

PEDAGOGICAL DOCUMENTATION PRACTICES AND
YOUNG CHILDREN'S SELF-REGULATION & METACOGNITION

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ABSTRACT

PEDAGOGICAL DOCUMENTATION PRACTICES AND YOUNG CHILDREN'S SELF-REGULATION & METACOGNITION

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The aim of the study is to explore the role of pedagogical documentation practices on young children's self-regulatory and metacognitive abilities. It is critical to develop metacognitive and self-regulatory abilities in early years for behavioral, social and intellectual development. The learning environment suggested by pedagogical documentation meets the required conditions to support self-regulation and metacognition of children. Thus, this study aimed to bring those two closely related concepts together and investigate self-regulation and metacognition through pedagogical documentation process. Participant observation and interviews were used to gather data in the study. 11 children participated in the study. Sharing times through documentation tools were videotaped to capture children's self-regulation and metacognition. Reflective dialogues that were conducted after these sharing times with children were audiotaped. The data were coded and analyzed by using

the Cambridge Independent Learning (C.Ind.Le) framework. The role of documentation on children's self-regulatory and metacognitive abilities are presented in a detailed and rich manner by using qualitative research design.

Keywords: young children, pedagogical documentation, self-regulation, metacognition

ÖZ

ERKEN ÇOCUKLUK DÖNEMİNDE ÖZ-DÜZENLEME VE ÜSTBİLİŞSEL BECERİLERİN DESTEKLENMESİ: PEDAGOJİK DOKÜMANTASYON UYGULAMALARI

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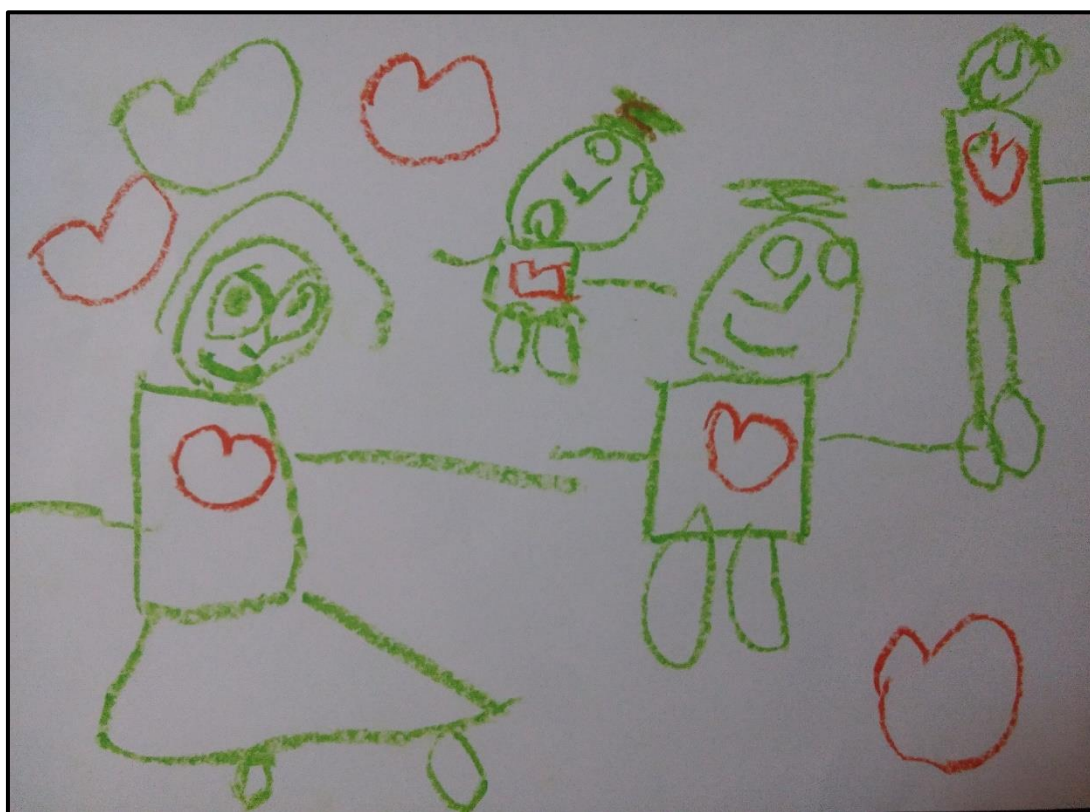
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Bu çalışma, pedagojik dokümantasyon uygulamalarının erken çocukluk döneminde öz-düzenleme ve üstbilişsel becerileri üzerindeki rolünü araştırmıştır. Davranışsal, sosyal ve entelektüel gelişim için ilk yıllarda öz-düzenleme ve üstbilişsel yeteneklerin geliştirilmesi önemlidir. Pedagojik dokümantasyon yaklaşımı ile önerilen öğrenme ortamı, çocukların öz düzenleme ve üst bilişini desteklemek için gerekli koşulları sağlar. Bu nedenle, bu çalışma, birbirine yakından ilişkili iki kavramı bir araya getirmeyi ve pedagojik dokümantasyon sürecinde gözlemlenen öz düzenleme ve üstbilişsel becerileri araştırmayı amaçlamıştır. Çalışmada veri toplamak için katılımcı gözlem ve mülakatlar kullanılmıştır. Çalışma 11 çocuk ile

gerçekleştirilmiştir. Dokümantasyon paneli ile gerçekleştirilen paylaşım saatleri ile dokümantasyon paneli ve çocuk portfolyoları ile gerçekleştirilen yansıtıcı diyaloglar çalışmanın verisini oluşturmaktadır. Veriler, Cambridge Bağımsız Öğrenme (C.Ind.Le) çerçevesi kullanılarak kodlanmış ve analiz edilmiştir. Dokümantasyonun uygulamaları sırasında sergilenen öz-düzenleme ve üstbilişsel beceriler nitel araştırma tasarımı kullanarak detaylı ve zengin bir şekilde sunulmuştur.

Anahtar Kelimeler: Pedagogik dokümantasyon, öz-düzenleme, üstbiliş, erken çocukluk dönemi

to...



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TABLE OF CONTENTS

PLAGIARISM.....	iii
ABSTRACT	iv
ÖZ.....	vi
DEDICATION	viii
ACKNOWLEDGEMENTS	ix
LIST OF TABLES	xiv
LIST OF FIGURES	xv
CHAPTER	
1.INTRODUCTION	1
1.1. Background of the Study	1
1.2. The Purpose and Research Questions of the Study	6
1.3. Significance of the Study	7
1.4. Pedagogical Documentation in Turkish Early Childhood Settings	9
2.LITERATURE REVIEW	12
2.1. Pedagogical Documentation	12
2.2. Research on Pedagogical Documentation	16
2.3. Documentation Tools	17
2.3.1. Documentation Panel	17
2.3.2. Newsletter.....	18
2.3.3. Portfolio.....	18
2.4. Self-Regulation and Metacognition.....	19
2.5. The Importance of Self-Regulation and Metacognition in Early Years	20
2.6. Research on Self-Regulation and Metacognition and Young Children	21
2.7. Self-regulation & Metacognition - Documentation Tools.....	23
2.8. Summary.....	24

3. METHOD	25
3.1. Research Questions	25
3.2. Research Design	25
3.3. Data Collection Methods.....	27
3.4. My Motivation to the Study	30
3.5. The Role of the Researcher	31
3.6. Participants	31
3.6.1 Background Information of the Children and the Teacher	33
3.7. Data Collection Procedures	35
3.8. Data Analysis	37
3.9. Trustworthiness and Transferability	43
4. FINDINGS	46
4.1. Documentation Panel	47
4.1.1. Metacognitive Knowledge	52
4.1.2. Metacognitive Regulation	60
4.1.3. Emotional and Motivational Regulation	72
4.2. Portfolio.....	76
4.2.1. Metacognitive Knowledge	77
4.2.2. Metacognitive Regulation	81
4.2.3. Emotional/Motivational Regulation.....	87
4.3. Summary of the Findings	90
5. DISCUSSION and IMPLICATIONS	92
5.1. Limitations of the Study	101
5.2. Implications for Further Research	102
REFERENCES	104
APPENDICIES	
A: Coding Scheme.....	114
B: Sample Coding – “Sharing Time”	117
C: Sample Coding – “Reflective Dialogue”	119
D: Consent Form for Parents.....	126
E: Teacher Voluntary Form.....	128

F: Attendance Table of Children	130
G: Tez Fotokopisi İzin Formu	131
H: Turkish Summary / Türkçe Özet	132
I: Curriculum Vitae.....	170

LIST OF TABLES

TABLES

Table 1 Profiles of Children	33
Table 2 Sequence of Data Collection Process	36
Table 3 Sequence of Data Analysis Process	39
Table 4 Frequency of C.Ind.Le. Indicators-Documentation Panel Sharing Time....	30
Table 5 Frequency of C.Ind.Le. Indicators-Documentation Panel Reflective Dialogues.....	33
Table 6 Frequency of C.Ind.Le. Indicators-Portfolio Reflective Dialogues	39

LIST OF FIGURES

FIGURES

Figure 1 Data Sources for the Study.....	30
Figure 2 Cambridge Independent Learning Coding Scheme	40
Figure 3 Documentation & Self-Regulation and Metacognition.....	93

CHAPTER 1

INTRODUCTION

This chapter discusses the general idea of the proposal and explains the basic points of the study. It reveals the main purposes of the work and emphasizes the importance of the research after giving background information about the study.

1.1. Background of the Study

Pedagogical documentation is a daily practice of gathering samples of children's work, photographs, analyses of the teacher, transcripts of children's conversations, contributions by parents, and explanations regarding the objectives of the activity (Hendrick, 1997; Katz & Chard, 1996; Kocher, 2004; Rinaldi, 1998). The documentation is important because:

It enables reading and interpretation, re-visiting and assessment in time and space. So, this reading, reflecting, assessing and self-assessing become an integral part of the child's knowledge building process.” (Rinaldi, 2006, p. 100)

Pedagogical documentation process is a systematic way of visualization and externalization of children's learning and development. Teachers are systematic and good observers as taking notes from children, taking photographs of children's learning moments, use different assessment tools to have information about children's development and learning. Then they gather all these evidences together through documentation tools. Teachers analyze the evidences and give decisions for what and how a child learnt and what should be taught next. These documentation tools are used to make the learning process visible for children, teachers, and

parents with an evidence-based manner. The visibility creates a dynamic of interaction through sharings among these stakeholders. The kind of sharings becomes reflective experiences with regard to their content and design.

Children find the opportunity of remembering, recalling, and revisiting their previous experiences. They engage in reflective sharings with their peers and teachers. By this way pedagogical documentation creates a learning environment for children to refer to their strengths or difficulties in learning, explain how they learnt something, evaluate the strategies they used during tasks, review their own learning, and make comments on their peers' tasks.

The scarce number of studies conducted on pedagogical documentation found that documentation support children' motivation and participation, self-confidence, self-awareness, mental processes and reflection. (MacDonald, 2007, Buldu, 2010, Bath, 2012; Rintakorpi & Reunoma, 2016). The creators and researchers of pedagogical documentation assert that pedagogical documentation also fosters children's self-regulation and metacognition which is a novel topic and have recently been studied in early years (Rinaldi, 2001; Clark, 2012.)

Self-regulation and metacognition have been promoted by researchers as vital for supporting student learning. They are emphasized as having a "central role in influencing learning and achievement in school and beyond" (Boekaerts & Cascallar, 2006, p. 199). Although supporting children's development is a part of caring for children in their early years, it is also critical for children to be able to plan, monitor, control for, and evaluate their own performances in their activities and strategies (Bronson, 2010; Bodrova & Leong, 2007). The first studies conducted about self-regulatory and metacognitive skills of young children had ignored their potentials for those skills. Then, for many years, researchers thought that children under the age of 8 were not capable of demonstrating metacognition and self-regulation (Veenman & Spaans, 2005; Zimmerman, 1990). This perspective has been revisited for the past 20 years, driven by evidence from the studies of Istomina

(1975), Perry (1998), and Whitebread et al. (2007, 2009). Up to now, common approaches utilized in the studies may not have been useful in setting the true scope of young children's self-regulatory and metacognitive skills (Larkin, 2010; Robson, 2016).

Two traditions in developmental psychology inspired the terms emphasized in this study. The term *metacognition* has emerged from cognitive information-processing tradition by Flavell (1979) and Brown (1987) and *self-regulation* was introduced by Vygotsky (1986). Metacognition was defined by Flavell (1979) as cognition about and regulation of cognition. Metacognition forms the cognitive sides of self-regulation, which also involves affective, motivational, and social elements (Whitebread et al., 2009).

Self-regulative abilities enable “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition” (Pintrich & Zusho, 2002, p. 250). Children with self-regulatory abilities engage in active roles in problem-solving processes. They are observed as individuals who are successful at expressing themselves and have better self-evaluative skills. Metacognitively active children are aware of the cognitive processes during their learning. Metacognitive abilities involve intellectual processes such as setting and evaluating general goals, making decisions on strategies, and activating the strategies (Flavell, 1979).

The literature includes important evidence of the influences of early self-regulatory and metacognitive abilities on developmental outcomes and short-term and long-term academic achievements (Pointz, 2008; Blair & Razza, 2007; Mitchell, Wylie, & Carr, 2008). These abilities contribute to children's readiness for school and support their academic skills. Moreover, self-regulatory and metacognitive abilities foster children's positive feelings toward challenging and difficult situations, emphasize individual progress, and consider mistakes as occasions for learning (Perry, 1998). The importance of self-regulatory and

metacognitive abilities in early years leads to a discussion of the appropriate learning environment to support these abilities.

The development of self-regulation and metacognition is highly dependent on the social and physical environment (Bronson, 2000). Recent research draws parallels between documentation—as an approach providing appropriate learning environment for reflection—and self-regulation—as a dynamic which emphasizes active participation in own's learning process and reflection on one's own thinking (Clark, 2012). The purposes of documentation have strong connections to the strategies deployed by children as they move along self-regulation (Clark, 2012).

The evidence obtained from documentation practices provides a learning environment for student reflection. This process makes thinking visible and releases internal learning processes. As children participate in documentation activities, they put their self-regulatory and metacognitive abilities into practice (Zimmerman, 2000; Clark, 2012). Transparent feedback from the child, other children, and the child's teachers supports self-regulatory abilities (Clark, 2012).

Pedagogical documentation practices touch on children's processes of thinking, reasoning, and learning. Documentation provides an opportunity to consider the learning process as a third eye, to assess in an evidence-based manner, and to reflect on our responses (Ontario Ministry of Education, 2014). Children develop awareness of their own thinking during the documentation process, which potentially stimulates metacognitive skills crucial for ongoing learning and development.

The phases children go through with pedagogical documentation meet the necessary requirements for self-regulatory and metacognitive abilities (Clark, 2012). The first phase of pedagogical documentation includes observing and recording student experiences. Two major aims of this phase are to evaluate a specific learning or skill and to record possible learning moments and thinking ways. (Kline, 2008). The second phase is interpreting learning in service of pedagogy to develop greater

understandings of children's learning with the engagement of children. Children's involvement in this phase leads to greater strides in understanding self and others. Children find opportunities to represent, record, and reflect on their own learning (Seitz, 2008). The third phase includes discussing and sharing through conversations and dialogues about the documented works. Children are encouraged to raise many questions about their agency in learning. Children discover who they are, realize what and how they learn, explore learning opportunities, and design personal pathways for their future learning (Ontario Ministry of Education, 2014).

Documentation tools include an important part of pedagogical practices. They are visual representations of children's learning and provide an environment for promoting self-reflection (Buldu, 2010). These tools deepen, clarify, and strengthen new understandings. Children find opportunities to learn from their peers and to be stimulated by others' work when they share their experiences through documentation tools. Such sharing time provides learning environments that promote revisiting ideas, thoughts, and works; seeking new understandings; and reflecting on children's own ideas. (Buldu, 2010; Kline, 2008). Behavioral outcomes and cognitive products that young children may not create on their own can be created through peer interactions (Chatzipanteli, Grammatikopoulos, & Gregoriadis, 2013). Working in pairs or engaging in discussions with peers promotes metacognitive behaviors (Whitebread, Bingham, Grau, Pino Pasternak, & Sangster, 2007).

Pedagogical documentation processes stimulate documentation of processes and mental paths that children experience during activities, and bonds teachers' and children's reflections together. These mental paths support metacognition as children revisit their learning and become aware of their thinking when they find opportunities to reflect upon their learning through documentation (Rinaldi, 2006; Deibert, 2011). Viewing artifacts and photos and revisiting dialogues enable

children to see their work as a third eye and expand their learning. (Deibert, 2011). The documentation process serves as a tool for remembering experiences and motivating the children to expend on their ideas and plans (Curtis & Carter, 2000; Edwards, Gandini, & Forman, 1998; Rinaldi, 2001). Documentation “lifts thinking out of the stream of lived experience in education and makes it visible” (Wien, 2008, p. 154).

Social interactions children experience through the documentation process promote cognitive development; thus, cooperative learning experiences are recommended for promoting development of metacognitive skills (Kramarski & Mevarech, 2003; Chatzipanteli et al., 2013). Iskala, Vauras, and Lehtinen (2004) have also claimed that metacognition is been fostered when children learn from each other.

Thus, this study aims to bring those two concepts together and explore the role of documentation practices on young children's self-regulatory and metacognitive abilities. Naturalistic observations and interviews conducted with children are planned to search for the self-regulation and metacognition young children demonstrate through documentation practices.

1.2.The Purpose and Research Questions of the Study

The aim of the study is to explore young children's self-regulatory and metacognitive abilities during pedagogical documentation practices.

Research Questions:

- How do reflective activities within documentation practices support young children's self-regulatory and metacognitive abilities?

- To what extent do young children demonstrate self-regulatory and metacognitive abilities through reflective activities within documentation practices?

The design of this study was exploratory; a participant-observational approach to data collection was utilized, which involved “being unusually thorough and reflective in noticing and describing everyday events in the field setting, and in attempting to identify the significance of actions in the events from the various points of view of the actors themselves” (Erickson, 1986, p. 121). Participant observations and interviews were utilized in the study. Eleven children were the participants in the study. Sharing times—through the documentation panels—were videotaped to capture children's self-regulative and metacognitive abilities. Documentation stimulated reflective dialogues conducted with children after these sharing times were audiotaped. Reflective dialogues were also conducted with children's individual portfolios. The data were coded and analyzed by using the Cambridge Independent Learning (C.Ind.Le) framework (Whitebread et al., 2007, 2009).

1.3. Significance of the Study

Much of the research effort into self-regulatory and metacognitive abilities has been conducted with older children and adults. The established orthodoxy within self-regulation and metacognition of young children has been that children develop these skills after age 8. However, recent research has explored the development of self-regulation in early years and challenged this position on both methodological and theoretical grounds. (Bronson, 2000; Rothbart, et al., 2006; Efklides & Misalidi, 2010). Since the understanding of young children's self-regulation and metacognition is largely based on research into these concepts with older students, there are few studies investigating self-regulation and metacognition of young

children. This lack has a potential to lead researchers to underestimate the extent to which self-regulation and metacognition are present in young children's activities.

Young children's abilities to control their emotions, regulate their interactions with others, and control their strategies for problem-solving are indicators of their potential for self-regulatory skills. (Bronson, 2000). Whitebread and his colleagues (2007) argue that metacognitive abilities developed in early years may have been extenuated due to experimental laboratory studies and research conducted with children's self-reports. In contrast, limited research conducted in naturally occurring qualitative studies reveal that children have potential to indicate evidence of self-regulation and metacognition at preschool and kindergarten levels. Recent research has begun to utilize more age-appropriate methodologies and identify self-regulatory and metacognitive abilities in early years. Three-year-old children have monitored their own behaviors while they are solving a problem, and four-year-old children have used metacognitive abilities (Sperling, Walls, & Hill, 2000). When children are provided time to spend on open-ended activities and are allowed making their own decisions among some choices, they can engage in self-regulated learning such as evaluating themselves and others and controlling challenges (Perry & Drummond, 2002). Similarly, Robson (2010) observed children's metacognitive and self-regulatory behaviors when they reflected upon their previous activities and tasks.

It is critical that children develop metacognitive and self-regulatory abilities in the early years for behavioral, social, and intellectual development. The emergence and development of those abilities still need to be investigated, and therefore are subject to new evidence provided for the field (Bronson, 2000; Whitebread, et al., 2009). The field needs more observational studies of children in naturalistic contexts (Whitebread, et al., 2009).

Pedagogical documentation naturally provides learning moments for children to think about their thinking and learning processes. Its philosophical

framework is based on making children remember and reflect on what and how they learned. The physical and psychosocial environment suggested by pedagogical documentation meets the required conditions to support self-regulation and metacognition of children. Thus, this study aims to bring those two closely related concepts together and investigate self-regulation and metacognition through a pedagogical documentation process. Research emphasizes the need for the development of self-regulation and metacognition in early years (Robson, 2010; Bronson, 2000; Bodrova & Leong, 2005). In addition, recent studies have called for research on programs and implementations that will foster the self-regulation and metacognition (Diamond & Lee, 2011; Hughes, 2011; Daily, 2013). Pedagogical documentation, by nature, has a valuable potential to foster these concepts with young children. This study will search for this potential in an exploratory manner and in its natural context.

1.4. Pedagogical Documentation in Turkish Early Childhood Settings

Turkey has a national early childhood education program provided for teachers by the Ministry of National Education (MoNE) renewed in 2013. The program provides goals and objectives for each developmental domain including cognitive, language, social-emotional, psychomotor, and self-care. Teachers are expected to focus on each of the domain specifically and in an integrated way. The program provides age characteristics of each age group and goals and objectives for each developmental domain. Teachers are flexible to integrate objectives and indicators depending on what they intent to teach. Reflecting practices of developmentally appropriate programs, the child is considered within his/her social and cultural context, age characteristics, and individual differences.

The program provides flexibility for teachers to design a learning environment within their own educational philosophy. Pedagogical documentation

is not a usual approach that is used by teachers but the program reflects some of the principles of pedagogical documentation. MoNE Early Childhood Education Program (2013) stresses the importance of process rather than product in studying with young children and recommends teachers to assess the process with the scope of a multi-dimensional manner. The program provides tools for teachers to record their observations about children's development. Teachers are suggested to take descriptive notes such as jottings or anecdotal records during activity time and then record the information on development observation form. Teachers are also provided "Development Report", a comprehensive form involving information from development observation form and teachers' other observations of children's skills, behaviors, and attitudes, to be filled two times in an academic year. Teachers' interpretations and analysis of development observation form and suggestions for parents are included in the development report. By that way, the emphasis on process, systematic observations of learning and development, multiple tools for recording learning and development are the items in the program that indicate parallels with pedagogical documentation implementations.

In terms of documentation tools, panels and individual child portfolios are the two common versions of externalization in Turkish early childhood settings. Teachers prepare panels and display children's products in school walls. The program also suggests teachers to prepare individual portfolios including evidences for children's learning and development. There is an emphasis on portfolio to be used as an assessment tool.

Within this study, the enhancement of teachers' implementations will be on the contents included in their panels and portfolios. The emphasis is given on the visibility of the learning process for children through not only children's products but also their photos, quotations, questions, and teachers' analysis. In addition, teachers will be suggested to use panels and portfolios as a tool for learning and assessment through sharing times. By this way, it is proposed that this kind of

learning environment have a potential to provoke reflection and discussion in early childhood settings.

CHAPTER 2

LITERATURE REVIEW

This chapter summarizes the literature on the topic of the study by giving detailed explanations from previous studies. This review attempts to explain what has been previously studied in the subject field, and to identify the gaps in the literature and areas needing further study.

2.1. Pedagogical Documentation

Pedagogical documentation is derived from Reggio Emilia, an Italian early childhood education model. To understand the philosophy of pedagogical documentation more in depth, it is important to examine Reggio Emilia approach. Reggio Emilia is a region in Northern Italy. Italy is an important country from an educational perspective as it provides funds for education of children between the ages of 3 and 6 (Walsh & Albrecht, 1996). The fundamental understanding of Reggio Emilia is based on seeing children as having rights rather than needs (Malaguzzi, 1993). Malaguzzi (1998) stated, “We wanted to recognize the right of each child to be a protagonist and the need to sustain each child’s spontaneous curiosity at a high level” (p.52). If children have their rights, they will improve their skills and experience healthy development. Malaguzzi (1994) gave emphasize on the importance of listening children. The rights given to children in Reggio Emilia classrooms can be seen from the opportunities provided for them.

Piaget’s and Vygotsky’s works were stressed by Malaguzzi (1998) and their theories have contributed to the Reggio Emilia approach. Children’s active involvement in the learning process and their curiosity are the key tools for a

meaningful learning environment. Piaget (1959) believed that provoking children's curiosity is the best way to engage them in learning. Malaguzzi (1998) indicated that the philosophy of Reggio Emilia is influenced by Piagetian epistemology and he stated that "the richest potentiality of Piagetian thought lies in the domain of epistemology" (p. 81).

Vygotsky's works also have important impacts on Reggio Emilia approach. The operation between thought and language and its role on generating ideas is an essential insight for education (Malaguzzi, 1998). The role of the social context on the construction of knowledge is one of the main ideas of Vygotsky's theory. Social and cultural contexts of children are taken into consideration in Reggio Emilia approach as Vygotsky has focused on. Rinaldi (1993) mentioned about the role of adults and peers in children's life and stated that the emphasis of Reggio Emilia approach is placed in relation to other children, teachers, parents, and other people in the life of children.

Erik Erikson is another theoretician that had contributions on the philosophy of Reggio Emilia approach. With an emphasis on the role of social environment on children, Erikson called for a warm and welcoming environment for children (Erikson, 1950). Malaguzzi (1998) reflected the same emphasis by stating the need of children for caring and respectful adults around themselves. Listening to children, which is one of the fundamental principles of Reggio Emilia, comes from this kind of responsive learning environment.

Influenced by the works of Piaget and Vygotsky, in Reggio Emilia approach, children are viewed as having an innate desire to discover, explore, and learn. They are accepted as active explorers and social constructors which was described by Malaguzzi (1994) as "authors of their own learning" (p.55) . Within the Reggio Emilia approach, the role of the child as explorer takes place in projects (Gandini, 1993; Walsh & Albrecht, 1996; Dodd-Nufrio, 2011). Projects have a fundamental role in Reggio Emilia classrooms for the teaching and learning process. Children,

when engaging in projects, find opportunities to use their innate curiosity and desire to discover, hypothesize, discuss, share, observe, and question when constructing their knowledge. Children also have a social role in Reggio Emilia. Within projects, children engage in small or large groups, brainstorm with others, and collaborate and cooperate with adults and peers (Hewett, 2001; Edwards, 2002).

Teachers and children collaborate while determining the course of learning by using multiple sources of knowledge. Children are able to use a variety of ways to express their thoughts and to demonstrate and interpret knowledge (Gandini, 1993). The school is not a place for transmission of knowledge from teacher to student. Children are producers of knowledge without goals or aims determined by teachers. Teachers demonstrate respect for children's rights and do not control or dominate the children. The teachers provide a variety of sources and tools for children, provide information and assistance, provide opportunities for children to make mistakes, ask questions, and offer suggestions during the process (McCharty, 1995; Edwards, 2002). The teacher also has a role of facilitating children's learning according to their interests and questions (Malaguzzi, 1994). Through observing and listening children, teachers "produce strategies that favor children's work or can be utilized by them" (Malaguzzi, 1993, p.82).

Besides Piaget, Vygotsky and Erikson, Dewey's view of evaluation in education is mirrored by the Reggio Emilia learning environments. The work products of children are not fundamental while evaluating the learning processes. From an Italian perspective, assessment means giving value. Teachers should emphasize how children learn rather than what they learn. The process of learning is the criteria for evaluation in Reggio Emilia classrooms. Portfolio usage is a common characteristic of those schools, which enables teachers to evaluate the whole process of an activity or a task (Dodd-Nufrio, 2011).

Pedagogical documentation is a process-oriented learning and teaching method focusing on interactions between children and teachers. It includes a cycle

of (a) planning what and how to collect data and evidence on children's learning and development, (b) making systematic observations, (c) collecting data and evidence on children's learning and development, (d) analyzing data, (e) sharing with children, teachers, and families, and (f) making decisions to guide future instructional plans (Buldu, 2010; Dahlberg, Moss, & Pence, 2006; Inan, 2012; Kinney & Wharton, 2008; Rinaldi, 2001).

Children, teachers, families, and the society are the four stakeholders involved in the pedagogical documentation process (Carr, 2001). Children share what they learned with their peers, and teachers provide a learning community for them. Teachers effectively listen to children, observe them, and take notes and photographs that reflect the students' learning experiences. Then, teachers prepare documentation tools to share what and how students learned; that sharing will support children's self-esteem and awareness of learning (Edwards & Gandini, 2001).

Teachers take photos of children and their works, take video recordings, and collect children's work samples to document children's development and learning. Documented learning experiences become educational material to be shared with children, teachers, and families. This educational material takes its place in routines of the instructional process and contributes to children's development and learning (Wien, 2013). There are a variety of strategies and sources to collect data that will reflect development and learning processes such as photographs taken when children are working, descriptive notes reflecting learning experiences, video and sound recordings, teacher notes, checklists, rubrics, and children's work samples (Ontario Ministry of Education, 2010). Pedagogical documentation contributes to the learning and development of the child, as it:

- supports interaction between child-child, child-teacher, and teacher-family,
- guides teachers in deciding goals and objectives for learning,
- informs about children's strengths, weaknesses, needs, and interests,

- provides an environment for individualized instruction,
- makes learning and teaching visible for children, teachers, and families,
- informs about the whole development of children,
- provides an interactive environment for teachers and families,
- guides future instructional plans, and
- provides opportunities for assessment of and for learning and assessment (Ontario Ministry of Education, 2010).

2.2. Research on Pedagogical Documentation

Pedagogical documentation is widely used in early childhood education institutions as it contributes to children's learning and development, guides teachers' instructional practices, and increases awareness of families and the society about children's learning and development. There is, however, limited research on documentation and its effects and contributions on learning and teaching processes. (Bath, 2012; Buldu, 2010).

MacDonald (2007) conducted research on the contributions of pedagogical documentation to the stakeholders of the process in Canada in five different classrooms. The findings of this case study indicated that pedagogical documentation increased teachers' awareness on the importance of assessment, supported children's early literacy, and increased families' awareness of their children's learning and developmental needs. Another study examined pedagogical documentation as a formative assessment method and investigated the interactions between children, teachers, and families (Buldu, 2010). The researcher had studied with six preschool teachers, 161 children, and their families. Participant observations, interviews, focus group interviews, and surveys were used to gather data, and the data were analyzed with grounded theory. Similarly, with MacDonald (2007), Buldu (2010) found that pedagogical documentation has a potential for

fostering children's learning and development, provides opportunities for effective interactions between teachers, creates a learning community, and helps families to support their children's learning at home.

With his study, Bath (2012) also noted important contributions of pedagogical documentation and its effects on children, teachers, and families. Bath emphasized that pedagogical documentation supports the interaction between stakeholders in the learning and teaching process and encourages children to learn.

2.3. Documentation Tools

Documentation panels, easels, newsletters, and portfolios are the documentation tools that make learning experiences visible, reflect learning and teaching processes, inform teachers and families about those processes, and provide opportunities for assessment (Helm, Beneke, & Steinheimer, 1998). Each documentation tool serves different purposes and is shared with different stakeholders in the process. Teachers, after observing children and collecting data and evidence on their learning processes, bring what they have collected together, analyze their findings, and prepare a documentation tool regarding the aim of the display. If the aim is making the process visible for the school and families, the teachers prepare documentation panels or wall displays. If they want to inform families about the learning experiences, they prepare newsletters. Portfolios provide both a whole and individual picture of a child during a semester or a year. Easels are a documentation tool which is effective for daily or weekly assessments of the children, to be shared only in the classroom.

2.3.1. Documentation Panel

A documentation panel is a tool supporting interaction between children, teachers, and parents. It makes learning and development of children visible through photographs, quotations, children's outcomes, and teacher analysis. Panels focus on

the student voice and student work in a particular learning moment (Kline, 2008). A documentation panel may focus on any event, situation, or case, in or out of the classroom, that supports children's learning and development. Documentation panels may include projects, themes, specific events or cases, themes from curriculum, acquisition of any skill or ability, learning environments, and developmental areas (Seitz, 2008).

2.3.2. Newsletter

Documentation of any learning experience can be designed as a classroom newsletter. Newsletters have a dual role of giving information about a previous month and some sort of information and announcements that are planned for the coming month. It is helpful to include a page at the beginning of the newsletter that explains aim and content of it (Helm, Beneke, & Steinheimer, 1998). It may include monthly news, samples reflecting child development and learning, suggestions for families to support their children at home, resource suggestions, contemporary news on early childhood education, announcements, teacher contact information, one-page articles written by the teacher, and information about the next month. A newsletter includes both learning experiences that have occurred during the month it aims to reflect and documentation from each child (Seitz, 2008).

2.3.3. Portfolio

Portfolios are prepared for each child representing the child's whole development and learning over time (Helm et al., 1998). Portfolios effectively document children's learning and development; they create an archive of children's learning processes, indicate children's strengths, help teachers to interact with families based on evidence collected for a period of time; and provides a reflection for teachers about their instructional practices (Seitz, 2008). Portfolios may contain descriptive

narratives, anecdotal records, checklists, rating scales, rubrics, frequency counts, participation charts, photographs, audio and video recordings, child work products, and interviews; a variety of documentation should be included in a portfolio to have a comprehensive picture of the child.

2.4. Self-Regulation and Metacognition

The origins of self-regulation and metacognition are characterized by different traditions within developmental psychology. Self-regulation has its origins in the early works of Lev Vygotsky (1986) from a sociocultural tradition. Vygotsky (1978) defined self-regulation as an indicator of higher mental processing, referring to consciously directed thought processes. Self-regulation generally refers to the capability of controlling behaviors, actions, attention, and thoughts. (McClelland & Cameron, 2012). “Children can be described as self-regulated learners to the degree that they are metacognitively, motivationally, and behaviorally engaged in their own learning” (Zimmerman, 1989a, p. 4). Children with self-regulatory skills systematically organize their cognition, feelings, and behaviors regarding their purposes (Schunk & Zimmerman, 1994). The roots of metacognition can be seen in the writings of Piaget (Schneider & Lockl, 2002). However, it was first defined by Flavell (1979) and Brown (1987) in the cognitive information-processing tradition. Later, Hacker (1998) introduced metacognition as a composition of metacognitive knowledge and metacognitive experiences. Flavell (1976) defined metacognition:

Metacognition refers to one’s knowledge concerning one’s own cognitive processes and products or anything related to them, e.g. the learning-relevant properties of information or data. Metacognition refers, among other things, to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective. (Flavell, 1976, p. 232)

Self-regulation and metacognition are complex terminologies to be conceptualized; however, they are recognized as very important for social interactions and academic success (Boekaerts & Cascallar, 2006). Although the perspectives about the relationship of one to the other indicate differences, there has been a growing tendency for these two terms to be considered together. Dinsmore, Alexander, and Loughlin (2008) claimed that aspects of self-regulation and metacognition are integrated under self-regulated learning. In their review paper, Dinsmore, Alexander, and Loughlin (2008) stated that the overlap between self-regulation and metacognition have become entangled in a structure that is very difficult to separate them. Similarly, Kaplan (2008) considered self-regulation, self-regulated learning, and metacognition under the umbrella of self-regulated action and suggested considering the terms together.

2.5. The Importance of Self-Regulation and Metacognition in Early Years

Studies have indicated that self-regulation and metacognition begin much earlier in human life than once thought (Perry, 1998; Whitebread, 1999). Many recent studies have shown that these abilities are associated with children's school readiness and success. Early childhood education programs upgrade their instruction to increase children's academic capabilities; however many children have problems with learning reading, writing, and early math skills. One of the reasons behind this problem is children's lack of self-regulation (Bodrova & Leong, 2005). Even if appropriate materials are used by teachers, many children are not paying attention and have difficulties with following directions. These children also may get into trouble with their peers. Consequently, teachers begin to use their efforts to manage the classroom rather than to teach effectively in such situations (Bodrova & Leong, 2005).

Research has drawn attention to the contributions of self-regulation and metacognition to learning (Veenman & Spaans, 2005; Wang, Haertel, & Walberg, 1990). Flavell (1979) clarified the role of metacognition in the education of young children as "teaching children and adults to make wise and thoughtful life decisions as well as to comprehend and learn better in formal educational settings" (p. 910). Early development of executive functioning and self-regulatory abilities has a crucial role in children's readiness for school and academic abilities (Blair & Diamond, 2008; Blair & Razza, 2007). Children with early emotion regulation abilities more easily followed instructions, focused attention, and cooperated with peers and teachers (Rubin et al., 1999).

2.6. Research on Self-Regulation and Metacognition and Young Children

Robson (2010) explored how young children perceive their tasks and reflect upon those tasks. The aim was to investigate children's metacognitive knowledge and self-regulatory behaviors. The researcher had studied 12 children and combined two different datasets about children's thinking and reflections. The researcher observed children during the activities and conducted interviews about those activities. The results of the study indicated that children displayed extensive evidence of metacognitive and self-regulatory behavior in their activities.

In her later study, Robson (2015) investigated the differences between child- and adult-oriented learning experiences on children's self-regulation and metacognition. The researcher conducted studies with 29 preschoolers by using participant observation techniques. The study concluded that children's self-regulation and metacognition was positively affected by both activities. The results, however, indicated a significant difference in children's expression of self-regulation and metacognition when they were engaged in child-initiated activities rather than adult-initiated activities.

Daily (2013) investigated the emergence of young children's self-regulated learning behaviors and identified practices teachers may utilize to support self-regulated learning. The participants of the study were two preschool teachers in a child care center and the 43 four-year-old children in their classrooms. The researcher had used videotaped recordings of children, teachers, and teacher-child interactions as data for the study. Two classrooms were videotaped during both student-centered and teacher-centered instructional times. Open coding, the Cambridge Independent Learning coding scheme, and the Classroom Assessment and Scoring System were used to analyze data. The results of this exploratory study suggest that preschool-aged children are capable of SRL, though aspects of goal-setting and self-reflection were less evident. In addition, the teachers in this study primarily assisted children with task completion and rarely engaged young children in a way that supported SRL.

The research conducted in Turkey are limited with a few studies. There is only one study examining self-regulation and metacognition in early years through observational methods. Adagideli (2013) studied self-regulation and metacognition with an aim of investigating metacognitive and self-regulatory abilities of young children at the ages of 4 and 5 during mathematics activities. The participants of the study were 16 children from a 4-year-old group and 17 children from a 5-year-old group. The C.Ind.Le Coding Scheme developed by Whitebread et al. (2009) and the Checklist of Independent Learning Development (CHILD) 3–5 developed by Whitebread et al. (2009) were used to analyze data. The findings showed that young children exhibit metacognitive knowledge of persons, tasks, and strategies, as well as metacognitive regulation. Besides, Tanrıbuyurdu and Güler Yıldız (2014) have developed a study to investigate the validity and reliability of Preschool Self-Regulation Assessment in Turkey. They have found the tool as a valid scale for assessing self-regulation of preschoolers. Tutku, Tezel-Şahin and Işıktekiner (2016) have conducted a study with preschoolers by using this scale. They had found that

gender, number of siblings and age affects children's self-regulative abilities. Another important finding that has been emphasized in the study is that the educational background of the mothers did not have any effect on children's self-regulation.

2.7. Self-regulation & Metacognition - Documentation Tools

Pedagogical documentation provides a learning environment in which children reflect on their previous experiences, share what and how they learned with their peers and teachers, and discuss their experiences. Documentation tools and sharing times support children in self-reflection. Children reach higher levels of thinking as they participate in documentation activities:

Documentation contributes to children's own understanding of how they and others learn; it serves as a reminder of what goes on in the classroom, offering students an opportunity for reflection, for evaluation of other children's theories and hypotheses, and for self-assessment. (Project Zero, 2003, p. 17)

Thus, documentation enables children to return to their tasks, performances, and thoughts and pursue them. (Seidel, 2001).

As children participate in documentation activities, they put their self-regulated learning and metacognition into practice (Zimmerman, 2000; Clark, 2012). When children are active participants in the documentation process, they come to learn more about their own thinking. The documentation process has the potential to help children develop and use metacognitive skills crucial for ongoing learning and development. By using the pedagogical documentation, children's thinking processes are supported so that they can "retrace their own processes, to find confirmation or negation, and to self-correct" (Rinaldi, 1998, p. 122).

2.8. Summary

Contemporary research on young children demonstrates children's capacity for self-regulatory and metacognitive abilities; these abilities should be considered as much as other abilities in early childhood education. The reason for the theoretical and practical lack of these abilities is rooted in the gap in the literature. Pedagogical documentation practices provide learning experiences that make learning and thinking visible. This evidence-based approach stimulates children to think on their own and to reflect their learning.

This study aims to bring those two concepts serving for each other together and explores the role of documentation practices on young children's self-regulatory and metacognitive abilities. This exploratory study will examine the development of self-regulation and metacognition in a learning environment practicing pedagogical documentation.

CHAPTER 3

METHOD

The methodology of the research is presented in this chapter. Participants involved in the study, instruments used for gathering data, procedures for data analysis, and validity and reliability of the study are described in the method chapter.

3.1. Research Questions

The aim of this study is to explore young children's self-regulatory and metacognitive abilities during the pedagogical documentation process. The research questions are:

- How do reflective activities within documentation practices support young children's self-regulatory and metacognitive abilities?
- To what extent do young children demonstrate self-regulatory and metacognitive abilities through reflective activities within documentation practices?

3.2. Research Design

This research was designed as a qualitative study to explore young children's self-regulatory and metacognitive abilities during reflective activities within documentation practices. The reason for conducting this study within a qualitative design lies with the characteristics of qualitative research and the characteristics of young children. Qualitative research is a way to explore and understand the meaning

that individuals or groups give to a social or individual problem (Creswell, 2009; Fraenkel & Wallen, 2009). Qualitative design is effective in searching for certain situations that cannot be adequately examined through statistical methods and is used to investigate little-known or unknown phenomena and to develop perceptions or understandings on known issues (Strauss & Corbin, 1990). Qualitative research is strongly recommended when the aim of a study is to explore in-depth information about processes (Denzin & Lincoln, 2011).

The topic to be examined in this study is a little-understood phenomenon that has not been widely researched with young children. Among the types of qualitative research, the type that will be utilized within this study is exploratory research design (Marshall, 1999; Yin, 2014). A qualitative exploratory case research design (Yin, 2014) enables an exploration of how self-regulation and metacognition is linked with pedagogical documentation practices. The examination of the data is conducted within the context that it takes place. The unit of analysis, pedagogical documentation implemented learning environment, can be examined within other cases and the replication of the study can be done by other interested researchers.

On the one hand, self-regulation and metacognition have recently been studied with young children. Traditional views claim that young children are not capable of demonstrating self-regulation and metacognition. However, recent studies argue the potentials of children and their self-regulatory and metacognitive skills, which are of fundamental significance for their general and academic development. Current studies have explored these two phenomena with young children, and have focused on the need for further studies to define the learning environments and activities that will promote self-regulation and metacognition (Daily, 2013; Robson, 2010).

The pedagogical documentation process, on the other hand, is another topic that is not adequately researched in early childhood education. Limited studies have explored documentation, and have indicated the effectiveness of this practice in

children's learning and development (Buldu, 2010; Dahlberg, Moss, & Pence, 2006; Rinaldi, 2001). Learning opportunities provided by documentation practices enable children to remember and reflect on what they have learned, engage in dialogues with their peers and teachers, and think about their thinking processes. Thus, documentation has strong potential for helping children to develop their self-regulation and metacognition. This exploratory study aimed to investigate this potential in a natural context and in-depth manner. Observations and interviews were used to gather data. The data were analyzed with a coding framework developed to measure verbal and nonverbal indicators of self-regulation and metacognition in young children. Eleven children were participants in the study.

I spent twelve weeks in the classroom collecting data through observations of pedagogical documentation activities and interviews conducted with children. The first two weeks were planned to become familiar with the children, classroom context, and program. The data collection period spanned ten weeks. The data were collected as children interacted with the pedagogical documentation activities, either independently or as mediated by the teacher. Specifically, I conducted observations through sharing times with documentation panels and held interviews with each child about their reflections and thinking processes about their learning experiences through documentation panels and individual portfolios.

3.3. Data Collection Methods

Video-Based Observation: When the characteristic of young children are considered, observational data has at least three advantages. First, it provides an opportunity to record what children do in their social processes. Second, children's behaviors and the context of the study are linked. Third, it does not require researchers to depend on the verbal abilities of children, besides the data also record non-verbal behaviors (Winne & Perry, 2000).

Specifically, the recent literature on self-regulation and metacognition have called specifically for observational designs when studying young children. Traditional studies have been criticized for their inappropriate designs, which resulted in the idea that young children are not capable of demonstrating self-regulatory and metacognitive skills before age 8.

Observation was one of the major ways to collect data. Audio recorders, video recorders, and field notes were used to record reflective activities through pedagogical documentation. Seven documentation panel sharing times were observed throughout the academic semester. The themes and contents were decided by the teacher depending on their academic schedule. We were always in dialogue with the teacher. She shared with me her weekly schedule at the beginning of each week, and I visited the classroom when the sharing times occurred.

Observations were conducted in front of the panels. Panels were located in classroom walls, school walls or portable panels. Sharing times were observed based on the location of the panels. Some sharing times were conducted in the school wall outside of the classroom. The teacher determined the appropriate hour for the sharing times of panels on the school wall in order not to interrupt other classroom's activities.

Interview: I held interviews with every child through each documentation panel and their individual portfolios. The interviews were called as documentation stimulated reflective dialogues, as the aim of the interviews was to ask reflective questions about the children's experiences (Robson, 2010). Dahlberg and Asen (1994) explained that: "A reflective dialogue and a reflective practice presupposes material to reflect on, material that is visible for whom it concerns" (p. 167). Reflective dialogues are more commonly used while studying with adults, but also it provides a context for listening to children and functions as a semiotic tool (Vygotsky, 1978) while supporting children's thinking. Reflective dialogues are

also appropriate for young children's competencies, knowledge, and contexts (Schiller & Einarsdottir, 2009).

I used digital recorders to record documentation-stimulated reflective dialogues. I asked questions of:

- "What do you want to tell me about the activities on the panel/portfolio?"
- "Are you pleased with what did you and your friends do?"
- "Which part do you want to share with your parents most?"
- "Is there any task that you would want to make again?"
- "Do you think anything was hard or easy?"

The reasons behind children's answers to these questions were also asked by such as "What forced you here?" "Why do you want to make this activity again?" "Tell me the pleasing thing for you in this activity." I recorded reflective dialogues with audio recorders. The context of the reflective dialogues was critical for the study. Based on my brainstorming with the teacher, I decided to conduct reflective dialogues by myself. There would be some consequences if the teacher conducted the interviews. First and most critically, the time that reflective dialogues take would interrupt the natural routine of the classroom if the teacher was the interviewer; so, as a participant observer, I conducted the reflective dialogues with children. The children and I made reflective dialogues within the documentation panel and portfolio. Each week, when the general sharing times occurred, we decided a future day with the teacher to conduct more reflective dialogues. We conducted reflective dialogues through portfolios once a month. At the end, I had completed three reflective dialogue periods through portfolios and eight reflective dialogues through documentation panels.

Reflective dialogues were conducted in front of the panels. Panels were located in classroom walls, school walls or portable panels. When the panel was located in the classroom, I waited for the time when the children were in another learning environment such as gym or art lab. When the panel was located in the

school wall, I asked for children to share their experiences in the panel and I interviewed with children one by one. The timings of the reflective dialogues were determined by the teacher appropriate for the daily routines.

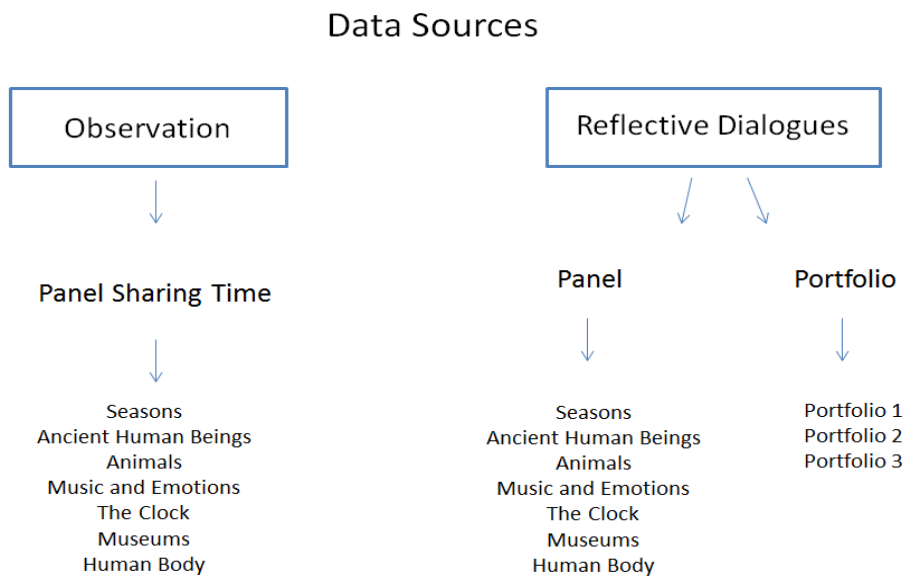


Figure 1. Data sources for the study.

3.4. My Motivation to the Study

The motivation behind studying this topic stems from my years as a kindergarten teacher and from observing children as a research assistant during a project. I had three years of teaching experience, and the second year was the most valuable year for me. While I was working in a private school as a kindergarten teacher, I closely experienced reflective activities with my students. We were applying portfolios and organizing portfolio sharing times with children and their families. During those times, I was really impressed by the children's reflective processes. Children were evaluating themselves and critically reasoning about their previous learning. As a teacher, it was an important teaching experience that I still

hold with me. After I was a research assistant, I participated in a research project on pedagogical documentation and spent two years with 24 teachers. I observed teachers' activities during their pedagogical documentation processes in the first year of the study. Then, in the second year of the project, I gave necessary support for teachers' implementations of documentation panels and children's portfolios. I was closely working with teachers—observing and assisting them with their implementations. During my experiences in this process, I was again impressed by children's self-evaluative moments. Children were revisiting and reflecting on their tasks, assessing themselves and their peers, and critically evaluating their strategies. My literature review after these experiences motivated me to study children's self-regulation and metacognition during documentation practices, and brought me to this point.

3.5. The Role of the Researcher

To attempt to understand and explain what happens when children encounter pedagogical documentation, I took on the role of participant observer. I engaged in the activities appropriate to the situation and observed the activities, people, and physical aspects of the situation. The motivation and willingness of the teacher was very important at this point. She welcomed me during the whole data collection process and was always ready for documentation activities and the recordings of them. I visited the classroom twice a week. When we met, the teacher informed me about the process and the activities they had made. I was an observer during their documentation panel sharing times, and I was the interviewer of documentation-stimulated reflective dialogues.

3.6. Participants

Purposeful sampling methods were used to identify “intensity-rich cases that manifest the phenomenon intensely, but not extremely” (Patton, 2002, p. 243),

primarily criterion sampling. The reason for using criterion sampling is to use cases that are for predetermined criteria (Patton, 2002). The criteria for this research required an early childhood teacher who was familiar with pedagogical documentation practices. The setting for the study was a kindergarten classroom located in a school on a state university campus. The classroom teacher and I worked together during the 2014-2015 school year to explore pedagogical documentation within the TUBITAK Project (113K560). The aim of the project was to investigate the effectiveness of pedagogical documentation as a teaching, learning and assessment method and tool in supporting the learning of young children, teaching of early childhood teachers, involvement and contribution of parents/families in early childhood learning environments in Turkey, from the perspectives of teachers and families. 24 teachers worked with three academicians and 12 research assistants from early childhood education. As a part of data collection process in the project, we also conducted post-interviews with teachers at the end of the implementation phase. The teacher, in this study, was one of the teachers who expressed her motivation to continue implementing pedagogical documentation practices in her classroom after the project.

The teacher selected for this study was one of the teachers in this longitudinal research project. The teacher was involved in in-service teacher training on pedagogical documentation for a year and engaged in seminars, workshops, and in-class trainings on the topic during the 2014-2015 academic year. The teacher had 12 children in the classroom. The reason for studying with one classroom setting was the potential during the study for getting rich data, to make it possible to observe all the children at the same time, and to analyze their verbal and nonverbal indicators of self-regulation and metacognition. I aimed to spend more hours with the same group of children to focus on not only the indicators of self-regulatory and metacognitive abilities, but also the quality of these examples and the degree of their alignment to the framework guiding the study. 11 of the 12 children

were included in the study, with one child excluded due to permission not being received from the child's family.

3.6.1 Background Information of the Children and the Teacher

The age group of children was in the range of 48-60 months. There were eight boys and three girls who were participated in the study. The profile of each child is given in the table below.

Table 1
Profiles of Children

Children	General Profiles
C1	She is a good listener. She keeps quite during the tasks, but she is talkative when she takes the turn. She is well at expressing her feelings and thoughts.
C2	He is talkative and extravert. He always want to take the turn to be active and express his thoughts.
C3	She needs time to communicate. It sometimes takes time while waiting for her to express her thoughts. She is more talkative during group plays.
C4	He is curious, mobile, and talkative. He enjoys spending time with his peers.

C5	She is extraverted and friendly. She is well at expressing her feelings and thoughts.
C6	He enjoys spending time independently. He is a good listener. He keeps silent during tasks, but he is talkative when he takes the turn.
C7	He has problems with articulation. He enjoys spending time with his peers. He was not observed in an independent task or work.
C8	He is curious, friendly, talkative, and extraverted.
C9	He is leading his friends. He sometimes gets difficulty while focusing on something. He uses his gestures.
C10	He sometimes needs help while interacting with his peers. He is an active child in group plays.
C11	He is curious. He is well at expressing his thoughts. He enjoys spending time with his peers. He is a good listener.

The school implements a theme-based philosophy. Teachers, initially, decided on the themes that will be addressed in the classroom and then design their curriculum based on these themes. Developmentally appropriateness is the main idea of the school and the teacher. The teacher designs the teaching process through children's developmental levels and, needs, and interests. The national program of Ministry of National Education was used while determining children's learning outcomes. There was one teacher in the classroom.

The teacher is 34 years old. The teacher has a bachelor degree in child development and a graduate degree in the same field. She has been working in the school for one and a half year. Curriculum is planned from simple to hard, usually in the form of special attention, to what children should learn, what they will love and how to learn. The teacher critically considers age and developmental characteristics are considered. Flexible planning takes place on specific days and weeks. Positive interaction between the children and the teacher were observed during the data collection period. The teacher listens to children's questions, give them feedbacks, and allow them to learn from their mistakes. The K12 system (a technology based assessment and evaluation system) is used to inform families. The school has a family council plan. The organized events are sent to the school and the families are asked to make requests based on the events. The physical learning environment is also suitable for the implementation of pedagogical documentation. There are wallboards and place for the interaction and dialogue among children.

The children were introduced with pedagogical documentation from the beginning of the academic year. The data collection process was utilized in the second semester of the year, so children were familiar with their teacher while taking photos of themselves and taking notes. They were familiar with pedagogical documentation processes. For instance, when the teacher was asking them to take place on the documentation panel, they were ready to tell their experiences. Besides, they knew the role of portfolio that they will share with their families and they were aware of their active role in the portfolio process.

3.7. Data Collection Procedures

Observations and interviews were the two major data sources for the study. Videotaped episodes of children's pedagogical documentation activities, gathered through observations, and audiotaped interviews between individual children and the researcher about the videotaped documentation activities were the two types of

data collected for the study. Videotaped episodes were used to obtain contextualized evidence of what children do (Perry & Winne, 2006). Audiotaped interviews were referred to as *reflective dialogues* (Robson, 2010), and provided the opportunity to study with individual children (Perry et al., 2002)

Children's experiences with pedagogical documentation were videotaped for the study. The major data sources were sharing times with documentation panels and portfolios. I observed and videotaped sharing times using those tools. In this way, children's reflections and thinking processes about their own learning were recorded. The next step was the documentation-stimulated reflective dialogues that were to be conducted with each child. Reflective dialogues between children and the researcher about these sharings and documentation activities were audio recorded throughout this process.

Table 2

Sequence of Data Collection Process

Weeks	Collected Data	Time Spent
Week 1	Panel Sharing Time – Animals Reflective Dialogues	24 Minutes 35 Minutes
Week 2	Panel Sharing Time – Seasons Reflective Dialogues	20 Minutes 28 Minutes
Week 3	Panel Sharing Time – Museum Reflective Dialogues	15 Minutes 30 Minutes
Week 4	Portfolio Reflective Dialogues	43 Minutes
Week 5	Panel Sharing Time – Ancient Human Beings Reflective Dialogues	24 Minutes 28 Minutes

Week 6	Panel Sharing Time – Music and Emotions	27 Minutes
	Reflective Dialogues	31 Minutes
Week 7	Portfolio Reflective Dialogues	32 Minutes
Week 8	Panel Sharing Time – Human Body	13 Minutes
	Reflective Dialogues	25 Minutes
Week 9	Panel Sharing Time – The Clock	16 Minutes
	Reflective Dialogues	24 Minutes
Week 10	Portfolio Reflective Dialogues	20 Minutes

3.8. Data Analysis

Data was analyzed using the C.Ind.Le framework constructed for research purposes, identifying verbal and nonverbal indicators of metacognition and self-regulation of young children (Whitebread et al., 2007, 2009) (Appendix A).

The coding framework comprised a blend of a priori categories of behavior deriving from previous research literature and new categories emerging from a grounded analysis of the data. The a priori categories were derived from an analytical model of cognitive self-regulation, developed originally by one of the present authors within a related study. This attempted to incorporate significant aspects of metacognition and self-regulation which appear to have an impact on the emergence of metacognitive and self-regulated learning within young children. (Whitebread et al., 2009, p. 72)

The observation framework included a detailed description of verbal and nonverbal behaviors within three main areas of self-regulation and metacognition. *Metacognitive knowledge*—being aware of the knowledge—is the first area; it

encompasses metacognitive knowledge about persons, tasks, and strategies. The second main area is *metacognitive regulation*, and is related to the cognitive processes children go through during their tasks. The third area, *emotional and motivational regulation*, is defined as monitoring and controlling emotions and motivation during a task. (Whitebread et al., 2009).

The reason behind using a pre-determined coding framework lies under the limited number of studies conducted in early years. It is difficult to understand children's self-regulation and metacognition by examining the scarce number of studies. In order not to misinform the readers of this study, a deductive approach was utilized by using a reliable qualitative coding scheme.

Children's self-regulatory and metacognitive abilities were observed during documentation panel and portfolio sharing times and then analyzed by using this coding framework. The calculated level of interrater agreement on the scheme was reported as 96.1% by Whitebread et al. (2009).

I transcribed the data by watching the video episodes and listening to the recordings of children. Initially, I transcribed the audio recordings and then checked them by watching the video recordings. At the same time, while watching the videos, I took notes about children's nonverbal behaviors during the activities, added my field notes where necessary, and took notes on transcriptions. After the transcriptions, I coded each recording on the transcriptions based on the coding scheme and then placed the codes on it. Then, I recoded the data again to check the consistency among my codes. At the same time, I consulted Professor David Whitebread, the founder of the coding scheme, when I became confused about some verbalizations by the children. He was very helpful, and his responses were very valuable for my study. When all the coding was done, an expert debriefing process was used to ensure credibility of the study (Denzin & Lincoln, 2005).

Table 3

Sequence of Data Analysis Process

Step	Operation
1. Step	Transcriptions of Audio recordings (Two Months)
2. Step	Watching Video Recordings (Three weeks)
3. Step	Coding with transcriptions (Two Months)
4. Step	Placing the codes on the coding scheme (Two Weeks)
5. Step	Recoding – Crosscheck (One Month)
6. Step	Expert Debriefing

Metacognitive knowledge

CATEGORY NAME	DESCRIPTION OF BEHAVIOR	EXAMPLES
Knowledge of persons A verbalization demonstrating the explicit expression of one's knowledge in relation to cognition or people as cognitive processors. It might include knowledge about cognition in relation to: - <i>Self</i> : Refers to own capabilities, strengths and weaknesses, or academic/task preferences; comparative judgments about own abilities - <i>Others</i> : Refers to others' processes of thinking or feeling toward cognitive tasks - <i>Universals</i> : Refers to universals of people's cognition	▪ Refers to his/her own strengths or difficulties in learning and academic working skills ▪ Refers to others' strengths or difficulties in learning and academic working skills ▪ Talks about general ideas about learning	▪ <i>I can write my name</i> ▪ <i>I can count backwards</i> ▪ <i>I don't know how to sing the song</i>
Knowledge of tasks A verbalization demonstrating the explicit expression of one's own long-term memory knowledge in relation to elements of the task.	▪ Compares across tasks identifying similarities and differences ▪ Makes a judgment about the level of difficulty of cognitive tasks or rates the tasks on the basis of pre-established criteria or previous knowledge	▪ <i>They need to put their boots on. And when they put their boots on, they dig a hole</i>
Knowledge of strategies A verbalization demonstrating the explicit expression of one's own knowledge in relation to strategies used or performing a cognitive task, where a strategy is a cognitive or behavioral activity that is employed so as to enhance performance or achieve a goal.	▪ Defines, explains or teaches others how she/he has done or learned something ▪ Explains procedures involved in a particular task ▪ Evaluates the effectiveness of one or more strategies in relation to the context or the cognitive task.	▪ <i>We don't need to use the sticky tape, we can use the glue</i> ▪ <i>You have to point it up this end so that it is going to grow</i>

Metacognitive regulation

CATEGORY NAME	DESCRIPTION OF BEHAVIOR	EXAMPLES
Planning Any verbalization or behavior related to the selection of procedures necessary for performing the task, individually or with others	- Sets or clarifies task demands and expectations - Sets goals and targets - Allocates individual roles and negotiates responsibilities - Decides on ways of proceeding with the task - Seeks and collects necessary resources	<i>I'm going to make a big circle</i> <i>I know... me and Harry could be the knights and you could be the peasant</i> - Child compares two objects before deciding which to use on task
Monitoring Any verbalization or behavior related to the ongoing on-task assessment of the quality of task performance (of self or others) and the degree to which performance is progressing towards a desired goal	- Self- commentates - Reviews progress on task (keeping track of procedures currently being undertaken and those that have been done so far) - Rates effort on-task or rates actual performance - Rates or makes comments on currently memory retrieval - Checks behaviors or performance, including detection of errors - Self-corrects - Checks and/or corrects performance of peer	<i>I think we've got one left</i> <i>This bit doesn't fit anywhere</i> <i>Hang on, we've got it a bit wrong here</i> - Child stops mid-way through an action (placing puzzle piece), pauses and re-directs action to place it somewhere else
Control Any verbalization or behavior related to a change in the way a task had been conducted, as a result of cognitive monitoring	- Changes strategies as a result of previous monitoring - Suggests and uses strategies in order to solve the task more effectively - Applies a previously learnt strategy to a new situation - Repeats a strategy in order to check the accuracy of the outcome - Seeks help - Uses nonverbal gesture as a strategy to support own cognitive activity - Copies from or imitates a model - Helps or guides another child using gesture	<i>Let's have a practice</i> <i>Can you help me do it?</i> - Child points to spots on a die as he counts - Child looks at a physical model (example: word on whiteboard) repeatedly while completing a task - Child points at computer screen or interactive whiteboard to indicate where another child should click the mouse
Evaluation Any verbalization (REFL-V)	Reviews own learning or explains the task	<i>He's done really well</i> <i>We learnt how to cut,</i>

or behavior (REFL-NV) related to reviewing task performance and evaluating the quality of performance.	▪ Evaluates the strategies used ▪ Rates the quality of performance ▪ Observes or comments on task progress ▪ Tests the outcome or effectiveness of a strategy in achieving a goal	<i>and how to stick things together</i> ▪ Child rotates scissors in hands while opening and closing them before initiating cutting activity
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Emotional and motivational regulation

CATEGORY NAME	DESCRIPTION OF BEHAVIOR	EXAMPLES
Emotional/ motivational monitoring Any verbalization or behavior related to the assessment of the current emotional and motivational experiences regarding the task	The child: ▪ Express awareness of positive or negative emotional experience of a task ▪ Monitors own emotional reactions while being on a task	▪ That wasn't very nice ▪ It's a bit sad ▪ I don't want to be a peasant
Emotional/ motivational control Any verbalization or behavior related to the regulation of one's emotional and motivational experiences while on task	The child: ▪ Controls attention and resists distraction or returns to task after momentary distraction ▪ Self-encourages or encourages others ▪ Persists in the face of difficulty or remains in task without help	▪ Mine is going to be a lovely one ▪ Child looks towards activity of others in the classroom, then re-focuses on task at hand and resumes activity

Figure 2. C.Ind.Le. Coding Scheme: Verbal and Non-verbal Indicators of Metacognition and Self-regulation in 3-5-Year-Olds (Whitebread et al., 2007, 2009)

3.9. Trustworthiness and Transferability

Lincoln and Guba (1986) proposed that quality demands different criteria in qualitative inquiry. They suggested “credibility as an analog to internal validity, transferability as an analog to external validity, dependability as an analog to reliability, and conformability as an analog to objectivity” (p.). I used pilot study, expert debriefing, intercoder agreement, and thick and low-inference descriptions to ensure validity and reliability within the study.

Pilot Study: A pilot study was conducted to gain insight about the data collection procedure. The aim of the pilot study was to assess the feasibility of the research process within its social context (Perry, 2001), to gain a clear conceptualization of the focus of the topic (Denzin & Lincoln, 1998), and to ensure that the planned methods would work in practice (Kim, 2010). It served as an exercise to novice the researcher while assessing the observation and interview techniques (Kim, 2010). In this sense, it was used to enhance the credibility of the study.

Children were observed during a sharing time on documentation panels and were interviewed after the sharing time. Seven children were participated in piloting. The lesson learned in carrying out the pilot study concerned implementation of reflective dialogues. Before the piloting was done, I had planned to conduct the reflective dialogues in the natural context of children—that is, in their classroom. I realized, however, that it was sometimes difficult for children to pay attention to the panel while their peers were doing something else with each other. So, I decided to conduct reflective dialogues outside the classroom. I shared this issue with the teacher and she told me that she would arrange a silent and appropriate place for reflective dialogues.

Expert Debriefing: An expert debriefing process was utilized to ensure the credibility of the data. The founder of the coding scheme, David Whitebread, was

consulted when it was needed. When I had difficulty with categorizing cases, I mailed them to Professor Whitebread, and his responses enhanced the trustworthiness of the findings. In addition, an expert from early childhood education who specializes in the phenomena of pedagogical documentation, self-regulation, and metacognition checked the coding of the study. I eliminated the codes which experts did not want me to code as I did.

Recoding: The agreement among the multiple coders of a study is defined as an *intercoder agreement* (Creswell, 2007). Two coders analyzed the data of this study. The first coder was the researcher, and the second coder was a research assistant having experience with cognitive sciences. The researcher informed the recoder about the study and its design. Then, the coding scheme and the transcripts were given to the recoder. The researcher and the recoder analyzed the data based on the coding scheme. When they finished, they came together and controlled each other's codings. The researcher and the recoder discussed the differences between their analyses, and the process was completed after agreeing on all codes with an agreement rate of 91%. In the cases where the researcher and the recoder could not agree, the codings were eliminated from the analysis and were not included in the findings of the study.

Thick and Low-Inference Descriptors: Presenting thick descriptions is a way to enhance credibility in qualitative studies (Merriam, 1998). Rich, detailed, and concrete descriptions were used to allow readers understand the context and draw out meanings and understandings (Patton, 2002). Children's quotations were included in the study to provide examples, and the contexts of the social environment were given in detail. Children's nonverbal behaviors were also added where necessary. Besides, low-inference descriptors were called by Seale (1999) and Silverman and Marvasti (2008) for the reliability of the studies. Low-inference

descriptors were given in this study which involve “recording observations in terms that are as concrete as possible, including verbatim accounts of what people say... rather than researchers’ reconstructions of the general sense of what a person said” (Seale, 1999, p. 148). Low-inference descriptors were also given to provide the reader long data extracts that include, for example, continuers (e.g., mm, hmm), which encourage a respondent to enlarge a comment (Silverman & Marvasti, 2008).

3.9. Ethical Considerations:

Conducting research with young children may lead to some ethical issues. Therefore, necessary permissions were obtained from parents of the children, and they were informed about the process and details of the study and that confidentiality was ensured. Initially, the parents were sent a consent form. Telephone calls were conducted when some parents needed additional information related to the data collection and analysis procedure. A voluntary participation form was also received from the teacher.

The approval from Middle East Technical University Ethics Committee (29.02.2016 – 2016-EGT- 028) was taken for the implementation of the research procedure.

CHAPTER 4

FINDINGS

This chapter mainly presents the results of the data analysis made after observations and interviews. Detail analysis of coding and categorization are given and quotations are included in this chapter to strengthen the results of the study.

The aim of the study was to explore young children's self-regulatory and metacognitive abilities during the pedagogical documentation practices. Since little research has been conducted on self-regulation and metacognition in early childhood period, and pedagogical documentation, the design of this study was exploratory in nature.

Research Questions:

- How do reflective activities within documentation practices support young children's self-regulatory and metacognitive abilities?
- To what extent do young children demonstrate self-regulatory and metacognitive abilities through reflective activities within documentation practices?

Over the course of twelve weeks of data collection observation of seven sharing times with documentation panels, seven reflective dialogues with documentation panels, and three reflective dialogues with individual children's portfolios were conducted in a kindergarten classroom. Reflective dialogues through documentation panels were conducted with each child parallel to the observation of sharing times.

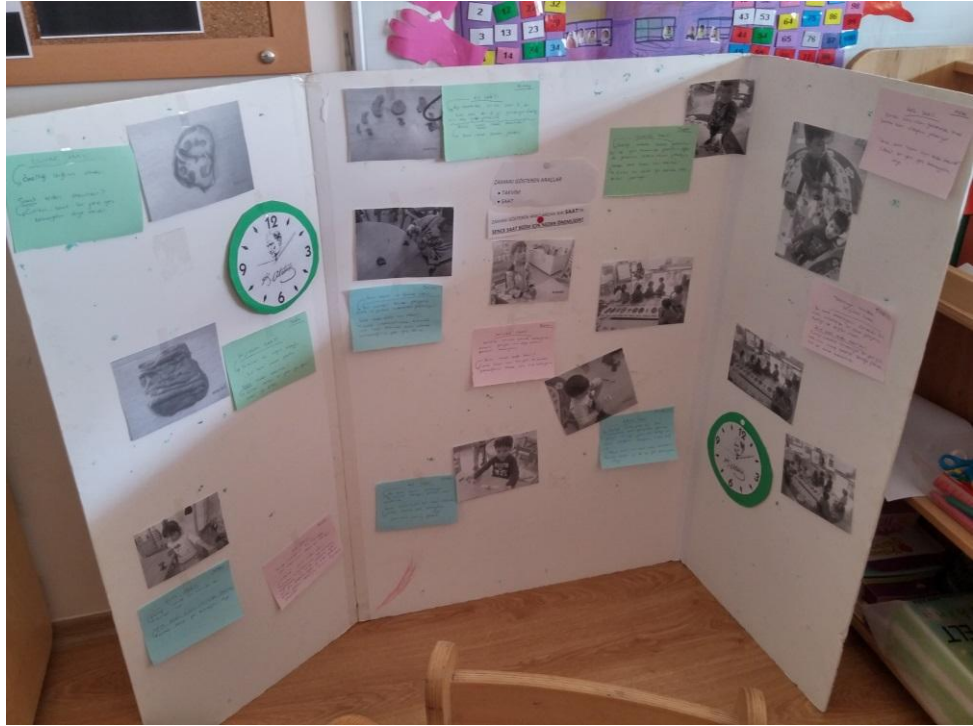
Reflective dialogues through portfolios were conducted once a month with each child. Sharing times through documentation panels were videotaped, documentation stimulated – panel and portfolio - reflective dialogues were audiotaped.

The data were analyzed by Cambridge Independent Learning Coding Scheme (C.Ind.Le Coding Scheme) developed by Whitebread and his colleagues (2009) to assess verbal and nonverbal indicators of self-regulation and metacognition in 3-5 years old.

While revealing the findings, word-for-word translation was adopted. In other words, the language mistakes made in Turkish by children were kept while translating the sentences into English. The children were coded as C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, and C11. Panel sharing times were done by the teacher and reflective dialogues were conducted by the researcher. The quotations given in the findings include dialogues from both sharing times and reflective dialogues. So the readers may see the interviewee as teacher or researcher.

4.1. Documentation Panel

Seven sharing times with seven documentation panels were observed within the study. The sharing times lasted between 15 minutes to 40 minutes. After every sharing time, children were interviewed and reflective dialogues were conducted. These dialogues lasted between two minutes to seven minutes. The frequency tables of documentation panel sharing times and children's reflective dialogues were provided in *Table 4* and *Table 5*. The pictures of the documentation panels are given below:



Panel on The Clock



Panel on Human Body



Panel on Animals



Panel on Ancient Human Beings

Table 4

Frequency of C.Ind.Le Indicators – Documentation Panel Sharing Times

Category Name and Behavior Indicator	n
Metacognitive Knowledge	
Knowledge of persons	16
Knowledge of tasks	3
Knowledge of strategies	11
Metacognitive Regulation	
Planning	11
Monitoring	57
Control	31
Evaluation	10
Emotional/Motivational Regulation	
Emotional/Motivational monitoring	25
Emotional/Motivational control	5

Table 5

Frequency of C.Ind.Le Indicators – Documentation Panel Reflective Dialogues

Category Name and Behavior Indicator	n
Metacognitive Knowledge	
Knowledge of persons	30
Knowledge of tasks	13
Knowledge of strategies	19
Metacognitive Regulation	
Planning	15
Monitoring	16
Control	6
Evaluation	32
Emotional/Motivational Regulation	
Emotional/Motivational monitoring	25
Emotional/Motivational control	1

4.1.1. Metacognitive Knowledge

Sharing times with documentation panels and reflective dialogues are found to support children's metacognitive knowledge with regard to fostering children to recognize their and others' abilities and cognition. Children's verbal and nonverbal behaviors related to their knowledge of persons, knowledge of tasks, and knowledge

of strategies are included under this category. Children were observed to demonstrate indicators of metacognitive knowledge in all sub-categories. Through the observations of sharing times with documentation panels and reflective dialogues, children described what they know and expressed their awareness of the strategies and tasks they had brought to the activities. It is observed that children had an understanding of what they and others know or not know, cognitive tasks, and approaches for the orientation of learning.

4.1.1.1. Knowledge of persons

Reviewing learning activities in a visible context fostered children's knowledge of persons, in terms of self, others, and universals. The context, that is open to children's questions, interpretations, and comments enabled children to refer to their strengths and weaknesses, recognize their capabilities and preferences. It is observed that seeing their activity sample or photograph on the panel supported children to talk about "self". Moreover, seeing others' samples and photographs also enabled them to comment on others' processes of thinking and refer to universals of people's cognition.

There are statements of children that verbalize the demonstration of their strengths or difficulties in learning and academic skills. Children's verbalizations of their knowledge of persons were generally observed during sharing times within the classroom.

An excerpt from the sharing time through documentation panel activity on human body illustrates examples for verbalization for knowledge of persons. The picture of a person sneezing on the panel provided a discussion on why humans are sneezing and what happens while sneezing. Children recalled and reflected on their previous learning and engaged in the discussion and demonstrated their metacognitive knowledge of universals:

C5: Teacher, we also close our eyes when we sneeze.

Teacher: Yes. Very good.

C11: Why do we close our eyes?

Teacher: When spicy things like black pepper go into our nose, or things like a feather, our eyes close reflexively at that point, don't they?

C6: If you take salt in your mouth and scatter it around, you sneeze.

Teacher: Yes, that might be a reason, too.

C11: No, then harmful dust will go in our nose.

C4: I know why our eyes close when we sneeze.

Teacher: Tell us, then.

C4: So that the sneeze won't get into our eyes.

In another excerpt, C11 and C5 reflected on their knowledge, as they looked at the documentation panel on museums. While C2 was reflecting on an activity referring to pictures and children's products on documentation panel, C11 recognized that he did not engage in the activity and asked aloud why he did not. C5 also displayed her knowledge of others by commenting that he was absent on the day when the activity was done:

C2: We drew some museums here. We painted the museums to which we went. We played the newspaper game. We designed museums for ourselves. We drew these.

C11: Why couldn't I play this game?

C5: Because you were gone. (Because you were not in class while we were playing newspaper game)

C11, during the sharing time in front of the documentation panel on museums, commented on universals of people's cognition.

Teacher: Why do we visit museums, I wonder?

C11: Because what do they have there, we look around see only what do they have there, it's like, we get excited to go. If we want to see things like dinosaur, insect, old car and animals.

C11: We get excited when we look at them and see what they are, that's why we want to visit a museum.

During sharing times and reflective dialogues children seemed keen to display personal knowledge and used mental state vocabulary about themselves comments such as: "I don't remember the reason" (C1) "I don't remember which music this is" (C5) ". "I can't understand what exhibit means" "I wasn't here that day" (C11)". Moreover, children also demonstrated their knowledge of preferences and things that they enjoy or like. For example, C8, during sharing time with documentation panel on music and emotions, expressed his knowledge of self: "I did this, because I like this kind of music, o yeeahh rock music.."

Documentation panels include artifacts from every child and it is observed that children demonstrated not only knowledge of self, but also knowledge of their peers. They were aware of their peers' artifacts and activity samples. For example when the teacher asked about C7's artifact C10 pointed to his sample and said that "That is C7's". In another example, C3 was expressing her reflections about an activity sample on the documentation panel. C2 cut in and displayed his knowledge of others: "This is C9's". Children were also observed demonstrating knowledge of others during sharing times. For example, while the class were discussing about why people were using clocks, C8 stated his mother's situation in their house:

Teacher: Why do we use clocks?

C8: To understand the time. But my mum does not understand the time.

Teacher: Why?

C8: My mum gets tired. [When she tries to catch her dates]

Reflective dialogues also afforded children the opportunity to consciously display and reflect their metacognitive knowledge. For example, C6 was ready to reflect on the activities on the documentation panel about animals and he commented that “I started from this because I don’t know any of these.” Similarly, while talking about tasks on museum panel C11 stated that “I don’t know what that is. But that spiky dinosaur, I know that. Poisonous, the most poisonous.” C9’s verbalization during his reflective dialogue through documentation panel on seasons also is an example for children’s knowledge of self: “These activities are all valuable for me”.

In another reflective dialogue, C4 was commenting on his “first human being” in front of the documentation panel on ancient human beings and he demonstrated the explicit expression of his capabilities: “When it is like this, but I can move ahead easily without falling”. Similarly, while talking about tasks on museum panel C6 expressed his knowledge of his preferences and capabilities “Because now I can very good draw the dinosaur.”

4.1.1.2. Knowledge of tasks

Among the three sub-categories, knowledge of tasks was the one that was the least observed during sharing times and reflective dialogues. Children demonstrated knowledge of tasks by making comparisons across tasks regarding with their similar and different points and making a judgment about the level of difficulty tasks or rating the task based on their previous knowledge. Documentation panels enabled children to see their products and their peers’ products at the same time which

provided children to come up with conclusions on similarities and differences. For example, during a share time on animals C5 compared the tasks and expressed that “Actually C1 and I did the same thing.”. C2’s example is also an indicator for his knowledge of task in terms of differences. C2, during the sharing time with the documentation panel on clocks, told that he wanted to construct a moon clock due to its difference: “I made a moon clock, because it is different from others.”

Similarly, children displayed their knowledge of tasks during reflective dialogues by making comparisons among tasks. The excerpts from C6 and C9 are presented as examples from the reflective dialogues through documentation panel on museums:

C6 : I painted three glasses here. Everybody painted one. And also I did the most different dinosaur. Rainbow dinosaur.

Researcher: You selected C11’s. Why does it interest you?

C9: Because C11’s also has dinosaurs, that’s why.

Researcher: Hmm. It caught your eye because it is with dinosaurs, too.

C9: This is also with dinosaurs. This one, too. I like all the dinosaurs.

Children defined where they got difficulty during the process and explained the reasons behind this difficulty. Especially, during reflective dialogues, children expressed knowledge about the level of difficulty of tasks. At the same time, they talked about the elements which were simple or difficult to do for them. For example, while C9 was expressing his reflections on one of the samples of him he stated the level of difficulty as : “Very easy. It was a baby’s play (meaning a piece of cake)”.

4.1.1.3. Knowledge of strategies

Providing children the opportunity of explaining what and how they learnt through documentation panels, supported children to think aloud and reflect on the procedures and elements of the tasks that took place on panels. They told how they did the activity by explaining the materials and ways they used. Documentation panels included not only the products and sample of children, but also photographs of learning moments and interactions between children, the steps of the learning process including how the activity started and how it ended. By this way, children remembered and recalled the procedures during their learning experiences. Children identified the strategies they applied during tasks. Some of them also explained the justifications behind their strategies. Children also explained procedures involved in the activity.

In sharing times and reflective dialogues there were a number of occasions when the children's expressions revealed strategic ideas. For example in one of his reflective dialogues, C4, referring to his drawing on the documentation panel, explained that he had used lines to sort animals out: "Because in order to tell the animals, I drew the lines.". Similarly, C2, during a reflective dialogue in front of the panel on ancient human beings, explained why and how they used the materials they had selected during the task. He had constructed a man with play dough and he told which materials he used to make the man stand upright: "And here is my human, these are its bones, if not for the bones, this couldn't stand upright. We glued the string on its back, stuck it in the dough like this and put it so it remained standing." C1 had used cotton in one of the activities displayed on the documentation panel on museums and she explained that the nidus should be soft so she had used cotton: "Here I did an insect nest. Our teacher glued it with silicone. I wanted to put some cotton in it because ummm the animals' nest is soft and it is hairy." C8 commented on a sticker on the panel and defined the justification for the usage of it as: "We stuck this so that they could understand we were doing a museum."

Children found opportunity to define or explain how they done or learned something. Some of the examples from reflective dialogues are as follows:

C3: Here we listened to music. We drew which emotion we felt here, on the front and at the back. Here again we listened to music but what color suits this, we painted it with the color that best suits it. (Music and Emotions)

C1: Here I decorated it using these. I wanted this to be seen here because I was to put some cotton. And here I made a snail. I wanted to do the body with this. And this is a ladybug. (Museum)

C6: I used the sticky while gluing it. (The clock)

C11: [I used] Paper, paint, dough and something like a string. (Ancient Human Beings)

C5: And here I matched it according to the weather. There is also one at the back. I drew my favorite season at the back. (Seasons)

The examples below, on the other hand, are the indicators for children's knowledge of strategies quoted from sharing times on museum and music-emotions. They explained how they done the activities:

C9: For example there are dinosaurs here, cars, animals, insects. These are all being a museum. That's why we had a museums week. (Museum)

C1: In those three paintings we cut from these papers and glued them here. (Museum)

C4: In yellow I felt a little bit arabesque. As I love Vivaldi so much I felt blue my favorite color came along with my favorite song. (Music and Emotions)

C5: I painted purple at Rock music. Because, there is generally a purple color in spotlights or disco ball in rock music. (Music and Emotions)

4.1.2. Metacognitive Regulation

Documentation stimulated reflective activities observed to prompt children to talk about their previous experiences within a visible context. The educational discussions among children enabled them to follow what is going on, monitor their peers and make corrections when they need. The content and process displayed on the panels also prompted children to review their learning. As children saw their artifacts and others' artifacts, saw the photographs taken while they were working on, they revisited what they learnt and criticized the processes. By this way, it is found that sharing times with documentation panels and reflective dialogues though these panels support children's metacognitive regulation.

Children's verbal and nonverbal behaviors related to their planning approaches to tasks, monitoring abilities during learning, controlling abilities, and evaluation abilities of outcomes are included under this category. Among the three categories of self-regulation and metacognition –metacognitive knowledge, metacognitive regulation, emotional/motivational regulation, more indicators were observed and coded under this category. Children were observed revising and evaluating the effectiveness of their strategies, analyzing the outcomes of their strategies, checking their and others' performances, organizing their thoughts during sharing times with documentation panels and reflective dialogues.

4.1.2.1. Planning

Documentation panels encouraged children to talk about their previous experiences and when they were asked to talk about what the panel is about they targeted to share their activities or photographs. At the beginning of the sharing times the teacher asked children to think about what to share regarding to the activities on documentation panel and children planned the processes or activities to be shared by others. There are examples of children setting goals by selecting what to share during sharing times:

C11: An activity of stone [saying what he would tell about] (Ancient Human Beings)

C10: I will tell from this and this (pointing) colors. (Music and Emotions)

C4: I will talk about two things. (Human Body)

The transcripts include indicators for children's decisions on ways of proceeding with the task. For example, in the sharing time of documentation panel about animals, C2 took the turn and told about the activities on the panel. C2 had not participated in one set of activities – creating own animal -because of his absence and decided to share what the animal in his imagination: “as I was not here myself I should tell about the animal in my dream. (thinking) shark crab...” In a reflective dialogue, C1 was getting ready for sharing her experiences during activities on ancient human beings displayed on panel and decided to begin with giving examples: “C1: I will give you an example from this, from mine.”

Children also observed to seek and collect necessary resources during sharing times and reflective dialogues. During the reflective dialogue with C6 in front of the panel on seasons, he planned to find his activity sample and observed to seek for it:

“Let’s look at their back. Because we painted at the back in some of them.” In one of the reflective dialogues, C5 could not find her activity product on the panel and decided not to talk about it without the resource: “I cannot tell you about it because I don’t have a photo. I was taken one but it is out, it is not here.”

Similarly, during a reflective dialogue with C4 in front of the panel on music and emotions, he, initially, wanted to find his sample and then shared his reflections and experiences:

Researcher: C4 I can see something very colorful here.

C4: Our teacher played some songs, and we showed which color we felt on these papers.

Researcher: Hmm, which colors did you feel?

C4: Let me find its name first...

As another example to planning, C5 set a goal for herself for the next week and shared this with the class and the teacher during the sharing time with panel on museums: “Teacher, I will say something about DNA next Monday.”

4.1.2.2. Monitoring

Monitoring is defined as any verbal or nonverbal behaviors related to the ongoing task assessment. Descriptions of the behaviors include self-comments, reviewing progress on task, checking owns or peers’ behaviors, detecting errors, and checking others’ performances. Children were mostly observed monitoring during sharing times in classroom with the whole class. The indicators for monitoring were observed less during reflective dialogues.

Examples of monitoring generally included children verbally checking their peers’ progress on the task. Children commented on the performance of their peers

based particularly on the detection of errors. Children also self-corrected based on these comments.

For example, in sharing time with documentation panel on ancient human beings, as a result of monitoring C2 corrected his teacher as:

Teacher: Nice... So you talked about nice things they ate, right?

C2: The thing they did.

Teacher: Oh, yes. For example you said he ate a tree, grass and he killed an animal and ate it. What part of it does this picture tell us? Does it tell us about his studies on art, his inventions, his nourishment or his houses?

C2: Nourishment

Sharing times afforded children the opportunity to interact with each other, check each other's performance and make self-corrections. In the same sharing time, the dialogue between C8, C4 and C2 indicates clear examples for monitoring. C4 could not find the correct word. C2 helped him and C4 used self-correction based on C2's correction:

Teacher: Yes! It has such similarities. Then shall we talk about similarities?
Who wants to tell us? C4?

C8: But it was not that different.

C4: While the knives were like this, their edges were round in the shape of a rectangle it became pointed like this. While those digging things were like this...

C2: A tractor

C4: Tractors took the place of diggers. In the past the paintings were done on the caves not they are done on the painting.

An excerpt from the transcript of documentation panel activity on animals illustrates examples for monitoring. C5, C8, and C2 made comments on each other about crabs:

Teacher: So what was the animal that interested you most, that affected you the most while painting it?

C5: Crab

Teacher: Tell us a bit about what kind of animal a crab is, then.

C5: Crab lives like in the water.

C8: But it can bite us, especially crab.

C5: It can also pinch

Teacher: It has pincers, doesn't it?

C5: They are on the seaside. And also (thinking) it hurts a lot if it pinches.

C8: I guess it makes a wound

C2: Or it cuts off our finger.

C8: One of my friend's fingers was cut off.

C7 made comment, as an example of monitoring, on his friend's expression on things that she was afraid of about caves. C7 added and corrected his friend by commenting that there are also bats in caves. In another sharing time C9 displays monitoring in response to C5's comment on his activity:

Teacher: Nice. Then let's look at other photos. I can see a photo here. Where is C9? He studied it. Come here a second. What are you doing?

C9: I'm studying my foot.

Teacher: Why are you studying your foot?

C9: It is thinking.

C5: about the whiteness (white patches?)

C9: Oh yes, about the whiteness.

In the case of C6, based on his monitoring of the discussion on the documentation panel on human body, he commentated his thoughts about the issue while adding something to the discussion:

C5: If our heart stops beating, we would die.

Teacher: We can't live, right? In order to breathe...

C6: But the brain runs it, too.

An excerpt from the sharing time of documentation panel on clocks illustrated indicators for monitoring, such as C10 and C2, engaging in checking behaviors including detection of errors and checking own's performance. The panel included different types of clocks made by children. There were both clocks used before and nowadays. The teacher asked children to be two groups. One group for the children made clocks of old times and the other for the children made nowadays' clocks:

C10: (To C2) You are an old clock.

C2: My clock is being used now, as well...

Teacher: Yes dear C9, do you have more friends in this group or that one?

C10: Oh, then I should go to this side (having decided after looking at his friends)

In reflective dialogues, children mostly observed while self-commentating as an indicator of monitoring. For example, while C5 was looking at a photograph on the panel about music, she firstly could not remember what they were during in the photograph and then suddenly she remembered and made comment on currently

memory retrieval: “What are we doing there? I don’t remember. Ah, yes. We are painting these flags there.”

C10 exhibited an evidence of monitoring in the reflective dialogue on animals. He looked at a set of activities on the panel and self-commentated as: “Did I do one of these? I didn’t do any.” A similar dialogue has occurred with C11 in front of the documentation panel on seasons:

Researcher: Do you want to say anything when you look at your friends’ (pictures.)?

C11: Nope.

Researcher: Alright. Thank you then dear C11.

C11: And also C2.

Researcher: Huh?

C11: And I also like C2’s.

Children reviewed their progress by keeping track of procedures currently being undertaken and those that have been done so far, as in this excerpt from a reflective dialogue with C2, as they were talking about the activities on the panel with ancient human beings:

Researcher: Alright, do you have anything else to say?

C2: It is finished.

Researcher: Thank you dear C2.

C2: Let me see if it is finished.

Researcher: Take a look.

C2: Look at here. I fixed our dinosaurs, planes and tractors here. Here are the things early humans used, and here the things we have these days.

A similar dialogue was also noted with C1 in front of the documentation panel on clocks. C1 demonstrated a monitoring behavior while she was sharing her observations about her peers' clocks in their houses. While she was telling the same clocks in her peers' houses, she suddenly chuckled. When she was asked, she explained that she formed the same sentence one after the other:

C1: There is a watch and a clock in C2's house. There is also a watch and a clock in my house. (01:51) there is also a watch and clock in ...'s house. There is also a watch and a clock in C11's house.

Researcher: Why did you laugh here?

C1: Because they all came one after the other.

4.1.2.3. Control

In the sub-category of control, seeking help comments were the most common form of behavior during the sharing times. Children searched for a help from their peers or the teacher when they could not remember an item on the panels or something from their previous learning experiences. There is much more evidence of children demonstrating any control behavior in sharing times rather than reflective dialogues. Children mostly asked questions such as "What was it?" or "What were we doing here?" during sharing times. For example C10, in a sharing time on music and feelings, was telling his activity and he could not remember a part of it and asked as: "Here, I, ummm, which music was this?" C6 was talking about his activity and asked as: "And here it is a toy, a toy teddy bear. No, it was toy something. What was it?" (Seasons)

There were also more specific comments while they were seeking. For example, C4 was reflecting on some the signals of our body as an indicator of a deficiency in our health based on his previous experience and asked: "The reason

for those patches is... what was that thing? ... it shows that there is not much of that thing.”

Some children also used gestures as a strategy to support their reflection. For example while C1 was sharing her experiences in front of the documentation panel on human body, she supported her comments as pointing on the activities on panel: “We did the fingerprints (pointing) and those are their activities.”

Documentation panels also served for a model where children can learn something. Children looked at the model and answered their teachers’ questions. For example a dialogue between C7 and his teacher illustrates an example for this description of behavior:

Teacher: Let’s take a look. Until when will it be? Looking at the clocks that we glued on... Where is the clock? Show me the clock.

C7: Here.

Teacher: So until when will it be?

C7: (Thinking, looking) 12

Children helped or guided their peers using clues which is also considered as an evidence of control. For example, in the example below, C2 helped C1 by only saying some syllable:

C1: Oh yes, also here... (thinking)

C2: Mamm..

Teacher: Very good. You have done one of the mammals. Okay you can also talk about the animals you did yourself.

There are some few examples of children changing their strategy as a result of monitoring. For examples, C10 changed what to tell after her teachers’ question:

C10: I also did a horse here, it runs very fast and lives in the zoo.

Teacher: Okay is there anything else you want to say? For example, what is the name of the animal that you have created?

C10: Here the thing that caught my attention the most is ... (thinking) or I'll tell you about the animal.

Teacher: Okay, tell me.

C10: A lion with a T-Rex head.

4.1.2.4. Evaluation

Children were likely to display evaluation, the fourth metacognitive regulation sub-category, where many of the children's comments indicated that they thoughtfully reviewing their own learning. Especially in reflective dialogues, there were more evidences of these types of behavior. One example here is C3's reflection on her task: "I was very successful at this. Because I painted without leaving any blanks." C11 also commented on his tasks on the panel on ancient human beings:

"Because I couldn't do everything here. Because I couldn't do everything easily... I did a human here like this.. and this.. but it's like that world is like... how do we do it? And it turned into purple. It became purple. I was doing it blue but it became purple. And because of that... hmmm.. I did a human like this."

In the reflective dialogues children's comments were also lengthier, as when C1 reflected on her activities on the panel about seasons:

Researcher: Hmm.. I can see some things here. Did you do this first?

C1: There was a mistake, so I erased it.

Researcher: You also painted this.

C1: There was a mistake, I erased it. And I mixed these two there.

Children also evaluated the strategies they used during tasks, as when C6 commented his activity and told the reason behind his strategy:

Researcher: Hmm.. What are the qualities of your human? How do we know that it is an early human?

C6: Because his hair is long like the sun.

Researcher: Long like the sun. Why is it long?

C6: So that it becomes an early human. I made it different.

The excerpts presented below are from dialogues with C6, C10, and C2 which showed their critical evaluation:

C6: Here there is fall and spring. We painted it so that we wear clothes according to them. I painted the hat by mistake but I won't say that.

Researcher: Oh, you painted it by mistake?

C6: I painted it by mistake.

Researcher: How do you understand that you painted by mistake?

C6: I painted it. Then I asked the teacher. If a hat is worn in fall? She said no. That's why I tried to erase it but I couldn't.

C2: I made a mistake here and there in this. I was going this. And this was going to there. But I did the opposite. Seasons

C10: That, I made a mistake there, these are bees. They make honey. I wanted to do a cow but I didn't have black so I made a mistake. Animals

Documentation panels provided children opportunity to review their learning and be aware of what they have learnt, as when C7 commented on the reason for his favorite activity: “I learned the names of animals I like the most (telling the reason for his favorite activity).”

There is evidence of children reviewing task performance and evaluating their learning in sharing times in the classroom. There were both personal and general comments, such as C5’s self-comment “I felt pink during the belly dance music because it felt a bit strange but still I felt my pink.” The excerpts from C11 and C7’s evaluations are examples for more general ones:

C7: How many people did a dinosaur museum? How many cars museum? We should have counted it and written the numbers. There would be votes according to that. We would understand who was naughty, who was not naughty? (commenting on improving an activity they did on the panel)

C11: If our friends behaved nice, it would be better..

Children also observed as verbalizing the parts that were difficult or easy to do as an indicator of their ability of evaluation:

C9: I didn’t have any difficulty in any of them. But I had difficulty in two of these activities.

C10: Because it was too easy (when asked about the reason for his favorite activity) animals

C1: Yes, it is finding the pictures. Because it was very hard to find them. They were hidden so well... even there was one on the chair. Museum

C8: This gave me trouble to be done. When I did it... Because it oftens got crumpled and Pritt fell on its head (grammatically problematic).

C5: I had difficulty in this? And cutting it gave me a bit of trouble.

Researcher: I understand. So in which activity did you feel the most successful?

C10: That one.

Researcher: Why? What did you feel successful for?

C10: Because it was too easy.

4.1.3. Emotional and Motivational Regulation

Documentation panel activities supported children's emotional and motivational regulation as children are provided opportunity to express their feelings about their and others' activities. The physical and psychological learning environment comprised of documentation panel offered children to share their emotional and emotional experiences. Children's verbal and nonverbal behaviors related to emotional and motivational monitoring and emotional and motivational control are included under this category. Observation recordings and reflective dialogues indicated that children are able to demonstrate their emotional and motivational experiences regarding to the tasks during sharing times with documentation panels and reflective dialogues.

4.1.3.1. Emotional/Motivational Monitoring

The area of emotional/motivational monitoring includes evidence of children's expressing awareness of positive or negative emotional experience of a task and monitoring their emotional reactions while being on a task. In sharing times and reflective dialogues children exhibited behaviors of emotional/motivational monitoring. Children expressed which part of the panel they wanted to share with the researcher or their peers, as in one of the sharing times C8 stated that he wanted to talk about his activity: "I want to talk about my own."

A noticeable feature of the children's comments was their emotions about their peers' samples and activities referring to the items on documentation panels. Children demonstrated behaviors of assessment of the current emotional experiences regarding the documentation panels:

C3: This is really nice and colorful.

C10: I like this one the most. C2's

C6: And I also like C2's because he supports Fenerbahçe.

C5: I like it a lot. I like them all.

C8: Nice, cool (answering the question about his friends' activities).

C4: Actually, they are all nice (his friends' activities).

Children also observed as monitoring their emotions during sharing times and reflective dialogues. For example, C5 expressed her feelings during the discussion on the documentation panel about ancient human beings: "Teacher, if lived in a

cave, I would feel scared, sad and hurt. The cave gets very dark at nights and there is a bear inside. I am scared of bears very much and I don't like the shape of caves.”

Another common reference to emotional states was talking about their emotional experiences during the activities while they were working on them. Especially, when they were asked about the activities which intrigued them the most, they expressed emotional states behind their reasons:

C5: It was this... It kind of got my attention a lot. I was very curious (talking about her feelings during the activity).

C9: That's why I was a bit excited in this activity and suddenly I told the teacher: “Teacher this activity was very nice” I said.

C1: Because I had so much fun in this and I felt successful.

C2: That's why I love dinosaurs a lot. I did the dinosaur museum that I saw before.

4.1.3.2. Emotional/Motivational Control

Emotional/motivational control comprises the verbalization or behaviors related to the regulation of children's emotional and motivational experiences while on task. Children controlled their attention and resisted distraction during sharing times and reflective dialogues. Specifically, children changed what to share about the activities on documentation panel regarding with their motivations or emotions as here:

C10: This is the early people's cave. Here they are making a fire. And here they built a stone wheel.

Researcher: Tell me, was there an activity that you had difficulty in?

C10: There is no activity I had difficulty in. Let me tell you this. The early human lighted a fire here. And cut the animal with a spear, a rhinoceros. Its horn is broken. Then he built the fire, cooked it and ate it. (Ancient Human Beings)

C5: I was to tell the ones above. (Ancient Human Beings)

Researcher: So, what did you do here?

C6: But I will tell you about mine. (The Clock)

C2: I will say the summer food. Watermelon, ice-cream, strawberry, aubergine, green beans, chery, zucchini, tomato, cucumber (He continued without a cue after he talked about the activity in which he had difficulty). (Seasons)

Researcher: What did you do here, dear C9?

C9: We did, umm... I'll tell you about that one. (Clock)

There are also few examples for evidence where children encourage others, especially in sharing times with the whole class, as in the following examples:

C5: By the way, won't you talk about the animal in the create-your-own-animal activity that got your attention the most? (Animals)

C10: Take a look at this side as well (while C3 was looking for the activity she likes the most) (Museums)

Teacher: Snail. Alright dear C3, you were absent in all of our activities that week. But what got your attention the most?

C6: She means, which one do you like the most? (Museums)

4.2. Portfolio

Children's self-regulatory and metacognitive skills were explored through reflective dialogues which were done for three times. Children were asked to select the artifacts they wanted to include in their portfolios to be shared with their parents. While they were selecting the artifacts, they were asked reflective questions to enable them revisit and reflect on their learning processes. The frequency tables of children's reflective dialogues were provided in *Table 6*. The codings of children's dialogues indicated that portfolio implementations supported children's self-regulation and metacognition and children demonstrated self-regulatory and metacognitive skills during portfolio stimulated reflective dialogues. Especially, they were observed while evaluating their performances, tasks, and strategies through portfolios.

Table 6

Frequency of C.Ind.Le Indicators- Portfolio Reflective Dialogues

Category Name and Behavior Indicator	n
Metacognitive Knowledge	
Knowledge of persons	11
Knowledge of tasks	6
Knowledge of strategies	5
Metacognitive Regulation	
Planning	13
Monitoring	15
Control	3
Evaluation	42
Emotional/Motivational Regulation	
Emotional/Motivational monitoring	28
Emotional/Motivational control	1

4.2.1. Metacognitive Knowledge

Portfolio stimulated reflective dialogues supported children's self- regulation and metacognition in terms of awareness of one's knowledge and cognition in relation to self, others, and universals. Unique examples of children's work that

capture their interests and experiences enabled children to reflect their metacognitive knowledge. Children's verbal and nonverbal behaviors related to their knowledge of persons, knowledge of tasks, and knowledge of strategies are included under this category. It is observed that children demonstrated metacognitive knowledge in all sub-categories.

4.2.1.1. Knowledge of Persons

Children were significantly more likely to display knowledge of persons, specifically knowledge of self, in reflective dialogues through their portfolios. They seemed keen to reflect their personal preferences about their abilities. When children were asked about their justification on selecting the samples from the whole portfolio, they generally explained their reasons with statements beginning with "I like..."

The excerpts presented below are from dialogues which showed children's knowledge of self:

C1: [When it is asked about why she selected the activity that she selected to be included in his portfolio, she looked at his artifact for a few seconds] Let me take a look. I like connecting the dots, umm... dot connecting.

C8: [He explained the reason behind selecting the activity for the portfolio] Because well, I like folding something like this. I even like doing a plane.

C7: [He did not put the butterfly activity on the portfolio and explained the reason] Because I don't like these a bit, butterflies.

C6: I like 6 in numbers and yellow in colors.

There are few examples from children's transcriptions as evidence for their knowledge about cognition in relation to knowledge of others and knowledge of universals. For example, C10 selected an activity which was about dinosaurs and while he was explaining why he chose this sample to tell for mother he expressed that "Because my mother likes dinosaur thingies".

4.2.1.2. Knowledge of Tasks

Children's evidences for knowledge of tasks were less than other categories of metacognitive knowledge. However there are examples where children make a judgment about the level of difficulty of cognitive tasks such as:

C10: [Showing his artifact] This is easy, I did it myself.

C6: This [his artifact] is also very easy because only this has gluing.

C9: Because it is very easy.

Researcher: What is easy?

C9: It is easy as I glued the photograph.

Children demonstrated knowledge of tasks by making comparisons across tasks regarding with their similar and different points. Children, especially, expressed their own long-term memory knowledge in relation to elements of the tasks. For example, while C6 was telling the reason behind choosing the activities that he selected for the portfolio, he expressed that it was different from the others'. C6: "Because it was very good. We painted colored papers, we drew a snowman but I did the most different because I drew white and used red and blue on it. No one else did it like that." A similar excerpt from C11 is also an evidence for his cognitive process in relation to

knowledge of tasks: “I chose this because no one did it. I wanted to do a flower for myself because there was no flower here.”

4.2.1.3. Knowledge of Strategies

Children displayed evidences of knowledge of strategies during reflective dialogues with their portfolios. They defined and explained how they done their activities. For instance while C6 was explaining one of his activities in his portfolio, he expressed his knowledge in relation to strategies that he used: “I did a butterfly here, its eyes are black. Its color is also black. Also it can be closed like this here. But if it closes like this, it is its shield. It becomes like its shield, this is its shield. And this is its cocoon.”

Similarly, C2 explained procedures involved in one of the tasks in his portfolio which is an evidence for knowledge of strategies:

C2: And here we drew a seven and eight first. I turned seven into a window and turned eight into a snowman.

C2: Today I, today was the recycle day.

Researcher: Uh-huh.

C2: I took a bottle, everybody is broken, we took a bottle there was a hole. I threw it into the recycle bin and it became a new ruler (grammatically problematic).

Researcher: Hmm.. it became a new ruler. Is this your invention?

C2: It is mine. It became a black ruler.

Researcher: So how did you think about it? How did you do it?

C2: Hm.. I a bottle turns into a ruler from recycle bin (grammatically problematic).

In another excerpt C5 defined how she conducted her activity while emphasizing on the special material that she used from the other classroom: “We did a snowman. And we painted it with the nice crayons of the cloud class, not with ours, but this is our crayons.

Another example from C1 illustrates her verbalization displaying her knowledge of how she had done her activity:

C1: I made its mouth from a banana here. I made here from a strawberry or an apple, I don’t remember well. I made the whites of its eyes from a banana. I made all of this with an apple. These are its eyes.

Researcher: Uh.huh.

C1: I made its ears from a pear.

Researcher: It looks beautiful.

C1: I don’t know where then.

Researcher: Uh. Huh.

C1: And I made its nose from grapes.

4.2.2. Metacognitive Regulation

Children’s individual portfolios provided children a visual and narrated history of what they have done and learnt through a period. This visual history prompted children to revisit and review their learning paths, by this way it supported children’s self-regulatory and metacognitive abilities. Children’s verbal and nonverbal behaviors related to planning, monitoring, control, and evaluation are included under this category. In this category, evaluation was the sub-category that was observed the most during reflective dialogues by portfolio. Children critically revisited and evaluated their previous activities and learnings while selecting the artifacts to be included in their portfolios. They also demonstrated behaviors of

planning and monitoring. However, they were rarely observed while controlling instead of a few examples.

4.2.2.1. Planning

In the sub-category of planning, comments for seeking and collecting necessary resources were the most common form of verbalizations during reflective dialogues with portfolios. There are evidences of behaviors related to the selection of procedures necessary for performing the task. During dialogues, children sought for the artifacts that they decided on their mind to put into their portfolios. For example, when they were asked the artifacts they want to put into their portfolios C11 decided to put his dinosaur book and started to seek for it: “Where is the dinosaur activity?” Similarly when C10 asked which of his activities to tell her mother during portfolio day he thought for a while and started to look at his artifacts while saying: “Where is the one with the dinosaur?”

Children, as been included in the selection of their portfolio pieces, they found the opportunity to make choices about which ones to include. When they were offered to decide which pieces to include, they compared the pieces before deciding which to include in their portfolios.

C2: There is one. Here. Somewhere here [meaning the activity he wants to talk about].

C5: Let me have a look [after the question “Is there...?”]

C6: Hmm.. Let me look. [after the question “Is there...?”]..

There is also evidence of children deciding on ways of proceeding with the task:

C1: Hmm.. Can I show mine?

C5: Teacher, should we start from the beginning and go one by one?

C6: I won't talk about this. My butterfly.

C1: And I like these, too. There might be some more, I'll take a look.

4.2.2.2. Monitoring

The most frequently identified examples of monitoring included children verbally and nonverbally correcting themselves on a task. For example, while he was telling the reason of selecting his dinosaur activity to put into the portfolio, C4 corrected his comment as: "It is very good, because it is "yumurta çalan" But it is not here.. (waits for a while) Hımm here it is here..." In another example, C11 was looking for one of his activities to be included in his portfolio. He selected one of his artifacts and then stopped and told that the one that he was searching for was not this one: "Let me have a look.. Hang on it is not.. It is mouse..".

Children also observed while checking performances including detection of errors. For example, while he was selecting the samples for his portfolio, C2 suddenly looked at that one of the samples that he had selected to put in his portfolio was placed in other artifacts. He asked himself "Why is this here?" and re-directed his action to place it in his portfolio. In another example, C9 was looking his activities and he stopped suddenly while selecting the activities:

Researcher: Let's look at these ones.. (while turning the pages)

C9: Aaaa you missed!

Researcher: Which one?

C9: This is the hospital car Cem Utku gived as a gift for me.

Researcher: You like it so..

C9: This.. (interrupts me)

Researcher: Why?

C9: This is the man with egg head..

Similarly, while she was talking about the activities that challenged her, C1 turned back to activities that she had already covered and selected one of them and said that “Hang on, I got difficulty in this one , too”. Children were observed keeping track of procedures currently being undertaken and those that have been done so far. For example, C6 kept in his mind the number of activities that he put into his portfolio and when he added another also counted it again:

C6: This is first, the second is the heart, I will move to the third. Snowman..

Researcher: Let’s look at those also (While turning the pages)

C6: I also want to add this one..

Researcher: Okey!

C6: Four.

4.2.2.3. Control

Children exhibited only a few behaviors of control during portfolio sharing dialogues. There are only examples for seeking help such as “I forgot the name of this activity” or “What was the name of the toy in this picture?”.

4.2.2.4. Evaluation

Children showed evidence of evaluation in a range of ways during reflective dialogues, particularly in aspects of reviewing own learning, evaluating the strategies used, and rating the quality of performance. Children engaged in self-assessment and reviewed their task performances. C11 looking through his drawing sample said with a giggle: “I had a lot of difficulty while doing the Turkish flag, but the benefit of its difficulty has shown.”

Children, especially, reflected on the difficulties they experienced during tasks. In the excerpts below C5, C1, and C10 reviewed their learning process by explaining the parts that challenged them:

C5: I can say that I had some difficulty with this.

Researcher: Why did you have difficulty?

C5: Because we were doing (painting?) a story and it is said that I had lots of fun but ummm it was very tiring.

Researcher: Well, what was so tiring about it?

C5: I didn't know how to draw these. That's why I had to draw in my own way.

C1: Let's see. I had some difficulty with this.

Researcher: Why?

C1: I forgot what it was but I think I had some difficulty with this one..

Researcher: Hmm... You drew flying and flightless birds in this.

C1: Hmm...

Researcher: What part of this did you have difficulty with?

C1: With drawing.

Researcher: I see. Is there any other like this?

C1: And a little bit with that one?

Researcher: That one?

C1: Yes.

Researcher: Why? Oh, with this one?

C1: With that one, too.

Researcher: With this?

C1: Yes.

Researcher: Why? What were you drawing here to have difficulty?

C1: Well... a square in circles. We draw a square and a triangle in circles here. We always drew a triangle and i always forgot, that's why i have some difficulty.

C10: This is one activity I have difficulty. (meaning "This is one of the activities I have difficulty in")

Researcher: This one?

C10: Yes.

Researcher: Why did you have difficulty with this? What gave you so much trouble?

C10: There are many others. This one gave me trouble, too.

Researcher: Why? What is this?

C10: This? This is a snowman.

Researcher: Hmm. With what did you have difficulty here?

C10: Mm... I couldn't choose these.

Researcher: Okay.

C10: And I had difficulty with this one.

Researcher: Okay. Tell me about them.

C10: Here, I have difficulty with... umm... in this experiment when putting this dough like this my hands got sticky then making a snowman got hard. It crushed. It got crushed (melted) because it is summer.

Researcher: Yes. Okay.

C10: And with this I had difficulty in cutting like this. And in cutting these, too.

Children also expressed what they have learnt during tasks as an indicator of evaluation. Revisiting previous activities and reflective questions enabled children to review the learning process and how they obtained the information. For example, while C9 was telling about his activities he told where he got difficulty and how he completed the activity:

Researcher: Can you select your most favorite activities?

C9: This one [showing]

Researcher: Why did you select it?

C9: Because I did it very easily.

Researcher: I see. Then is there any activity that you got difficulty?

C9: This one [without thinking immediately selected one of the artifacts]. I mixed up the color here.

Researcher: You mixed up the colors?

C9: Yes. But my teacher taught it to me and I learnt them.

4.2.3. Emotional/Motivational Regulation

Children's verbal and nonverbal behaviors related to emotional/motivational monitoring and emotional/motivational control are included under this category. On one hand, as children selected the artifacts that they wanted to put in their portfolios, they mostly verbalized their positive emotions based on the artifacts that they had selected. On the other hand, there were few examples for the sub-category of emotional/motivational control.

4.2.3.1. Emotional/Motivational Monitoring

Children were mostly observed verbalizing their emotional experiences regarding the tasks. Children were asked to select from their previous activities to be included in their portfolio, this moments encouraged children to express their positive feelings among the tasks they decided to put in their portfolio. While they were asked the reasons behind their selections, they told how they liked to be engaged in such an activity or how they got enjoyed during the task. The examples of children regarding this type of behavior are presented as below:

C1: This is one of the activities that I liked the most. Because it was a gift for my teacher.

C5: We did it here from the birds. I had a lot of fun doing this bird. I had a lot of fun doing gagas. I had a lot of fun doing this bird while doing it.

C6: I liked him very much because it was finger paint.

C4: Because I love it. The one with the most boxes.

C11: I liked this, this flower..

C3: I had so much fun. Painting. To dye and draw them. Folding [was very fun].

Children also expressed their negative emotions depending on the contents of the tasks. For example, while C11 was telling about an activity about the color black, he explained that he would feel very angry if everything was black in the world: “[I would feel] so angry! This is my world, my friends’ my teachers’ world, there are many colors. So, I do not want it to be black.”

Children also verbalized which activities they want to tell. In addition, they expressed their enthusiasm to share the activities with their parents which is also an evidence for emotional and motivational regulation.

C6: I also want to tell this one.

C4: But I think I want to put my butterfly in it [into the portfolio]

C10: I will take away it.. Because I want to tell it [to my parents], how I did it.

C5: But I want to tell all of them..

4.2.3.2. Emotional/Motivational Control

Few behaviors were observed under the sub-category of emotional/motivational control. Children controlled their attention and resisted distraction during sharing times and reflective dialogues. Specifically, children changed what to share about the activities among the activities to be selected for the portfolios regarding with their motivations. For example, while he was talking about an artifact, C10 re-focused on the other tasks to be included in the portfolio and continued as “Let me tell you this (activity) also..”. In another example C1 was motivated to design her portfolio without a lack:

Researcher: Ok, well done.. Thank you C1! You can go and play with your peers now.

C1: Let me look (at the activities) again..

4.3. Summary of the Findings

The theoretical background behind pedagogical documentation claimed its appropriateness for fostering children's thinking skills. The reflective learning environment provided by pedagogical documentation practices supposed to support children self-regulatory and metacognitive skills. The findings of this study, aiming to search for this potential in its natural context, supported this claim that reflective practices of pedagogical documentation foster children's self-regulation and metacognition in terms of metacognitive knowledge, metacognitive regulation, and emotional/motivational regulation. Children demonstrated verbal and nonverbal indicators of knowledge of persons, knowledge of tasks, knowledge of others; planning, monitoring, control, evaluation; emotional/motivational monitoring, emotional/motivational control during sharing times and reflective dialogues.

They referred to their capabilities, preferences, strengths and weaknesses, talked about general ideas about others, made interpretations about the level of the difficulties of tasks, compared similarities and differences among tasks, defined procedures of their tasks and explained how they learned as indicators of metacognitive knowledge; they sought and collected necessary resources, set goals for themselves, made decisions on the way of the task, reviewed their and their peers' progress during tasks, self-commentated, checked behaviors of themselves and others, corrected own and others' performances, sought help, guided their peers, reviewed their activities, evaluated their strategies, rated the quality of their performances as indicators of metacognitive regulation; expressed positive and negative feelings toward a task, encouraged themselves and others, controlled their attention during tasks as indicators of emotional/motivational regulation.

It is observed that in both sharing times with documentation panel and reflective dialogues through documentation panel and portfolios, the most observed sub-category was the evaluation. Children revisited and reflected on their previous learning experiences, criticized their strategies and tasks, and evaluated the

effectiveness of their and their peers' practices. Another notable finding was the difference of monitoring and control behaviors of children during sharing times and reflective dialogues. It is found that children demonstrated monitoring and control behaviors more in sharing times than reflective dialogues. Children, listening to each other, sharing the "shared" experiences with the whole class, pointing on the photographs of their peers' photographs, monitored and controlled each other more in sharing times. They corrected each others' performances and helped each other, sought help from their peers, which are all indicators of monitoring and control. In reflective dialogues they also demonstrated those behaviors but they were limited with only their performances as they were alone with the researcher.

CHAPTER 5

DISCUSSION and IMPLICATIONS

In line with the claims of Rinaldi (2006) and Clark (2012), the present study suggests that pedagogical documentation serves as a tool for enabling children to demonstrate self-regulative and metacognitive abilities in their early years. Using Whitebread et al.'s (2009) C. Ind. Le. Coding Scheme, the researcher identified examples of children demonstrating aspects of self-regulation and metacognition during reflective practices of pedagogical documentation. All children exhibited a variety of self-regulative and metacognitive behaviors during sharing times with documentation panels, reflective dialogues with documentation panels, and reflective dialogues with portfolios. Children's self-regulation and metacognition were supported when the teacher used pedagogical documentation tools.

Rinaldi (1998) claimed that "documentation supports children's memory, offering them the opportunity to retrace their own processes, to find confirmation of negation, and to self-correct" (p. 122). Similarly, in their definitions, Dahlberg, Moss, and Pence (2007) explained pedagogical documentation was closely connected with both *process* and *content*:

"Pedagogical documentation" involves the use of that material as a means to reflect upon the pedagogical work That reflection will be done by . . . with others [other teachers, children, and parents]. (p. 148)

The current study results critically support these claims as children rethought and reflected on what they did. Parallel with Sparrman and Lindgren's (2010)

argumentation, documentation produced visibility, helping children to be seen and heard. The externalization of children's words, artifacts, and photos enabled them to articulate their previous experiences. The teacher and children used documentation tools alongside these visual artifacts to improve discussion and reflection.

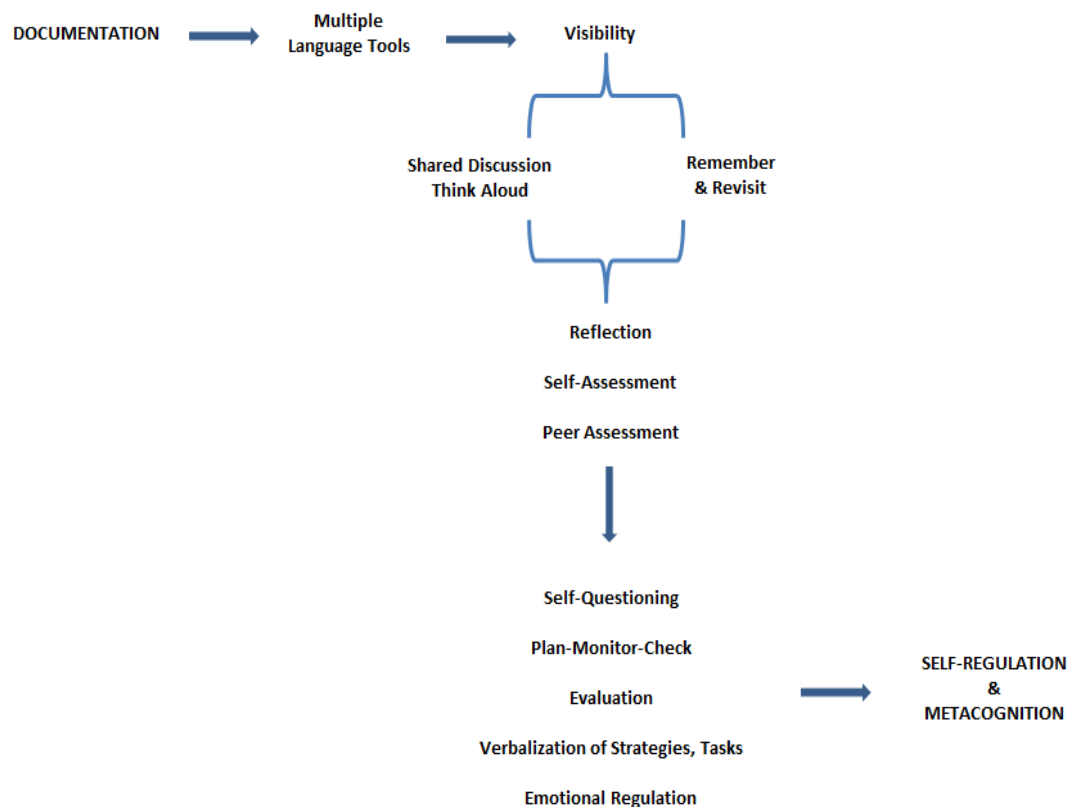


Figure 3: Documentation & self-regulation and metacognition

To what extent documentation supported self-regulation and metacognition is summarized in the *Figure 2* based on the findings of this study. Pettersson (2015) argued that pedagogical documentation established learning environments in which children are heard and consulted as well as being allowed to discuss situations that they were involved in. Documentation practices are usually put forward as tool for educational dialogue, discussion, and participation in evaluation (Pettersson, 2015).

The results revealed that as children introduced their work samples, quotations, photographs of their experiences and interactions, they found the opportunity to interpret, critique, and evaluate their peers and themselves. Their understanding increased and they co-constructed judgments, which Moss and Dahlberg (2008) also claimed. This reflective part of the instruction is a critical way to support children's self-regulation and metacognition (Larkin, 2010). Through the reflective practices of documentation used in this study, children displayed their self-regulatory and metacognitive abilities by expressing what they know, what they learned, how they learned, and what they know about their learning.

The overall evidences of self-regulatory and metacognitive expression in the sharing times and reflective dialogues confirms the value of pedagogical documentation practices in early years. The data showing children's verbal and nonverbal indicators of self-regulation and metacognition suggest that children have the necessary context to express self-regulatory and metacognitive thought. Studies also have subsequently documented evidence young children's early expressions of metacognitive processes when they are provided a meaningful environment (Blöte, Resing, Mazer, & Van Noort, 1999; Deloache, Sugarman, & Brown, 1985; Whitebread & Coltman, 2010).

Children demonstrated self-regulatory and metacognitive abilities during their sharing times with peers and the teacher and during reflective dialogues conducted with a documentation panel and their individual portfolios. During sharing times, children engaged in shared thinking (c.f. , Morgan, 2007; Robson, 2010), which supports self-regulation and metacognition in young children. In addition, Vygotsky's (1978) sociocultural perspective explains the critical role of social interaction in promoting these skills.

When the aspects of self-regulation and metacognition were critically examined, children displayed verbal and nonverbal indicators of metacognitive knowledge in reflective dialogues, especially the knowledge of tasks and strategies.

This finding is consistent with Robson's (2010, 2016) results that demonstrated the reflective dialogue between an adult and the child encouraged children's expression of metacognitive knowledge. In general sharing times, the teacher was present, but other children were also there. In one-to-one reflective dialogues, children may find more opportunity to reflect on their knowledge.

Data derived from sharing times and reflective dialogues indicated that children displayed more examples of monitoring and control under the category of metacognitive regulation during sharing times. Peer interaction may account for this finding. Children were more likely to check each other's performance, listen their peers' critiques and evaluations, and make comments on these cases, which are indicators of monitoring. Peer interaction also enabled children to seek help and help or guide their peers, which are indicators of control. But children also demonstrated incidents of monitoring and control in reflective dialogues as well. However, the types of behavior descriptions accounts for this difference. While children mostly self-commented during reflective dialogues, they displayed more indicators of monitoring and control when it came to general evaluations during sharing times. These indicators depended on shared thinking.

The planning and evaluation aspects of metacognitive regulation were observed in both sharing times and reflective dialogues. The context allowed children to plan what they wanted to say, set individual goals, and seek necessary resources, which are indicators of planning. Evaluation was used significantly during both sharing times and reflective dialogues. Consistent with the findings of MacDonald (2007) and Buldu (2010), documentation invited discussion, self-evaluation, and peer assessment. As children remembered what they had done and reflected upon their previous experiences, they found the opportunity to analyze themselves and their peers. Visibility of previous learning activities enabled children to review their own learning, evaluate the strategies they and their peers used, and rate the quality of their and peers' performance in an evidence-based

context. The photographs, artifacts, work samples, and quotations helped children remember, and the sharing thinking and discussions encouraged children to review task performance.

Children were significantly more likely to demonstrate emotional/motivational monitoring in both sharing times and reflective dialogues. By revisiting their previous experiences, children found the opportunity to express positive and negative emotions associated with the task they discussed. They verbalized their current emotional and motivational experiences regarding the activities. In addition, documentation stimulated reflective dialogues encouraged children to talk about their feelings regarding the activities displayed on panels.

Edwards, Gandini, and Forman (1993) stated that “children have many, many languages for expressing and communicating.” Thus, documentation supports children’s enhancement of their powers of thinking “through the synthesis of all the expressive, communicative, and cognitive languages” (Edwards et al., 1993, p.457). In this study, recording and displaying children’s many means of expression made the things that children had said or done available to their visible memory.

Documentation provides children the means to represent their mental images to their peers and themselves as they develop a more conscious vision. They move from one experience to another and reflect on these shifts. In this manner, their evaluations are richer. Documentation encourages this richer evaluation by giving the children opportunity to listen and be heard through reciprocal interaction (Rinaldi, 2006). The findings of the study support Rinaldi’s emphasis on the role of pedagogical documentation for metacognitive processes and for children’s understanding. She highlighted how photographs, artifacts, and notations aide memory in learning processes and the learning environment. Rinaldi (2006) pointed out the need for observational studies, and this study provides evidence for this supposition. The results support that documentation tools encouraged children’s

memory and metacognitive thinking and allowed children to interpret their thinking processes.

The documentation panel encouraged interpersonal and intrapersonal communication as it offered children an opportunity for reflection. The context provided by documentation practices show the value of group interaction and discussion. Reflective dialogues confirmed the value of talking with children about their reasoning and thinking as also discussed by Robson (2016). The findings of this study support that children can express metacognitive thought as they practice it. Prambling (1988) and Dignath, Buettner, and Langfeldt (2008) also found that teachers' use of reflective dialogues are beneficial for children's own learning.

Reflective questions asked by the researcher triggered broad metacognitive thought. Such questions encouraged children to reflect on strategies that they used while performing the task. They stimulated self-explanation for self-regulatory and metacognitive development. Children's self-regulation and metacognition were promoted as they were asked to articulate their thinking during the task. Support and recognition of the importance of revision encourages metacognition and self-regulation. (Darling-Hammond, Austin, & Martin, 2003). As the teacher given children feedback with the purpose of enabling them to redirect and revise their own learning, they revisited their work with a greater understanding.

The findings from the reflective dialogues with children's portfolios demonstrated that, as proposed by Laski (2013), portfolios provided children an opportunity for self-evaluation. Self-evaluative experiences that portfolios provided children have been found to support early self-regulative and metacognitive skills (Larkin, 2010). In line with McKenna (2005), it is found that portfolios allow children to reflect on their practices and progress. The findings of this study also supported this view as children demonstrated verbal and nonverbal indicators of self-regulation and metacognition while revisiting the tasks on their portfolios. The

results revealed children's verbalizations and behaviors related to metacognitive knowledge, metacognitive regulation, and emotional and motivational regulation.

Children found the opportunity to select the artifacts that they wanted to discuss and identified strengths and potential areas for improvement. Reflective questions supported children to articulate their self-evaluation and to validate their thoughts. Children determined strengths and weaknesses in their work and thinking. They also reflected on how well they have learned something and the way their skills have developed. Students evaluated the strategies that they used and their usefulness for a given task.

It is found that young children who are given the appropriate environment and who practice reflection demonstrate self-regulatory and metacognitive skills. Young children who share their learning paths and learning experiences within multiple language tools provide reflective responses. "Visibility, legibility, and shareability" (Rinaldi, 2001, p. 52) provided by documentation tools become a tool for self-regulation and metacognition.

Specifically, the most important next steps for research on early metacognitive development and learning will be explicated focusing in particular on.... instruction, individual factors, contexts, and learning environments, that have the most potential to facilitate metacognitive processes beginning in preschool. (Marulis, 2014, p. 319)

This study aims to contribute to the research on young children by examining two important and little-studied phenomena and the relationship between them. Research emphasizes the need for development of self-regulation and metacognition in early years (Robson, 2010; Bronson, 2000; Bodrova & Leong, 2005). In addition, recent studies have called for research on programs and implementations that will foster self-regulation and metacognition (Diamond & Lee, 2011; Hughes, 2011;

Daily, 2013). Pedagogical documentation naturally has valuable potential to foster these concepts when used with young children. This study searched for this potential in a qualitative manner using the natural context. This will enable educators examine the issue with details and see what happens in actual early childhood learning environments. In addition, the study hopes to focus more attention on self-regulation and metacognition in early childhood settings and inform educators about the learning environments that stimulate these abilities.

Children are born with a certain genetic potential. It is necessary to respect and support this potential in children (Vygotsky, 1978). In early childhood settings, a rich learning environment stimulating the holistic development of children is very important. The ones most responsible for this environment are teachers, policy makers, and teacher educators. Contemporary research has argued a traditional view based on children's inability to use self-regulatory and metacognitive skills. It is now known that children under age 8 are also capable of metacognitive skills. The issue here, however, is that appropriate procedures and learning environments are required for these skills to be demonstrated. Recent research calls for learning environments supporting children's self-regulatory and metacognitive skills.

This study contributes to the literature about this novel topic: learning environments within a pedagogical documentation approach used to support young children's self-regulation and metacognition. Initially, in this study, it was determined that self-regulation and metacognitive skills of children could be evaluated through observation. By contributing to the scarce number of studies, use of observation sheds light on the investigation of these skills in different environments, and enhances work on these two important skills.

Second, reflective practices through pedagogical documentation supported children's self-regulation and metacognition. Introducing and recommending the documentation approach to support the enhancement of self-regulation and metacognitive skills—topics that are beginning to take an important place in

international literature--will help children acquire and support these skills. Teachers should take additional training to implement the documentation approach.

Presenting learning opportunities for documentation in early childhood will provide children a learning environment for self-regulatory and metacognitive skills.

Although pedagogical documentation has its origins in the Reggio Emilia approach, it is also accepted as a systematic tool for learning, teaching, and assessment processes. When the pedagogical documentation practices are examined, it appears that they can be applied in different curriculum and program types.

The national program in Turkey is also suitable for implementation of the pedagogical documentation approach, both in government and private institutions. Turkish National Early Childhood Education Program—a process-oriented program—allocates an important place to the portfolio. In Turkey, the teachers prepare the panels on a daily or weekly basis, and they put their portfolios into practice. Pictures of children's products, photos reflecting classroom interactions and children's expressions, and teachers' own analyses are included in the panels or walls; sharing times with this panel will lay the groundwork for supporting children's self-regulation and metacognitive skills. In addition, involving children in the portfolio process, arranging sharing times with the children's portfolio process and asking students reflective questions will effectively support these skills in early years.

This study also has implications for teacher education programs, both in Turkey and other parts of the world. The phenomena explored in this study are new areas to be studied in the field of early childhood education. Thus, it is important for teacher education programs in universities to introduce these topics with their teacher candidates and support pre-service teachers who are developing necessary skills through their programs.

5.1. Limitations of the Study

In this study, children's self-regulatory and metacognitive abilities were coded and analyzed by using a predetermined coding scheme. Although the scheme includes variety of the elements discussed in the literature, the findings of the study are limited to the categories in the coding scheme.

Research designs adopting a participatory approach to study with young children should employ high ethical and methodological standards due to the commitment to the well-being, protection and safety of children (Brady, Davey, & Shaw, 2011). The participation of children to the in the study is controlled by a hierarchy of gatekeepers who have responsibility for the protection and safety of children such as ethics committee, parents, and experts (Hill, et al., 2004). Initially the approval from Middle East Technical University Ethics Committee was taken for the implementation of the research procedure. The data were collected with the consent of the parents and the parents were explained who will have access to the data and why. The principle of anonymity was considered and the findings of the study were presented in a way that individual participants were not identifiable in research documentation. At this point, with the parents who have questions about the process were called by telephone and the necessary information about the research process was provided for them. The parents were also invited to obtain the last version of the study to be sure that their children's name and photographs were not used in the dissertation.

The difficulty for researchers seeking to access children's voices lie in both their data collection and data analysis methods. In terms of my study, I did not seek for any correct answer from children. I looked for some reflective talks they got engaged in during their regular routine classroom events. In terms of my own perspective, a child-centered research approach was implemented within this study. I achieved this by offering the opportunities to express assent, dissent and views; considering the child's willingness to participate, and listening to the child (Flewitt,

2005). Besides, the study did not utilize an interventional approach. The observations that were recorded were the daily implementations of the teacher. Children's interviews were added for the study with the permission taken from the teacher, parents, and the children themselves. When the children did not want to engage in interviews they were informed that they had the right to not to interview with.

5.2. Implications for Further Research

The field of early childhood education is open to studies searching for self-regulation and metacognition in different contexts or settings. The field needs more study to enlighten this novel topic. This study also needs to be replicated to obtain more idea about self-regulation and metacognition in early years.

Determining contexts that promote children's self-regulation and metacognition takes important place for further research. It is needed to search for other appropriate learning environments to be suggested for teachers, school administrators, and policy makers.

Pedagogical documentation approach is also another area that has been taken attention in worldwide. The literature mostly include research reviews on pedagogical documentation, so more interventional studies are needed to investigate the effectiveness of this approach for children's development and learning.

The coding scheme developed by Whitebread and his colleagues (2009) used in this study was very beneficial while analyzing the data. However, with the increasing number of studies in the field, the issue - self-regulation and metacognition in early years- should be also studied with a pure inductive and interpretive manner. Longitudinal studies designed with grounded theory model will enlighten the researchers and educators related with this issue.

Pedagogical documentation is proposed to improve children's developmental and academic skills within scarce number of studies. This subject

area needs more empirical studies to be conducted for its role and effects on children's learning and development. The thing that I observed within this dissertation was that children were highly motivated and likely to participate in documentation activities. How pedagogical documentation supports children's motivation and participation is another research topic that is open to be designed.

Besides, self-regulation and metacognition in young children is needed to be studied within the field. Recent research have argued the role of learning environments that support children's self-regulatory and metacognitive abilities. So, different contexts should be investigated for the appropriateness for self-regulation and metacognition. The Tools of the Mind program, a post-Vygotskian approach for learning, is specifically developed for developing children's self-regulation and is needed to be studied for its effects on self-regulation in both national and international contexts. In addition, play and its role on these skills is open for new empirical and in-depth studies to be presented for teachers and researchers. Bodrova, Germeroth, and Leong (2013) discussed the role of play on mental development, reasoning, and executive functioning. The researchers called for observational studies to examine "the mechanisms of the development of play itself and a view of the dynamics of its effects on self-regulation". (p. 120)

REFERENCES

- Adagideli, F. H. (2013). *Investigation of young children's metacognitive and self-regulatory abilities in mathematics activities* (Unpublished master's thesis). Boğaziçi University, Istanbul, Turkey.
- Blair, C., & Diamond, A. (2008). Biological processes in prevention and intervention: The promotion of self-regulation as a means of preventing school failure. *Development and Psychopathology*, 20, 899–911.
- Blair, C., & Razza, R. P. (2007). Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child Development* 78, 647–63.
- Blöte A. W., Resing W. C. M., Mazer P., Van Noort D. A. (1999). Young children's organizational strategies on a same-different task: A microgenetic study and a training study. *Journal of Experimental Child Psychology*, 74, 21–43
- Bodrova, E., & Leong, D. J. (2005). Self-regulation: A foundation for early learning. *Early Childhood*, 20(1), 6.
- Boekaerts, M., & Cascallar, M. (2006). How far have we moved toward the integration of theory and practice in self-regulation? *Educational Psychology Review*, 18, 199-210.
- Bronson, M. B. (2000). *Self-regulation in early childhood: Nature and nurture*. New York: Guilford.
- Brown, A. L. (1987). Metacognition, executive control, self-regulation, and other more mysterious mechanisms. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, motivation and understanding* (pp. 65–116). Hillsdale, NJ: Lawrence Erlbaum.
- Buldu, M. (2010). Making learning visible in kindergarten classrooms: Pedagogical documentation as a formative assessment technique. *Teaching and Teacher Education*, 26, 1439-1449.
- Brady, L., Davey, C., & Shaw, C. (2011). Guidelines for Research with Children and Young People Guidelines for Research with Children and Young People Guidelines for Research with Cyp.

- Carr, M. (2001). *Assessment in early childhood settings: Learning stories*. London: Paul Chapman.
- Chatzipanteli, A., Grammatikopoulos, V., & Gregoriadis, A. (2013). Development and evaluation of metacognition in early childhood education. *Early Child Development and Care*. Retrieved from: <http://dx.doi.org/10.1080/03004430.2013.861456>.
- Clark, I. (2012). Formative assessment: Assessment is for self-regulated learning. *Educational Psychology Review*, 24, 205–249.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles: Sage Publications.
- Curtis, D., and Carter, M. (2000). *The art of awareness: How observation can transform your teaching*. St. Paul, MN: Redleaf Press.
- Dahlberg, G., & Asen, G. (1994). Evaluation and regulation: A question of empowerment. In P. Moss, & A. Pence (Eds.), *Valuing quality in early childhood services* (pp. 157-171). London: Teachers College Press.
- Dahlberg, G., Moss, P., & Pence, A. (2006). *Beyond quality in early childhood education and care. Postmodern perspectives*. London: RoutledgeFalmer.
- Daily, S. (2013). *Young children's self-regulated learning and supported teacher-child interactions: An exploratory study* (Doctoral dissertation). Retrieved from ProQuest Dissertation and Theses database. (AAT 3562498)
- Darling-Hammond, L., Austin, K, Cheung, M. & Martin, D. (2003) Thinking About Thinking: Metacognition. In *The Learning Classroom: Theory into Practice*, (157-172).
- Bodrova E., Germeroth C., Leong D. J. (2013). Play and self-regulation. Lessons from Vygotsky. *American Journal of Play*, 6, 111–123.
- Denzin, N. K., & Lincoln, T. S. (2011). *The Sage handbook of qualitative Research*. USA: Sage Publications.
- DeLoache, J.S., Sugarman, S., & Brown, A.L. (1985). The development of error correction strategies in young children's manipulative play. *Child Development*, 56, 928-939.

- Dewey, J. (1938). *Experience and Education*, New York: Collier Books.
- Diamond, A., & Lee, K. (2011). Interventions shown to aid executive function development in children 4 to 12 years old. *Science*, 33, 959–964.
- Dignath, C, Buettner, G and Langfeldt, H (2008). How can primary school students learn self-regulated learning strategies most effectively? A meta-analysis on self-regulation training programmes. *Educational Research Review*, 3(2), pp. 101-129
- Dinsmore, D. L., Alexander, P. A., & Loughlin, S. M. (2008). Focusing the conceptual lens on metacognition, self-regulation, and self-regulated learning. *Educational Psychology Review*, 20, 391–409.
- Dodd-Nufrio, A. T. (2011). Reggio Emilia, Maria Montessori, and John Dewey: Dispelling teachers' misconceptions and understanding theoretical foundations. *Early Childhood Education Journal*, 39, 235-237.
- Edwards, C., Gandini, L., & Forman, G. (1998). Introduction: Background and starting points. In C. Edwards, L. Gandini, & G. Forman (Eds.), *The hundred languages of children: Advanced reflections* (2nd ed.) (pp. 5-25). Westport, CT: Ablex Publishing.
- Edwards, C. P. (2002). Three approaches from Europe: Waldorf, Montessori, and Reggio Emilia. *Early Childhood Research and Practice*, 4(1).
- Edwards, C. P., & Gandini, L. (2001). *Bambini: The Italian approach to infant/toddler care*. New York: Teachers College Press.
- Erikson, H. (1950). *Childhood and Society*. New York: W.W. Norton & Company, Inc
- Erickson, F. (1986). Qualitative methods in research on teaching. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed.) (pp. 119-161). New York: MacMillan Publishing Company.
- Fındık Tanrıbuyurdu, E. ve Güler Yıldız, T. (2014). Okul öncesi öz düzenleme ölçeği (OÖDÖ): Türkiye uyarlama çalışması. *Eğitim ve Bilim*, 39(176), 317-328

- Flavell, J. H. (1976). Metacognitive aspects of problem-solving. In L. B. Resnick (Ed.), *The nature of intelligence* (pp. 231–235). Hillsdale, NJ: Lawrence Erlbaum.
- Flavell, J. H. (1979). Metacognition and cognitive monitoring. *American Psychologist*, 34, 906–911.
- Flewitt, R. (2005). Conducting research with young children: Some ethical issues, *Early Child Development and Care*, 175 (6), pp. 553-565.
- Fraenkel, J. R. & Wallen, N. E. (2009). *How to design and evaluate research in education* (7th ed.). San Francisco: McGraw-Hill.
- Gandini, L. (1993). Fundamentals of the Reggio Emilia approach to early childhood education. *Young Children*, 49(1), 4–8.
- Hacker, D. J. (1998). Metacognition: Definitions and empirical foundations. In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Metacognition in educational theory and practice*, (pp. 1-23). Mahwah, NJ: Erlbaum.
- Helm, J. H., Beneke, S., & Steinheimer, K. (1998). *Windows on learning: Documenting young children's work*. New York: Teachers College Press
- Hendrick, H. (1997). Constructions and reconstructions of British childhood: An interpretative survey, 1800 to the present. In A. James & A. Prout (Eds.), *Constructing and reconstructing childhood* (pp. 34-62). London: Falmer Press.
- Hewett, V. M. (2001). Examining the Reggio Emilia Approach to early childhood education. *Early Childhood Education Journal*, 29(2), 95-100.
- Hill, M., Davis, J., Prout, A., & Tisdall, K. (2004), Moving the Participation Agenda Forward, *Children & Society*, 18, pp. 117-128.
- Hughes, C. (2011). Changes and challenges in 20 years of research into the development of executive functions. *Infant and Child Development*, 20, 251-271. doi: 10.1002/icd.736
- Iiskala, T., Vauras, M., & Lehtinen, E. (2004). Socially-shared metacognition in peer learning? *Hellenic Journal of Psychology*, 1, 147-178.

- İnan, H. Z. (2012). *Reggio Emilia Yaklaşımı ve Proje Yaklaşımı*. Ankara: Anı Yayıncılık.
- Istomina, Z.M. (1975). The development of voluntary memory in preschool age children. *Soviet Psychology*, 13, 5-64.
- Kaplan, A. (2008). Clarifying metacognition, self-regulation, and self-regulated learning: What's the purpose? *Educational Psychology Review*, 20, 477–484.
- Katz, L. G., & S. C. Chard. (1996). *The contribution of documentation to the quality of early childhood education*. ED 393608. www.ericdigests.org/1996-4/quality.htm
- Kim, Y. (2010). The pilot study in qualitative inquiry. *Qualitative Social Work*, 10(2), 190-206.
- Kinney, L., & Wharton, P. (2008). *An encounter with Reggio Emilia: Children's early learning made visible*. London: Routledge.
- Kline, L. S. (2008). Documentation panel: The “Making Learning Visible” project. *Journal of Early Childhood Education*, 29, 70-80.
- Kocher, L. (2004). The disposition to document: Portraits of practice. *Canadian Children*, 29 (1), 23-31.
- Kramarski, B., & Mevarech, Z. R. (2003). Enhancing mathematical reasoning in the classroom; The effects of cooperative learning and meta-cognitive training. *American Educational Research Journal*, 40, 281-310.
- Larkin, S. (2010). *Metacognition in young children (3rd ed.)* London; New York: Routledge.
- Laski, E. V. (2013). Portfolio picks: An approach for developing children's metacognition. *Young Children*, 68 (3), 38-43.
- Lincoln, Y., & Guba, E. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Program Evaluation*, 20, 15-25.

- MacDonald, M. (2007). Toward formative assessment: the use of pedagogical documentation in early elementary classrooms. *Early Childhood Research Quarterly*, 22, 232-242.
- Malaguzzi, L. (1993). For an education based on relationships. *Young Children*, 49(1), 9-12.
- Malaguzzi, L. (1994). Your image of the child: Where teaching begins. *Child Care Information Exchange*, 3, 52-61.
- Malaguzzi, L. (1998). History, Ideas, and Basic Philosophy: An Interview with Lella Gandini. In C. Edwards, L. Gandini, & G. Forman (Eds.), *The hundred languages of children: the Reggio Emilia approach-advanced reflections* (2nd ed., pp. 49-97). Greenwich, Conn: Ablex
- Marshall, J. (1999). "Living life as inquiry." *Systemic Practice and Action Research*, 12(2), 155-171.
- Marulis, L. M. (2014). *Conceptualizing and assessing metacognitive development in young children*. (Unpublished dissertation). University of Michigan, USA.
- McCarthy, J. (1995). Reggio Emilia: What is the message for early childhood education? *Contemporary Education*, 66 (3), 139–142.
- McClelland, M. M., & Cameron, C. E. (2012). Self-regulation in early childhood: Improving conceptual clarity and developing ecologically valid measures. *Child Development Perspectives*, 6(2), 136–142.
- McKenna, D. E. (2005). Documenting Development and Pedagogy in the Swedish Preschool: The Portfolio as a Vehicle for Reflection, Learning, and Democracy. *Frontiers: The Interdisciplinary Journal Of Study Abroad*, 12, 161-184.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.
- Ministry of National Education. (2013). *Okul Öncesi Eğitim Programı*. Ankara: MEB.
- Mitchell, L., Wylie, C., & Carr, M. (2008). Outcomes of early childhood education. Literature review. Report to the Ministry of Education. Wellington: NZCER.

- Ontario Ministry of Education. (2014). *Making learning visible through pedagogical documentation*. Retrieved July 21, 2014 from <http://www.edu.gov.on.ca/childcare/Wien.pdf>
- Pettersson, K. E. (2015). Children's participation in preschool documentation practices. *Childhood*, 22(2), 231-247
- Patton, M. Q. (2002). *Strategic themes in qualitative inquiry. Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Perry, N., & Drummond, L. (2002). Helping young students become self-regulated researchers and writers. *The Reading Teacher*, 56, 298-310.
- Perry, N. E. (1998). Young children's self-regulated learning and contexts that support it. *Journal of Educational Psychology*, 90, 715-729.
- Piaget J (1959). *The language and thought of the child* (3rd ed.). London: Routledge & Kegan Paul.
- Pintrich, P. R., & Zusho, A. (2002). The development of academic self-regulation: The role of cognitive and motivational factors. In A. Wigfield, & J. S. Eccles (Eds.), *Development of achievement motivation* (pp. 249-284). San Diego: Academic Press.
- Project Zero. (2003). *Making teaching visible: Documenting individual and group learning as professional development*. Cambridge, MA: Harvard University.
- Rinaldi, C. (1998). Projected curriculum construction through documentation—Progettazione. In C. Edwards, L. Gandini, & G. Forman (Eds.), *The hundred languages of children: The Reggio Emilia approach—Advanced reflections* (2nd ed.) (p. 114). Greenwich, CT: Ablex.
- Rinaldi, C. (2001). Documentation and assessment: What is the relationship? In C. Giudici, C. Rinaldi, & M. Krechevsky (Eds.), *Making learning visible: Children as individual and group learners* (pp. 78-90). Reggio Emilia, Italy: Reggio Children.
- Rintakorpi, K. & Reunamo, J. (2016). Pedagogical documentation and its relation to everyday activities in early years. *Early Child Development and Care*. doi:10.1080/03004430.2016.1178637

- Robson, S. (2010) Self-regulation and metacognition in young children's self-initiated play and reflective dialogue, *International Journal of Early Years Education*, 18, 227-41.
- Robson, S. (2015). Self-regulation, metacognition, and child and adult initiated: Does it matter who initiates the task? *Early Childhood Development and Care*, doi:10.1080/03004430.2015.1057581
- Rubin, K. H., Nelson, L. J., Hastings, P. D., and Asendorpf, J. (1999). The transaction between parents' perceptions of their children's shyness and their parenting styles. *International Journal of Behavioral Development*, 23, 937-957.
- Seale, C. (1999). *The quality of qualitative research*. London: Sage.
- Schneider, W., & Lockl, K. (2002). The development of metacognitive knowledge in children and adolescents. In T. Perfect & B. Schwartz (Eds.), *Applied Metacognition* (pp. 224-247). Cambridge, UK: Cambridge University Press.
- Schunk, D. H., & Zimmerman, B. J. (1994). *Self-regulation of learning and performance: Issues and educational applications*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Seidel, S. (2001). Understanding documentation starts at home. In C. Giudici, C. Rinaldi, & M. Kreshevsky (Eds.), *Making learning visible: Children as individual and group learners* (pp. 304-311). Reggio Emilia, Italy: Reggio Children.
- Seitz, H. (2008). The power of documentation in the early childhood classroom, *Young Children*, 63(2), 88-93.
- Silverman, D. & Marvasti, A. (2008). *Doing qualitative research: a comprehensive guide*. USA: Sage.
- Sparrman, A. & Lindgren, A. (2010). Visual documentation as a normalizing practice: A new discourse of visibility in preschool, *Surveillance & Society*, (7), 3/4, 248-261.
- Sperling, R. A., Walls, R. T., & Hill, L. A. (2000). Early relationships among self-regulatory constructs: Theory of mind and preschool children's problem-solving. *The Child Study Journal*, 30, 233-252.

- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Techniques and procedures for developing grounded research*. London: Sage Publications.
- Tutkun, C., Tezel-Şahin, F., & Işıktekiner, S. (2016). Dört- beş yaş çocuklarının öz düzenleme becerilerinin incelenmesi. *Pegem Index*.
<http://dx.doi.org/10.14527/9786053183563.028>
- Veenman, M. V. J., & Spaans, M. A. (2005). Relation between intellectual and metacognitive skills: Age and task differences. *Learning and Individual Differences*, 15, 159–176.
- Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University.
- Vygotsky, L. S. (1986). *Thought and language*. (A. Kozulin, Ed.). Cambridge, MA: MIT Press.
- Walsh, K., & Albrecht, K. (1996). Reggio Emilia: A view from the classroom. *Texas Child Care*, 20(1), 2–6.
- Wang, M. C., Haertel, G. D., & Walberg, H. J. (1990). What influences learning? A content analysis of review literature. *Journal of Educational Research*, 84(1), 30-43.
- Whitebread, D. (1999). Interactions between children's metacognitive processes, working memory, choice of strategies and performance during problem-solving. *European Journal of Psychology of Education*, 14, 489–507.
- Whitebread, D., Bingham, S., Grau, V., Pino Pasternak, D., & Sangster, C. (2007). Development of metacognition and self-regulated learning in young children: The role of collaborative and peer-assisted learning, *Journal of Cognitive Education and Psychology*, 3, 433-455.
- Whitebread, D. & Coltman, P. (2010) Aspects of pedagogy supporting metacognition and mathematical learning in young children; evidence from an observational study, *ZDM: The International Journal on Mathematics Education*, 42 (2), 163-178
- Whitebread, D., Coltman, P., Pino Pasternak, D., Sangster, C., Grau, V., Bingham, S., Almeqdad, Q., & Demetriou, D. (2009). The development of two

observational tools for assessing metacognition and self-regulated learning in young children. *Metacognition and Learning*, 4(1), 63-85.

Wien, C. A. (2008). Introduction. In C. A. Wien (Ed.), *Emergent curriculum in the primary classroom: Interpreting Reggio Emilia approach in schools* (pp. 5-16). Washington, DC: Teacher's College Press.

Yin, R. (2014). *Case Study Research Design and Methods* (5th ed.) . Thousand Oaks, CA: Sage.

Zimmerman, B. J. (1989a). Models of self-regulated learning and academic achievement. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theory, research, and practice* (pp. 1-25). New York, NY: Springer.

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, 25(1), 3-17

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39). San Diego: Academic Press.

APPENDICIES

Appendix A: Coding Scheme

Metacognitive knowledge

CATEGORY NAME	DESCRIPTION OF BEHAVIOR	EXAMPLES
Knowledge of persons A verbalization demonstrating the explicit expression of one's knowledge in relation to cognition or people as cognitive processors. It might include knowledge about cognition in relation to: - <i>Self</i> : Refers to own capabilities, strengths and weaknesses, or academic/ task preferences; comparative judgments about own abilities - <i>Others</i> : Refers to others' processes of thinking or feeling toward cognitive tasks - <i>Universals</i> : Refers to universals of people's cognition	- Refers to his/her own strengths or difficulties in learning and academic working skills - Refers to others' strengths or difficulties in learning and academic working skills - Talks about general ideas about learning	<i>I can write my name</i> <i>I can count backwards</i> <i>I don't know how to sing the song</i>
Knowledge of tasks A verbalization demonstrating the explicit expression of one's own long-term memory knowledge in relation to elements of the task.	- Compares across tasks identifying similarities and differences - Makes a judgment about the level of difficulty of cognitive tasks or rates the tasks on the basis of pre-established criteria or previous knowledge	<i>They need to put their boots on. And when they put their boots on, they dig a hole</i>
Knowledge of strategies A verbalization demonstrating the explicit expression of one's own knowledge in relation to strategies used or performing a cognitive task, where a strategy is a cognitive or behavioral activity that is employed so as to enhance performance or achieve a goal.	- Defines, explains or teaches others how she/he has done or learned something - Explains procedures involved in a particular task - Evaluates the effectiveness of one or more strategies in relation to the context or the cognitive task.	<i>We don't need to use the sticky tape, we can use the glue</i> <i>You have to point it up this end so that it is going to grow</i>

Metacognitive regulation

CATEGORY NAME	DESCRIPTION OF BEHAVIOR	EXAMPLES
Planning Any verbalization or behavior related to the selection of procedures necessary for performing the task, individually or with others	- Sets or clarifies task demands and expectations - Sets goals and targets - Allocates individual roles and negotiates responsibilities - Decides on ways of proceeding with the task - Seeks and collects necessary resources	<i>I'm going to make a big circle</i> <i>I know... me and Harry could be the knights and you could be the peasant</i> - Child compares two objects before deciding which to use on task
Monitoring Any verbalization or behavior related to the ongoing on-task assessment of the quality of task performance (of self or others) and the degree to which performance is progressing towards a desired goal	- Self- commentates - Reviews progress on task (keeping track of procedures currently being undertaken and those that have been done so far) - Rates effort on-task or rates actual performance - Rates or makes comments on currently memory retrieval - Checks behaviors or performance, including detection of errors - Self-corrects - Checks and/or corrects performance of peer	<i>I think we've got one left</i> <i>This bit doesn't fit anywhere</i> <i>Hang on, we've got it a bit wrong here</i> - Child stops mid-way through an action (placing puzzle piece), pauses and re-directs action to place it somewhere else
Control Any verbalization or behavior related to a change in the way a task had been conducted, as a result of cognitive monitoring	- Changes strategies as a result of previous monitoring - Suggests and uses strategies in order to solve the task more effectively - Applies a previously learnt strategy to a new situation - Repeats a strategy in order to check the accuracy of the outcome - Seeks help - Uses nonverbal gesture as a strategy to support own cognitive activity - Copies from or imitates a model - Helps or guides another child using gesture	<i>Let's have a practice</i> <i>Can you help me do it?</i> - Child points to spots on a die as he counts - Child looks at a physical model (example: word on whiteboard) repeatedly while completing a task - Child points at computer screen or interactive whiteboard to indicate where another child should click the mouse
Evaluation Any verbalization (REFL-V)	Reviews own learning or explains the task	<i>He's done really well</i> <i>We learnt how to cut,</i>

or behavior (REFL-NV) related to reviewing task performance and evaluating the quality of performance.	▪ Evaluates the strategies used ▪ Rates the quality of performance ▪ Observes or comments on task progress ▪ Tests the outcome or effectiveness of a strategy in achieving a goal	<i>and how to stick things together</i> ▪ Child rotates scissors in hands while opening and closing them before initiating cutting activity
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Emotional and motivational regulation

CATEGORY NAME	DESCRIPTION OF BEHAVIOR	EXAMPLES
Emotional/ motivational monitoring Any verbalization or behavior related to the assessment of the current emotional and motivational experiences regarding the task	The child: ▪ Express awareness of positive or negative emotional experience of a task ▪ Monitors own emotional reactions while being on a task	▪ That wasn't very nice ▪ It's a bit sad ▪ I don't want to be a peasant
Emotional/ motivational control Any verbalization or behavior related to the regulation of one's emotional and motivational experiences while on task	The child: ▪ Controls attention and resists distraction or returns to task after momentary distraction ▪ Self-encourages or encourages others ▪ Persists in the face of difficulty or remains in task without help	▪ Mine is going to be a lovely one ▪ Child looks towards activity of others in the classroom, then re-focuses on task at hand and resumes activity

Appendix B: Sample Coding – “Sharing Time”

Üstbilişsel Bilgi	Örnekler
Kişilerle İlgili	C9: Sergi ne demekti anlamadım.. C11: ben neden bu oyunu oynayamadım ki? C5: Çünkü sen gitmiştin..
Stratejilerle İlgili	
Etkinliklerle İlgili	C1: Şu üç resimde bu kağıtlardan kesip buraya yapıştırdık.. C8: Müze yaptığımızı anlamaları için bunu yapıştırdık (gösteriyor)

Üstbilişsel Düzenleme	Örnekler
Planlama	C5: Öğretmenim ben bir dahaki Pazartesi DNA ile ilgili bir şey söyleyeceğim.
İzleme	C5: Bakabilir, yani müzeyle ilgili bişeyler öğrenebilir (Öğretmenin cümlesini keserek tamamlıyor.) C2: Bu C9un (C3nın seçtiği etkinliğe bakarak) C11: ben de öyle diyecektim (Arkadaşının yorumu üzerine..)
Kontrol	C10: Aa bişey söyleyeyim bu öğretmenin astığı resim.. (gösteriyor) C5: Mukavva? (Öğretmen içinde mukavva kelimesi geçen bir cümle kurduktan sonra) C3: Bu kimin resmi (gösteriyor) C11: DNA mı ya da B? (C5’in ben müzemde eski bir okul D, DNA ve dinazor fosilleri yaptım sözüne yönelik soruyor)

	C2: C3 senin müzen hangisi?
Değerlendirme	C7: Kaç kişi dinazor müzesi yapmış, kaç kişi eski arabalar müze bunları sayıp sayılarını yazsaydık, Ona göre oy gelirdi.. Hangisi yaramazdı hangisi yaramaz değildi anlardık (Panel üzerinde yaptıkları bir etkinliğe geliştirmek üzere yorum yapıyor) C11: BNA yaparsan çok güzel olurdu..

Duygusal ve Motivasyonel Düzenleme	Örnekler
Duygusal ve Motivasyonel İzleme	C8: En çok sevdiğim kısmı yapıştırma kısmıydı.. C3: Bu çok güzel olmuş ve renkli olmuş.. C5: Evet, ben müzemin göze çarpan şeyi ne olsun söyleyeyim mi, en çok.. en çok..ama ben iki tane istiyorum.. Arılarımın ve uğur böceklerimin göze çarpmasını istiyorum..
Duygusal ve Motivasyonel Kontrol	C10: Bu tarafları da gez..(C3 en sevdiği etkinliği ararken) Öğretmen: Peki C3 sen o hafta hiçbir etkinliğimizde yoktun ama senin dikkatini çeken ne oldu? C6: Yani hangisini daha çok sevdin?

Appendix C: Sample Coding – “Reflective Dialogue”

Üstbilişsel Bilgi	Örnekler
Kişilerle İlgili	C1: Bir bakayım. Nokta tamamlamayı seviyorum böyle nokta tamamlamaları. C8: Tamam. Seç bakalım. Bu bu bu bu. Al bakalım. Peki neden bunları seçtin? Çünkü böyle bir şeyi katlamayı çok seviyorum yani. Uçak bile yapmayı seviyorum.
Stratejilerle İlgili	C5: Ve bunu bir arkadaşım ile aynı yaptık denebilir. (Sevdiği etkinliği anlatırken) C6: Hem de ben herkesten değişik yaptım. Herkesin şuraları beyaz benim mavi ve kırmızı. C10: Ç: Bu kolay zaten ben yapıştırdım.
Etkinliklerle İlgili	C1: Ağzını ben şurada muzdan yaptım. Şurayı çilek yada elmadan yaptım hatırlayamıyorum. Gözlerinin içini muzdan yaptım. Urayı böyle elmadan yaptım. Bu gözleri. Araştırmacı: Hı hı. C1: Kulaklarını armuttan yaptım. Araştırmacı: Çok güzel olmuş. C1: Sonra nerede bilmiyorum. Araştırmacı: Ha ha. C1: Burnunu da üzümünden yaptım. C2: Bunda da yedi ve sekizi çizdik ilk önce. Ben yediye cama dönüştürüp sekizi de kardan adama dönüştürdüm. C2: Ben bugün bugün geri dönüşüm günüydü. Araştırmacı: Hı hı.

	C2: Ben bir şişeyi herkes kırılacağı bir şişeyi aldık bir delik vardı. Onu geri dönüşüme attım yeni bir cetvel oldu. Araştırmacı: Hmm yeni bir cetvel oldu. Bu senin mi icadın? C2: Benim. Siyah bir cetvel oldu. Araştırmacı: Nasıl düşündün bunu peki nasıl yaptın? C2: Mm ben bir şişeyi geri dönüşüm kutusundan cetvele dönüşüyor.
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Üstbilişsel Düzenleme	Data
Planlama	C11: Dinozor etkinliği neredeydi ki? (Portfolyoda en başarılı bulunduğu etkinliği ararken) C1: Bunları da sevdim. Bir kaç tane daha olabilir bir bakacağım. C1: Bakayım bir (Var mı paylaşmak istediğin bir şey sorusu üzerine) C2: Var. Şurada. Şuralarda bir yerde. (anlatmak istediği etkinliği belirtiyor) Araştırmacı: Peki. Mm şeyi soracağım sana kendini böyle zorlandığın bir etkinlik var mıydı yaparken? Bunların içinde. C3: Tamam bir bakayım. C5: Bakayım ben bir (Var mı ... sorusu üzerine) C6: MM bakayım.. (Var mı ... sorusu üzerine) C10: Tamam bakayım bir..
İzleme	C11: Dur bir bakalım. Yo bu değil. Fare. Araştırmacı: Bir tane dinozor etkinliği mi olacak? C11: Hıh bu. Araştırmacı: Çok güzel. Bunu paylaşalım o zaman bir de. Bir de bunlara bakalım. C1: Bir de..Bir de şunu çok sevdim. C1: Aaa o benim (Portfolyo dosyalarına bakarken) C2: Bu niye burada? (Portfolyoya eklemek istediği etkinliklerden bir tanesini başka bir yerde görünce)

Kontrol	C1: Mm. burada sayımız kadar elma çizdim. Ama bunları unuttum neydi? Araştırmacı: Şunlardan da seçelim bir tanesini. C2: Hayır. Bu. Araştırmacı: Bu. Neden bu? C2: Ben bugün bugün geri dönüşüm günüydü. C10: Neymiş oyuncağın adı unuttum ya..
Değerlendirme	C11: Bunların ikisini seçtim. Araştırmacı: Tamam. Neden onları seçtin? Bana bir anlatır mısın? C11: Çünkü çok kolaydı. C11: Türk bayrağı yapmak için çok uğraştım ama yine de zorluğunun faydalısı geldi. C11: Çünkü mm T-rex i yapamadım ama sonra yapabildim onun için. Araştırmacı: Böyle yapsaydım bir daha yapardım ya da zorlandım dediğin? C11: Mmm. bunu yapamadım..Çünkü mm bunun yapraklarını yapamadığım için. Araştırmacı: Hmm. Peki, sonra yapraklarını yaptığını görüyorum sonra nasıl yaptın peki? C11: Sonra da yapabildim işte. C5: Ben şunda biraz zorlandım diyebilirim. Araştırmacı: Neden zorlandın peki? C5: Çünkü hikâye yapıyorduk ve fazla eğlendiğim söylenir ama mm şey ama çok yorucuydu. Araştırmacı: Hmm. Neydi yorucu olan? C5: Bunları nasıl çizeceğimi bilmiyordum o yüzden kafama göre çizmek zorunda kaldım. C5: En sevdiğim şekil üçgen aslında böyle bu ben fazla üçgen yapamadım ama

	C1: Çünkü bu engeller gününde yaptığımız bize Başak öğretmenimin verdiği bir resimdi biz boyadık. Çok güzel oldu. C1: Biraz bunda zorlandım Araştırmacı: Neden? C1: Ne olduğunu unuttum ama bunda zorlandım galiba. Araştırmacı: Hmm bunda uçamayan kuşlar ve uçabilen kuşları yapmışsınız. C1: Hmm. Araştırmacı: Neyinde zorlandın bunun? C1: Çizmekte. Araştırmacı: Hmm anladım. Var mı başka öyle? C1: Biraz da şunda. Araştırmacı: Şunda mı? C1: Evet. Araştırmacı: Neden? Ha bunda mı? C1: Şunda da zorlandım. Araştırmacı: Bunda mı? C1: Evet. Araştırmacı: Neden? Ne yapıyordunuz ki zorlandın burada? C1: Mm. daireler içinde kare. Kare çiziyoruz üçgen çiziyoruz buralara. Üçgen çiziyorduk hep unutuyordum o yüzden zorlandım biraz. Araştırmacı: Var mı paylaşmak istediğin başka bir şey bu etkinliklerle ilgili? C1: Şunu da. Araştırmacı: Bunu niye paylaşmak istedin benimle? C1: Bu etkinlik değil de böyle bir şey. Biz böyle bir gözlem ağacımız var bizim. Gözlem ağacımızı yaparken çiziminde biraz zorlandım ama yapabildim. Araştırmacı: Hmm neyinde zorlandın? C1: Çizimlerinde. Araştırmacı: Anladım ama çok güzel olmuş. Ağacı çizmişsin. C1: Ama yapabildim. C2: Çünkü şunu yaparken çok zorlandım. Çünkü bunda hepsini yapmak uzun sürdü bütün değişiklikleri yapmak. Araştırmacı Bunda kendini buna bakınca ne hissettin de seçtin peki köpek yaparken?
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	C3: Mutlu. Arařtırmacı: Mutlu. Neden mutluydun acaba? C3: Çünkü yapabildim köpek sevgimi. Arařtırmacı Hangisi? Bu mu? Neden? Ne yapmışsın orda? C3: Çünkü gezegenleri tanıdım. Arařtırmacı: Tamam peki bunları neden seçtin bana bir söyler misin? C10: Çünkü onları çok kolay yaptım. C10: Zorlandığım etkinlik bir tanesi bu. Arařtırmacı: Bu mu? C10: Hı hı. Arařtırmacı: Neden bunda zorlandın? Neydi seni zorlayan? C10: Daha çok var. Bu da zorladı. Arařtırmacı: Neden? Bu ne böyle? C10: Bu mu? Kardan adam. Arařtırmacı: Hmm. Neyinde zorlandın bunun? C10: Mm şunları seçemedim. Arařtırmacı: Tamam. C10: Bir de şunda zorlandım. Arařtırmacı: Tamam. Bir onları anlat bakalım. C10: Bunda şey de zorlandım böyle bu deneyde onu böyle şöyle hamurları koyarken biraz elim yapış yapış oldu sonra kardan adam yapmakta biraz zorlaştı. Ezdi ezildi çünkü yaz gelmiş. Arařtırmacı: Evet. Tamam. C10: Bunda da böyle kesmekte zorlandım. bunları kesmekte de zorlandım Arařtırmacı: Hı hı. C10: Bunları da şunları meyveleri çizmekte de zorlandım dilleri. Arařtırmacı: Hı hı. Bunda peki? C10: Bunda mı? Arařtırmacı: Hı hı. C10: Şu kırmızı elma yapmaya çalıştım. Böyle yapabildim. Arařtırmacı: Hı hı. Güzel olmuş. C10: Boyamaya çalıştım ama biraz taşırdım. Arařtırmacı: Hı hı. C10: Oyunağı güzel yapamadım. Arařtırmacı: Hmm.
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	Ç: Hmm. Neymiş oyuncağın adı unuttum ya. A: Ninja kaplumbağa. Ç: Haa. A: Hı hı. Güzel olmuş bence. Ç: Sonra mm kardan adamı güzel yapamadım. Mm bunda biraz bu bu kolaydı A: Hı hı Ç: Aslan yapmakta zorlaştım. A: Hı hı. C6: Şu balığı boyamasında zorlandım biraz. Araştırmacı: Neden? C6: İşte çünkü şurada bir delik açıldı. Araştırmacı: Hangi delikmiş? Haa. C6: Yırtıldı. Araştırmacı: Peki C6: Ondan çok zorlandım.
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Duygusal ve Motivasyonel Düzenleme	Data
Duygusal ve Motivasyonel İzleme	C1: çünkü bu etkinliğimi çok sevdim. C1: Şunu da sevmiştim en çok. Çünkü böyle nokta tamamlarken çok zevkli geliyor bana. C1: Sevdiğim etkinliklerden biri de bu. Çünkü öğretmenime bu hediye idi. C5: En çok bu kitapçığı anlatmak isterim. Araştırmacı: Peki..Neden? C5: Çünkü bunu çok sevmiştim. Araştırmacı: Neyini sevmiştin C5ciğim? C5: Ben bunun şu kurdelesini çok beğendim.

	C5: Buraya biz kuşlardan yapmıştık. Ben bu kuşu yaparken çok eğlenmişim. Gagasını yaparken çok eğlenmişim. Bu kuşu yaparken de bu kuşu yaparken de çok eğlenmişim. C10: hepsiymi çünkü sevdim biraz. C2: Çünkü en çok bunda keyif aldım. C6: Ben bunu çok sevdim çünkü parmak boyaydı. Kağıttan kardan adam yapıyorduk. Kendi kardan adamımızı. C6: Bir de ben şunu anlatmak istiyorum..
Duygusal ve Motivasyonel Kontrol	C10: Göz. Bu yanaklarını yıldız yaptım kulaklarını da. Şunu da anlatayım şimdi.

Appendix D: Consent Form for Parents

Veli Onay Mektubu

Sayın Veliler, Sevgili Anne-Babalar,

Çocuğunuzu, çocuğunuzun öğrenim gördüğü okulda, Orta Doğu Teknik Üniversitesi, Eğitim Fakültesi, İlköğretim Bölümü doktora öğrencilerinden Selda Aras tarafından yürütülen "Pedagojik Dokümantasyon Uygulamalarının Erken Çocukluk Döneminde Öz-Düzenleme ve Üst-Bilişsel Becerilerin Kazanımındaki Rolü" başlıklı doktora tez çalışmasına katılması için davet ediyorum.

Araştırmanın okul öncesi dönem çocuklarının dahil edildiği kısmı bir akademik dönem sürecektir olup, bu süreçte çocukların pedagojik dokümantasyon uygulamaları sırasında sergiledikleri öz-düzenleme ve üstbilişsel becerileri gözlemlenecektir. Bu süreçte çocuklarınızın eğitim gördüğü sınıflarda gerçekleşen sosyal etkileşimler gözlenip farklı araçlarla (betimsel notlar, dijital fotoğraf makinesi, video kamera, ses kayıt cihazı, vs.) kaydedilerek öğrenme ve öğretim süreçleri ile ilgili veriler toplanacaktır. *Bu çalışma sırasında toplanan çocuğunuza ait bilgiler ve veriler rumuz (takma isim) kullanılarak sadece araştırma sahibi tarafından değerlendirilecektir.*

Çalışmaya katılım gönüllülük esasına dayalıdır ve ne çocuğunuz ne de sizler için hiçbir risk içermemektedir. Sizin bilginiz ve onayınız ve çocuğunuzun gönüllülüğü dışında çalışmada herhangi bir işlem gerçekleştirilmeyecektir. Bu çalışma sürecinde gerçekleştirilecek gözlemler ve etkinlikler size ve çocuğunuza rahatsızlık verecek nitelikte değildir. Ancak çalışmalar sırasında herhangi bir nedenden ötürü siz de çocuğunuz da çalışmayı yarıda bırakmakta serbestsiniz. Böyle bir durumda çocuğunuzun öğretmenine çalışmaya devam etmek istemediğini iletmeniz yeterli olacaktır. Çocuğunuzun araştırmaya katılmasına izin vermediğiniz takdirde çocuğunuzun öğrenme ortamlarında gerçekleşen etkinliklere katılımı hiçbir şekilde etkilenmeyecektir. Bu durumda çocuğunuzun sınıfındaki rutin eğitim/öğretim faaliyetleri ve düzenlenen etkinliklere katılımı devam edecek ama çocuğunuzun için toplanan tüm veriler çalışma dışında tutulacaktır.

Bu çalışmanın sonuçlarının çalışmanın gerçekleştirildiği okulda öğrenim gören çocuklara, okul öncesi eğitimi öğretmenlerinin mesleki gelişimine, okul öncesi eğitimi programlarına, çocukları okul öncesi eğitime devam eden ailelere, okul öncesi eğitimi öğretmen yetiştirme programlarına ve Milli Eğitim Bakanlığı birimlerine önemli katkılar sağlaması beklenmektedir.

Bu çalışmayla ilgili daha fazla bilgi almak isterseniz: Çalışmaya katılımınızın sonrasında, bu çalışmayla ilgili sorularınız yazılı biçimde cevaplandırılacaktır. Çalışma hakkında daha fazla bilgi almak için e143454@metu.edu.tr ile iletişim kurabilirsiniz. Bu çalışmaya katılımınız için şimdiden teşekkür ederiz.

Yukarıdaki bilgileri okudum ve çocuğumun bu çalışmada yer almasını onaylıyorum (Lütfen alttaki iki seçenektten birini işaretleyiniz).

Evet onaylıyorum_____

Hayır, onaylamıyorum_____

Annenin/Babanın adı-soyadı: _____

Bugünün

Tarihi:_____

Çocuğun adı soyadı ve doğum tarihi:_____

(Formu doldurup imzaladıktan sonra araştırmacıya ulaştırınız).

Appendix E: Teacher Voluntary Form

Öğretmen Gönüllü Katılım Formu

Sayın Öğretmenim,

Sizi Orta Doğu Teknik Üniversitesi, Eğitim Fakültesi, İlköğretim Bölümü doktora öğrencilerinden Selda Aras tarafından yürütülen "Pedagojik Dokümantasyon Uygulamalarının Erken Çocukluk Döneminde Öz-Düzenleme ve Üst-Bilişsel Becerilerin Kazanımındaki Rolü" başlıklı doktora tez çalışmasına katılmanız için davet ediyorum.

Araştırma bir akademik dönem sürecektir olup, bu süreçte çocukların pedagojik dokümantasyon uygulamaları sırasında sergiledikleri öz-düzenleme ve üstbilişsel becerileri gözlemlenecektir. Bu süreçte sınıfınızda gerçekleşen sosyal etkileşimler gözlenip farklı araçlarla (betimsel notlar, dijital fotoğraf makinesi, video kamera, ses kayıt cihazı, vs.) kaydedilerek öğrenme ve öğretim süreçleri ile ilgili veriler toplanacaktır.

Çalışmaya katılım gönüllülük esasına dayalıdır sizler için hiçbir risk içermemektedir. Bu çalışma sürecinde gerçekleşecek gözlemler ve etkinlikler size ve öğrencilerinize rahatsızlık verecek nitelikte değildir. Sizden öğretmen olarak tek beklentimiz var olan pedagojik dokümantasyon uygulamalarınıza devam etmenizdir. Ancak çalışmalar sırasında herhangi bir nedenden ötürü çalışmayı yarıda bırakmakta serbestsiniz.

Bu çalışmanın sonuçlarının çalışmanın gerçekleştirildiği okulda öğrenim gören çocuklara, okul öncesi eğitimi öğretmenlerinin mesleki gelişimine, okul öncesi eğitimi programlarına, çocukları okul öncesi eğitime devam eden ailelere, okul öncesi eğitimi öğretmen yetiştirme programlarına ve Milli Eğitim Bakanlığı birimlerine önemli katkılar sağlaması beklenmektedir.

Bu alıřmayla ilgili daha fazla bilgi almak isterseniz: alıřmaya katılımınızın sonrasında, bu alıřmayla ilgili sorularınız yazılı biimde cevaplandırılacaktır. alıřma hakkında daha fazla bilgi almak iin e143454@metu.edu.tr ile iletiřim kurabilirsiniz. Bu alıřmaya katılımınız iin řimdiden teřekkr ederiz.

Yukarıdaki bilgileri okudum ve bu alıřmaya tamamen gnll olarak katılıyorum.

(Formu doldurup imzaladıktan sonra uygulayıcıya geri veriniz).

İsim Soyad

Tarih

İmza

----/----/----

Appendix F: Attendance Table of Children

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
The Clock /ST	+	+	+	+	+	+	+	+	+	+	+
The Clock / RD	+	+	+	+	+	+	+	+	+	+	+
Seasons / ST	+	+	+	+	+	+	+		+	+	+
Seasons / RD	+	+	+		+	+	+		+	+	+
Ancient Human Beings / ST	+	+	+	+	+	+	+	+	+	+	+
Ancient Human Beings / RD	+	+	+	+	+	+	+	+	+	+	+
Animals / ST	+	+	+		+	+	+	+	+	+	+
Animals /RD	+	+	+	+	+	+	+	+	+	+	+
Music and Emotions / ST	+		+	+	+	+	+	+	+	+	+
Music and Emotions / RD	+	+	+	+	+	+	+	+	+	+	+
Museum / ST	+	+	+		+	+	+	+	+	+	+
Museum / RD	+	+	+		+	+	+	+	+	+	+
Human Body / ST	+		+	+	+	+	+	+	+	+	+
Human Body / RD	+		+	+	+	+	+		+	+	+
Portfolio 1	+	+	+	+	+	+	+	+	+	+	+
Portfolio 2	+	+	+	+	+	+	+		+	+	+
Portfolio 3	+		+	+	+	+		+	+	+	+

Appendix G: Tez Fotokopisi İzin Formu

TEZ FOTOKOPİSİ İZİN FORMU

ENSTİTÜ

Fen Bilimleri Enstitüsü

☐

Sosyal Bilimler Enstitüsü

☒

Uygulamalı Matematik Enstitüsü

☐

Enformatik Enstitüsü

☐

Deniz Bilimleri Enstitüsü

☐

YAZARIN

Soyadı : Aras

Adı : Selda

Bölümü : İlköğretim

TEZİN ADI (İngilizce) : Pedagogical Documentation Practices And Young Children's Self- Regulation & Metacognition

TEZİN TÜRÜ : Yüksek Lisans

☐

Doktora

☒

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir.

☐

2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir.

☐

3. Tezimden bir bir (1) yıl süreyle fotokopi alınamaz.

☒

TEZİN KÜTÜPHANEYE TESLİM TARİHİ:

Appendix H: Turkish Summary / Türkçe Özet

Erken Çocukluk Döneminde Öz-Düzenleme ve Üstbilişsel Becerilerin Desteklenmesi: Pedagojik Dokümantasyon Uygulamaları

1. GİRİŞ

İlk yıllardaki eğitim kalitesi, çocukların tüm gelişimini ve öğrenimini etkiler. Çocukların becerilerinin geliştirilmesi ilk yılların bir parçası olmasına rağmen, çocukların etkinlik ve stratejilerindeki performanslarını planlama, izleme, denetleme ve performanslarını değerlendirebilme açısından da kritik önem taşımaktadır (Bronson, 2010; Bodrova & Leong, 2007). Küçük çocukların öz-düzenleme ve üst bilişsel becerileri üzerine yapılan ilk çalışmaların bu beceriler için olan potansiyellerini gözardı ettiği iddia edilmektedir. Bununla birlikte, sekiz yaşın altındaki çocukların üst biliş ve öz düzenlilik gösterme yeteneğine sahip olmadıkları uzun yıllar düşünülmüştür (Veenman & Spaans, 2005; Zimmerman, 1990). Gelişim psikolojisinde iki gelenek, bu çalışmada vurgulanan iki terim için ilham kaynağı olmuştur. "Üst biliş" terimi Flavell (1979) ve Brown (1987) tarafından bilişsel bilgi işleme geleneğinden ortaya çıkmış ve "öz düzen" Vygotsky (1986) tarafından ortaya atılmıştır. Üst biliş Flavell (1979) tarafından biliş hakkındaki biliş ve düzenleme olarak tanımlandı. Üstbiliş, duygusal, motivasyonel ve sosyal unsurları da içine alan öz düzenlemenin bilişsel taraflarını oluşturur (Whitebread, Coltman, Pasternak, Sangster, Grau, Bingham, Almeqdad ve Demetriou, 2009). Öz düzenleme becerileri "öğrencilerin öğrenmeleri için hedef belirlediği, ardından da bilişlerini izlemesine, düzenlenmesine ve kontrol etmeye çalıştığı aktif, yapıcı bir süreç" sağlar. (Pintrich & Zusho 2002, s. 250). Öz düzenleme becerileri olan çocuklar problem çözme süreçlerinde aktif rol oynamaktadır. Kendilerini ifade etme

konusunda başarılı olan ve kendilerini daha iyi değerlendiren bireyler olarak gözlemlenirler. Üst-bilişsel açıdan aktif olan çocuklar, öğrenme sürecindeki bilişsel süreçlerin farkındadırlar. Üst bilişsel yetenekler, genel hedefleri belirleme ve değerlendirme, stratejiler üzerine karar alma ve onları aktifleştirme gibi entelektüel süreçleri içerir (Flavell, 1979).

Literatür, erken öz düzenleme ve üstbilişsel becerilerin gelişimsel sonuçlar ve kısa ve uzun vadeli akademik başarılar üzerindeki etkilerine dair önemli kanıtlar içerir (Pointz, 2008; Blair & Razza 2007; Mitchell, Wylie ve Carr, 2008). Bu yetenekler, çocukların okula hazır olmalarına ve akademik becerilerini desteklemesine katkıda bulunur. Ayrıca, öz düzenleme ve üstbilişsel beceriler, çocuklara zorlayıcı ve zor durumlara karşı olumlu duygular yaşatır, bireysel ilerlemeyi vurgular ve hataları öğrenme vesilesi olarak görür (Perry, 1998). Öz düzenleme ve üstbilişsel becerilerin ilk yıllardaki önemi, tartışmayı bu yetenekleri desteklemek için uygun öğrenme ortamına getirir.

Öz-düzenleme ve üstbiliş gelişimi, sosyal ve fiziksel çevreye bağlıdır (Bronson, 2000). Yakın tarihli araştırmalar pedagojik dokümantasyon ve bu beceriler arasında paralellikler ortaya koymaktadır; bu yaklaşım, yansıma ve öz-düzenleme için uygun öğrenme ortamı sağlamaktadır - bu da kendi öğrenme sürecine aktif katılımı vurgulayan ve kendi düşüncelerini yansıtmayı vurgulayan bir dinamiktir (Clark, 2012). Dokümantasyonun amaçlarının, çocukların özdenetimle hareket ettikçe çocukların konuşturıldığı stratejilere güçlü bağları vardır (Clark, 2012).

Dokümantasyon uygulamalardan elde edilen kanıtlar, öğrenci yansıması için bir öğrenme ortamı sağlar. Bu süreç, düşünceyi görünür kılar ve iç öğrenme süreçlerini serbest bırakır. Çocuklar belgeleme faaliyetlerine katıldıkça öz düzenleme ve üstbilişsel becerilerini uygulamaya geçirirler (Zimmerman, 2000; Clark, 2012).

Çocuğun kendisinden, diğer çocuklardan ve öğretmenlerden gelen şeffaf geribildirim özdenetim becerisini desteklemektedir (Clark, 2012).

Pedagojik dokümantasyon uygulamaları, çocukların öğrenme süreçlerinde neyi nasıl düşündüklerini, akıl yürütmelerini ve öğrenmelerini anlatır. Öğrenme sürecini üçüncü bir göz olarak düşünmeye, kanıta dayalı bir şekilde değerlendirmeye ve yanıtlarımıza yansıtmaya fırsat verir (Ontorio Milli Eğitim Bakanlığı, 2014).

Çocuklar, dokümantasyon sürecinde kendi düşüncelerini fark eder. Dokümantasyon süreci, devam eden öğrenme ve gelişim için çok önemli olan üst bilişsel becerileri uyarma potansiyeline sahiptir.

Pedagojik dokümantasyon, çocuk çalışmalarının örnekleri, fotoğrafları, öğretmenin analizi, çocuk konuşmalarının transkriptleri, ebeveynlerin katkısı ve etkinliklerin amaçlarıyla ilgili açıklamalar içeren bir günlük pratiktir (Hendrick, 1997; Katz & Chard, 1996 ; Kocher, 2004; Rinaldi, 1998). Dokümantasyon öğrenme süreçlerinin doğasını görülebilir hale getirir. Bu da okumayı ve yorumlamayı, ve değerlendirmeyi mümkün kılar. Çocuğa hem süreci hem de kendi kendini değerlendireme fırsatı sunar (Rinaldi, 2006).

Çocukların pedagojik dokümantasyon ile geçirdiği aşamalar, öz düzenleme ve üstbilişsel becerileri için gerekli şartları sağlar (Clark, 2012). Pedagojik dokümantasyonun ilk aşaması, öğrenci deneyimini gözlemleme ve kaydetmeyi içerir. Bu aşamanın iki büyük amacı, belirli bir öğrenmeyi veya beceriyi değerlendirmek ve olası öğrenme anlarını ve düşünme yollarını kaydetmektir. (Kline, 2008). İkinci aşamada çocukların öğrenimine ilişkin daha fazla anlayışın geliştirilmesi için yorumlanır. Çocukların bu aşamaya girmesi kendilik ve başkalarını anlamada büyük adımlar atmaktadır. Çocuklar, kendi öğrenimlerini temsil etme, kaydetme ve yansıtmaya fırsatını bulurlar (Seitz, 2008). Üçüncü aşama, ürünler ve öğrenme süreçleri hakkında konuşmalar, diyalogları tartışmayı ve

paylaşmayı içermektedir. Çocuklar öğrenmede kendi öğrenmelerine yönelik ilgili birçok soru yöneltmeye teşvik edilir. Çocuklar, kim olduklarını, ne ve nasıl öğrendiklerini, öğrenme fırsatlarını keşfedip gelecekteki öğrenimleri için kişisel yollar tasarlamalarını keşfederler (Ontorio Milli Eğitim Bakanlığı, 2014).

Dokümantasyon araçları, pedagojik dokümantasyon uygulamalarının önemli bir kısmını içerir. Bunlar, çocukların öğrenmelerinin görsel temsidir ve kendi düşüncelerini provoke etme ortamı sağlar (Buldu, 2010). Yeni anlayışları derinleştirmek, netleştirmek ve güçlendirmek için bir araç olarak hizmet ederler. Çocuklar akranlarından öğrenme fırsatları bulur ve deneyimlerini dokümantasyon araçlarıyla paylaştıklarında başkalarının çalışmalarıyla uyarılırlar. Bu paylaşım zamanı, fikirleri, düşünceleri ve ortaya çıkan ürünü tekrar gözden geçirmeyi teşvik eden öğrenme ortamları sağlar. (Buldu, 2010; Kline, 2008).

Pedagojik dokümantasyon süreci, çocukların aktiviteler sırasında deneyimlediği süreçleri ve zihinsel yolları belgelemekte ve öğretmen ve çocuk yansımalarını bir araya getirmektedir. Bu zihinsel yollar, çocuklar öğrenmelerine yeniden alıştıkça üst bilişleri destekler, öğrenmelerini belgeler yoluyla yansıtma fırsatı bulduklarında düşüncelerinin farkına varırlar (Rinaldi, 2006; Deibert, 2011). Ürünleri ve fotoğrafları görüntülemek, diyalogları gözden geçirmek, çocukların çalışmalarını üçüncü bir göz olarak görmelerini ve öğrenmelerini geliştirmelerini sağlar. (Deibert, 2011). Dokümantasyon süreci, yaşantıları hatırlamak ve çocukların fikir ve planlarını harcamasına motive etmek için bir araç olarak hizmet etmektedir (Curtis & Carter, 2000; Edwards, Gandini ve Forman, 1998; Rinaldi, 2001). Dokümantasyon "eğitimde yaşanan deneyimleri görünür hale getirir." (Wien, 2008, s. 154).

Çocukların dokümantasyon süreci boyunca yaşadığı sosyal etkileşim bilişsel gelişimlerini teşvik eder. Böylelikle, biliştü becerilerin gelişimini desteklemek

için işbirliği içinde öğrenme deneyimleri önerilmektedir (Kramarski & Mevarech, 2003; Chatzipanteli, Grammatikopoulos ve Gregoriadis, 2013). Çocukların birbirlerinden öğrendikleri zaman üst bilişin güçlendiği iddia edilmektedir. (Iskala, Vauras ve Lehtinen, 2004).

Böylece, bu çalışma, birbirlerine hizmet eden bu iki kavramı bir araya getirmeyi amaçlamıştır ve dokümantasyon uygulamaları sırasında küçük çocukların sergiledikleri öz düzenleme ve üstbilişsel becerileri araştırmayı amaçlamıştır. Çocuklarla yapılan gözlemler ve bireysel görüşmeler, küçük çocukların dokümantasyon uygulamaları yoluyla öz-düzenleme ve metacognition'ı araştırmak için kullanılmıştır.

1.2. Araştırmanın Amacı ve Araştırma Soruları

Çalışmanın amacı, küçük çocukların pedagojik dokümantasyon uygulamaları sırasında sergiledikleri öz-düzenleme ve üstbilişsel yeteneklerini araştırmaktır.

Araştırma soruları:

- Dokümantasyon uygulamaları içerisindeki yansıtıcı faaliyetler, küçük çocukların öz-düzenleyici ve üstbiliş yeteneklerini nasıl destekler?
- Küçük çocuklar, dokümantasyon uygulamaları içerisinde yansıtıcı faaliyetler yoluyla öz düzenleyici ve üstbiliş yeteneklerini ne derece ortaya koyarlar?

1.3. Çalışmanın Önemi

Öz düzenleme ve üstbilişsel beceriler konusundaki araştırmaların büyük kısmı daha büyük çocuklar ve yetişkinleri kapsamıştır. Yakın tarihe kadar yapılan araştırmalar, bu becerilerin 8 yaşından önce gözlemlenmediği ile sonuçlanmıştır. Ancak son araştırmalar erken yaşlarda öz-düzenleme gelişimini araştırmış ve bu konumu hem

metodolojik hem de teorik gerekçelerle sorgulanmıştır. (Bronson, 2000; Rothbart ve diğerleri, 2006; Efklides & Misalidi, 2010). Küçük çocukların öz- düzenleme ve üst bilişinin anlaşılması büyük ölçüde bu kavramların daha büyük öğrencilerle olan araştırma gayretine dayandığından, küçük çocukların öz- düzenleme ve üst bilişini araştıran çok az çalışma bulunmaktadır. Bu eksiklik, küçük çocukların faaliyetlerinde kendini düzenleme ve üst bilişin boyutlarını küçümseme potansiyeline sahiptir.

Duygularını kontrol edebilme, başkalarıyla olan etkileşimlerini düzenleme ve problem çözme stratejilerini kontrol edebilme özelliklerine sahip olan küçük çocukların öz düzenleme ve üstbilişsel becerileri için potansiyellerinin göstergeleri vardır. (Bronson, 2000). Whitebread ve meslektaşları (2007), deneysel laboratuvar çalışmaları ve çocukların kendi raporlarıyla yapılan araştırmalar nedeniyle erken yaşlarda gelişmiş üst bilişsel yeteneklerin azaltılabileceğini iddia etmektedir. Buna karşın, doğal olarak oluşan nitel araştırmalarda yapılan sınırlı araştırma, çocukların anaokulu düzeyinde öz-düzenleme ve üst biliş kanıtlarını gösterme potansiyeline sahip olduğunu ortaya koymaktadır. Yakın tarihli araştırmalar daha yaşa uygun metodolojileri kullanmaya başlamış ve ilk yıllarda öz düzenleme ve üstbilişsel becerileri tanımlamıştır. Örneğin, yapılan bir çalışmada üç yaşındaki çocukların bir problemi çözerken davranışlarını izlediği ve dört yaşındaki çocukların üstbiliş yeteneklerini kullandıkları saptanmıştır (Sperling, Walls, & Hill, 2000). Çocuklara açık uçlu etkinliklerde vakit geçirme deneyimleri verildiğinde, kendi kararlarını kendileri vermek ve diğerlerini değerlendirmek ve hareketlerini kontrol etmek gibi öz düzenleyici yetenekleri sergiledikleri ortaya koyulmuştur (Perry & Drummond, 2002). Benzer şekilde, Robson (2010), önceki faaliyetleri ve görevleri üzerine düşündükleri zaman çocukların üstbilişsel ve öz-düzenleyici davranışlarını gözlemlemiştir.

Davranışsal, sosyal ve entelektüel gelişim için ilk yıllarda üstbiliş ve öz-düzenleyici yeteneklerin geliştirilmesi önemlidir. Bu yeteneklerin ortaya çıkışı ve gelişimi incelenmek üzere açıktır ve bu nedenle alana ilişkin yeni kanıtlara (Bronson, 2000; Whitebread ve diğerleri, 2009) tabidir. Alanın, doğalcı bağlamlarda çocuklara yönelik daha gözlemsel çalışmaları gerekmektedir (Whitebread ve diğerleri, 2009). Pedagojik dokümantasyon, doğal olarak, çocuklar için düşünme ve öğrenme süreçlerini düşünmek için öğrenme anları sağlar. Felsefî çerçevesi, çocukların ne ve neyi öğrendiklerini hatırlamalarını ve yansıtmalarına dayanmaktadır. Pedagojik belgeleme tarafından önerilen fiziksel ve psikososyal ortam, öz düzenleme ve çocukların üst bilişini desteklemek için gerekli koşulları sağlar. Bu nedenle, bu çalışma, birbirine yakından ilişkili iki kavramı bir araya getirmeyi ve pedagojik dokümantasyon süreci ile öz düzenleme ve metabilşmeyi araştırmayı amaçlamaktadır. Araştırma, erken dönemde kendi kendini düzenleme ve üstbiliş gelişimi ihtiyacını vurgulamaktadır (Robson, 2010; Bronson, 2000; Bodrova & Leong, 2005). Buna ek olarak, son çalışmalar, özdenetim ve metabilşimi güçlendiren programlar ve uygulamalar üzerine araştırma yapılması çağrısında bulundu (Diamond & Lee, 2011; Hughes, 2011; Daily, 2013). Pedagojik dokümantasyon, doğası gereği, küçük çocuklarla çalışırken bu kavramların geliştirilmesi için değerli bir potansiyel içermektedir. Bu çalışma doğal içeriğinde keşfedici bir şekilde bu potansiyeli arar.

2. YÖNTEM

2.1. Araştırma Tasarımı

Bu araştırma, küçük çocukların pedagojik dokümantasyon uygulamaları sırasında sergiledikleri öz-düzenleme ve üstbilişsel yeteneklerini araştırmak için nitel bir araştırma olarak tasarlanmıştır. Bu çalışma ile incelenecek olan konu az anlaşılan bir

olgudur ve küçük çocuklar ile geniş çapta araştırılmamıştır. Bu nedenle nitel araştırma türleri arasında keşifsel araştırma tasarımı (Marshall, 1999) kullanılmıştır. Bir taraftan, öz düzenleme ve üst biliş, son zamanlarda küçük çocuklar ile çalışılmaktadır. Geleneksel görüşler, küçük çocukların öz- düzenleme ve üst biliş gösterme yeteneğine sahip olmadığını iddia etmektedir. Bununla birlikte, yakın tarihli çalışmalar, genel ve akademik gelişim için tC5 öneme sahip olan çocukların potansiyelleri ve öz düzenlenmesi ve üst bilişsel becerileri üzerinde durmaktadır. Mevcut çalışmalar, küçük çocuklarla birlikte bu iki olgunun,öz- düzenleme ve üstbilişi teşvik edecek öğrenme ortamlarını ve faaliyetleri tanımlamak için daha fazla çalışma yapılması gerektiğine odaklandığını ortaya çıkarmıştır (Daily, 2013, Robson, 2010).

Öte yandan, pedagojik dokümantasyon sürecini konu alan sınırlı çalışmalar, bu uygulamaların çocukların öğrenme ve gelişimine etkinliğini göstermektedir (Buldu, 2010; Dahlberg, Moss, & Pence, 2006; Rinaldi, 2001). Dokümantasyon uygulamaları ile sağlanan öğrenme fırsatları, çocukların öğrendiklerini hatırlamalarını ve yansıtmalarını sağlar; akranları ve öğretmenleri ile düşünme süreçlerini düşünmek için diyaloglara girerler. Dolayısıyla dokümantasyon, çocukların öz- düzenleme ve üst bilişini geliştirmeleri için güçlü bir potansiyele sahiptir. Bu araştırma, bu potansiyelin doğal bir bağlamda ve derinlemesine incelenmesini amaçlamıştır. Verilerin toplanması için gözlem ve mülakatlar yapılmıştır. Veriler, küçük çocuklarda kendini düzenleme ve üstbilişin sözel ve sözsüz göstergelerini ölçmek için geliştirilen bir kodlama çerçevesi ile analiz edilmiştir. Çalışmaya 11 çocuk katılmıştır.

Sınıfta pedagojik dokümantasyon faaliyetleri ve çocuklar ile yapılan röportajların gözlemleriyle veri toplamak için on iki hafta geçirilmiştir. İlk iki hafta, çocuklar, sınıf içeriği ve program hakkında bilgi almak için ayrılmıştır. Veri toplama periyodu

on hafta boyunca gerekleşmiştir. Dokümantasyon paneli paylaşım saatleri gözlenlenmiş ve her bir çocukla bireysel görüşmele yapılmış, bunun yanında çocukların portfolyolarına yönelik bireysel görüşmeler yapılmıştır.

2.2. Örneklem

Fenomeni yoğun olarak ortaya koyan yoğunluk bakımından zengin vakaları inceleyebilmek için (Patton, 2002, s.243) amaçlanan örnekleme yöntemleri kullanılmıştır. Ölçüt örneklemesinin kullanılmasının nedeni, önceden belirlenmiş ölçütler için olanları kullanmaktır (Patton, 2002). Bu araştırmanın kriterleri pedagojik dokümantasyon uygulamalarının devam ettiği bir okul öncesi öğrenme ortamıdır. Çalışma ortamı, bir devlet üniversitesi kampüsünde bir okulda bulunan bir anaokulu sınıfında gerekleşmiştir. Sınıf öğretmeni ve araştırmacı, pedagojik dokümantasyon uygulamalarını hedef alan bir TÜBİTAK Projesi içinde 2014-2015 öğretim yılı boyunca birlikte çalışmışlardır. Sınıf öğretmeni öğretimindeki pedagojik dokümantasyon uygulamalarını kullanmaya devam etme niyetini dile getirmiştir ve bunun çalışmalar için uygun bir ortam olacağına karar verilmiştir. Öğretmen, erken çocukluk öğrenme ortamlarında öğrenmeyi ve öğretmeyi anlama, destekleme ve geliştirmede pedagojik belgelerin etkinliğini araştırmayı amaçlayan daha büyük bir projenin katılımcılarından biridir. Öğretmen, bir yıl boyunca pedagojik dokümantasyon yaklaşımı konusunda hizmet içi öğretmen eğitimi almış ve 2014-2015 öğretim yılı boyunca bu konuyla ilgili seminerler, çalıştaylar ve sınıf içi eğitimlere dahil olmuştur. Bir çocuğun ailesi tarafından çalışmaya katılmasına izin verilmediğinden on iki çocuğun onbiri çalışmaya alınmıştır.

2.2. Veri Toplama İşlemleri

Çalışma için iki önemli veri kaynağı olarak gözlem ve görüşme kullanılmıştır. Dokümantasyon paneli ile gerçekleştirilen paylaşım zamanları video kamera ile kayıt altına alınmış, her bir panelden sonra çocuklarla yapılan bireysel görüşmelerin ses kayıtları alınmıştır. Portfolyo tabanlı gerçekleştirilen bireysel görüşmelerin de ses kayıtları alınmıştır. Gözlemlere yönelik videolar, çocukların yaptıklarına ilişkin bağlamsallaştırılmış kanıtları almak için kullanılmıştır (Perry & Winne, 2006). Görüşmeler, çocuklarla bireysel olarak çalışma fırsatı sağlayacak yansıtıcı diyaloglar (Robson, 2010) olarak anılacaktır (Perry ve diğerleri, 2002). Gözlemler doğal sınıf ortamında gerçekleşirken, çocuklarla yapılan görüşmeler araştırmacı tarafından yapılmıştır.

2.3. Veri Analizi

Veriler, araştırma amacıyla oluşturulmuş Cambridge Bağımsız Öğrenme (C.Ind.Le) çerçevesi kullanılarak, küçük çocukların üstbilis ve kendini denetleme konusundaki sözel ve sözsüz göstergelerinin belirlenmesi ile analiz edilmiştir (Whitebread ve ark., 2007, 2009) (Ek 1).

Gözlem çerçevesi, öz-düzenleme ve üstbilis üç ana alanına yönelik sözlü ve sözsüz davranışların detaylı tanımını içerir. Üstbilisel bilgi ilk alandır ve bilginin farkında olmakla ilgilidir. Kişiler, görevler ve stratejiler için üst bilisel bilgiyi kapsar. İkinci ana alan üstbilisel düzenlemedir. Bu, çocukların görevleri sırasında geçirdiği bilisel süreçlerle ilgilidir. Üçüncü alan, duygusal ve motive edici düzenleme, bir görev sırasında duygu ve motivasyonu izleme ve kontrol etme olarak tanımlanır. (Whitebread ve ark., 2009).

2.4. Güvenilirlik ve Aktarılabilirlik

Lincoln ve Guba (1986), kalitenin nitelik araştırmasında farklı kriterleri talep ettiğini ileri sürmüştür. "İç geçerliliğe analog olarak güvenilirlik, dış geçerliliğe analog olarak aktarılabilirlik, güvenilirliğe analog bir bağımlılık ve nesnellığe analog bir uyumluluk" önermişleridir.

Çalışma kapsamında geçerlik ve güvenilirlik sağlamak için pilot çalışma, akran ve uzmanlardan oluşan bilgilendirme ve zengin veriler kullanılmıştır.

3. BULGULAR

3.1. Dokümantasyon Paneli

Çalışmada yedi dokümantasyon paneli ile yedi paylaşım süresi gözlemlendi. Paylaşım süreleri 15 dakika ile 40 dakika arasında sürdü. Her paylaşım zamanından sonra çocuklar ile yansıtıcı diyaloglar gerçekleştirildi. Bu diyaloglar iki dakika ile yedi dakika arasında sürdü.

3.1.1. Üst Bilişsel Bilgi

Çocukların sözel ve sözel olmayan davranışları, kişilik bilgisi, görev bilgisi ve stratejilerin bilgisi bu kategoriye dahildir. Çocukların, üst bilişsel bilginin göstergelerini tüm alt kategorilerde gösterdikleri gözlemlendi. Dokümantasyon panelleri ve yansıtıcı diyaloglarla paylaşma zamanlarının gözlemleriyle çocuklar, bildiklerini tanımladı ve faaliyetlere getirdiği stratejiler ve görevler hakkında farkındalıklarını dile getirdi. Çocukların ve başkalarının bildikleri veya bilmediği, bilişsel görevleri ve öğrenme yönelimi ve yaklaşımları hakkında bir anlayışları olduğu edinilen bulgular arasındadır.

3.1.1.1. Kişilerin bilgisi

Öğrenme sırasında ve akademik süreçlerde karşılaştıkları zorlukları yansıtan çocuk ifadeleri bulunmaktadır. Çocukların, insanlarla ilgili bildiklerini sözlü olarak ifade etmeleri, sınıf içindeki paylaşım zamanlarında gözlemlenmiştir. İnsan vücudu konulu dokümantasyon paneli aktivitesinin transkriptinden bir alıntı, kişilerin bilgisi için sözlü ifade için örnekler göstermektedir. Panelde hapşırarak bir kişinin resmi, insanların neden hapşırdıkları ve hapşırırken neler olduğunu tartışılmasını sağladı. Çocuklar, önceki öğrenmelerini hatırlayıp tartışmaya katıldılar ve evrensel bilimler hakkındaki bilişsel bilgilerini gösterdiler:

C5: Öğretmenim bir de hapşırırken gözümüzü kapatıyoruz.

Öğretmen: Evet çok güzel

C11: Neden gözümüzü kapatıyoruz?

Öğretmen: karabiber gibi şeyler baharatlı şeyler burnumuza gelirse tüy gibi şeyler gelirse gözlerimiz refleks olarak o sırada kapanıyordu değil mi

C6: Tuzu ağzına alıp sağa sola dökersen hapşırsın

Öğretmen: evet o yüzden de olabilir

C11: Hayır o zaman zararlı olan burnumuza toz girer

C4: Gözlerimiz niye kapanıyor biliyorum hapşırınca

Öğretmen: Hadi söyle o zaman!

C4: Gözlerimize hapşırık girmesin diye

C11 ve C5 müzeler konulu dokümantasyon paneline baktıklarında yine bu kategoriye ait bilgilerini yansıttılar. C2 müzik ve duygular konulu dokümantasyon panelinde resimlere ve çocuk ürünlerine atıfta bulunan bir etkinliği yansıtırken, C11 etkinliğe girmediğini ve niçin yapmadığını yüksek sesle sordu. C5, aktivitenin yapılacağı günde bulunmadığını ekleyerek diğerleri hakkındaki bilgilerini de sergiledi:

C2: Burda müzeler yaptık, gittiğimiz müzelerin resmini yaptık, gazete oyunu oynadık, kendimize müzeler tasarladık, bunları çizdik..

C11: Ben neden bu oyunu oynayamadım ki?

C5: Çünkü sen gitmiştin..

Paylaşım zamanları ve yansıtıcı diyaloglar sırasında, çocuklar "Şunu hatırlamıyorum" (C1) "" Hangi müzik olduğunu hatırlamıyorum "(C5)"Sergilerin anlamını anlayamıyorum" "Ben o gün burada bulunmadım" (C11) " gibi kendilerine yönelik bilgilerini sergilediler. Dahası, çocuklar ayrıca sevdikleri veya beğenilen tercihler hakkındaki bilgilerini sergilediler. Örneğin, C8, müzik ve duygular üzerine dokümantasyon paneli ile paylaşım süresince, benlik bilgisini dile getirdi: "Bunu yaptım, çünkü bu tür müzikleri seviyorum, o yahahh rock müziği .."

Yansıtıcı diyaloglar, çocuklara üst bilişsel bilgilerini bilerek sergileme ve yansıtma fırsatı da verdi. Örneğin C6, hayvanlar hakkında dokümantasyon panelindeki faaliyetleri yansıtırken "bunlardan başladım çünkü bunlardan hiçbirini bilmiyorum" yorumunda bulundu. Benzer şekilde, müze paneli C11'deki görevlerden bahsederken: " Bunun ne olduğunu bilmiyorum. Ama o kıvrımlı dinozor, bunu biliyorum. Zehirli, en zehirli. " dedi. C9'un mevsimler konulu panelde yansıtıcı diyalogundaki sözleri de çocukların benlik bilgisine bir örnektir:" Bu faaliyetler benim için çok değerlidir ".

Bir başka yansıtıcı diyalogda, C4, eski insanlardaki dokümantasyon panelinin önündeki "ilk insanı" üzerine yorum yapıyordu ve yeteneklerinin açık ifadesini gösterdi: "Böyle olduğunda, düşmeden kolaylıkla ilerleyebilirim. "dedi. Benzer şekilde, müze paneli C6'daki görevlerden bahsedecekken, "Şimdi dinozoru çok iyi çizebilirim" konusundaki tercih ve yetenekleri hakkındaki bilgilerini dile getirdi.

3.1.1.2. Görev bilgisi

Üç alt kategori arasında, görevlerin bilgisi yansıtıcı zamanlarda ve paylaşım sürelerinde en az gözlenen olaydı. Çocuklar, benzer ve farklı noktalardaki görevler arasında karşılaştırmalar yaparak ve zorluk seviyeleri hakkında bir karar verip, önceki bilgileri tC5 alan görevi derecelendirerek görev bilgisini sergilemişlerdir. Özellikle dokümantasyon panelleri, çocukların ürünlerini ve akranlarının ürünlerini aynı anda görmelerini sağladı ve bu da çocukların benzerlik ve farklılıklar hakkında sonuç çıkarmalarını sağladı. Örneğin hayvanlar üzerinde paylaşım süresi sırasında C5, görevleri kıyasladı ve "Aslında C1 ve ben aynı şeyi yaptım" diyordu. C2'nin örneği aynı zamanda farklar açısından görev bilgisinin bir göstergesidir. C2, saatler konulu panel paylaşım saatinde, diğer saatlerden olan farkı nedeniyle bir ay saati yapmış olduğunu söyledi: "Bir ay saati hazırladım çünkü diğerlerinden farklı."

Benzer şekilde çocuklar, görevler arasında karşılaştırmalar yaparak yansıtıcı diyaloglar sırasında görevleri hakkındaki bilgilerini sergilemişlerdir. C6 ve C9'dan alınan alıntılar, müzelerde dokümantasyon paneli aracılığıyla yansıtıcı diyaloglardan örnek olarak sunuluyor:

C6: Burada üç bardak boyadım. Herkes bir tane çizdi. Ayrıca en farklı dinazor da yaptım. Gökkuşağı dinozoru.

Araştırmacı: C11'leri seçtiniz. Neden sana ilginç geldi?

C9: C11'de de dinazorlar da var, bu yüzden.

Araştırmacı: Hmm.

C9: Bu aynı zamanda dinazorlarla da ilgili. Bu da. Tüm dinazorları severim.

Çocuklar, süreç boyunca zorluk çektiği yerleri belirledi ve bu zorluğun sebeplerini açıkladı. Özellikle, yansıtıcı diyaloglarda, çocuklar görevlerin zorluk derecesi hakkında bilgi verdi. Aynı zamanda, onlar için basit veya zor olan unsurlardan bahsettiler. Örneğin, C9, bir örnek üzerinde yaptığı düşüncelerini ifade ederken, zorluk seviyesini "Çok kolay. Bebek oyuncağı.. ".

3.1.1.3. Stratejilerin bilgisi

Çocuklar görevler sırasında uyguladıkları stratejileri belirlemişlerdir. Kullandıkları materyalleri ve yolları açıklayarak faaliyeti nasıl yaptıklarını anlattılar. Bazıları stratejilerinin ardındaki gerekçeleri de açıkladı. Çocuklar ayrıca, etkinlik ile ilgili prosedürleri açıkladılar.

Paylaşım zamanlarında ve yansıtıcı diyaloglarda, çocukların ifadelerinin stratejik fikirler ortaya çıktığı birkaç durum vardı. Örneğin C4, yansıtıcı diyaloglarından birinde dokümantasyon panelindeki çizimine atıfta bulunarak hayvanları sıralamak için çizgiler kullandığını açıkladı: "Çünkü hayvanlara anlatmak için çizgileri çizdim" dedi. Aynı şekilde C1 kullandığı stratejilerden bahsederken müzelerde dokümantasyon panelinde gösterilen faaliyetlerden birinde pamuk kullandığını ve nidusun yumuşak olması gerektiğini söyledi: "Burada bir böcek yuvası yaptım. Öğretmenimiz silikonla yapıştırdı. İçinde biraz pamuk koymak istedim, çünkü hayvanların yuvası yumuşak ve tüylü. "C8, paneldeki bir çıkartmaya değindi ve bunun kullanımının gerekçesini şöyle yorumladı: "Bunu anlayabilecekleri şekilde sıkıştık. Biz bir müze yapıyorduk. "

Çocuklar, bir şeyler yaptıklarını veya nasıl öğrendiklerini tanımlama veya açıklama fırsatı buldu. Yansıtıcı diyaloglardan bazı örnekler şöyledir:

C1: Burada bunları kullanarak süsledim. Bunun görülmesini istemiřtim çünkü biraz pamuk atacađım. Ve burada salyangoz yaptım. Bedenimi bununla yapmak istedim. Ve bu bir lüfer otu.

C3: Burada müzik dinledik. Burada hissettiđimiz duyguyu öne ve arkaya çizdik. Burada yine müzik dinledik, ancak hangi renge uygun, ona en uygun renge boyadık.

3.1.2. Üst Biliřsel Düzenleme

Çocukların görevlere planlama yaklařımları, öğrenme sırasında yeteneklerini izleme, yetenekleri kontrol etme ve deđerlendirme sonuçlarının deđerlendirilmesi ile ilgili çocukların sözel ve sözsüz davranıřları bu kategoriye dahildir. Kendini düzenleme ve üstbiliřsel bilgi, metabiliřsel düzenleme, duygusal / motivasyonel düzenleme- nin üç kategorisi arasında, bu kategoride daha fazla gösterge gözlemlendi ve kodlandı. Çocuklar, stratejilerinin etkinliđini gözden geçirip deđerlendirdikleri, stratejilerinin sonuçlarını analiz ederek, onların ve diđerlerinin performanslarını kontrol ettikleri, paylařım zamanlarında düşüncelerini dokümantasyon panelleri ve yansıtıcı diyaloglarla organize ettiđi gözlemlendi .

3.1.2.1. Planlama

Dokümantasyon panelleri, çocukları önceki deneyimlerinden bahsetmeye teřvik etti ve panelin neyle ilgili olduđunu konuřmaları istendiđinde, faaliyetlerini veya fotođraflarını paylařmayı hedeflediler. Paylařım zamanlarının bařında, öğretmen çocuklardan dokümantasyon panelindeki etkinliklerle ilgili olarak ne paylařacaklarını düşünmelerini istedi ve çocuklar bařkaları tarafından paylařılacak

süreçleri veya etkinlikleri planladı. Paylaşım zamanlarında ne paylaşacağımızı seçerek hedef belirleyen çocuk örnekleri bulunmaktadır:

C1: Hımmm.. Ben şurası hakkında konuşacağım..

C10: Ben şu (Gösteriyor) şu renklerden anlatacağım

Transkriptler, görev ile devam etme yolları hakkında çocukların kararlarına ilişkin göstergeleri içerir. Örneğin, hayvanlar hakkında dokümantasyon panelinin paylaşımında C2, paneldeki faaliyetleri anlattı ve dönüş yaptı. C2, bir takım etkinliklere katılmadı - kendi hayvanını yaratmak- kendi yokluğundan dolayı ve hayal gücündeki hayvanı paylaşmaya karar verdi: "burada kendim olmadığım için rüyamdaki hayvanı anlatmalıyım. (Düşünce) köpekbalığı yengeç ... "Yansıtıcı bir diyalogda C1, panelde sergilenen eski insanlar üzerindeki faaliyetleri sırasında deneyimlerini paylaşmaya hazırlanıyor ve örnek vermeye başlamıştı:" C1: Sana bir bundan örnek vereyim, Mayın."

Çocuklar, paylaşım zamanlarında ve yansıtıcı diyaloglarda gerekli kaynakları aramayı ve toplamayı da gözlemlemişlerdir. Mevsimlik dönem panelin önünde CE ile yansıtıcı diyalog sırasında, etkinlik örneğini bulmayı planladı ve araştırmaya dikkat etti: "Onların sırtına bakalım. Çünkü bazılarının arkasında boyalıyız "dedi. C5, yansıtıcı diyaloglardan birinde, etkinlik ürününü panelde bulamadı ve kaynak olmadan bu konuda konuşmamaya karar verdi:" Bunu söyleyemem, çünkü ben don istemiyorum. Bir fotoğrafım yok. Bir tane aldım, ama bitti, burada değil. " Planlamaya bir başka örnek olarak, C5 kendisi için önümüzdeki hafta bir hedef belirledi ve müzelerde panelle paylaşımında bulunarak sınıf ve öğretmenle bunu paylaştı: "Öğretmen, önümüzdeki Pazartesi günü DNA hakkında bir şeyler söyleyeceğim."

3.1.2.2. İzleme

İzleme, devam eden görev değerlendirmesi ile ilgili sözlü veya sözsüz davranışlar olarak tanımlanır. Davranışların açıklamaları kendine-yorumlar, görevdeki ilerlemeyi gözden geçirme, kendi veya eşlerinin davranışlarını kontrol etme, hataları saptama ve diğerlerinin performanslarını kontrol etmeyi içerir. Sınıflardaki paylaşım süreleri boyunca çocukların çoğunlukla sınıfta izlenmesi gözlenmiştir. İzleme göstergeleri yansıtıcı diyaloglar sırasında daha az gözlemlenmiştir.

İzleme örnekleri genelde çocukların sözlü olarak akranlarının görevdeki ilerlemesini kontrol etmesini içerir. Çocuklar, akranlarının özellikle hata tespiti üzerine performanslarına değindiler. Çocuklar da bu yorumlara dayanarak kendini düzelttiler.

Örneğin, eski insan dokümantasyon paneli ile zaman paylaşımında, C2 izleme sonucunda öğretmeni şu şekilde düzeltmiştir:

Öğretmen: Yani peki sen yedikleri şeylerden bahsettin ya.. İlk insanın..

C2: Yaptıkları şey..

Öğretmen: Hah, mesela dedin ya ağaç yemiş, ot yemiş, sonra da bir hayvanı öldürmüş onu yemiş.. neyini anlatıyor burda? Sanatla ilgili çalışmalarını mı, icatlarını mı, beslenmelerini mi, evlerini mi....

C2: Beslenme..

Paylaşma zamanları, çocuklara birbirleriyle etkileşim kurma, birbirlerinin performansını kontrol etme ve kendi kendini düzeltme fırsatı vermişti. Aynı paylaşım süresinde, C8, C4 ve C2 arasındaki diyalog izleme için net örnekler

göstermektedir. C4 doğru kelimeyi bulamadı. C2 ona yardım etti ve C4, C2'nin düzeltmesine dayanan kendini düzeltmeyi kullandı:

C4: Bıçaklar eskiden şöyleyken böyle üstü yuvarlakken dikdörtgen şekliyen şööyle sivri uçlu oldu.. O kazıcı şeyler eskiden böyleyken

C2: Traktör

C4: Traktörler kepçeler yerine geçti.. Eskiden mağaraya resim çizilirken şimdi tabloya çiziliyor..

C7, gözlem örneği olarak arkadaşının mağaralar hakkında korktuğu şeyleri ifade etmesi üzerine yorum yaptı. C7, mağaralarda da yarasa bulunduğunu belirterek arkadaşını ekledi ve düzeltti. Başka bir paylaşım zamanında C9, C5'in yaptığı etkinliğe ilişkin yorumuna tepki olarak izleme görüntüler:

Öğretmen: Güzel..Peki bakalım başka fotoğraflara.. Burda bir fotoğraf görüyorum hatta C9 nerde C9 incelemişti, bir gelir misin ne yapıyorsun fotoğrafta?

C9: Ayağımı inceliyorum.

Öğretmen: Niye inceliyorsun ayağını

C9: (Düşünüyor)

C5: Beyazlıkları!

C9: Aaa evet beyazlıkları..

Yansıtıcı diyaloglarda, çocuklar çoğunlukla kendi yorumlarını gözlemenin bir göstergesi olarak gözlemledi. Örneğin, C5 panelde müzikle ilgili bir fotoğrafa bakarken, önce fotoğraflarda neler olduklarını hatırlayamadı ve aniden hatırladı ve şu anki bellek alımı hakkında yorum yaptı: "Burada ne işimiz var? Ben hatırlamıyorum. Ah evet! Bu bayrakları orada boyuyoruz. "

3.1.2.3. Kontrol

Kontrol alt kategorisinde, yardım talepleri, paylaşım süreleri boyunca en yaygın davranış biçimiydi. Çocuklar panellerdeki bir şeyi ya da önceki öğrenme deneyimlerinden bir şey hatırlayamadığında akranlarından ya da öğretmenden yardım istedi. Yansıtıcı diyaloglara nazaran paylaşım zamanlarında herhangi bir kontrol davranışı gösteren çocuklara dair çok daha fazla kanıt bulunmaktadır. Çocuklar çoğunlukla paylaşım zamanlarında "Ne oldu?" Ya da "Burada ne yapıyorduk?" gibi sorular sordu. Örneğin C10, müzik ve hislerle paylaşımında bulunurken bir kısmını hatırlayamadı ve şu şekilde yardım istedi: "Ben burda , ben .. bu hangi müzikti?". Benzer şekilde C6 de etkinliği hakkında konuşurken şu şekilde yardım istedi: "Şurası da oyuncak, oyuncak ayı. Hayır, oyuncak neydi bu?"

Çocukların ifadelerinin arasında daha spesifik yorumlar da vardı. Örneğin, C4, vücudumuzun bazı sinyallerinin sağlığımızdaki eksikliğin bir göstergesi olduğunu hatırladığında, sınıfta öğrendikleri bir durumu anımsayamadı ve şu şekilde bir soru sordu. "O lekelerin sebebi hani bir şey var o şeyin o kadar çok olmadığını gösteriyordu?"

Bunların yanında, bazı çocuklar, paneldeki ürün ve fotoğrafları yansımalarını desteklemek için bir strateji olarak kullandılar. Örneğin C1, insan vücudu konulu dokümantasyon panelinin önünde deneyimlerini paylaşırken, yaptığı yorumları panelde yapılan etkinlikler üzerine destekleyerek şu şekilde ifade etti: "Parmak izlerini yaptık, (gösteriyor) şurada da onların etkinlikleri var."

Çocuklar akranlarına, kontrol delilleri olarak da düşünülen ipuçlarını kullanarak yardım veya rehberlik ettiler. Örneğin, aşağıdaki örnekte, C2, kelimenin ilk seslerini söyleyerek C1'ye yardımcı oldu:

C1: Ha evet..Burda da (düşünüyor..)

C2: Meme

C1: Memeli

Öğretmen: Çok güzel, memelilerden yaptın. Peki kendi yaptığınız hayvanlar ile ilgili de konuşabilirsiniz.

İzleme sonucunda çocuklarının stratejilerini değiştirdiklerini gösteren örnekler de bulunmaktadır. Örneğin, C10 öğretmenlerinin sorusundan sonra söyleyeceklerini şu şekilde değiştirdi:

C10: Şurda ben at yapmıştım, çok hızlı koşuyor ve hayvanat bahçesinde yaşıyor.

Öğretmen: Peki başka anlatmak stediğin bir şey varsa? Mesela kendi oluşturduğun yeni hayvanın neydi?

C10: burda ben en çok dikkatimi çeken..(düşünüyor) ya da hayvanı söyleyeyim.

Öğretmen: Söyle bakalım

C10: T rex kafalı aslan

3.1.2.4. Değerlendirme

Çocukların çoğu, çocuk yorumlarını kendi düşüncelerini düşünerek gözden geçirdiklerini belirten dördüncü üst bilişsel düzenleme alt kategorisine ait göstergeler sergilediler. Özellikle yansıtıcı diyaloglarda bu tür davranışların daha fazla kanıtı vardı. Örneğin C3 şu şekilde bir değerlendirmede bulundu: “Bunda çok başarılıydım..Çünkü boşluk bırakmadan boyadım.” Benzer şekilde C11 da paneldeki etkinliklerine bakarak değerlendirmesini şu şekilde dile getirdi:

“Çünkü burada her şeyi yapamadım. Burada her şeyi kolayca yapamadığım için.. Ben burda insan yaptım böyle, böyle de sanki şu dünyanın böyle şey ne yapıyoduk.. Sonra da mora dönüştü, mor olmuş.. Mavi yapacaktım mor oldu.. Ondan dolayı da.. Hımm ben böyle bir insan yaptım..”

C1 ise öğrenme sürecindeki yaptığı bir hata ile ilgili değerlendirmesini şu şekilde öne sürdü:

Araştırmacı: Hmm. Burada ben bir şeyler görüyorum. Önce bunu mu yapmışsın?

C1: Yanlış oldu o yüzden sildim.

Araştırmacı: Bunu da boyamışsın.

C1: Yanlışlık oldu sildim. Ben orda şu ikisini karıştırdım.

Aşağıda sunulan C6 ve C10’a ait ifadeler, öğrenme süreçlerine yönelik eleştirel değerlendirmelerine örnek teşkil etmiştir:

C6: Burada sonbahar ve ilkbahar var. Bunlara göre hangisi kıyafetleri giyeceğiz diye boyadık. Ben yanlışlıkla şapkayı boyadım onu söylemeyeceğim.

Araştırmacı:Ha yanlışlıkla mı boyadın onu?

C6: Yanlışlıkla boyadım.

Araştırmacı:Nerden anladın yanlışlıkla boyadığını?

C6: Ben boyadım. Sonra öğretmene sordum. Sonbaharda şapka giyilir mi? diye, hayır dedi. O yüzden silmeye çalıştım ama silemedim.

C10: O, bunu yanlış yapmıştım, bunlar arı. Bal yapıyorlar. İnek yapacaktım ama siyah yoktu o yüzden yanlış yaptım

Dokümantasyon panelleri, C7'nin en sevdiği etkinliğin sebebini yorumladığı zamanki gibi çocuklara, öğrenmelerini gözden geçirme ve öğrendiklerinin farkında olmalarını sağladı: “En sevdiğim hayvanların isimlerini öğrendim. (En sevdiği etkinliğin nedenini söylerken)”

Görev performansını inceleyen ve sınıfta paylaşma zamanlarında öğrendiklerini değerlendiren çocuk kanıtları bulunmaktadır. Hem kişisel hem de genel yorumlar göze çarpmaktadır. Örneğin C5 şu şekilde bir kişisel yorumda bulunmuştur: “Oryantal müzikte pembe hissettim, çünkü biraz tuhaf gibi gelmişti ama yine de benim pembe hissettim”. Genel yorumlara örnek olarak C11 ve C7’nin ifadelerinden aşağıdakiler sunulmuştur:

C7: Kaç kişi dinazor müzesi yapmış, kaç kişi eski arabalar müze bunları sayıp sayılarını yazsaydık, Ona göre oy gelirdi.. Hangisi yaramazdı hangisi yaramaz değildi anlardık (Panel üzerinde yaptıkları bir etkinliğe geliştirmek üzere yorum yapıyor)

C11: “Böyle arkadaşlar iyi davransaydı, o zaman yapabilirdik ama yapamadık.”

Çocuklar, değerlendirme yeteneklerinin bir göstergesi olarak zor veya yapması kolay olan parçaları sözlü olarak ifade ettiler. Buna örnek olarak aşağıdaki ifadeler sunulmuştur:

C9: Hiçbirinde zorlanmadım. Ama bu etkinliğin ikisinde zorlandım.

C8: Beni zorlayan şeydu yapmakta. Yapınca...Çünkü bazenleri buruştu ve kafasına pirit düştü.

C5: Bunda biraz zorlandım? Birde kesmek biraz beni zorladı.

3.1.3. Duygusal ve Motive Edici Düzenleme

Duygusal ve motivasyonel izleme ve duygusal ve motive edici kontrol ile ilgili çocukların sözel ve sözsüz davranışları bu kategoriye dahildir. Gözlem kayıtları ve yansıtıcı diyaloglar, çocukların dokümantasyon panelleri ve yansıtıcı diyaloglarla paylaşım zamanlarındaki görevler hakkındaki duygusal ve motivasyonel deneyimlerini gösterebildikleri versini sağlamıştır.

3.1.3.1. Duygusal / Motivasyonel İzleme

Duygusal / motivasyonel izleme alanı, bir görevin olumlu ya da olumsuz duygusal deneyiminin farkındalığını ifade eden ve bir görevde oldukları sırada duygusal tepkilerini izleyen çocukların kanıtıdır. Çocuklar, paylaşım zamanlarında ve yansıtıcı diyaloglarda duygusal / motivasyonel izleme davranışlarını sergiledi. Çocuklar panelin hangi bölümünü araştırmacı ya da akranlarıyla paylaşmak istediklerini belirttiler; C8 paylaşım sürelerinden birinde olduğu gibi, "Kendi hakkımda konuşmak istiyorum" konusundaki etkinliğinden bahsetmek istediğini belirtti.

Çocukların yorumlarının göze çarpan bir özelliği, akranlarının dokümantasyon panelindeki maddelere atıfta bulunan örnekleri ve etkinlikler hakkındaki duygularıdır. Çocuklar dokümantasyon panelleriyle ilgili şu anki duygusal deneyimlerin değerlendirilmesine ilişkin davranışları sergiledi:

C3: Bu çok güzel olmuş ve renkli olmuş..

C6: Ben birde C2'inkini çok sevdim çünkü o Fenerbahçeli.

C8: Güzel, havalı. (Arkadaşlarının etkinliği hakkında soruya cevap verirken)

C4: Hepsi güzel aslında (Arkadaşlarının etkinlikleri..)

Çocuklar ayrıca paylaşım zamanlarında ve yansıtıcı diyaloglarda duygularını izleme gibi gözlemledi. Örneğin C5, eski insanlar konusulu dokümantasyon panelindeki tartışmalar sırasında duygularını şu şekilde dile getirdi: “Öğretmenim ben mağarada kalsaydım, korkmuş, üzgün ve canım acımış hissederdim.. Mağara çok karanlık oluyor geceleri ve ayı var içinde ben ayılardan çok korkarım ve mağaraların şekli hoşuma gitmiyor.”

Duygusal ifadelerin ortak bir başka referansı, üzerinde çalışırken faaliyetler sırasında duygusal deneyimlerini anlatmaları olarak gözlenmlenmiştir. Özellikle, kendilerinin en çok ilgisini çeken etkinlikler hakkında sorular sorulduktan sonra, nedenlerinin arkasında duygusal ifadeleri dile getirdiler:

C5: Şeydi. Böyle çok ilgimi çekmişti, çok meraklanmışım. (Etkinlik sırasındaki hislerini anlatırken)

C9: Bunun için, bu etkinlikte biraz heyecanlandım ve birden öğretmene dedim ki “Öğretmenim bu etkinlik çok güzeldi” dedim.

C1: Çünkü bunda hem çok eğlendim hem de çok başarılı hissettim.

3.1.3.2. Duygusal / Motivasyonel Kontrol

Duygusal / motivasyonel kontrol, görev sırasında çocukların duygusal ve motivasyonel deneyimlerinin düzenlenmesiyle ilgili sözlü anlatımı veya davranışları kapsamaktadır. Çocuklar dikkatlerini kontrol etmiş ve paylaşım süreleri ve yansıtıcı diyaloglar sırasında bunu yansıtmışlardır. Özellikle, çocuklar dokümantasyon panelindeki etkinliklerle ilgili nedenlerini motivasyonları veya duyguları ile değiştirdiler:

C10: Bu ilk insanların mağarası, ateş yakıyorlar burada. Burada da taştan tekerlek yapmışlar..

M: Peki zorlandığın bir ekinlik oldu mu?

C10: Zorlandığım bir etkinlik yok. Şunu da anlatayım. İlk insan burada ateş yakmış. Ve mızrakla hayvanı böyle kesmiş, gergedanı. Boynuzu kırılmış. Sonra ateşi yakmış, ateşte pişirmiş, yemiş. (İlk insanlar)

C9: M: Tamam. Burada ne yapmışsınız böyle C9cuğum? (Saat)

C: Biz şey yaptık, ben şunu anlatayım..

Ayrıca, çocukların başkalarını cesaretlendiren deliller için, özellikle de tüm sınıfla paylaşma zamanlarında çok az örnek vardır:

C5: Bu arada o kendi hayvanımızı oluşturmaktan en çok dikkatini çeken söylemeyecek misin?

C10: Bu tarafları da gez..(C3 en sevdiği etkinliği ararken) (Müze)

3.2. Portfolyo

Çocukların öz-düzenleme ve üstbilişsel becerileri, üç kez yapılan yansıtıcı diyaloglarla araştırılmıştır. Çocuklardan, ailelerine paylaşılacak portfolyolarına

dahil etmek istedikleri ürünleri seçmeleri istendi. Yapay eserleri seçerken, tekrar görüşmeler yapmalarını ve öğrenme süreçlerine yansıtılmalarını sağlamak için yansıtıcı sorular soruldu. Çocuk diyaloglarının kodlamaları, çocukların portfolyo uyarılan yansıtıcı diyaloglar sırasında kendi kendini düzenleyen ve üstbiliş becerilerini gösterdiklerini ortaya koydu. Özellikle portfolyolari aracılığıyla performanslarını, görevlerini ve stratejilerini değerlendirirken gözlemleniyorlardı.

3.2.1. Üst Bilişsel Bilgi

Çocukların sözel ve sözel olmayan davranışları, kişilik bilgisi, görev bilgisi ve stratejilerin bilgisi bu kategoriye dahildir. Çocukların tüm alt kategorilerde üst-bilişsel bilgi sergilediği görülmektedir.

3.2.1.1. Kişilerin Bilgisi

Çocuklar, kişilerin bilgisini, özellikle de benlik bilgisini, portfolyolari aracılığıyla yansıtıcı diyaloglarda sergileme konusunda daha istekli bulundu. Kişisel tercihlerini yeteneklerine göre yansıtmaya hevesli oldukları gözlemlenmiştir. Çocuklara bütün portfolyodaki örnekleri seçme gerekçeleri sorulduğunda sebeplerini genel olarak "Seviyorum" ile başlayan ifadelerle açıkladılar.

Aşağıda sunulan alıntılar, çocukların kendilik bilgisini gösteren diyaloglardan gelmektedir:

C1: Bir bakayım. Nokta tamamlamayı seviyorum böyle nokta tamamlamaları.

C8: Çünkü böyle bir şeyi katlamayı çok seviyorum yani. Uçak bile yapmayı seviyorum.

C7: Çünkü ben bunları hiç sevmiyorum kelebekleri

C6: Sayı olarak 6'yı, renk olarak da sarıyı seviyorum.

Çocukların transkripsiyonlarından, başkalarının bilgisi ve evrensel bilgi ile ilgili olarak biliş hakkındaki bilgilerini kanıtlayan az örnek vardır. Örneğin, C10, dinazorlar hakkında yapılmış bir etkinlik seçti ve nedenini şu şekilde dile getirdi: "Annem dinazorları sevdiğinden seçtim bunu".

4.2.1.2. Görev Bilgisi

Görev bilgisine ilişkin çocuk kanıtları bilişsel bilginin diğer kategorilerinden daha azdı. Bununla birlikte, çocukların bilişsel görevlerin zorluk derecesi hakkında bir karar vermeleri için örnekler vardır:

C10: Bu kolay zaten ben yapıştırdım.

C6: Bu da çok basit çünkü sadece bunda yapıştırma vardı..

C9: Çünkü çok kolay

Araştırmacı: Ne kolaymış?

C9: Fotoğrafi yapıştırdığım için kolay..

Çocuklar benzer ve farklı noktalardaki görevler arasında karşılaştırmalar yaparak görev bilgisini sergilemişlerdir. Çocuklar özellikle, görevlerin öğeleri ile ilgili kendi uzun süreli bellek bilgisini ifade ettiler. Örneğin, C6 portfolyo için seçtiği aktiviteleri seçme nedenini açıklarken, diğerlerininkinden farklı olduğunu belirtti. Örneğin C6: "Çünkü bu çok güzeldi, renkli kağıt boyadık, kardan adam çizdik ama

en deęişik ben yaptım çünkü ben beyaz çizdim kırmızı ve mavi kullandım üstüne , kimse öyle yapmamıştı..”. C11'den benzer bir alıntı, görev bilgisiyle ilişkili olarak bilişsel süreci için bir kanıttır: “Bunu kimse yapmadığı için seçtim. Burada çiçek olmadığı için ben kendime çiçek yapmak istedim.”

3.2.1.3. Stratejilerin bilgisi

Çocuklar, portfolyoları ile yansıtıcı diyaloglar sırasında stratejiler hakkında bilgi sahibi olduklarını gösterdi. Faaliyetlerini nasıl yaptıklarını tanımladılar ve açıkladılar. Örneğin C6, portfolyosunda yer alan faaliyetlerinden birini açıklarken, kullandığı stratejilerle ilgili bilgilerini dile getirdi: “Ben burada kelebek yaptım, gözü siyah. Rengi de siyah. Birde burada böyle kapanabiliyor, böyle kapanıyor, böyle de kapanabiliyor. Ama böyle kapandı mı bunun kalkanı. Kalkanı gibi oluyor, kalkanı bu. Burası da kozası.” Benzer şekilde, C2, portfolyoündeki görevlerden birinde yer alan ve stratejilerin bilgisi için bir kanıt olan prosedürleri açıkladı:

C2: Bunda da yedi ve sekizi çizdik ilk önce. Ben yediye cama dönüştürüp sekizi de kardan adama dönüştürdüm.

C2: Ben bugün bugün geri dönüşüm günüydü.

Araştırmacı: Hı hı.

C2: Ben bir şişeyi herkes kırılacağı bir şişeyi aldık bir delik vardı. Onu geri dönüşüme attım yeni bir cetvel oldu.

Araştırmacı: Hmm yeni bir cetvel oldu. Bu senin mi icadın?

C2: Benim. Siyah bir cetvel oldu.

Araştırmacı: Nasıl düşündün bunu peki nasıl yaptın?

C2: Mm ben bir şişeyi geri dönüşüm kutusundan cetvele dönüşüyor.

Bir başka alıntıda C5, diğer sınıftan kullandığı özel materyali vurgularken onun aktivitesini nasıl yürüttüğünü tanımladı: “Kardan adam yaptık ve bunu bizim pastellerimizle değil, bulut sınıfının güzel pastelleriyle boyadık, ama şu bizim pastelimiz.”

C1'den bir başka örnek, sözlü ifadesini göstererek onun etkinliğini nasıl yaptığına dair bilgilerini gösteriyor:

C1: Ağzını ben şurada muzdan yaptım. Şurayı çilek yada elmadan yaptım hatırlayamıyorum. Gözlerinin içini muzdan yaptım. Burayı böyle elmadan yaptım. Bu gözleri.

Araştırmacı: Hı hı.

C1: Kulaklarını armuttan yaptım.

Araştırmacı: Çok güzel olmuş.

C1: Sonra nerede bilmiyorum. Burnunu da üzümünden yaptım.

3.2.2. Üst Bilişsel Düzenleme

Çocukların planlama, izleme, kontrol ve değerlendirme ile ilgili sözlü ve sözsüz davranışları bu kategoriye dahildir. Bu kategoride değerlendirme, yansıtıcı diyaloglarda portfolyo bazında en çok gözlemlenen alt kategoridir. Çocuklar, portfolyolarına eklenecek eserleri seçerken eleştirel bir biçimde tekrar ziyaret ettiler ve önceki etkinliklerini ve öğrenmelerini değerlendirdiler. Planlama ve izleme davranışlarını da gösterdiler. Bununla birlikte, çocuklar kontrol davranışı sergilerken nadiren gözlemlenmiştir.

3.2.2.1. Planlama

Planlamanın alt kategorisinde, gerekli kaynakları aramaya ve toplamaya yönelik yorumlar, portfolyolarla yansıtıcı diyaloglar sırasında en yaygın sözlü ifade biçimiydi. Görevi yerine getirmek için gerekli prosedürlerin seçimiyle ilgili davranışlara dair kanıtlar vardır. Diyaloglar sırasında, çocuklar fikirlerini portfolyolarına koymaya karar verdikleri eserler arıyorlardı. Örneğin, portfolyalarına koymak istedikleri eserler sorulduğunda, C11 dinazor kitabını koymaya karar verdiler ve bunun için aramaya başladı: “Dinazor etkinliği neredeydi ki?”. Benzer şekilde, C10, portfolyo gününde annesine söyleyeceği aktiviteleri sorduğunda bir süre düşündü ve eserlerine bakmaya başladı: “Şu dinazorlu nerede?”.

Çocuklar, portfolyo parçalarının seçimine dahil olduklarında hangilerinin dahil edileceği konusunda seçim yapma imkânı buldu. Hangi parçaların ekleneceğine karar verildiğinde, hangilerinin portfolyolarına dahil edileceğine karar vermeden önce parçaları karşılaştırdılar.

C2: Var. Şurada. Şuralarda bir yerde. (anlatmak istediği etkinliği belirtiyor)

C5: Bakayım ben bir (Var mı ... sorusu üzerine)

C6: MM bakayım.. (Var mı ... sorusu üzerine)

Görevle devam etme yollarını belirleyen çocuklar hakkında da kanıt bulunmaktadır:

C1: Mmmm.. Ben [etkinliğimi dosyadan] çıkarıp gösterebilir miyim?

C5: Öğretmenim baştan başlayıp sıra sıra mı gitsek?

C6: Bunu anlatmayacağım, kelebeğimi.

C1: Bunları da sevdim. Bir kaç tane daha olabilir bir bakacağım.

3.2.2.2. İzleme

En sık tespit edilen izleme örnekleri, çocukların sözlü ve sözsüz olarak kendilerini bir göreve düzeltmeleridir. Örneğin, dinozor aktivitesini portföyüne koyma nedenini açıklarken C4, yorumunu şöyle düzeltti: “Çok güzel çünkü burda yumurta çalan bile var.. Yumurta çalan burda yok ama. (Duruyor) Ha var var. Yumurta çalan yumurta çalan..” Başka bir örnekte, C11 portföyüne dahil edilmek üzere faaliyetlerinden birini arıyordu. Yapıtlarından birini seçti ve sonra durdu ve aradığı ürünün bu olmadığını söyledi: “Dur bir bakalım. Yo bu değil. Fare”.

Hatalar da dahil olmak üzere performansları kontrol ederken çocuklar da gözlemledi. Örneğin, portfolyosunun örneklerini seçerken, C2 aniden, portfolyosuna koymayı seçtiği örneklerden birinin diğer eserlere yerleştirildiğine baktı. Kendisine "Bu neden burada" diye sordu ve eylemini portfolyosuna yerleştirmek için yeniden yönlendirdi. Başka bir örnekte, C9 faaliyetlerine bakarken ve faaliyetleri seçerken aniden durdu:

Araştırmacı: Bir şunlara da bakalım (Sayfaları çeviriyorum)

C9: AA kaçırdım..

Araştırmacı: Hnagisini kaçırdım..

C9: Bu Cem Utku’nun hediye ettiği bana hastane arabası..

Araştırmacı: Oyüzden seviyorsun..(sözümü keiyor)

C9: Buu

Araştırmacı: Bu neden?

C9: Yumurta kafalı adam, robot adam , güvercin

Benzer şekilde, kendi faaliyetlerinden bahsederken, C1, halihazırda kapsadığı etkinliklere geri döndü ve bunlardan birini seçti ve şöyle dedi: “Bir saniye..Bunda da zorlandım.” Çocuklar, halen üstlenilen ve halihazırda yapılmış olan prosedürleri

takip e gözlemlendi. Örneğin, C6, portföyüne koyduğu etkinlik sayısını aklında tuttu ve başka bir tane de eklediğinde, tekrar saydı:

C6: Birincisi bu..İkincisi kalp, üçüncüsüne geçeyim kardan adam..

Araştırmacı: Şuralara da bakalım belki eklemek istediğin avrdr..

C6: Bir de Bunu ekledim..

Araştırmacı: Bunu tamam

C6: Dört

3.2.2.3. Kontrol

Çocuklar, portfolyo paylaşımı diyaloglarında yalnızca birkaç kontrol davranışı sergiledi. "Bu etkinliğin adını unuttum" veya "Bu resimdeki oyuncağın adı neydi?" gibi yardım istemek için yalnızca örnekler var.

3.2.2.4. Değerlendirme

Çocuklar, özellikle kendi öğrenimlerini gözden geçirme, kullanılan stratejileri değerlendirmek ve performans kalitesini derecelendirmek gibi yansıtıcı diyaloglarda çeşitli şekillerde değerlendirme kanıtı gösterdiler. Çocuklar özdeğerlendirmeye girmiş ve görev performanslarını gözden geçirmişlerdir. Çizim örneğini inceleyen C11, kıkırdama ile şunları söyledi: "Türk bayrağı yapmak için çok uğraştım ama zorluğun faydalısı oldu."

Çocuklar, özellikle, görevler sırasında yaşadıkları güçlükleri yansıtmışlardır. Aşağıdaki alıntılarda C5, C1 ve C10, kendilerine zorlayan kısımları açıklayarak öğrenme sürecini gözden geçirdi:

C5: Ben şunda biraz zorlandım diyebilirim.

Araştırmacı: Neden zorlandın peki?

C5: Çünkü hikâye yapıyorduk ve fazla eğlendiğim söylenir ama mm şey ama çok yorucuydu.

Araştırmacı: Hmm. Neydi yorucu olan?

C5: Bunları nasıl çizeceğimi bilmiyordum o yüzden kafama göre çizmek zorunda kaldım.

C1: Şunda da zorlandım.

Araştırmacı: Bunda mı?

C1: Evet.

Araştırmacı: Neden? Ne yapıyordunuz ki zorlandın burada?

C1: Mm. daireler içinde kare. Kare çiziyoruz üçgen çiziyoruz buralara. Üçgen çiziyorduk hep unutuyordum o yüzden zorlandım biraz.

Çocuklar, görevler sırasında öğrendiklerini değerlendirmenin bir göstergesi olarak ifade ettiler. Daha önceki etkinlikleri ve yansıtıcı soruları tekrar gözden geçirmek, çocukların öğrenme sürecini ve bilgiyi nasıl elde ettiğini gözden geçirmesini sağladı.

3.2.3. Duygusal / Motivasyonel Düzenleme

Duygusal / motivasyonel izleme ve duygusal / motivasyon kontrolü ile ilgili çocukların sözel ve sözsüz davranışları bu kategoriye dahildir. Bir taraftan, çocuklar portfolyolarına koymak istedikleri eserleri seçerken, çoğunlukla olumlu duygularını, seçtikleri eserlere dayalı olarak sözlü olarak ifade ettiler. Öte yandan, duygusal / motivasyonel kontrolün alt kategorisi için yalnızca birkaç örnek vardı.

3.2.3.1. Duygusal / Motivasyonel İzleme

Çocuklar çoğunlukla görevler hakkındaki duygusal deneyimlerini sözlü olarak ifade etmişlerdir. Çocuklardan portfolyolarına dahil edilmek üzere daha önceki faaliyetlerinden seçim yapmaları istenmiş, bu anlar çocukları olumlu duygularını portfolyolarına koymaya karar verdikleri görevler arasında ifade etmeye teşvik etmiştir. Seçimlerinin ardındaki nedenleri sorulduğunda, bu tür bir etkinlikle nasıl ya da görev sırasında nasıl keyif aldıklarını sevdiklerini söylediler. Bu tür davranışlara ilişkin çocuk örnekleri aşağıda sunulmuştur:

C1: Sevdığım etkinliklerden biri de bu. Çünkü öğretmenime bu hediye idi.

C5: Buraya biz kuşlardan yapmıştık. Ben bu kuşu yaparken çok eğlenmiştim. Gagasını yaparken çok eğlenmiştim. Bu kuşu yaparken de bu kuşu yaparken de çok eğlenmiştim.

C6: Ben bunu çok sevdim çünkü parmak boyaydı.

C4: Çünkü onu seviyorum..En çok kutucuğu olanı

C11: Şunu sevdim, şu çiçeği.

C3: Çok eğlendim. Boyama. Bunları boyamak ve çizmek. Katlamak.

Çocuklar, görevlerin içeriğine bağlı olarak olumsuz duygularını dile getirdi. Örneğin, C11 siyah renkle ilgili bir etkinlik hakkında bilgi verirken, her şey dünyada kara olsaydı çok kızdığını söyledi: “[Öyle kızgın hissediyorum]! Bu benim dünyam, arkadaşlarımdan öğretmenler dünyasında pek çok renk var. Bu yüzden, siyah olmasını istemiyorum. ”

Çocuklar paylaşmak istedikleri faaliyetleri de sözlü olarak belirttiler. Ek olarak, duygusal ve motivasyonel düzenlemelerin bir kanıtı olan etkinlikleri ebeveynleriyle paylaşma konusundaki heveslerini dile getirdiler.

C6: Bir de ben şunu anlatmak istiyorum..

C4: Ama ben kelebeğimi sanırım koymak istiyorum

C10: [Bu etkinliği eve] Götüreceğim. Çünkü onu anlatmak istiyorum, nasıl yaptığımı.

C5: Ama ben hepsini anlatmak istiyorum.

3.2.3.2. Duygusal / Motivasyonel Kontrol

Duygusal / motivasyonel kontrol alt kategorisinde çok az davranış saptanmıştır. Çocuklar dikkatlerini kontrol etti ve paylaşım süreleri ve yansıtıcı diyaloglar sırasında dikkati dağıtmaya direndi. Özellikle çocuklar, motivasyonlarıyla ilgili olarak portfolyolar için seçilecek etkinlikler arasında neler paylaşacaklarını değiştirdiler. Örneğin, eseri hakkında konuşurken, C10 portfolyoda yer alacak diğer görevleri tekrar odakladı ve "Bu işi size de söyleyeyim" şeklinde devam etti. Bir başka örnekte C1, portfolyosunu eksiksiz bir şekilde tasarlamaya motive oldu:

Araştırmacı: Teşekkürler C1! Artık arkadaşlarınızla birlikte oynamaya başlayabilirsiniz.

C1: [Faaliyetlerime] Tekrar bi bakayım..

4. SONUÇ

Pedagojik dokümantasyonun arkasındaki teorik arka plan, çocukların düşünme becerilerini geliştirme potansiyelini iddia etmektedir. Yansıtıcı öğrenme ortamı, çocukların kendini düzenleyen ve üst bilişsel becerileri desteklemesi beklenen pedagojik belgeleme uygulamaları tarafından sağlanmıştır. Bu potansiyelin doğal bağlamında araştırılmasını amaçlayan bu çalışmanın bulguları, pedagojik dokümantasyonun yansıtıcı uygulamalarının, üstbiliş bilgisi, üstbilişsel düzenleme ve duygusal / motivasyonel düzenleme açısından çocukların kendi kendini düzenleme ve üstbilişlerini geliştirdiğini iddiasını doğrulamıştır.

Çocuklar yetenekleri, tercihleri, güçlü ve zayıf yönlerine değinmişler, başkaları hakkında genel fikirler hakkında konuşmuşlar, görevlerin güçlükleri hakkında yorum yapmış, görevler arasındaki benzerlikleri ve farklılıkları karşılaştırmışlar, görevlerinin tanımlanmış prosedürlerini karşılaştırmış ve göstergeler olarak nasıl öğrendiklerini açıklamışlardır.

Paylaşım saatleri ve yansıtıcı diyaloglarda en sık gözlenen alt kategorinin değerlendirme olduğu görülmektedir. Çocuklar daha önce öğrenmiş oldukları deneyimleri gözden geçirmiş ve yansıtmış, stratejilerini ve görevlerini eleştirmiş ve onların ve akranlarının uygulamalarının etkinliğini değerlendirmişlerdir. Bir diğer göze çarpan bulgu paylaşım zamanlarında çocukların izleme ve kontrol davranışlarının ve yansıtıcı diyalogların farklı olmuştur. Çocukların paylaşım sürelerinde izleme ve kontrol davranışlarını yansıtıcı diyaloglardan daha fazla göstermiş oldukları bulunmuştur. Çocukların birbirlerini dinlemesi, "paylaşılan" deneyimleri tüm sınıfla paylaşması, akranlarının fotoğraflarının fotoğraflarına işaret etmesi, paylaşım zamanlarında birbirlerini daha fazla izlemelerine ve kontrol etmelerine neden olmuştur. Birbirlerinin performanslarını düzelttikleri ve

birbirlerine yardım ettikleri, gözlem ve kontrol göstergeleri olarak akranlarından yardım talep ettikleri gözlemlenmiştir. Yansıtıcı diyaloglarda bu davranışları da göstermişlerdir, ancak araştırmacı ile yalnız oldukları için performansları ile sınırlı kalmıştır.

Appendix I: Curriculum Vitae

CURRICULUM VITAE

PERSONAL INFORMATION

Surname, Name: Aras, Selda
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EDUCATION

Degree	Institution	Year of Graduation
MSc	METU Early Childhood Education	2012
BS-Major	METU Early Childhood Education	2009
BS-Minor	METU Sociology	2009

WORK EXPERIENCE

Year	Place	Enrollment
2012-Present	TED University	Research Assistant
2011-2012	Dünya Çocuk Evi Anaokulu / Pıtırık Yuva	Education Specialist
2010-2011	Nesibe Aydın Anaokulu	Preschool Teacher
2009-2010	Disney Yuva	Preschool Teacher

FOREIGN LANGUAGES

Advanced English

PUBLICATIONS

Aras, S. (2015). Free play in early childhood education: a phenomenological study. *Early Child Development and Care*, 186(7), 1173-1184.

Aras, S. (2015). Promoting self-regulation in early years: tools of the mind. *Journal of Education and Future*, 8(1), 15-25.

Buldu, M., & **Aras, S.** (2014). Öğretmen mesleki gelişimi planlaması ve dokümantasyonu. *Öğretmen Dünyası*, 414, 22-25.

Aras, S., Genç, Z. ve Çağıltay, K. (2016). Beynimizin sadece yüzde 10'unu kullanabiliyoruz: Siz buna inanıyor musunuz?, *Herkese Bilim Teknoloji. Sayı 30*, Sayfa 12-13. 21 Ekim 2016

PROJECTS

Effectiveness of pedagogical documentation in understanding, supporting and improving learning and teaching in early childhood learning environments. TUBITAK 1001, Project Assistant

RESEARCH GROUPS

Educational Neuroscience, METU, Group Member

CONFERENCE PRESENTATIONS

Buldu, M., Şahin, F., Yılmaz, A., **Aras, S.**, Buldu, M., & Akgül, E. (2015). Video Based Professional Development to Cultivate Early Childhood Teachers' Practices on Pedagogical Documentation. *Paper presented at 25. EECERA Conference*, Barcelona, Spain, 7-10 2015.

Aras, S. (2014). An Overview of Three Successful Teacher Education Systems: Australia, Singapore, and South Korea. *Paper presented at 1. EJER Conference*, İstanbul, Turkey, April, 24-26 2014

Ulukaya, S., **Aras, S.**, Çok, F., & Buldu, M. (2014). Young Children's Perceptions of Youth. *Paper presented at 14. EARA Conference*, İzmir, Turkey, Sept. 3-6 2014.

Aras, S. (2014). Teachers' Involvement in Children's Free Play: A Phenomenological Study. *Paper presented at 24. EECERA Conference*, Crete, Greece, Sept. 7-10 2014.

Aras, S. (2013). Classroom Management in Early Childhood Education: A Review in Turkish Literature. *Paper presented at ECER Conference*, Istanbul, Turkey, Sept. 9-10 2013.

Aras, S. ve Sözen, S. (2012). Türkiye, Finlandiya ve Güney Kore'de öğretmen yetiştirme programlarının incelenmesi. *Bildirinin sunulduğu X. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi*, Niğde, Türkiye.

SEMINAR STUDIES AND OTHER ACTIVITIES

Workshop: "Mental Tools: Examples of Activities for Teaching Basic Geometric Shapes" , Developing Teachers Symposium, Nesibe Aydın Kindergartens, February 21, 2015

Poster presentation: "Documentation Tools and Sharing with Children", Hacettepe University, February 15, 2015

Poster presentation: "Use of Portfolio in Preschool Learning Environments" Hacettepe University, February 15, 2015

Presentation: "Documentation Panel and Pedagogical Documentation Process" TED University, October 25, 2015