The Development of Emergent Literacy Skills during Preschool Period: A Sample of 36-71 Month-Old Turkish Children [*]

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Abstract

The aim of this study was to unfold the development of preschool children's emergent literacy skills with respect to age. This study was conducted in a cross sectional design. The sample consisted of 96 children aged 36-71 months. ANOVA and Kruskal-Wallis Test results indicated that emergent literacy skills (phonological awareness, print concepts, alphabet knowledge and name writing) of preschool children could be differentiated with respect to age. The best performance that children displayed in phonological awareness was in syllable segmentation, whereas the lowest performance was in last phoneme detection. In terms of print concepts, the children were better at items about book concepts than at items about sentence, words and letters. With respect to alphabet knowledge, 36-47 month-olds showed almost no letter knowledge but the performance increased after 48 months of age. In terms of name writing, 36-47 month-olds responded with drawing rather than writing their names. 48-59 month-olds began to use letters in their name writing and most of the 60-71 month-olds could write their names conventionally.

Introduction

Learning to read and write is a significant milestone for children and is considered a foundation for academic success (Whitehurst & Lonigan, 2002). Until fifty years ago, it was believed that learning to read and write does not commence prior to taking formal education in school. According to this "Reading Readiness" approach, children must possess certain prerequisite skills in order to learn to read and write therefore, literacy instruction is deferred until these skills have been acquired. (Storch & Whitehurst, 2001). "It is now abundantly clear that literacy acquisition begins early in the preschool period and children arrive at primary school with different levels of knowledge and skills related to literacy" (Scarborough, 2002, p. 97). Therefore, today literacy is conceptualized as a "developmental" process, rather than a skill perceived as an all-or-nothing concept (Pinto, Bigozzi, Gamannossi, & Vezzani, 2009). According to this perspective termed as "Emergent Literacy", there exists no distinct

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border between prereading and reading (Lonigan, 2006). The early childhood years- from birth to age eight- and literacy related behaviours that occur during these years are considered very important for formal reading and writing (National Association for the Education of Young Children [NELP], 1998; Whitehurst & Lonigan, 1998).

Whitehurst and Lonigan (1998) define emergent literacy as skills, knowledge, attitudes and environments supporting these constructs, which are the precursors of formal reading and writing. Griffith, Beach, Ruan, and Dunn (2008) express that emergent literacy is a developmental process that paves the way for being a master literate and is made up of knowledge and skills, as well as behaviours that children develop themselves before they learn how to read and write like adults. According to Teale and Sulzby (1986, p. xix-xx), emergent literacy indicates that "children learn gradually more about the written system while advancing forward towards conventional reading and writing". The same researchers also posit that growth observed in literacy skills is instigated both by children themselves and environmental stimulants, and arises from reading and writing used in daily context of home and society without any need for formal education.

According to the proposed structural models and published research reports found in the literature related to emergent literacy, it can be said that emergent literacy comprises certain components such as oral language, phonological awareness and print awareness (National Early Literacy Panel [NELP], 2008; Senechal, LeFevre, Smith-Chant, & Colton, 2001; Whitehurst & Lonigan, 1998, 2002). Since the development of phonological awareness and print awareness is investigated in this research, the developmental progression presented in the literature regarding these two components of emergent literacy is provided below.

Phonological Awareness
Phonological awareness has been defined as "the ability to detect, manipulate, or analyse the auditory aspect of spoken language including the ability to distinguish or segment words, syllables or phonemes" (NELP, 2008, s. vii). There is a general sequence in the development of phonological awareness across languages (Anthony & Francis, 2005; Ziegler & Goswami, 2005). Developmental progression occurs from large segments of phonology to smaller segments. Children can detect or manipulate words before syllables, syllables before rhymes, and ryhmes before phonemes (Burgess, 2006; Carroll, Snowling, Hulme, & Stevenson, 2003; Goswami, 2006; Stone, Merritt, & Cherkes Julkowski, 1997; Treiman & Zukowski, 2001). In this progression, at first children can detect similar and dissimilar sounding words, and then blend phonological information, and lastly segment it (Anthony & Francis, 2005).

Among children between three to four years of age, early emerging phonological awareness skills-syllable and ryhme awareness-are observed (Lonigan, Burgess, Anthony, & Barker, 1998; Muter, 2006; Torgesen & Mathes, 2000). Older preschoolers are better at rhyme detection, rhyme production, initial phoneme detection and inital phoneme segmentation. Besides, preschool children are better at initial phoneme detection than last phoneme detection (Stanovich, Cunningham, & Cramer, 1984). Kindergarten children can blend two phonemes at the end of the year, and many kindergartners and first graders can display the ability to delete phonemes (Muter, 2006; Uhry & Clark, 2005). According to the researchers, the progression in phonological awareness does not ocur in separate stages, but rather in overlapping stages or in a quasi-parallel form (Anthony, Lonigan, Driscoll, Phillips, & Burgess, 2003). In other words, as children become more proficient in easier phonological awareness skills they can simultaneously be at the beginning level of more complex phonological awareness skills (Phillips, Clancy Menchetti, & Lonigan, 2008).

Although there is a universality in the development of phonological awaneress, it is influenced by the ortography and linguistic complexity of the spoken language (Anthony & Francis, 2005; Anthony, Williams, Duran, & Gillam, 2011; Ziegler & Goswami, 2005). For example, in the literature, there is evidence that Turkish, Italian or Greek-speaking children have acquired syllable and phonetic awareness earlier than children who speak English or French (Cossu, Shankweiler, Liberman, Katz, & Tola, 1988; Durgunoğlu & Öney, 1999; Kotoulas, 2004). This is based on the fact that languages such as Turkish, Italian and Greek have a simple syllabic structure and a non-wide vocal repertoire compared to English and French (Anthony et al, 2011; Durgunoğlu & Öney, 1999).

Print Awareness

Print awareness is a broad term that encompassses children's growing ability to recognize print both in contextual (i.e., the print on a cereal box) and decontextualized forms (i.e., the print in a child's book) (Vukelich, Christie, & Enz, 2014). Print awareness can be divided in to three separate but interrelated areas: Print concepts, alphabet knowledge and emergent writing (McGinty & Justice, 2009).

Print concepts. Print concepts is a term to describe children's growing awareness that print is a systematic and rule-governed system and is different from visuals such as pictures (Cabell, McGinty, & Justice, 2007). The first dimension of print concepts is related to book concepts: Handling a book in a right position, showing the title of a book, opening a book and its pages from left to right, distinguishing print from pictures, understanding that print is read from top to bottom and from left to right (Lovelace & Stewart, 2007; Whitehurst & Lonigan, 1998). The second dimension of print concepts is about print units and their functions. These are related to sentence, word, letter and punctuation marks. Findings in the literature indicate that children's knowledge about print concepts increase with age (Levy, Gong, Hessels, Evans, & Jared, 2006), and that children acquire book concepts before word concept, and word concept before punctuation marks (Cabell et al., 2007; Justice & Ezell, 2001; Justice, Bowles, & Skibbe, 2006a).

Alphabet knowledge. Alphabet knowledge is an area of knowledge that indicates children are moving from comprehensive knowledge about print to more specific ones (Cabell et al., 2007). In order for children to display alphabet knowledge they should understand that letters are symbols and that they each have a name (Vukelich et al., 2014). Literature findings show that children's alphabet knowledge increases with age or within a shorter time. These findings hold ture for children from countries where letter instruction is mandatory during preschool period and for those where it isn't (Molfese et al., 2006; Phillips, Piasta, Anthony, & Francis, 2012; Torppa, Poikkeus, Laakso, Eklund, & Lyytinen, 2006; Worden & Boettcher, 1990).

Some studies trying to unfold the sequence of letter name knowledge acquisition put forth that children learn earlier a) the letters occuring in their names relative to those not in their names; b) the letters occuring in the alphabet string before (i.e., L) versus those letters occuring later in the string (i.e., M); c) the letters for which their pronunciation contains the sound of the letter (i.e., B) compared to those that do not (i.e., W) and d) the letters corresponding to consonantal phonemes acquired earlier in development (i.e., B, H, N, P, W) over those acquired later (i.e., D, G, K, T) (Justice, Pence, Bowles, & Wiggins, 2006b; Phillips et al., 2012; Treiman & Broderick, 1998).

Emergent writing. Emergent writing is another area that shows children's growing knowledge in print awareness. The physical marks that children produce on a paper, the meanings that they attribute to them, and the context in which writing occurs are defined as emergent writing (Cabell, Justice, Zucker, & McGinty, 2009). Before children can write conventionally they understand that writing has a communication goal and this understanding motivates them to experience writing (Otto, 2008). Many studies conducted in different countries reveal that emergent writing follows a developmental sequence (Bloodgood, 1999; Cabell et al., 2007; Cabell et al., 2009; Hildreth, 1936; Levin, Vries, Aram, & Bus 2005; Puranik, Lonigan, & Kim, 2011; Sulzby, Barnhart, & Hieshima, 1988; Welsch,

Sullivan, & Justice, 2003). According to the findings, children in early ages write by making scribbles or by drawing pictures that represent objects. At this stage, children do not yet make a distinction between print and pictures. In the following years, children discover the linear characteristic of print. The marks that they make are on a line and are similar in terms of shape and size. In the following stage, children produce letter like forms that they create and leave spaces between them. At the end of the preschool period, children begin to understand that written letters represent spoken sounds, and they use letter-sound correspondences to make invented spelling. These invented spellings initially include some basic letters of the words. As children progress in invented spelling, the words that they write become readable (Levin & Bus, 2003; Vukelich et al., 2014; Whitehurst & Lonigan, 2002).

Name writing is considered to be one of the first signs of emergent writing, because the word that children first try to write is usually their names (Bloodgood, 1999; Levin et al., 2005; Welsch et al., 2003). It is asserted that trying to write one's own name is a "model"or a"prototype" for conventional writing (Ferreiro & Teberosky, 1982, as cited in Levin et al., 2005) and that children try to write new words with the letters in their names (Both-de Vries & Bus, 2008; McNeill, Westerveld, Bysterveldt, Boyd, & Gillon, 2013).

In the literature, it is possible to find many studies pointing to the defining role of emergent literacy skills on reading sucess or failure in primary school years. Longitudinal studies reveal that knowledge and skills possessed by children related to literacy during preschool period show stability over time and stand as predictors of future reading success (Dickinson, McCabe, Anastasopolous, Peisner-Feinberg, & Poe 2003; Kendeou, Broek, White, & Lynch, 2009; Lonigan, Burgess, & Anthony, 2000; McBride-Chang, Liu, Wong, Wong, & Shu, 2011; NELP, 2008; NICHD Early Child Care Research Network, 2005; Puolakanaho et al., 2008; Scarborough, 2002; Storch & Whitehurst, 2002). For instance, based on a meta-analysis report published by American National Early Literacy Panel (NELP, 2008), it was found that oral language, phonological awareness and print awareness measured during preschool or kindergarten period are moderately or strongly correlated with later measures of literacy development. Besides, certain retrospective longitudinal studies point out to the fact that children with reading difficulties and their typically reading peers exhibit different performance in emergent literacy skills from a very early age (Barbosa, Miranda, Santos, & Bueno 2009; Smith, Scott, Roberts, & Locke, 2008; Torppa, Lyytinen, Erskine, Eklund, & Lyytinen, 2010; Torppa et al., 2006). These results indicate that the fundamentals underlying why some children are successful and some are not in reading and writing arise out of the differences present in the knowledge and skills of these children related to emergent literacy. (Cunningham & Zibulsky, 2011).

The fact that emergent literacy plays a defining role upon reading success or failure in primary school years necessitates assessment of children's knowledge and skills related to emergent literacy from preschool period (NAEYC, 1998). Such assesments are important for determining children's performance in emergent literacy skills, following the progress of children in these skills, and supporting children with slow emergent literacy development with appropriate intervention programs (Anthony et al., 2003; Pence, 2007). For this reason, in order to assess Turkish children's emergent literacy skills it is necessary to a) unfold the development of these skills in preschool period and to b) develop assessment tools. However, in Turkey, there is a limited number of research that shows how emergent literacy skills develop with respect to age. For example, in a study examining the development of phonological awareness among Turkish children aged 3-8 (Acarlar, Ege, & Turan, 2002), it was found that 3-6 year-olds were successful in word and syllable tasks and, were partially successful in producing words starting with the given sound. Besides, only children at first grade were successful in producing words ending with the given sound and in segmenting words in to sounds; but not preschoolers. However, in this study, rhyme skills were not investigated by the researchers.

A limited number of studies on print concepts knowledge of Turkish children indicate that children acquire book concepts earlier than print units (words and letters) (Akoğlu & Kızılöz, 2018; Bayraktar, 2013; Şimşek Çetin, 2014). However, 36-48 month-old children were not included in the samples. Studies investigating the development of emergent writing skills or name writing skills from three years of age display that there is an increase in these skills with respect to age (Altun Akbaba, Şimşek Çetin, & Bay, 2014; Işıkoğlu Erdoğan, Muslugüme, Huz, Yılmaz, & Öztürk 2015) however, it is seen that the developmental criteria used by the researchers may not be sufficient to discriminate age groups (Işıkoğlu Erdoğan et al., 2015). Finally, no research examining Turkish children's alphabet knowledge development with respect to age was found.

Although there are some assessment tools for emergent literacy skills in Turkey, it appears that they mostly target five and six year old children, and handle only one component of emergent literacy (i.e., print awareness: Bayraktar, 2013; phonological awareness: Büyüktaşkapu, 2012; Sarı & Aktan Acar, 2013). Only a few handle more than one component (Karaman ve Güngör Aytar, 2016; Kargın, Ergül, Büyüköztürk, & Güldenoğlu, 2015). Among these assessment tools, only "Test of Early Literacy" has findings on children. According to these findings, kindergarten children were sufficient in vocabulary subtest but not in alphabet knowledge and phonological awareness subtests (Kargın, Güldenoğlu, & Ergül, 2017).

In the light of the above-mentioned findings, it is neccessary to conduct a research that investigate multiple components of emergent literacy on the same sample group between the ages 3-6 from a developmental perspective. For this reason this study is designed to unfold developmental progression of emergent literacy skills with respect to age. The findings obtained from this study will a) provide information about the performance level of typically developing 3-6 year old children in emergent literacy skills b) be a reference point for new assessment instruments to evaluate young children's emergent literacy skills and c) guide emergent literacy curriculums and instruction practices applied in home and early childhood education settings. Lastly, since the development of phonological awareness is influenced by linguistic and orthographic nature of a given language (Anthony & Francis, 2005; Durgunoğlu & Öney, 1999; Ziegler & Goswami, 2005) it is expected that the findings of this study, by unfolding the development of phonological awareness skills in Turkish language will contribute to the comparisons that have been made between different languages in the literature. For these purposes the research questions are stated as follows:

1) Do preschool children's emergent literacy skills- phonological awareness, print concepts, alphabet knowledge and name writing- display significant difference with respect to age?

2) Is age a significant predictor of preschool children's emergent literacy skills- phonological awareness, print concepts, alphabet knowledge and name writing- ?

3) How preschool children's emergent literacy skills- phonological awareness, print concepts, alphabet knowledge and name writing- are distributed with respect to age?

Method

Study Design

Since this study aimed to demonstrate development of emergent literacy skills during preschool period, it was designed as a cross-sectional descriptive study.

Study Group

The research group was selected by purposeful sampling method. In Istanbul, private kindergartens' principals were contacted and the study was carried out in these schools which accepted research to be done there. Thus, the study group consisted of 36-71 month-old children who attended two private kindergartens governed by the Ministry of Education (MoE), located in the two counties (Umraniye and Uskudar) of Istanbul province. For inclusion in the study, not being older than 71 months of age and typical development were set as criteria. The decision related to typical development was given according to the results of the Denver Developmental Screening Test administered to the children and to the preschool teachers' opinions about children. 113 students met the criteria and their parents were sent a parent consent form. Of those 113 children, 93 of them were allowed by their parents to participate in the study. The children involved in the study were classified in three age groups: 36-47, 48-59, and 60-71 month-olds. There were 30 children in the 36-47 month-old group, 32 children in the 48-59 month-old group and 31 children in the 60-71 month-old group.

According to the descriptive statistics, 48.4% of the children were female (45) and 51,6% were male (48). The average age of the children was 53.8 months with a standard deviation of 9.2. The children's mothers had an average age of 34 years with a standard deviation of 3.7. While the majority of the mothers had a bachelor's degree (72%), 14% held a high school, 4.3% held a primary school and 3.2% held an associate degree. The majority of the fathers held a bachelor's degree (64.5%), whereas 24.7% had a master/doctorate, 9.8% had a high school or lower, and 1.1% had an associate degree. 40% of the mothers had no regular job and 60% of them were employed. The total household income of 49.5% of the families ranged between 4000 TL and lower to 4001 - 6000 TL, while 31.2% of them had an income of 6001 TL and higher. 20% of the families provided no information regarding their household income.

Data Collection Tools

The data of the research were collected by the following tools: Phonological Awareness Assessment Tool, Control List for the Evaluation of the Print Awareness of Preschool Children [Ömer is Making A Cake], Alphabet Knowledge Assessment Tool and Name Writing Assessment Tool.

Phonological awareness assessment tool. This tool aimed to assess phonological awareness skills of children with four subsections, namely "syllable segmentation", "rhyme detection", "initial phoneme detection", and "last phoneme detection". Syllable segmentation subsection was developed by Babur, Haznedar, and Ercetin (2009b) by having adapted Phonological Awareness Skills Screener (PASS) to Turkish. PASS is a tool that aims to measure children's phonological awareness skills and to identify those at risk for reading failure from kindergarten to second grade. It consists of ten subsections measuring word, syllable, rhyme and phoneme level skills (Mather & Goldstein, 2008). Last phoneme detection subsection of phonological awareness assessment tool was also developed by Babur, Haznedar, and Ercetin (2009a) by having adapted the test entitled as Comprehensive Test of Phonological Process to Turkish (CTOPP). CTOPP has been developed to identify individuals who have difficulty in phonological processes from preschool to 24 years of age and to demonstrate their strengths and weaknesses in phonological awareness skills. The instrument consists of thirteen subtests measuring phonological awareness, phonological memory and rapid naming (Rashotte, Torgesen, & Wagner, 1999). The items included in syllable segmentation and last phoneme detection subsections, adapted from PASS and CTOPP, were examined by three experts in terms of the appropriateness for preschool children.

Rhyme detection and initial phoneme detection subsections of Phonological Awareness Assessment Tool were developed by the author. During the development phase of these subsections, words that preschool children are likely to use and encounter in daily communication were selected. This was followed by the selection of the pictures believed to best represent these words. Later on, three experts were consulted for the content validity of these subsections and appropriates of words and related pictures; and necessary changes were made in line with their recommendations. Before test-retest reliability took place, the appropriateness of the pictures was tested by showing the pictures to preschool children. Pictures considered inappropriate were replaced with the new ones and these replaced pictures were shown to the children. For the test-retest reliability of the phonological awareness assessment tool 30 children aged 36-71 months, attending a preschool center were selected. The tool was administered to these children two times with two weeks interval. The test-retest reliability coefficients were .87, .86, .90 and .88 respectively for syllable segmentation, rhyme detection, initial phoneme detection and last phoneme detection. The test-retest reliability coefficient for the complete tool was .95.

There were forty eight items in the complete tool. Each subsection of the tool contained two sample items besides ten items. Each item was scored with "1" point if the child's answer had been correct or with"0" if the child's answer had been incorrect. The lowest score to be obtained from this tool was "0" and the highest score was "40".

Syllable segmentation subsection included 10 words which were comprised of two, three or four syllables. The examples for this subsection are "tabak" [plate] and "musluk" [tap]. The child was asked to pause between each syllable. In rhyme detection subsection, the child was requested to detect the words with the same rhyme. For instance, the child was shown a picture of an elephant and asked as follows; "Look, this is "fil" [elephant] and these are "muz" [banana] and "dil" [tongue]. Which one rhymes with the word "fil"? In other items, the child was requested to detect the right answer among three options. In initial phoneme detection subsection, the child was requested to detect the words that begin with the same phoneme. For example, the child was shown a picture of a çiçek [flower] and asked as follows: "Look at the picture; this is a "çiçek" [flower]. Now, look at the other pictures. These are "mısır"[corn] and "çorap"[socks]. The word çiçek starts with the phoneme /ç/. Well, which one of these words starts with the phoneme /ç/, "mısır" or "çorap"? In other items, the child was requested to detect the right answer among three options. In last phoneme detection subsection, the child was requested to find the words that end with the same phoneme. For example, the child was shown the picture of a "çilek" [strawberry]. "Look at this picture; this is a "çilek". Now, look at the other pictures. These are "şapka" [hat] and "köpek" [dog]. The word çilek ends with phoneme /k/. Well, which one of these words ends with phoneme /k/, "şapka" or "köpek". In other items, the child was requested to detect the right answer among three options.

Phonological Awareness Assessment Tool was administered to children individually. In administering the tool, syllable segmentation, rhyme detection, initial phoneme detection and last phoneme were given respectively.

Control list for the evaluation of the print awareness of preschool children [Ömer is making a cake]. In order to assess print concepts knowledge of preschool children, Control List for the Evaluation of the Print Awareness of Preschool Children developed by Şimşek Çetin and Alisinanoğlu (2013) was used. The content validity of the control list was verified by eight specialists. For factor analysis to be carried out the researchers worked with 200 children aged 60-72 months, attending kindergarten classes of primary schools. According to the result of the exploratory factor analysis, the items contained in the control list concentrated under two factors. The eigenvalue of the first factor was found as 7.69 and 4.84 for the second factor. The confirmatory factor analysis for these two factors produced a result

of .92 and .97, respectively. The test-retest reliability of the control list was stated to be .60, and internal consistency reliability, K-20, to be .72.

Control List for the Evaluation of the Print Awareness of Preschool Children was prepared to assess children's knowledge about book concepts; function, shape, and direction of print as well as print units (sentence, word and letter). This control list was administered to children along with a story book entitled as "Ömer is making a cake". This book consisted of 18 pages. Prior to applying the control list, the child was shown the story book and was told; "I want to read this book for you. Would you help me read this book?". The child was expected to show or verbally express what he/she was asked for. There were 17 items in the control list. Each item was scored as "1" if the child's answer had been correct, and "0" if the child's answer had been incorrect. The lowest score to be obtained from the control list was "0" and the highest score was "17".

Alphabet knowledge assessment tool. This tool was prepared by the researcher to assess children's letter recognition knowledge. For the reliability analysis, the researcher administered the tool to 61 children aged 36-71 months, attending a preschool center. The test-retest reliability coefficient was found as .96.

Alphabet Knowledge Assessment Tool included all Turkish letters in the alphabet. 29 capital letters were placed on three A-4 sized papers in a random manner. There were 10 letters on two A-4 size papers and 9 letters on the third A-4 size paper. This tool was administered to the children individually. The child was shown the papers in turn and asked to show the letter that is told to him. For instance, the child was instructed as; "Show me which one of these is the letter "C?". There were twenty nine items in the tool. Each item was scored as "1" if the child's answer had been correct and "0" if the child's answer had been incorrect. The highest score to be obtained from this tool was 29.

Name writing assessment tool (YABE). YABE was developed by the researcher to assess name writing skills, an indication of emergent writing skills of preschool children. Items contained in YABE were arranged based upon the criteria for name writing and emergent writing found in the literature (Bloodgood, 1999; Cabell et al., 2007; Cabell et al., 2009; Hildreth, 1936; Levin et al., 2005; Puranik et al., 2011; Sulzby et al., 1988; Welsch et al., 2003). For the content validity, the items in the tool were submitted to three specialists for their opinions and were rearranged accordingly. In order to find out whether the items in YABE were appropriate for the intended purpose, name writing samples were collected from 40 children aged 36-71 months. The samples were scored according to YABE by two independent observers. Inter-rater reliability coefficient (Cohen's Kappa) was found as .68. The Kappa coefficient ranging between .40 and .75 is considered a reasonable agreement (Şencan, 2005).

YABE tool was administered to children individually. The child was given a blank A-4 size paper and asked to write his/her name on it. The child was asked; "What did you write?" after he finished writing. Writing samples collected from the children were scored based on YABE criteria (Appendix-1). YABE tool consisted of 11 items. The lowest score to be obtained from this tool was "0", whereas the highest score was "10".

Data Collection Process
Firstly, the researcher obtained permission from the principals of the kindergartens in order to conduct the study. Then, students aged 36-71 months enrolled in these kindergartens for the academic year 2012-2013 were selected and their families were sent consent forms. In the consent form, the families were briefed about the objective, target group and the tools of the study. They were asked whether they would allow their children to participate in the study. The children allowed to participate were included in the study and those not permitted were excluded.

A suitable place (the school counselor's room or an empty class) was selected in order to administer the tools to the children. Tables and chairs compatible with children were used and care was taken in order to ensure a silent environment. The data collection process lasted for two months, spanning between February and March 2013. Phonological Awareness Skills Assessment Tool, Control List for the Evaluation of the Print Awareness of Preschool Children, Alphabet Knowledge Assessment Tool and Name Writing Assessment Tool (YABE) were administered to the children. Three sessions lasting around 1 hour were held with each child for administering the tools.

Data Analysis

The Statistical Package for Social Sciences program (SPSS) was used the analyse the data. Whether or not the variables exhibit a normal distribution was tested with Kolmogorov-Smirnov Test. The results were accepted as statistically significant at p < 0.05 level.

Whether the scores related to emergent literacy show any difference with respect to age was investigated by One-Way Analysis of Variance for the variables with normal distribution and by Kruskal-Wallis Variance Analysis for the variables with non-normal distribution. In determining which age groups display an intergroup difference, pairwise groups were analysed with Tukey HSD Test for the variables with normal distribution. For the variables with non-normal distribution Mann-Whitney U Test was used. Furthermore, Regression Analysis was applied for testing whether the age variable is a significant predictor of emergent literacy skills. Finally, the frequency distribution was used in order to display how scores related to emergent literacy skills are distributed with respect to age.

Results

The findings of this study, which examined the development of emergent literacy skills among children aged 36-71 months, are presented below under the following headings: a) Development of emergent literacy skills with respect to age, b) age variable as a predictor of emergent literacy skills and, c) distribution of emergent literacy skills by age.

Development of Emergent Literacy Skills with Respect to Age

Phonological awareness. The results of ANOVA Test and Kruskal-Wallis-H Test conducted to determine whether the scores of phonological awareness and its subsections vary by age groups are provided in Table 1 and Table 2, respectively.

Table 1. ANOVA Test Results for Phonological Awareness and Its Subsections by Age Groups

	Age Groups	N	$\bar{X}$	S	df	F	p	Significant Difference
Phonological Awareness	36-47 months	30	17.83	5.77	2	45.55	.00*	36-47/48-59
	48-59 months	32	28.03	5.60	90			36-47/60-71
	60-71 months	31	31.03	5.59				
Rhyme Detection	36-47 months	30	4.23	1.87	2	23.97	.00*	36-47/48-59
	48-59 months	32	6.44	2.42	90			36-47/60-71
	60-71 months	31	7.84	1.77				48-59/60-71
Last Phoneme Detection	36-47 months	30	3.13	1.59	2	20.53	.00*	36-47/48-59
	48-59 months	32	5.19	1.73	90			36-47/60-71
	60-71 months	31	6.16	2.25				

*p< 0.05

Table 1 reveals that phonological awareness mean scores of 60-71 and 48-59 month-old children were significantly higher than that of 36-47 month-olds. Even though phonological awareness mean score of 60-71 month-old children was higher than that of 48-59 month-olds, this difference was not statistically significant.

For rhyme detection, mean score of 60-71 month-old children was significantly higher than that of 48-59 and 36-47 month-olds; and rhyme detection mean score of 48-59 month-old children was significantly higher than that of 36-47 month-olds. For last phoneme detection, mean scores of 60-71 and 48-59 month-old children were significantly higher than that of 36-47 months-olds. Even though last phoneme detection mean score of 60-71 children was higher than that of 48-59 month-olds, this difference was not statistically significant.

Table 2. Kruskal-Wallis Test Results for Phonological Awareness Subsections by Age Groups

	Age Groups	N	$\overline{x}_{rank}$	x^2	df	p	Significant Diffence
Syllable Segmentation	36-47 months	30	33.90				36-47/48-59
	48-59 months	32	53.09	12.54	2	.00*	36-47/60-71
	60-71 months	31	53.39				
Initial Phoneme Detection	36-47 months	30	20.72				36-47/48-59
	48-59 months	32	55.69	44.04	2	.00*	36-47/60-71
	60-71 months	31	63.47				

*p< 0.05

Table 2 reveals that syllable segmentation mean ranks of 60-71 and 48-59 month-old children were significantly higher than that of 36-47 month-olds. Similarly, initial phoneme detection mean ranks of 60-71 and 48-59 month-old children were significantly higher than that of 36-47 month-olds. For both syllable segmentation and initial phoneme segmentation, although the mean ranks of 60-71 months old children were higher than that of 48-59 month-olds, this difference was not statistically significant.

Print awareness: Print concepts, alphabet knowledge and name writing. The results of ANOVA Test and Kruskal-Wallis-H Test conducted to determine whether print concepts knowledge and name writing skills of children vary by age group are provided in Table 3 and Table 4, respectively.

Table 3. ANOVA Test Results for Print Concepts by Age Groups

	Age Groups	N	$\overline{X}$	S	df	F	p	Significant Difference
Print Concepts	36-47 months	29	5.14	3.48	2	40.96	.00*	36-47/48-59
	48-59 months	32	9.81	3.22	89			36-47/60-71
	60-71 months	31	12.87	3.28				48-59/60-71

*p< 0.05

Table 3 reveals that print concepts mean score of 60-71 month-old children was significantly higher than that of 48-59 and 36-47 month-olds; and print concepts mean score of 48-59 month-old children was significantly higher than that of 36-47 month-olds.

Table 4. Kruskal-Wallis-H Test Results for Alphabet Knowledge and Name Writing by Age Groups

	Age Groups	N	$\overline{x}_{rank}$	x^2	df	p	Significant Difference
Alphabet Knowledge	36-47 months	30	22.64				36-47/48-59
	48-59 months	32	50.06	40.00	2	.00*	36-47/60-71
	60-71 months	31	65.15				48-59/60-71
Name Writing	36-47 months	30	20.74				36-47/48-59
	48-59 months	32	45.33	47.42	2	.00*	36-47/60-71
	60-71 months	31	67.24				48-59/60-71

*p< 0.05

Table 4 reveals that alphabet knowledge mean rank of 60-71 month-old children was significantly higher than that of 48-59 and 36-47 month-olds, and alphabet knowledge mean rank of 48-59 month-old children was significantly higher than that of 36-47 month-olds. Similarly, name writing mean rank of 60-71 month-old children was significantly higher than that of 48-59 and 36-47 month-olds; and name writing mean rank of 48-59 month-old children was significantly higher than that of 36-47 month-olds.

Age Variable as a Predictor of Emergent Literacy Skills

In order to determine whether the age variable stands as a significant predictor of emergent literacy skills Regression Analysis test results are provided in Table 5.

Table 5. Regression Analysis Results for Prediction of Emergent Literacy Skills by Age

Predicted	Predictor	R	R²	F	Beta	T	p
Phonological Awareness	Age	.67	.45	76.31	.675	8.736	.00*
Print Concepts	Age	.68	.47	80.61	.687	8.979	.00*
Alphabet Knowledge	Age	.56	.31	42.21	.565	6.497	.00*
Name Writing	Age	.71	.50	90.17	.711	9.496	.00*

*p< 0.05

Table 5 reveals that age was a significant predictor of phonological awareness skills (explained variance 45%), print concepts (explained variance 47%), alphabet knowledge (explained variance 31%), name writing (explained variance 50%).

Distribution of Emergent Literacy Skills by Age

Subsections of phonological awareness. Table 6 shows the percentage of providing correct answers by children to the items in the subsections of phonological awareness assessment tool according to age groups.

Table 6. Percentage of Providing Correct Answers to Phonological Awareness Subsections by Age Groups

	36-47 months (N=30) %	48-59 months (N=30) %	60-71 months (N=31) %	36-71 months (N=93) %
Syllable Segmentation	68,33	91,56	90,65	83,76
Rhyme Detection	42,33	64,38	78,39	61,94
Initial Phoneme Detection	36,33	72,50	79,68	63,23
Last Phoneme Detection	31,33	51,88	61,61	48,49

Table 6 indicates that percentages of providing correct answers to the phonological awareness subsections increased with respect to age. Only for syllable segmentation the percentages remained constant after 48-59 months and children from this age group onward provided correct answers to almost any questions in this subsection.

For 36-47 month-old children, the highest to lowest sorting of percentages for providing correct answers to phonological awareness subsections resulted as follows: Syllable segmentation ranked first, rhyme detection ranked second, initial phoneme detection ranked third, and last phoneme detection ranked fourth.

For 48-59, 60-71 and 36-71 month-old children, the highest to lowest sorting of percentages for providing correct answers to phonological awareness subsections resulted as follows: Syllable segmentation ranked first, initial phoneme detection ranked second, rhyme detection ranked third and finally, last phoneme detection ranked fourth.

Based on the foregoing results, the best performance children in all age groups displayed was in syllable segmentation, whereas the lowest performance was seen in last phoneme detection. Rhyme detection and initial phoneme detection laid between these two skills in terms of difficulty and children displayed different performance for these two skills according to age groups, namely 36-47 month-old children were more successful at rhyme detection compared to initial phoneme detection whereas 48-59, 60-71 and 36-71 month-olds exhibited higher success in initial phoneme detection compared to rhyme detection.

Print awareness: Print concepts, alphabet knowledge and name writing skills. Table 7 shows the percentage of providing correct answers by children to the items in the control list assessing print concepts according to age groups.

Table 7. Percentage of Providing Correct Answers to Print Concepts Items by Age Groups

Items	36-47 months (N=29)	48-59 months (N=32)	60-71 months (N=31)	36-71 months (N=92)
Direction of Book (Front Side)	13 44.8%	27 84.4%	30 96.8%	70 75.26%
Direction of Book (Back Side)	15 51.7%	27 84.4%	29 93.5%	71 76.34%
Title of Book	15 51.7%	25 78.1%	26 83.9%	66 70.96%
Function of Book Title	16 55.2%	25 78.1%	24 77.4%	65 69.89%
Print-Picture Difference	14 48.3%	15 46.9%	20 64.5%	49 52.68%
Print Directionality (Left page)	7 24.1%	18 56.3%	25 80.6%	50 53.76%
Print Directionality (Top line/word)	2 6.9%	15 46.9%	23 74.2%	40 43.01%
Print Directionality (Bottom line/word)	7 24.1%	13 40.6%	25 80.6%	45 48.38%
Print Directionality (Turning page leftward)	20 69.0%	28 87.5%	30 96.8%	78 83.87%
Print Directionality (Print direction: left to right)	6 20.7%	15 46.9%	25 80.6%	46 49.46%
Word	3 10.3%	8 25.0%	10 32.3%	21 22.58%

Table 7. Continued

Items	36-47 months (N=29)	48-59 months (N=32)	60-71 months (N=31)	36-71 months (N=92)
Short Word	3 10.3%	10 31.3%	10 32.3%	23 24.73%
Long Word	2 6.9%	7 21.9%	6 19.4%	15 16.12%
Several Words	0 0.0%	9 28.1%	13 41.9%	22 23.65%
Letter	12 41.4%	26 81.3%	30 96.8%	68 73.11%
Uppercase Letter	4 13.8%	17 53.1%	25 80.6%	46 49.46%
Lowercase Letter	6 20.7%	16 50.0%	25 80.6%	47 50.53%
Sentence	3 10.3%	8 25.0%	15 48.4%	26 27.95%
Lowercase of Uppercase Letter	13 44.8%	27 84.4%	30 96.8%	70 75.26%
Total	15 27.0%	27 51.6%	29 67.7%	71 49.3%

* The items contained in the above table are adapted from the "Control List for the Evaluation of the Print Awareness of Pre-School Children (Şimşek Çetin & Alisinanoğlu, 2013).

Table 7 reveals that the percentage of providing correct answers to print concepts items was 49.3% for 36-71 month-old children. It is observed that there was an increase in the percentage with respect to age.

For 36-71 month-old children, highest success was achieved for the following items, namely "showing front and back side of the book, telling the function of the book title, showing how to turn the book page leftward, showing a letter, and pointing to a lowercase of any shown uppercase letter". Their success rate was around 70-85%. In terms of age groups, it is observed that older children displayed better success rates than younger children in the same items.

For 36-71 month-old children, moderate success was achieved for the following items, namely "starting reading with the left page, print is read from left to right, where to read first on a page (first word/line), where to read last on a page (last word/line), picture-not print is read, showing lower and uppercase letters. Their success rate was around 43%-55%. In terms of age groups, it is observed that older children displayed better success rates than younger children in the same items.

For 36-71 month-old children, lowest success was achieved for the following items, namely, "showing a single sentence, a word, several words, a short word and a long word on a page". Their success rate was around 0%-10%. In terms of age groups, it is observed that older children displayed better success rates than younger children in the same items.

The descriptive statistics related to alphabet knowledge of children by age groups are provided in Table 8.

Table 8. Descriptive Statistics for Alphabet Knowledge by Age Groups

	Age Groups	Number	Min.	Max.	Average	S	Median
Alphabet Knowledge	36-71 months	92	0	29	5.86	7.50	3.00
	36-47 months	29	0	4	.69	1.13	.00
	48-59 months	32	0	25	5.44	5.60	5.00
	60-71 months	31	0	29	11.13	9.08	7.00

According to Table 8, for 36-71 month-old children, alphabet knowledge median was 3 and the scores varied between 0 and 29. In terms of age groups, it is observed that 36-47 month-old children almost showed no letter knowledge but children's letter knowledge increased with respect to age.

The observed frequencies of name writing levels of children by age groups are provided in Table 9.

Table 9. Frequency of Observed Name Writing Levels by Age Groups

Levels		36-47 months (N=27)	48-59 months (N=32)	60-71 months (N=31)	36-71 months (N=90)
Makes a drawing and identifies it as a "drawing".	N	11	2	0	13
	%	40.7%	6.3%	0.0%	14.4%
Makes a drawing and identifies it as his/her name.	N	0	0	0	0
	%	%0	%0	%0	%0
Scribbles vertically or horizontally without leaving any space.	N	3	0	0	3
	%	11.1%	0.0%	0.0%	3.3%
Makes letter-like scribbles without leaving any space.	N	0	1	0	1
	%	0.0%	3.1%	0.0%	1.1%
Draws a single letter-like symbol.	N	2	2	0	4
	%	7.4%	6.3%	0.0%	4.4%
Draws letter-like symbols with spaces in between.	N	5	1	0	6
	%	18.5%	3.1%	0.0%	6.7%
Draws random symbols and letters. These symbols and letters are not related to his/her name.	N	1	2	1	4
	%	3.7%	6.3%	3.2%	4.4%
Writes his/her initial or any letter of his/her name.	N	2	7	3	12
	%	7.4%	21.9%	9.7%	13.3%
Writes at least two letters of his/her name correctly.	N	2	6	0	8
	%	7.4%	18.8%	0.0%	8.9%
Generally writes his/her name correctly.	N	0	5	7	12
	%	0.0%	15.6%	22.6%	13.3%
Writes his/her name correctly.	N	1	6	20	27
	%	3.7%	18.8%	64.5%	30.0%
Total	N	27	32	31	90
	%	100.0%	100.0%	100.0%	100.0%

* The items in the above table are abbreviated. Please see Appendix-1 for complete definitions.

According to Table 9, 36-71 month-old children most frequently wrote their names correctly. This level was followed by "Makes a drawing", "Writes his/her initial or any letter of his/her name" and "Generally writes his/her name correctly" levels.

In terms of age groups, 36-47 month-old children mainly responded with drawing when asked to write their names. This level was followed by "Draws letter-like symbols" and "Scribbles vertically or horizontally" levels.

Children in 48-59 month-old group most frequently wrote their initials or any letter of their names. This level was followed by "Writes at least two letters of his/her name correctly and "Writes his/her name correctly" levels.

Lastly, 60-71 month-old children mostly could write their names correctly. This level was followed by "Generally writes his/her name correctly" and "Writes his/her initial or any letter of his/her name" levels.

Discussion, Conclusion and Suggestions

This study investigated the development of emergent literacy components; phonological awareness, print concepts knowledge, alphabet knowledge and name writing during preschool period with respect to age groups (36-47, 48-59 and 60-71 months), and the findings are discussed below in line with literature.

Development of Emergent Literacy Skills with Respect to Age, and Age as a Predictor of Emergent Literacy Skills

In this study, it was examined whether emergent literacy skills of preschool children showed a significant difference according to age and whether age was a significant predictor of these skills. Acccording to the results, this study clearly demonstrates that phonological awareness, print concepts, alphabet knowledge and name writing were affected by age variable and that older children obtained higher scores in related assessment tools compared to youngers. Moreover, regression analyses revealed that age was a significant predictor of emergent literacy skills (for phonological awareness %45, for print concepts %47, for alphabet knowledge %31, and for name writing %50 explained variance). Various studies in the literature are in line with the findings of this research in showing that age is a prominent factor in the development of phonological awareness skills (Acarlar et al., 2002; Carroll et al., 2003; Dickinson et al., 2003; Farver, Xu, Lonigan, & Eppe; 2013; Lonigan et al., 1998; Lonigan et al., 2000; Stanovich et al., 1984; Treima & Zukoski, 2001; Wood & Terrell, 1998), print concepts (Akoğlu & Kızılöz, 2018; Cabell et al., 2009; Dickinson et al., 2003; Justice et al., 2006a; Puranik et al., 2011), alphabet knowledge (Dickinson et al., 2003; Farver et al., 2013; Lonigan et al., 2000; Phillips et al., 2012; Puranik et al., 2011; Torppa et al., 2006; Worden & Boettcher, 1990) and emergent writing (Altun Akbaba et al., 2014; Bloodgood, 1999; Cabell et al., 2009; Dickinson et al., 2003; Farver et al., 2013; Hildreth, 1936; Ho, 2011; Işıkoğlu Erdoğan et al., 2015; Levin et al., 2005; Şimşek Çetin, Bay, & Altun Akbaba, 2014; Welsch et al., 2003; Puranik et al., 2011). Furthermore the results obtained in this study are in agreement with emergent literacy perspective, which asserts that literacy is a developmental process starting in the early years of life, and growth observed in literacy arises from the child himself and the environmental stimulants, and children gradually learn more and more in skills concerning literacy (Teale & Sulzby, 1986). In contrast to reading readiness approach, which suggests that a child should have a certain age of mind to in order to learn reading and writing, and that small muscle skills and hand-eye coordination should be sufficiently developed (Beecher & Markin, 2002), this research clearly reveals that children from an early age-as young as 3- and on display growing knowledge and skills related to literacy.

Therefore, based on these findings and related body of literature it can be concluded that Turkish children's emergent literacy skills display a developmental characteristic.

In this study, it is seen that phonological awareness assessment tool was successful in differentiating 60-71 month-old children from 36-47 month-olds as well as 60-71 month-olds from 48-59 month-olds. But it was insufficient to differentiate 48-59 month-olds from 60-71 month-olds. The reason for this finding may have arised from the fact that the skills assessed as phonological awareness subsections were performed easily by the children from 48-59 months onward. Therefore, any future studies targeted at investigating the development of phonological awareness skills of preschool children are recommended to include the skills assessed in this study along with more challenging ones (e.g. rhyme production, word production based on a given phoneme, syllable and phoneme blending, syllable and phoneme deletion, phoneme segmentation) (Phillips et al., 2008). In this way, it is thought that preschool children's phonological awareness skills can be more adequately assessed with respect to age.

Again, in this study, it is seen that the tools prepared by the researcher to assess rhyme detection, alphabet knowledge and name writing skills were successful in differentiating all age groups. In addition, it can be said that the criteria set for assessing name writing skills were sufficient in presenting the developmental stages of name writing. Therefore, it is thought that these tools can be used to measure emergent literacy the skills of children from the age of three in the future studies.

Distribution of Emergent Literacy Skills by Age

In this study, in order to determine performance level of preschool children in emergent literacy skills; the distribution of phonological awareness skills, print concepts knowledge, alphabet knowledge and name writing skills with respect to age was investigated. According to the results regarding phonological awareness, the best performance that 36-47, 48-59, 60-71 and 36-71 month-old children displayed was in syllable segmentation, whereas the lowest performance was in last phoneme detection. Rhyme detection and initial phoneme detection skills laid between these two skills in terms of difficulty and differences were observed according to age groups as such: 36-47 month-old children performed better at rhyme detection than initial phoneme detection, whereas 48-59, 60-71 ve 36-71 month-olds were better at initial phoneme detection compared to ryhme detection. Studies in the literature point out that developmental progression occurs from large segments of phonology to small segments and that children detect and manipulate words before syllables, syllables before rhymes and rhymes before phonemes (Acarlar et al., 2002; Anthony & Francis, 2005; Burgess, 2006; Carroll et al., 2003; Goswami, 2006; Kargın et al., 2017; Lonigan et al., 1998; Muter, 2006; Stanovich et al., 1984; Stone et al., 1997; Torgesen & Mathes, 2000; Turan & Akoğlu, 2011; Wood & Terrell, 1998). From this point of view, it is possible to say that the developmental progression mentioned in the literature holds true for 36-47 month-old Turkish children. The finding that the initial sound detection was easier than rhyme detection, which was seen in the other age groups may be due to the fact that children in the study group were attending preschool centers where they might have been exposed to more (i.e., initial sound) or less (i.e., rhyme) activities related to phonological awareness skills. Therefore, it is recommended that new studies be conducted with a large group of children from different socio-economic backgrounds and that they allow for comparing children attending preschool centers with those who do not. Thus, Turkish preschool children's level of performance in rhyme detection and initial phoneme detection skills could be determined more clearly which will make it possible to see whether new results will be in line with the literature findings.

In this study, one of the findings regarding phonological awareness subsections which deserves attention is that from 36-47th month onward children were able to show some performance in all of the skills related to phonological awareness (syllable segmentation, rhyme detection, initial sound detection and last sound detection); however, the level of children's performance changed with respect to the difficulty level of phonological awareness skills. This finding is in line with some researchers' viewpoint that phonological awareness does not occur in separate stages but in an overlapping manner or in a "quasi-parallel" development. This is to say that while children gain mastery in simple levels of phonological awareness skills at the same time they can also be at the beginning level of a more difficult phonological awareness skill (Anthony et al., 2003; Phillips et al., 2008). These findings have implications for phonological awareness instruction. Preschool teachers or curriculum designers can target a few steps in the developmental progression of phonological awareness which means that once a child shows some ability in one skill they can add in another skill which is just a little more difficult (Anthony et al., 2003).

In this study, the distribution of children's performance with respect to print concepts items shows that children displayed the highest success for book title, function of book title, book direction (front-back side) and print direction items; which are referred to as "book concepts" in the literature (Cabell et al., 2007; Lovelace & Stewart, 2007; Whitehurst & Lonigan, 1998). The lowest success was observed for the items related to sentence, word and letter concepts; that is, items aimed at assessing print units. This result is in line with the results of other studies which indicate that preschool children acquire knowledge about book concepts earlier than knowledge about print units (Cabell et al., 2007; Justice & Ezell, 2001; Justice et al., 2006a; Şimşek Çetin, 2014). In addition to this, success rate of children in print concepts in this study was found to be lower than that of American children ((Justice & Ezell, 2001; Justice ve diğ., 2006). Although the Preschool Education Program (MoE, 2013) includes objectives about print awareness, this result may be an outcome of preschool teachers' ineffectiveness in creating a qualified literacy classroom environment (Tarım, 2015) and in applying appropriate practices related to print awareness (Ergül, Akoğlu, Sarıca, Tufan, & Karaman, 2015).

In terms of alphabet knowledge, 36-47 month-old children displayed almost no letter knowledge but alphabet knowledge increased with age (alphabet knowledge median score for 48-59 month-olds was 5, for 60-71 month-olds it was 7, and for 36-71 month-olds it was 3). In another study conducted in our country (Turkey), it is also stated that alphabet knowledge mean score of children attending kindergarten is quite low (Kargın et al., 2017). Furthermore, the results obtained in this study indicate that alphabet knowledge of the children raised in our country are rather low than in comparison to that of children from countries providing (Molfese et al., 2006; Phillips, et al., 2012; Worden & Boetcher, 1990) or not providing (Torppa et al., 2006) alphabet knowledge instruction during preschool period. Although low alphabet knowledge scores of children in this study compared to those of children raised in countries providing alphabet instruction are somewhat explicable, it is worthy of consideration that their scores are lower than those of children from countries providing no alphabet knowledge instruction. This finding is thought to be a result of several factors. The most important factor is that teaching letter names and writing letters are not among the objectives of the Preschool Education Program, but of the Primary School Program (MoE, 2013, 2018). Besides, it is stated that MEB inspectors do not allow the alphabet letters and environmental print to be present in preschool education classrooms (Ergül et al., 2014). Depending on these, both teachers and parents may restrict or postpone the learning of children in this area by believing that it is more appropriate for children to learn alphabet letters in primary school (Ergül et al., 2014).

According to the results of this study, when asked to write their names, 36-47 month-old children responded with "making a drawing" and 48-59 month-olds with "writing a letter or letters from his/her name" more frequently compared to the other levels of name writing. And also, most of the 60-71 month-olds could write their names correctly. These results, as asserted by numerous researchers, are in line with the viewpoint that the development of emergent writing progresses from scribbles and drawings to linear continuous forms, from linear continuous forms to separated letter-like forms and from there to the ability to write some letters of one's own name and finally to the ability to write one's own name conventionally (Ferreiro, 1978, 1986, 1990, as cited in Fields, Groth, & Spangler, 2004; Hildreth, 1936; Levin & Bus, 2003; Sulzby et al., 1988). Besides, the distribution of children in name writing in this study is very much similar to a study that used alike name writing criteria to investigate the developmental characteristics of Head Start children's name writing skills (Ho, 2011). However, it should be noted that the sample of the study conducted by Ho consisted of children of underprivileged families, whereas the sample of this study was mainly comprised of children of families having higher levels of education. These results may be an outcome of the fact that in the Preschool Education Program there are indicators that children should visually recognize their names and ask an adult to print their feelings and thoughts, but no indication that children are encouraged to write for themselves. As a natural consequence, teachers may not engage in such practices. Still another reason could be that, in preschool education classrooms there is usually no separate writing area with writing materials, and children are not allowed to use writing materials except for teacher-directed activities (Tarım, 2015).

As stated above, the findings in this study showing that print concepts, alphabet knowledge and name writing skills of preschool children are lower than those children in other countries are supported with a comprehensive study indicating that early literacy skills of Turkish children are quite low (Kargın et al., 2017). Also, it is stated in the literature that preschool teachers and candidates do not have enough theoretical knowledge about emergent literacy and they are limited in related classroom practices (Altun & Tantekin Erden, 2016; Deretarla Gül & Bal, 2006; Ergül et al., 2014). Given the fact that emergent literacy skills rank as upmost important variables predicting reading during primary school period, a prevalent approach for this subject matter is needed. For this purpose, it is suggested that a) "early literacy" courses are offered in preschool education programs at the universities, c) in-service trainings are provided to preschool teachers that train them in how to support emergent literacy skills in children, and lastly c) parents' awareness about emergent literacy is raised by means of media, preschool centers or children's libraries.

In conclusion, this study is unique in terms of investigating multiple components of emergent literacy skills of preschool children from the age of three in a developmental perspective. The results obtained in this study are important in the sense that they indicate that developmental progression of Turkish preschool children's emergent literacy skills occurs in a similar way that is stated in the literature. Besides, by unfolding the developmental progression of phonological awareness in a Turkish sample, it is believed that the findings may contribute to the comparisons that have been made between different languages with respect to phonological awareness.

In Turkey, there are some assessment instruments for emergent literacy skills but they mainly target children at age five and/or six (Büyüktaşkapu, 2012; Karaman ve Güngör Aytar, 2016; Kargın et al., 2015; Sarı & Aktan Acar, 2013; Şimşek Çetin, 2014). Therefore, it is recommended that valid and reliable instruments are developed to assess children's emergent literacy skills from an early age. In this way, it will be possible to monitor children's level of performance, progression and shortfall in these skills. By designing intervention programs for children who have gaps in these skills, their risk for displaying a reading disability might have been reduced. Since this study investigated emergent literacy skills of preschool children, and the assessment tools used in the study were successful in differentiating

age groups, it stands out as a significant reference for any new assessment tools to be developed. In addition to that, the developmental characteristics of emergent literacy during preschool period uncovered in this study may guide researchers to design curriculum programs or guide teachers in their instruction practices.

Lastly, this study was conducted on typically developing preschool children who were attending preschool centers. In this respect, it is suggested that new studies compare emergent literacy skills of children between the following groups: Children with special needs and typically developing children; children attending preschools and those who do not, and also monolingual and bilingual children. New studies can also address the contribution of environmental factors such as home literacy environment along with age to the development of emergent literacy skills. Since in this study, emergent literacy skills of children were examined at a time, it is recommended that these skills are assessed with repeated measures throughout the year in order to better demonstrate the developmental nature of emergent literacy skills and how children progress in these skills. Such research design will allow to see how emergent literacy skills are interrelated and how these skills contribute to one another's development. Finally, it would be interesting to investigate the order in which children learn alphabet letters and the contribution of the emergent literacy skills to writing new words (invented spelling).

Limitations

The most important limitation of this study is that the sample group was selected from only two counties of Istanbul and was limited in representing children from families with low education levels. This limitation is thought to have no significant effect on the developmental progression of emergent literacy skills because the findings obtained in this study show that developmental progression among Turkish children is consistent with developmental progression stated in the international literature. However, it should be taken into consideration that the results cannot be generalized to children from families with low education levels, as the limitation in the sample may have an impact on the distribution of emergent literacy skills of children involved in the study. In this respect, it is suggested that new studies are carried out with a larger sample group representing different levels of education or socio-economic status.

References

Acarlar, F., Ege, P., & Turan, F. (2002). Türk çocuklarında üstdil becerilerinin gelişimi ve okuma ile ilişkisi. *Türk Psikoloji Dergisi, 17*(50), 63-73.

Akoğlu, G., & Kızılöz, Ç. (2018). Print awareness skills and home literacy environment of Turkish preschoolers. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 34*(1), 90-105. doi:10.16986/HUJE.2018040772

Altun Akbaba, S., Şimşek Çetin, Ö., & Bay, N. (2014). Okul öncesi dönemdeki çocukların yazma becerilerinin gelişimsel özelliklerinin incelenmesi. *İlköğretim Online, 13*(2), 564-576.

Altun, D., & Tantekin Erden, F. (2016). Okul öncesi öğretmen adaylarının erken okuryazarlıkla ilgili görüşleri ve staj uygulamaları. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi, 17*(1), 241-261.

Anthony, J. L., & Francis, D. J. (2005). Development of phonological awareness. *Current Directions in Psychological Science, 14*(5), 255-259.

Anthony, J., Lonigan, C., Driscoll, K., Phillips, B., & Burgess, S. (2003). Phonological sensitivity: A quasi-parallel progression of word structure units and cognitive operations. *Reading Research Quarterly, 38*, 480-487.

Anthony, J., Williams, J. M., Duran, L. K., & Gillam, S. L. (2011). Spanish phonological awareness: Dimentionality and sequence of development during the preschool and kindergarten years. *Journal of Educational Psychology, 4*, 857-876.

Babur, N., Haznedar, B., & Ercetin, G. (2009a). *Kapsamlı fonolojik farkındalık testi* (BAP No. 05D101). İstanbul: Boğaziçi University.

Babur, N., Haznedar, B., & Ercetin, G. (2009b), *Fonolojik farkindalik tarama testi* (BAP No. 05D101). İstanbul: Boğaziçi University.

Barbosa, T., Miranda, M. C., Santos, R. F., & Bueno, O. F. A. (2009). Phonological working memory, phonological awareness and language in literacy difficulties in Brazilian children. *Reading and Writing, 22*, 201-218.

Bayraktar, V. (2013). *Okuma-yazmaya hazırlık eğitim programının anasınıfına devam eden 6 yaş grubu çocukların yazı farkındalığı becerilerine ve ilkokul birinci sınıftaki ses farkındalığı ve okuma-yazma becerilerine etkisinin incelenmesi* (Unpublished doctoral dissertation). Gazi University, Ankara.

Beecher, B., & Markin, L. (2002). Languages and literacies in early childhood: At home and in early childhood settings. *European Early Childhood Education Research Journal, 10*(1), 67-84.

Bloodgood, J. W. (1999). What's in the name? Children's name writing and literacy acquisition. *Reading Research Quarterly, 34*(3), 342-367.

Both-de Vries, A., & Bus, A. G. (2008). Name writing: A first step to phonetic writing? Does the name have a special role in understanding the symbolic function of writing? *Literacy Learning and Teaching, 12*, 37-55.

Burgess, S. R. (2006). The development of phonological sensitivity. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (Vol. 2, pp. 90-112). New York: Guilford Press.

Büyüktaşkapu, S. (2012). Mountain shadows fonolojik farkındalık ölçeğinin (MS-PAS) Türkçe'ye uyarlanması geçerlik güvenirlik çalışması. *International Online Journal of Educational Sciences, 4*(2), 509-518.

Cabell, S. Q., McGinty, A. S., & Justice, L. M. (2007). Assessing print knowledge. In K. L. Pence (Ed.), *Assessment in emergent literacy* (pp. 327-375), San Diego: CA, Plural Publishing.

Cabell, S. Q., Justice, L. M., Zucker, T. A., & McGinty, A. S. (2009). Emergent name-writing abilities of preschool-age children with language impairment. *Language, Speech, And Hearing Services in Schools, 40*, 53-66.

Carroll, J. M., Snowling, M. J., Hulme, C., & Stevenson, J. (2003). The development of phonological awareness in preschool children. *Developmental Psychology, 39*(5), 913-923.

Cossu, G., Shankweiler, D., Liberman, I. Y., Katz, L., & Tola, G. (1988). Awareness of phonological segments and reading ability in Italian children. *Applied Psycholoinguistics, 9*(1), 1-16.

Cunningham, A. E., & Zibulsky, J. (2011). Tell me a story: Examining the benefits of reading. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (Vol. 3, pp. 397-411). New York: Guilford Press.

Deretarla Gül, E., & Bal, S. (2006). Anasınıfı öğretmenlerinin okuma yazmaya hazırlık çalışmalarına ilişkin bakış açıları, sınıf içi kullanılan materyal ve etkinlikler ile çocukların okuma yazmaya ilgilerinin incelenmesi. *Çocuk Gelişimi ve Eğitimi Dergisi, 1*(2), 33-51.

Dickinson, D., McCabe, A., Anastasopolous, J. A., Peisner-Feinberg, E. S., & Poe, M. D. (2003). The comprehensive language approach to early literacy: The interrelations among vocabulary, phonological sensitivity, and print knowledge among preschool-aged children. *Journal of Educational Psychology, 95*(3), 465-481.

Durgunoğlu, A., & Öney, B. (1999). Cross-linguistic comparison of phonological awareness and word recognition. *Reading and Writing, 11*, 281-299.

Ergül, C., Akoğlu, G., Sarıca, A. D., Tufan, M., & Karaman, G. (2015). Ana sınıflarında gerçekleştirilen birlikte kitap okuma etkinliklerinin "etkileşimli kitap okuma" bağlamında incelenmesi. *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 11*(3), 603-619.

Ergül, C., Karaman, G., Akoğlu, G., Tufan, M., Kesiktaş, D., & Bahap Kudret, Z. (2014). Okul öncesi öğretmenlerinin "erken okuryazarlık" kavramına ilişkin bilgi düzeyleri ve sınıf uygulamaları. *İlköğretim Online, 13*(4), 1449-1472.

Farver, J. A. M., Xu, Y., Lonigan, C. J., & Eppe, S. (2013). The home literacy environment and Latino head start children's emergent literacy skills. *Developmental Psychology, 49*(4), 775-791.

Fields, M. V., Groth, L., & Spangler, K. (2004). *Let's begin reading right: A developmental approach to emergent literacy*. USA: Pearson Education.

Goswami, U. (2006). Early phonological development and the acquisition of literacy. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (Vol. 1, pp. 111-125). New York: Guilford Press.

Griffith, P. L., Beach, S. A., Ruan, J., & Dunn, L. (2008). *Literacy for young children: A guide for early childhood educators*. California: Corwin Press.

Hildreth, G. (1936). Developmental sequences in name writing. *Child Development, 7*, 291-303.

Ho, C. A. (2011). *Major developmental characteristics of children's name writing and relationships with fine motor skills and emergent literacy skills* (Unpublished doctoral dissertation). University of Michigan, America.

Işıkoğlu Erdoğan, N., Muslugüme, E., Huz, Ç., Yılmaz, G., & Öztürk B. (2015). Okul öncesi eğitimi döneminde isim yazma becerilerinin incelenmesi. *Elementary Education Online, 14*(2), 449-458.

Justice, L. M., & Ezell, H., K. (2001). Word and print awareness in 4 year-old children. *Child Language Teaching and Therapy, 17*, 207-225.

Justice, L. M., Bowles, R. P., & Skibbe, L. E. (2006a). Measuring preschool attainment of print-concept knowledge: A study of typical and at-risk 3- to 5-year-old children using item response theory. *Language, Speech, and Hearing Services in Schools, 37*, 224-235.

Justice, L. M., Pence, K., Bowles, R. B., & Wiggins, A. (2006b). An investigation of four hypotheses concerning the order by which 4-year-old children learn the alphabet letters. *Early Childhood Research Quarterly, 21*, 374-389.

Karaman, G., & Güngör Aytar, A. (2016). Erken okuryazarlık becerilerini değerlendirme aracının (EOBDA) geliştirilmesi. *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 12*(2), 516-541.

Kargın, T., Ergül, C., Büyüköztürk, Ş., & Güldenoğlu, B. (2015). Anasınıfı çocuklarına yönelik erken okuryazarlık testi (EROT) geliştirme çalışması. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 16*(3), 237-268.

Kargın, T., Güldenoğlu, B., & Ergül, C. (2017). Anasınıfı çocuklarının erken okuryazarlık beceri profili: Ankara örneklemi. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 18*(1), 61-87.

Kendeou, P., Broek, P., White M. J., & Lynch, J. S. (2009). Predicting reading comprehension in early elementary school: The independent contributions of oral language and decoding skills. *Journal of Educational Psychology, 101*(4), 765-778.

Kotoulas, V. (2004). The development of phonological awareness throughout the school years: The case of a transparent ortography. *Educational Studies in Language and Literature, 4,* 183-201.

Levin, I., & Bus, A. (2003). How is emergent writing based on drawing? Analyses of children's products and their sorting by children and mothers. *Developmental Psychology*, *39*, 891-905.

Levin, I., Vries, A. B., Aram, D., & Bus, A. (2005). Writing starts with own name writing: From scribbling to conventional spelling in Israeli and Dutch children. *Applied Psycholinguistics*, *26*, 463-477.

Levy, B. A., Gong, Z., Hessels, S., Evans, M. A., & Jared, D. (2006). Understanding print: Early reading development and the contributions of home literacy experiences. *Journal of Experimental Child Psychology, 93*(1), 63-93.

Lonigan, C. J. (2006). Conceptualizing phonological processing skills in prereaders. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* içinde (Vol. 1, p. 77-89).   New York: Guilford Press.

Lonigan, C. J., Burgess, S. R., & Anthony, J. L. (2000). Development of emergent literacy and early reading skills in preschool: Evidence from a latent variable longitudinal study. *Developmental Psychology*, *36*, 596-613.

Lonigan, C. J., Burgess, S. R., Anthony, J. L., & Barker, T. A. (1998). Development of phonological sensitivity in two-to five-year-old children. *Journal of Educational Psychology*, *90*, 294-311.

Lovelace, S., & Stewart, S. R. (2007). Increasing print awareness in preschoolers with language impairment using non-evocative print referencing. *Language, Speech, and Hearing Services in Schools*, *38*, 16-30.

Mather, N., Goldstein, S. (2008). *Learning disabilities and challenging behaviors: A guide to intervention & classroom management*. Paul H. Brookes Publishing Co.

McBride-Chang, C., Liu, P. D., Wong T., Wong, A., & Shu, H. (2011). Specific reading difficulties in Chinese, English, or both: Longitudinal markers of phonological awareness, morphological awareness, and RAN in Hong Kong Chinese children. *Journal of Learning Disabilities*, *20*(10), 1-12.

McGinty, A. S., & Justice, L. M. (2009). Predictors of print knowledge in children with SLI: Experiential and developmental factors. *Journal of Speech, Language, and Hearing Research*, *52*, 81-97.

McNeill, B. C., Westerveld, M., Bysterveldt A. V., Boyd, L., & Gillon, G. (2013). Early name writing and invented spelling development. *New Zealand Journal of Education Studies, 48*(1), 50-65.

Ministry of Education. (2013). *Okul öncesi eğitim programı.* Ankara: Temel Eğitim Genel Müdürlüğü.

Ministry of Education. (2018). *Türkçe dersi öğretim programı (İlkokul ve Ortaokul 1,2,3,4,5,6,7 ve 8. sınıflar).* Ankara: Ministry of Education.

Molfese, V. J, Modglin, A. A., Beswick, J. L., Neamon, J. D., Berg, S. A., & Molnar, A. (2006). Letter knowledge, phonological processing, and print knowledge: Skill development in nonreading preschool children. *Journal of Learning Disabilities, 39*(4), 296-305.

Muter, V. (2006). The prediction and screening of children's reading difficulties. In M. J. Snowling & J. Stackhouse (Eds.), *Dyslexia, speech and language: A practitioner's handbook* içinde (Vol. 2, pp. 4-73). NJ: Whurr Publishers.

National Association for the Education of Young Children. (1998). Developmentally appropriate practices for young children. *Young Children*, 53(4), 30-46.

National Early Literacy Panel. (2008). *Developing early literacy report of the national early literacy panel*. Maryland: National Institute for Literacy.

NICHD Early Child Care Research Network. (2005). Pathways to reading: The role of oral language in the transition to reading. *Developmental Psychology*, *41* (2), 428-442.

Otto, B. (2008). *Literacy development in early childhood: Reflective teaching for birth to age eight.* New Jersey: Pearson Education Inc.

Pence, K. L. (2007). Measuring contexts of learning and development and children's emergent literacy abilities and growth. In K. L. Pence (Ed.), *Assessment in emergent literacy* (pp. xiii-xxi), San Diego: CA, Plural Publishing.

Phillips, B. M., Clancy Menchetti, J. C., & Lonigan, C. J. (2008). Successful phonological awareness instruction with preschool children: Lessons from the classroom. *Topics in Early Childhood Special Education, 28*(1), 3-17.

Phillips, B. M., Piasta, S. B., Anthony, J. L., & Francis, D. J. (2012). IRTs of the ABCs: Children's letter name acquisition. *Journal of School Psychology, 50*(4), 461-481.

Pinto, G., Bigozzi, L., Gamannossi, B. A., & Vezzani, C. (2009). Emergent literacy and learning to write: A predictive model for Italian language. *European Journal of Psychology of Education*, 24(1), 61-78.

Puolakanaho, A., Ahonen, T., Aro, M., Eklund, K., Leppänen, P. H., Poikkeus, A. M., … & Lyytinen, H. (2008). Developmental links of very early phonological and language skills to second grade reading outcomes: strong to accuracy but only minor to fluency. *Journal of Learning Disabilities*, *41*(4), 353-370.

Puranik, C. S., Lonigan, C. J., & Kim, Y. (2011). Contributions of emergent literacy skills to name writing, letter writing, and spelling in preschool children. *Early Childhood Research Quarterly*, *26*, 465- 474.

Rashotte, C., Torgesen, J., & Wagner, R. (1999). *Comprehensive test of phonological processing (CTOPP).* Austin, TX: Pro-Ed.

Sarı, B., & Aktan Acar, E. (2013). Erken çocukluk dönemi fonolojik duyarlılık ölçeğinin (EÇDFDÖ) geliştirilmesi ve psikometrik özellikleri. *Kuram ve Uygulamada Eğitim Bilimleri, 13*(4), 2195-2215.

Scarborough, H. S. (2002). Connecting early language and literacy to later reading disabilities: evidence, theory, and practice. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (Vol. 1, pp. 97-110). New York: Guilford Press.

Senechal, M., LeFevre, J., Smith-Chant, B. L., & Colton, K. V. (2001). On refining theoretical models of emergent literacy the role of empirical evidence. *Journal of School Psychology*, *39*(5), 439-460.

Smith, S. L., Scott, K. A., Roberts, J., & Locke, J. L. (2008). Disabled readers' performance on tasks of phonological processing, rapid naming, and letter knowledge before and after kindergarten. *Learning Disabilities Research and Practice*, *23*(3), 113-124.

Stanovich, K. E., Cunningham, A. E., & Cramer, B. B. (1984). Assessing phonological awareness task in children: Issues of task comparability. *Journal of Experimental Child Psychology*, *38*, 175-190.

Stone, B. H., Merritt, D., & Cherkes Julkowski, M. (1997). Language and reading: Phonological connections. In D. D. Merritt & B. Culatta (Eds.), *Language intervention in the classroom* (pp. 363-408). San Diego, CA: Singular Publishing.

Storch, S. A., & Whitehurst, G. J. (2001). The role of family and home in the literacy development of children from low-ıncome backgrounds. In P. R. Britto & J. Brooks-Gunn (Eds.), *The role of family literacy environments in promoting young children's emerging literacy skills. New directions for child and adolescent development* (pp. 53-71). San Francisco: Jossey-Bass.

Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology, 38*, 934-947.

Sulzby, E., Barnhart, J., & Hieshima, J. (1988). *Forms of writing and rereading from writing: Technical report* (Report no. 437). Illinois: Center for the Study of Reading, University of Illinois at Urbana-Champaign.

Şencan, H. (2005). *Sosyal ve davranışsal ölçümlerde güvenilirlik ve geçerlilik*. Ankara: Seçkin Yay.

Şimşek Çetin, Ö. (2014). Okul öncesi dönemindeki çocukların yazı farkındalığı ve yazmaya hazırlık becerilerinin incelenmesi. *Kuramsal Eğitimbilim Dergisi, 7*(3), 342-360.

Şimşek Çetin, Ö., & Alisinanoğlu, F. (2013). Okul öncesi dönemdeki çocukların yazı farkındalığını değerlendirme kontrol listesinin geçerlik ve güvenirlik çalışması. *Karadeniz Sosyal Bilimler Dergisi, 5*(8), 15-27.

Şimşek Çetin, Ö., Bay, D. N., & Altun Akbaba, S. (2014). Okul öncesi dönemdeki çocukların yazma becerilerinin gelişimsel özelliklerinin incelenmesi. *İlköğretim Online, 13*(2), 564-576.

Tarım, Ş. D. (2015). Literacy environments of preschool education classrooms in Turkey: The case of Muğla. *Journal of Education and Training Studies, 3*(5), 264-271.

Teale, W. H., & Sulzby, E. (1986). Emergent literacy as a perspective for examininng how young children become writers and readers. In W. H. Teale & E. Sulzby (Eds.), *Emergent literacy: Writing and reading* (pp. vii-xxv). New Jersey: Ablex Publishing.

Torgesen, J. K., & Mathes, P. G. (2000). *A basic guide to understanding, assessing, and teaching phonological awareness.* Texas: Pro-ed.

Torppa, M., Lyytinen, P., Erskine, J., Eklund, K., & Lyytinen, H. (2010). Language development, literacy skills, and predictive connections to reading in Finnish children with and without familial risk for dyslexia. *Journal of Learning Disabilities, 43*(4), 308-321.

Torppa, M., Poikkeus, A., Laakso, M. L., Eklund K., & Lyytinen, H. (2006). Predicting delayed letter knowledge development and its relation to grade 1 reading achievement among children with and without familial risk for dyslexia. *Developmental Psychology, 42*(6), 1128-1142.

Treiman, R., & Broderick, V. (1998). What's in a name: Children's knowledge about the letters in their own names. *Journal of Experimental Child Psychology, 70*, 97-116.

Treiman, R., & Zukowski, A. (2001). Levels of phonological awareness: A tribute to Isabelle Y. Liberman. In S. A. Brady & D. P. Shankweiler (Eds.), *Phonological processes in literacy* (pp. 67-83). New Jersey: Lawrence Erlbaum Associates Inc.

Turan, F., & Akoğlu, G. (2011). Okul öncesi dönemde sesbilgisel farkındalık eğitimi. *Eğitim ve Bilim, 36*(161), 64-75.

Uhry, J. K., & Clark, D. B. (2005). Phonemic awareness. In J. K. Uhry & D. B. Clark (Eds.), *Dyslexia theory & practice of instruction* (pp. 97-117). Baltimore: Brookes.

Vukelich, C., Christie, J., & Enz, B. J. (2014). *Helping young children learn language and literacy*. England: Pearson Education Limited.

Welsch, J. G., Sullivan A., & Justice, L. M. (2003). That's my letter! What preschoolers' name writing representations tell us about emergent literacy knowledge. *Journal of Literacy Research, 35*(2), 757-776.

Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development, 69*(3), 848-847.

Whitehurst, G. J., & Lonigan, C. J. (2002). Emergent literacy: Development from pre-readers to readers. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (pp. 11-29). New York: Guilford Press.

Wood, C., & Terrell, C. (1998). Pre-school phonological awareness and subsequent literacy development. *Educational Psychology, 18*, 253-272.

Worden, P. E., & Boettcher, W. (1990). Young children's acquisition of alphabet knowledge. *Journal of Reading Behavior, 22*(3), 277-295.

Ziegler, J. C., & Goswami, U. (2005). Reading acquisition, developmental dyslexia, and skilled reading across languages: A psycholinguistic grain size theory. *Psychological Bulletin, 131*(1), 3-29.

Appendix 1. YABE

Level No	Name Writing	Score
1. Level	Makes a drawing and identifies it as a "drawing".	0 point
2. Level	Makes a drawing and identifies it as his/her name.	1 point
3. Level	Scribbles vertically or horizontally without leaving any space.	2 points
4. Level	Makes letter-like scribbles without leaving any space.	3 points
5. Level	Draws a single letter-like symbol.	4 points
6. Level	Draws letter-like symbols with spaces in between.	5 points
7. Level	Draws random symbols and letters. These symbols and letters are not related to his/her name.	6 points
8. Level	Writes his/her initial or any letter of his/her name. There may be other added symbols and/or letters.	7 points
9. Level	Writes at least two letters of his/her name correctly (letter should not be a repetition of the same letter). There may be other added symbols and/or letters.	8 points
10. Level	Generally writes his/her name correctly. Some letters may be written backwards and/or name may be written entirely in a mirror image.	9 points
11. Level	Writes his/her name correctly with no backwards letters or mirror image writing.	10 points

Appendix 2. Examples for Name Writing

1. Level: Makes a drawing and identifies it as a "drawing".

Example 1: 37 month-old Arda stated that he drew a "flower" when requested to write his name.

Example 2: 44 month-old Enes Bera stated that he drew a "wheel" when requested to write his name.

Example 3: 47 month-old Akif stated that he wanted to draw a "picture" and drew "himself" when requested to write his name.
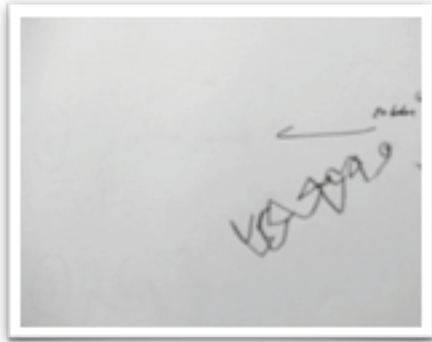
2. Level: Makes a drawing and identifies it as his/her name.

There is no example regarding this level.

3. Level: Scribbles vertically or horizontally without leaving any space.

Example 1: 36 month-old Sena stated that she wrote "Sena" when requested to write her name.

4. Level: Makes letter-like scribbles without leaving any space.

Example 1: 52 month-old Ahmet Kenan stated that he wrote "ice" when requested to write his name.

5. Level: Draws a single letter-like symbol.
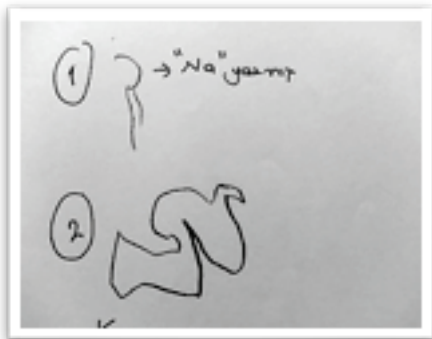
Example 1: 55 month-old İrem Su stated that she wrote "na" and "ke" when requested to write her name.

6. Level: Draws letter-like symbols with spaces in between.
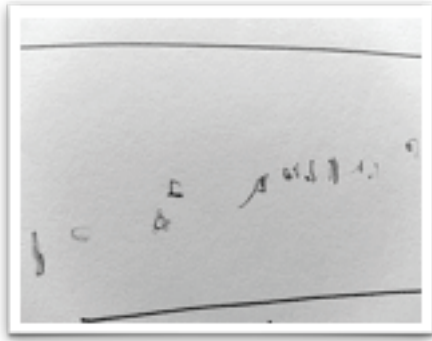
Example 1: 38 month-old Halil Efe drew the symbols on the left and stated that he wrote Halil Efe when requested to write his name.

Example 2: 48 month-old Ahmet Furkan drew the symbols on the left and stated that he wrote Ahmet Furkan when requested to write his name.

**7. Level: Draws random symbols and letters. These symbols and letters are not related to his/her name.**
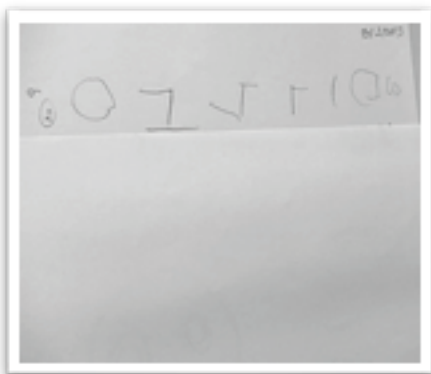
Example 1: 45 month-old Rabia drew the symbols and letters on the left and stated that these letters are related to a cat when requested to write her name.

8. Level: Writes his/her initial or any letter of his/her name. There may be other added symbols and/or letters.
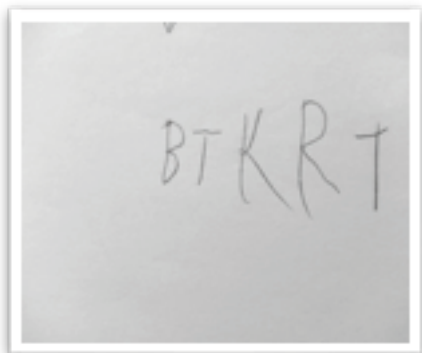

Example 1: 55 month-old Kerem stated that he wrote "ke" when requested to write his name.

9. Level: Writes at least two letters of his/her name correctly (letter should not be a repetition of the same letter). There may be other added symbols and/or letters.
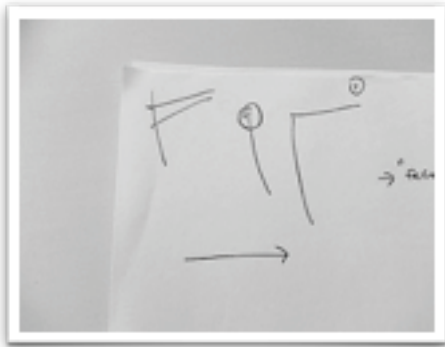

Example 1: 49 month-old Ahmet Ferit stated that he wrote "Ferit Bir" when requested to write his name.
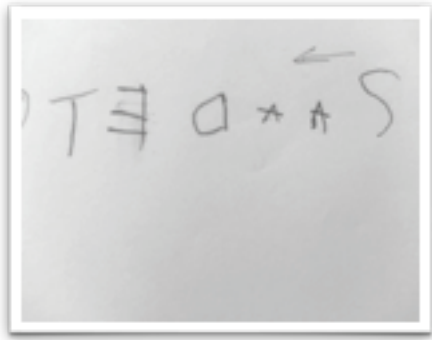

Example 2: 61 month-old Berat wrote like shown on the left and said that he did not know what they were when requested to write his name.

10. Level: Generally writes his/her name correctly. Some letters may be written backwards and/or name may be written entirely in a mirror image.
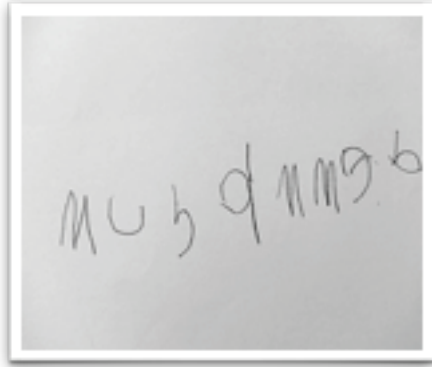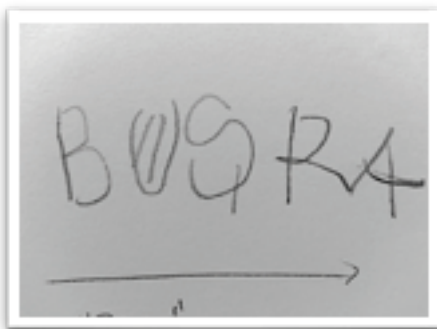

Example 1: 64 month-old Muhammed wrote like shown on the left when requested to write his name.

Example 2: 59 month-old Saadet wrote like shown on the left when requested to write her name.

11. Level: Writes his/her name correctly with no backward letters or mirror image writing.

Example1: 60 month-old Büşra wrote like shown on the left when requested to write her name.