Podlesak, 2017). Picky eating at this life stage is a developmental process (Horodynski, 2010). It may stem from the slowing down of the rate of growth in toddlers, which leads to a decline in energy requirements, and therefore, to refusal of foods as a result of an intrinsic signal of satiety (Podlesak, 2017). Children may also engage in picky eating as a means to express their understanding of control and autonomy (Horodynski, 2010). Meals provide a proper context to use this newly gained characteristic by refusing the foods when they are not hungry (Podlesak, 2017). Picky eating types at this life stages include unwillingness to try new foods (Johnson, 2002), eating the same food repeatedly, an inadequate variety in the diet, and refusal to eat the familiar foods they normally consume (Van Der Horst, 2016; Horodynski, 2010; Podlesak, 2017). Parents also influence the fear of new foods, 'neophobia'. If the mother does not taste it, the toddler would be unwilling to try new food. However, children are inclined to be less neophobic by age (Horodynski, 2016; Johnson, 2002; Skinner, 2002). Repeated requests for the same food and refusal of other foods may stem from the boredom with usually consumed foods or maybe a reflection of their sense of autonomy (Mahan, 2016). Fruits, vegetables, and protein sources are reported to be in the "lower intake" category for

picky eaters (Podlesak, 2017). The decreased intake of these food groups and inadequate variety in the diet may result in deficiencies of some of the important macro and micronutrients that are essential for the growth of the child. A higher intake of carbohydrates may result in obesity. Between 2-5 years of age, 10.4% of the children were reported to be obese, while 21.1% of them to be overweight. Families are especially important for establishing a proper model for their children. Too much control over their diet or a wide range of restrictions may lead to decreased self-regulation ability and overeating (Mahan, 2016).

VI. *Factors That Affect The Nutrition of Toddlers and Pre-schoolers*

Parent Modelling: Toddlers take their parents' dietary behaviours as models. Children whose mothers constitute a model for food neophobia may be neophobic when offered new foods. The mother's fruit and vegetable consumption is an important determinant of the fruit and vegetable consumption of the child (Horodynski, 2010).

Family Environment: The environment in which the children are fed can significantly affect their reaction to foods and their nutrition preferences (Johnson, 2002). A positive environment, establishing healthy nutritional patterns is one in which there is sufficient time to consume foods. The child may sometimes spill the food and the family members have healthy communication with each other (Mahan, 2016). Guidance and tolerance during mealtimes are important factors for the acceptance of foods, whereas, quarrelling and distractions such as watching television have a negative impact on healthy nutritional patterns (Leung, 2012).

The Behavioural Pattern of Parents: Parents largely influence the nutrition behaviour of children. They shape the feeding environment of the child who reflects their attitudes and beliefs about food, and takes them as role models (Edelson, 2016). Interventions such as controlling the nutritional intake of the child, restricting some foods, and rewarding others negatively influence healthy eating behaviours (Podlesak, 2017) Research studies show that parents' different feeding styles significantly affect children's nutritional choices and issues. Three types of parenting styles have been identified according to the level of demandingness (control) and responsiveness (warmth): authoritative (high control and high warmth), authoritarian (high control and low warmth), and permissive (low control and high warmth) (Podlesak, 2017). These styles are also prevalent in the domain of feeding. Authoritarian parents provide high control, pressure to eat, restrictions, low fruit and vegetable availability. These are part of negative feeding strategies. Permissive parents provide rewards for eating and trying new foods when the offered one is not consumed. Rewards create a cause for eating other than hunger and prevent stopping even though the child is full, causing problems in the self-regulation ability (Van der Horst, 2016). Using one food as a reward for eating healthy

food leads to a dislike of the target food in the long term (Edelson, 2016). Repeated exposures provide a better solution for healthy nutrition rather than presenting new options to the child. Both authoritarian and permissive parenting styles provide a non-responsive feeding practice for the child, and may lead to obesity and nutritional issues in the long term. Authoritative parents have a responsive approach to the child. They are nurturing compared to authoritarian ones (Van der Horst, 2016). They set reasonable rules and are also sensitive to the child's needs. The strategies of these three types of parents are given in Table I (Edelson, 2016).

Table I
Parenting Strategies Against Picky Eating

Strategy	**Possible Usage**
Pressure	"If you don't eat your dinner, I will take away your cell phone!"
Reasoning	"If you eat your spinach, you will be stronger!"
Food reward	"If you eat your cabbage, you can have an ice cream!"
Non-food reward	"If you eat your broccoli, you can watch television!"
Being a model	A parent saying "Mmmm" while eating broccoli.

Peer Influence: Peer modelling is also an important influence for the food acceptance of the toddler or pre-schooler (Johnson, 2002). With age, peer influence becomes even stronger (Mahan, 2016). In a study, it was detected that vegetable consumption of young children increased significantly after watching a video of their peers eating them (O'Connell, 2012). In another study, students' intakes were compared with their tablemates' intakes, and 1 g of peer intake was associated with 1/5 g of increase in the intake of the subjects (O'Connell, 2012).

VII. *Nutrition Education Solutions*

Strategies for Food Acceptance: Food acceptance is accomplished basically through repeated exposures to the same food, which increases the acceptance by increasing the familiarity with the food (Schwartz, 2011). For two years old children, 10 exposures, and for 4-5 years old children, 8-15 exposures would be enough (Skinner, 2002). Repeated exposures in the early period of life can prevent neophobia and pickiness (Horodynski, 2010). Parents should be informed about the effect of repeated exposures and the inadequacy of a few trials for giving up healthy food. The power of patience can be emphasized and a few creative examples can be given to provide the family with some alternative ways for enabling the child to taste the food again. Other strategies for acceptance of food are giving it together with energy-dense foods (Johnson, 2002) or combining it with a liked flavour (Schwartz, 2011). Another important factor for refusing healthy foods may be textures. Changing the texture may be sufficient for a refused food to be accepted (Van der Horst, 2016).

Parenting Strategies: Among parenting types, authoritative parenting enables healthy nutritional patterns by encouraging the child to eat. Even though they have control over the child, they still respect the child's autonomy. They present a variety of fruits and vegetables letting the child choose which ones and how much to eat (Edelson, 2016). This style is found to be associated with healthy nutrition and weight status in children and adolescents (Edelson, 2016). The authoritative parenting style is also associated with more vegetable consumption among pre-schoolers (Podlesak, 2017). Setting limits to the feeding pattern of children is beneficial while defining healthy eating boundaries. The child's autonomy and self-decisions may be protected this way (Johnson, 2002). Among the strategies used by parents, the most effective one is modelling with eating healthy food enthusiastically and reasoning (Table I). These strategies, deliver an internal message, providing the child to eat the same food even when the parents are not present (Edelson, 2016).

The parents should be informed that at two to five years of age, the growth rate is slower, leading to a decreased appetite and that this situation is normal (Leung, 2012). They should be advised to promote healthy eating models via proper food choices and eating patterns, to present their children a variety of foods, to use repeated exposures against food refusal, to try high energy or liked flavour combinations or proper textured versions of the food for acceptance (Skinner, 2002; Leung, 2012). It is important that they understand their role as healthy food and meal structure providers, and their child's role as decision-makers for food and how much to eat (Edelson, 2016). Rewards and punishments are not part of healthy nutrition. Parents should know that a pleasant mealtime environment is important for food acceptance (Leung, 2012).

Nutrition Education Targeting Toddlers and Pre-schoolers: Nutrition education directly influences toddlers and pre-schoolers through some daily activities. It may be given through stories, songs, videos, tasting parties, vegetable and fruit garden visits, puzzles, and art projects. In a nutrition education initiative for preschool children, memory card activities, tasting parties, and storybooks were offered to lead the children to try new foods, and the results were significantly positive (Contento, 2010). The activities should have clear messages (Mitra, 2013). Toy kitchens or grocery stores may also be helpful. In kindergartens, they can learn how to grow fruits and vegetables. Parents may be advised to incorporate their children into cooking and serving practices (Contento, 2010).

VIII. School-Age Period

This is the life period when basic information about nutrition can be effectively introduced to children. Since children have a tendency to perceive taste and healthfulness as mutually

exclusive, it is more appropriate to focus on enjoying the taste of fruits and vegetables rather than their health benefits (Wardle and Huon, 2000). A study among fourth and fifth-grade students showed that family and home environment factors explained more than 50% of the changes in students' fruit and vegetable consumption (Gross, 2010). Children should be guided to establish healthy eating habits. There are some important tips to create healthy dietary habits not only for children but also for the whole family (Behan, 2006). Mealtimes should be regularly scheduled. As children thrive on routines, regular mealtimes will help a child to better self-regulate food intake. Mealtimes are opportunities that provide social interaction for families. Children tend to consume a greater variety of foods when all family members are at the table at meals longer than 15 minutes. Children's portion sizes should not be expected to be the same as adults. Parents should not insist children clean the plate after they are full; instead, encourage them to try different types of food. Children and parents should elaborate on a list of foods that can be eaten as a snack. In this way, conflicts can be prevented and healthier snacks are provided. Eating only in certain areas, such as the kitchen and dining room, enables awareness of food consumption. Parents should determine which foods would be served as a meal. Children can select among these foods. Children take their parents as role models, so parents should be an example for children in their eating habits. Family members should not eat just to relieve boredom or reduce emotional stress; instead, they should try to do an alternative activity like exercising. Parents should encourage children to eat fruits and vegetables. As a part of a healthy diet, a person should consume at least 5 portions of fruits and vegetables every day, as diverse as possible. It is essential to restrict the consumption of candy bars, ice cream, and any drink with 25 g of added sugar per 100-calorie portion (Behan, 2006).

The eating habits of school-aged children are greatly affected by family, culture, food insecurity, and poverty status (Sharman, 2016; Amuta, 2015). This is a life period in which the influence of peers, teachers, coaches, or sports idols increases. Another factor affecting children's eating habits is television. The increased time children spend watching television leads to higher consumption of snacks and soda, a higher calorie intake, and to be overweight (Andersen, 1998). Screen time should be limited to 2 hours a day.

Parents believed that children's participation in meal preparation was important for developing their cooking skills, but stated that participation was limited due to time constraints and concerns about child safety in the kitchen (Olfert, 2019). Involving children in meal preparation processes improved their consumption of foods with better nutritional content (Ogata and Hayes, 2014). Children can perform age-appropriate food preparation activities such as packing their own snacks, setting the table, and helping with grocery shopping. Children who

participated in gardening programs consumed more vegetables (Spears-Lanoix, 2015). Fruit and vegetable consumption behaviours of school-age children who were given farm tours as a part of nutrition education were positively affected (Moss, 2013). Education that provides a better understanding of nutrition labels has the potential to contribute to the formation of healthy eating habits (Moore, 2018).

School and after-school programs have an impact on the nutritional behaviour of many school-age children. The nutritional habits and cognitive functions of children who received nutrition education at school were positively affected (Teo, 2021). Besides sessions of theoretical information, nutrition education should be done with different methods that will arouse children's interests. The nutrition education provided with posters, picture storybooks, songs, and game cards in addition to the theoretical education, may lead children to consume more balanced meals (Yurni and Sinaga, 2020). A meta-analysis concluded that nutrition education combined with taste testing, cooking activities, and gardening interventions for primary school children increased children's desire to taste unfamiliar foods, improved their food preparation and cooking skills besides their nutritional knowledge (Charlton, 2020). To provide nutrition education, nutritional professionals should collaborate with school faculty and the local community. Addressing home-packed lunchboxes may provide favourable outcomes. In general, home-packed lunches provide fewer nutrients, but also less fat, than school meals (Mahan and Raymond, 2016). The variety of such meals is less as children's favourite foods tend to be packed. While teaching children nutrition concepts and knowledge, the developmental levels of children should be taken into account. One of the most efficient methods in the nutrition education of school-age children is the play approach learning (Mahan and Raymond, 2016). Through meal preparation activities, children find opportunities to practice and reinforce their knowledge of nutrition.

The majority of school-aged children do not eat breakfast. Instead, they have a fast-food breakfast on their way to school. Children who have a healthy breakfast have lower cholesterol levels, are more likely to maintain a healthy weight, and have a higher level of mindfulness and concentration in school than those who don not (Brown, 2015). Those consuming breakfast regularly are more active in the classroom and more successful at school tasks (Adolphus, 2013). Instead of traditional breakfast foods, parents may offer children healthy breakfast alternatives.

School-age children consume more snacks, especially after school and in the evening when they have more time to eat. Since older school children receive pocket money, they may spend this money to buy snack foods. Families should offer healthy snacks at home so that children do not develop the habit of eating unhealthy snacks.

The way families control their children's nutrition is related to their children's nutritional intake and body weight (Rhee, 2006). The authoritative style determines healthy food alternatives that can be eaten without putting pressure on the child, and limits eating unhealthy snacks, allows children to eat more vegetables and fruits, and to consume more nutritious foods (Rhee, 2006). On the other hand, authoritarian feeding attempting to control children's meals strictly has been associated with decreased consumption of nutritious foods.

Making learning enjoyable for children will increase the efficiency of nutrition education. Planning interactive educational activities will have a positive effect. As an example, with real ingredients, scales, and measuring cups, children can measure the quantity of food themselves. Children get acquainted with new foods through food tasting practices.

IX. Adolescence Period

Many changes occur rapidly during adolescence, thus, it can be difficult for teens to realize the value of healthy diets. Many teens may have difficulty associating their daily eating habits with future health outcomes. Therefore, it is more effective to focus on short-term benefits, such as improvement in school performance, looking good, and having more energy, rather than talking about health outcomes. While explaining the importance of nutrition and physical activity to teenage boys, explaining their positive effects on physical development, especially muscle development and fitness can be effective. Teenage girls can be persuaded to choose nutritious foods by explaining the relationship between healthy nutrition and healthy weight. When communicating with adolescents, messages should always be positive and at their level of understanding. Nutrition education of adolescents should include basic features such as selecting water instead of sugar-sweetened drinks, and choosing broiled or baked food rather than fried ones.

While discussing nutrition with adolescents, it is indispensable to consider the characteristics of this life period and the external pressures teenagers are subjected to. Adolescence is a period when teenagers begin to perceive themselves and their environment differently, have myriads of new experiences, and discover their mental and physical existence. Changing priorities, needs, and lifestyles during the transition from childhood to adolescence confuse teenagers about their nutritional preferences as many other issues. In addition, they will be coping with the demands of their environment, which includes family, friends, school, and even work (Holli and Beto, 2017).

Many factors influence the food choices of adolescents including hunger, the appearance and taste of food, limited time to eat, body image, financial issues, and food availability. The

influence of family is decreasing while the influence of peers is increasing in parallel with the media and vegetarian beliefs. The most important factor determining what adolescents are eating is their peers' food choices (Holli and Beto, 2017). Therefore, it would be wise to help adolescents' incorporate healthy eating habits into their lifestyles rather than imitate the unhealthy eating habits of their peers. In a study in which 1000 students received nutrition education, and 270 peer leaders were trained to take part in the training, the results showed that peer-led nutritional education approaches in schools were more acceptable and effective among students (Story, 2002). A Canadian study aiming to reduce consumption of beverages showed that beverage consumption decreased in the groups that received peer education, compared to those who did not (Lo, 2008).

Particular attention should be paid to irregular meal times, excessive snacking, eating at fast-food restaurants, dieting, and skipping meals. First of all, parents should develop healthy eating habits and set an example for their children. Besides, they may encourage their children to eat healthy foods by choosing healthy foods for family meals and setting the limits on consumption of unhealthy snacks. Healthy eating index scores increase if teens are encouraged to learn how to prepare some of their own foods (Sattler, 2015). Eating meals together with the family as often as possible should be encouraged in order to ensure communication with the family and to reinforce healthy eating habits.

Dieting has become very common among teenagers. Teenagers who are dissatisfied with their body image tend to restrict most of the essential nutrients along with energy, thus, reducing the nutritional quality of their diets. Teenagers trying to lose weight try to reduce their portion sizes (Calderon, 2004). This type of nutrition may lead to nutritional deficiencies and may evolve into eating disorders in the long term (Holli and Beto, 2017). Psychological stress affects dietary behaviour in overweight/obese adolescents, regardless of gender and race (Ajibewa, 2020). Family conflict and depressed mood are also associated with dieting behaviour (Hinchliff, 2016). It is important to support adolescents to achieve and maintain a healthy body image and weight.

Meal skipping is a common nutrition problem among youngsters. The most commonly skipped meal is breakfast (Mahan and Raymond, 2016). Teenagers, who skip breakfast, eat snacks when they are hungry. The content of snack foods consumed by teenagers is often high in added sugar, fat, and sodium. As a consequence, intake of important nutrients decreases compared to regular breakfast (Deshmukh-Taskar, 2010). A decrease in body fat was observed in adolescents who regularly have breakfast (Cayres, 2018). Since snacks are prevalent in the diets of adolescents, at least healthy snack options should be offered such as yogurt layered

with fruits or oilseeds, baked potato with broccoli and olive oil dressing, veggie pinwheels, and baked cauliflower tots.

Another growing trend among adolescents is to become vegetarian or vegan. Unless vegetarian nutrition is balanced with appropriate nutritional supplements, it does not meet the nutritional requirements of a growing organism during adolescence. Adolescents are at higher risk of developing nutrient deficiencies than adults if they have this type of nutrition practice. Omega-3 fatty acids, vitamin B_{12}, iron, and zinc deficiencies are of greatest concern (Rudloff, 2019). Adolescents, who adopt vegan or vegetarian nutrition, should be evaluated for nutritional deficiencies and eating disorders.

X. Teenage pregnancy

If the nutritional needs of pregnancy are superimposed on those of puberty, it may be difficult for teens to consume a diet that can support both. Some pregnant teens may rely on extreme dieting to hide their pregnancy or maintain their body image. Teenagers who become pregnant in the first two years after menarche are at greater risk of developing nutritional deficiencies and have a higher incidence of pregnancy-related complications (Byrd-Bredbenner, 2019).

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