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Examination of Human Figure Drawings by Gifted and Normally Developed Children at Preschool Period*

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ABSTRACT. This study was conducted to examine the drawing stages and characteristics of 4-5 year old normally developing and gifted children. Childrens human figure drawings (HFD) were assessed accroding to Koppitz's HFD criteria. The study sample included a total of 60 4 and 5 year old children, with 20 of them previously identified as gifted and the remaining 40 displaying normal development. The results showed that gifted children, particularly girls, produced more developed and detailed drawings in both age groups, and that all 5 year olds produced both qualitatively and quantitatively more advanced drawings when compared to 4 year olds. Additionally, 4 year old gifted children, especially girls, had drawing skills almost equal to those of 5 year olds.

Key Words: Preschool children, gifted children, human figure drawings

SUMMARY

Purpose and significance*:* The pictures made by children for various reasons display the level of their emotional and mental development. The characteristics used by both children that display a normal development process and the children that have special needs, such as the colors they use, size, perspective, the forms of putting objects on the paper and realism in the drawings of objects provide significant clues about their mental, social and emotional development patterns. There are significant differences between the characteristics of the drawings of children that display a normal development process and the characteristics of drawings by gifted children. The creativity and imaginative power of gifted children are more developed than their peers. Drawing skills of children that are gifted in drawing are at a higher level than the children that are normally developed and gifted. Although the drawing skills of gifted and normally developed children are similar, the difference between them can be observed while the gifted children talk about the pictures they made.

Methods: This study aimed to examine the drawing process and characteristics of 4-5 year-old children with normal development and gifted children. Based on all these factors, this study aims to examine the drawing phases and picture characteristics of normally developed and gifted children aged between 4 and 5. The sample of the study consists of 20 pre-determined gifted children and 40 children that display a normal development process aged between 4 and 5 and go to a private nursery school in Bursa province. The children that form the study group were provided the same number and colors of pastels and were asked to make a picture with the instruction "draw a person". The study then examines the drawings of children regarding developmental criteria using Koppitz's Human Figure Drawing method.

Results: The drawings of gifted and normally developing children over the age of 4 have meaningful differences, particularly in favor of gifted girls, in many criteria such as arms, double sided arms, neck, downward arms, hands, irises, and arms out of shoulders. A difference in favor of normally developing girls was found with respect to the drawing of feet. As for boys,

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a meaningful difference was only found in favor of gifted boys with respect to eyebrow and iris drawings ($p<0.05$).

Discussion and Conclusion: This study found that in both age groups gifted children, especially girls, drew more developed and detailed drawings, that 5 year olds were more advanced in their drawings quantitatively and qualitatively than 4 year olds. It was also found that the drawing skills of 4 year old gifted children, especially girls, were almost at the level of age 5, and that when criteria are considered as a basis 4 year old gifted children, especially girls, were seen to draw more detailed drawings than their normally developing peers. In addition, no meaningful relationship was found between the intelligence parts and HFD score of gifted children in the sample.

INTRODUCTION

Children often use drawings as a simple tool to reflect themselves and express their feelings and thoughts about events. In addition to being a tool to get to know children, drawings are also an important tool for children to reflect their intelligence, personality, and their inner world (Koppitz, 1984).

Through lines and symbols drawn on paper, children express many emotions and thoughts that they would not be able to express verbally. In addition to children's intelligence and personality traits, their interaction with the environment and daily experiences make their lines and symbols unique to themselves (Yavuzer, 1995).

Apart from children's thinking styles, drawings reflect to us certain problems that cannot be expressed verbally in their relationships with other children and adults. In meaningfully interpreting these problems, factors such as the way children use paper, the composition of the drawing, the placement of figures on paper, symbols used in the composition or the relationships between figures carry some meaning. As a result of detailed analysis of children's drawings, important clues may be obtained about their talents, habits, personality traits, and relationships with the environment.

Children's drawings are universal and follow the same development everywhere in the world (Tepecik and Oğuzoğlu, 2002). The very first lines of children are like scribbles. Rhoda Kellogg (1969) examined more than a million drawings from the USA and 30 other countries and identified 20 shapes in the stage going from scribbles to the discovery of circular movements (Qtd. in Schirrmacher, 1988; Kırışoğlu, 2002).

Towards the end of the scribbling stage, the first attempts to draw human figures are simple and deficient. Children start to notice relationships between the objects that they draw between the ages 2 and 4. The drawings of preschool children aged between 3 and 5 start to become better controlled in time and the drawing skill develops by distinguishing between basic shapes and forms. The human figure is usually drawn in the form of a head by adding parts like eyes, nose and mouth to a large circle (Yavuzer, 2000).

The majority of 5 year-olds draw a head and a body. The head has a nose and a mouth, while arms and legs originate from the body. In addition to these, houses and trees also start to be identified in their drawings. Known as the schematic period, this era is also noteworthy for the way figures and objects are lined up on a line at the bottom of the paper (Yavuzer, 2000).

Children need certain skills for drawing, namely small muscle motor skills and hand-eye coordination. While 1-1.5 year-old children unknowingly start to scribble, they start to have more awareness and drawing skills as they become older. Children's small muscle motor skills develop quickly between the ages 5-9. This leads to an equal amount of development in their drawing skills too. Children's drawings and how these drawings reflect their development levels has been a popular area of study for researchers for over than a century, and they have examined these drawings in different ways to have more insight into child development.

Examining Children's Drawings

The interest in children's drawings and their evaluation dates back to the early 18th century. Increased importance attached to children in this era led to a change in the opinions about childhood and education, and studies examining child behavior became more common. Charles Darwin published in 1877 in England a detailed observation study of his younger son Doddy, while Corrado Ricci published his first book on children's drawings in Italy. In 1926, Florance Goodenough developed a test based on children's ability to draw human figures and used this as an intelligence test. This test was revised and made more comprehensive in 1963 by Dale Haris. Haris and Goodenough, meant the Draw a Human Test (DAH) as one that measures cognitive maturity rather than intelligence itself, and suggested it measure children's current level rather than their functional potential.

After 1940, a renewed interest started in children's drawings. Personality studies known as the projective method brought a new dimension to Human Figure Drawings (HFD). According to this, children's drawings and the painting characteristics give us clues about their personality, habits and behaviors.

Machover (1949) and Koppitz (1968, 1984) examined children's drawings from an emotional perspective. Koppitz (1968) particularly used the DAH approach to identify emotional disorders in children, and suggested alternative ideas in the interpretation of special signs.

Koppitz's method can be used in the diagnosis and remedy of emotional disorders during the education of problem children. In this way, hidden feelings can be expressed non-verbally, anbd children can be evaluated in a relaxed environment.

Koppitz's outlook on children's drawings from the perspective of emotional determinants has lasted from the 1950s to our day. Buck's House-Tree-Person Drawing Test (1966) and Kaufman and Burns' Kinetic Family Drawing Test (1970) are used frequently in evaluating cognitive maturity, learning difficulties, personality and emotional disorders. Such assessments of children's drawings have created serious doubts and debates about the validity and reliability of the method used. However, it is still continued in the West as a common practice (Lubin, Larsen, Matarazzo and Sever, 1985; Lubin, Larsen and Matarazzo, 1984).

When infants make scribbles, they draw things they already know with their developing skills. Eventually, they develop visual realism that includes perspective (Tallandini and Valentini, 1991).

A basic problem in cognitive development is the representation of events, objects and thoughts. These can be represented in more than one way, and children of differing ages appear to be using different ways when reflecting their world. Their way of displaying knowledge and coding events change according to their development.

For children around 1-1.5 years old, the arm is closely related to the mechanical structure of the wrist and the hand, and is drawn automatically. While at the onset awareness and planned action may be lacking, the scribbles can be used to prepare a profile of children's actions.

When children with no prior experience of drawing are given a pencil and paper, they tend to spontaneously draw human figures. Golomb (2004) states that the biggest information about children's development can be obtained from their human figure drawings. Typically, children move from scribbles to early representative shapes and forms, and then to complex human figure designs (Golomb, 2004; Haris 1963). In other words, as children mature and develop cognitively, their drawings move from simple pictures to more complex human figures. A young child often draws a circle as a head and then draws sticks as the body to form a figure of "legs from the head". This design is drawn to symbolize a human. As they develop, children experience human figure design and in the end turn it into a distinctly different figure that includes their personal drawing style (Golomb, 2004).

Children's drawings are affected to a great extent by the school they attend and the art of the country they live in. In cultures with only little interest in art, children draw much more basic shapes (Wales, 1990). Going to school gives children the opportunity to draw and write, see drawings and understand artistic shapes with shared meaning (Cox, 1993). The cognitive development of children is displayed in their human figure drawings and reflects their social world. La Voy et al. (2001) state that cultural differences infuse into children's human designs and are thus displayed in their drawings. Details and social value perception is emphasized by

the length of the figure. Certain studies have shown that American children draw more smiling figures whereas Japanese children draw more detailed and larger figures (LaVoy et al. 2001). Similarly, Case and Okamato (1996) found cultural differences between Chinese and Canadian children's drawings. These findings show that children's drawings not only reflect their development but also help us understand children and their culture.

Until our day, children's drawings have largely been used as a tool measuring and identifying their cognitive and personal development (Knoff and Prout, 1985; Naglieri, 1988) and relevant studies have focused on the following topics:

1. Internal structure and visual validity in understanding children (Cox, 1985, 1992)
2. Perception, cognitive and motor processes in the drawing (Freeman, 1980)
3. Validity and reliability in the interpretation of children's drawings (Hammer, 1997)

This article will focus on the perceptual, cognitive and motor processes in children's drawings as they open a window to children's worlds. Thanks to these drawings, we can understand their gender and age-related differences and talents. Considering children's talents, it has been shown through several studies, albeit not many, that gifted children's drawings have some differences from those of their peers and that these differences relate generally to the size of the figure, the quality and quantity of the details in the drawing, colors used and perspective.

Gifted Children

Approximately 2-3% of the population of a given society is composed of gifted individuals (Maryland, 1972). The probability of gifted individuals is equal in all segments of the society. In gifted literature, there are three important definitions;

The first one Renzulli (1986) examined people with superior lifelong success and showed that this concept is not only related to intelligence, but requires talent in one or more areas as well as motivation, creativity and willpower to produce a different product in these areas. Morelock (1992) approached the concept from a developmental view and defined it as ***asynchronic development*** *that includes superior talents, different internal experiences different qualitatively and quantitatively from normal standards, and advanced cognitive skills*. What is emphasized here is the developmental problems gifted children have in creating a product due to their more advanced cognitive skills. In other words, there is no cooperation between the thinking speed of gifted children and their skills in other developmental areas. For instance, if a child who is biologically 5 years old is mentally 7 years old, it will be difficult for her to reflect her thoughts because the level and speed of her psychomotor skills will not match her thinking speed.

Dabrowski (1996) writes that there are differences in intensity between the reactions given to inner or outer stimuli, depending on individuals' development potential. It has been suggested that there are five sensitivity areas that include the intensity differences in reactions; namely, kinetic, emotional, imaginative, mental and affective sensitivity. Extra sensitivity may be seen in one or more of these areas in some children. This is generally thought to be inborn. These are often expressed as psychological and positive characteristics nurturing giftedness (Qtd. in Kokot, 1999).

Certain measurement tools are used in identifying gifted preschool children but Turkey is rather weak with respect to these tools. It is crucial that these children are identified and educated early just like all other children necessitating special education. Therefore it is important that the following characteristics of gifted children are known:

"Extraordinary energy in babies, prolonged attention, early recognition of parents or caregiver, extra reaction to laughing, sounds and pain, fast achievement of developmental turning points (walking, talking, and so on), fast development, extraordinary memory, quick learning and enjoyment derived from this, early and comprehensive language development, excessive interest in books, curiosity, sense of humor, abstract judgment and problem-solving skills, vivid imagination, sensitivity and friendliness, constant questioning and leadership in games with friends" (Freeman 1980, Renzulli 1986, Morelock 1992, Dağlıoğlu 1995, Metin 1999).

Gifted children are not expected to display all of these characteristics but their frequency is important. In addition, many scales are used in the identification of gifted children. Some

commonly used ones include intelligence-talent-success tests, teacher-family-peer information, portfolio evaluation and talent identification activities.

Hotulinen and Schofield (2003) conducted a longitudinal study in Finland on gifted preschool children. It involved a total of 211 children (37 gifted children and 174 with normal development). Prior to and following the study, the German Bruer-Weuffen Differences Test was performed and confirmed by Raven's Advancing Matrices and the Goodenough-Harris DAH Test. Scores from the tests were found to be parallel.

Suveren (2006) conducted a study on 5-6 year-old preschoolers to identify the genuinely gifted children from among those nominated by their teachers and families. By using the TKT 5-7 and Goodenough-Harris DAH Test, she identified 50 children as gifted. Suveren used in this study data from the Goodenough-Harris DAH Test to corroborate her own findings.

In this presentation, the Human Figure Drawing method has been used. This method may be used to reveal children's drawing skills and may thus take part in a gifted child identification system. It has been used as a supporting test in identifying gifted children, not clinically but with respect to children's small muscle motor development and cognitive development.

METHOD

Aim of the Study

This study aimed to examine the drawing process and characteristics of 4-5 year-old children with normal development and gifted children. Their human figure drawings were assessed by Koppitz's HFD method. The study aimed to reveal whether there was a difference between these children's drawings with respect to their development and gender.

Population

The study population included 4-5 year-old preschool-goers in Bursa.

Sample

As shown in Table 1, the sample comprised a total of 60 4 and 5 year-old children attending a private preschool in Bursa, 20 of whom were previously identified as gifted and 40 with normal development.

Table 1: *The distribution of the children in the sample by age and gender*

	Gender	**4 age**		**5 age**		**TOTAL**	
		n	%	n	%	n	%
GIFTED	Girl	8	61.5	5	38.5	13	65.0
	Boy	4	57.1	3	42.9	7	35.0
	TOTAL	**12**	**60.0**	**8**	**40.0**	**20**	**100.0**
NORMALLY	Girl	16	61.5	10	38.5	26	65.0
	Boy	8	57.1	6	42.9	14	35.0
	TOTAL	24	60.0	16	66.7	40	100.0
	GENERAL TOTAL	**36**	**60.0**	**24**	**40.0**	**60**	**100.0**

The 4-5 year-old gifted children were identified at a private preschool in Bursa within the project entitled "Identification and Education of Gifted Preschool Children". They were initially nominated by their teachers and/or families. Following this, talent identification activities, development scales, family interviews and finally individual and group intelligence tests conducted at a Guidance and Research Center (120 points or higher) were used to assess the children. Children with normal development were identified twice as much as gifted children.

Data Collection Tool

Koppitz's "Human Figure Drawing" method was used in the study to examine children's drawings from a developmental criteria perspective. There are different criteria for girls and boys. Koppitz's HFD method was designed for 5-12 year-olds. The tool contains developmental criteria that determine children's age and maturity levels. The developmental criteria have been listed under 29 headings for each age group between the ages 5-12:

1. Head
2. Eyes
3. Irises
4. Eyebrows and eyelashes
5. Nose
6. Nostrils
7. Mouth
8. Lips
9. Ears
10. Hair
11. Neck
12. Body
13. Arms
14. Double sided arms
15. Arms from shoulders
16. Arms directing downward
17. Elbows
18. Hands
19. Fingers
20. Right number of fingers
21. Double sided legs
22. Knees
23. Feet
24. Double sided feet
25. Profile
26. Clothing/one trait or none
27. Clothing/two-three traits
28. Clothing/four-five traits
29. Good proportion

These criteria have been grouped in four categories:

1. **Expected:** Includes all characteristics that exist in 86-100% of HFD at a certain age level. These are existent in almost all normal children's HFD. They basically have the minimum of the HFD characteristics in the drawings of a certain age level. Rather than the existence, the lack of expected criteria is more critical.
2. **Observed:** Includes 51-85% of the developmental criteria in the HFD at a certain age level.
3. **Ordinary:** Includes 16-50% of the developmental criteria in the HFD at a certain age level.
4. **Extraordinary:** Includes less than 15% of the developmental criteria in the HFD at a certain age level. It is assumed that these extraordinary developmental criteria only exist in the HFD of children above average cognitive maturity.

In the measurement of HFD scores, the expected and extraordinary criteria scores are most important (Koppitz, 1968). Whathever the expected criteria are, the existence of each one is checked. If there is a non-existent one, this criterion receives – 1 point, while the existent ones receive +1 point each. Whatever the extraordinary criteria are, the existing ones are important. If there is no criterion, the point deserved is 0. The total HFD score is calculated by assessing points obtained from both categories.

With this assessment, children's HFD and individual intelligence test scores can be compared to search for a significant relationship between the two.

Data Collection

Children in the study group were given colored crayons and pencils. The instruction given to children when asking them to draw was: "I want you to draw a human, it could be a boy or a girl, or a child". Individual drawing was ensured so that children would not get influenced by one another.

Data Analysis

Individual human drawings by 5 year-olds were scored. The criteria for this group was considered for 4 year-olds as well but their HFD scoring was not made.

The SPSS 12 package program was used for analyses. Chi-square test was usedfor statistical analyses. A level of above 0.05 indictaed meaningfulness.

FINDINGS

This study has been designed to examine the human figure drawings of 4-5 year old gifted and normally developing children according to Koppitz's criteria, with repsect to age and gender. The data obtained has been treated spearately for the two age groups. The findings for 4 year-olds has been presented before the data for 5 year-olds.

Table 2 gives the 4 year-olds' scores separately for gifted and normally developing boys and girls. The scores have been obtained according to whether the drawings displayed Koppitz's criteria.

Table 2 shows that no meaningful difference exists between the gifted and normally developing 4-year-old girls' and boys' head, eye, nose, mouth, body, leg, hair, finger, proportion, nostril, arms from shoulders and lip drawings ($p > 0.05$). At the same time, no difference exists betwen 4-year-old gifted and normally developing children's double sided leg drawings ($p > 0.05$).

Similarly, gifted girls' eyebrow drawings are not different from those of normally developing children. However, 50% of gifted boys drew eyebrows while none of the normally developing boys did so. A meaningful difference can be seen between gifted and normally developing children's eyebrows ($p=0.028$).

All of gifted 4 year old girls drew arms whereas only 66.7% of normally developing children did so, therefore creating a difference between the arm drawings of the two groups ($p=0.041$).

No such difference was observed between 4 year old gifted and normally developing boys. There is a meaningful difference between the foot drawings of gifted 4 year old girls and normally developing ones ($p= 0.020$). According to Table 3, the percentage of of gifted children who drew feet was 8.5% while that of normally developing children was 37.7%. all of gifted 4-year-old girls drew double sided arms bot only 66.7% of normally developing children did so. The difference is statistically meaningful ($p=0.014$). On the other hand, no difference has been found between the double sided arm drawings of gifted and normally developing 4 year old boys.

None of the normally developing children drew necks, but 25% of the gifted ones did so, and the difference was meaningful ($p=0.034$). No meaningful difference was seen between the neck drawings of 4 year old gifted and normally developing boys. An examination of the downward arm drawings of gifted and normally developing children showed that 62.5% of gifted children and 6.3% of normally developing ones, and the difference was statistically meaningful ($p=0.003$). However, no meaningful difference has been found between the downward arm drawings of gifted and normally developing boys.

While 87.5% of 4 year old gifted girls drew hands, 37.5% of normally developing children did so. The difference was noteworthy ($p=0.020$). However no meaningful difference was seen between the hand drawings of 4 year old gifted and normally developing boys. An examination of the iris drawings of gifted and normally developing girls showed that 75% of gifted children and 6.3% of normally developing ones drew them, and the difference between was meaningful ($p=0.0001$). As for criteria for clothing, boys were seen to draw one single criterion, and all of these boys were normally developing ones. When it comes to girls, normally developing ones tend to draw a single criterion, while gifted ones draw at least 2 criteria.

Table 2: The distribution of gifted and normally developing 4 year-olds with respect to whether their HFD's contain Koppitz's criteria

		Boys				Girls			
		Absent		Exist		Absent		Exist	
		n	%	n	%	n	%	n	%
Head	Gifted	0	0.0	4	100.0	0	0.0	8	100.0
	Normal	0	0.0	8	100.0	0	0.0	16	100.0
Eyes	Gifted	0	0.0	4	100.0	0	0.0	8	100.0
	Normal	1	12.5	7	87.5	0	0.0	16	100.0
Nose	Gifted	2	50.0	2	50.0	2	25	6	75.0
	Normal	5	62.5	3	37.5	7	43.8	9	56.3
Mouth	Gifted	1	25.0	3	75.0	0	0.0	8	100.0
	Normal	1	12.5	7	87.5	1	6.3	15	93.8
Body	Gifted	2	50.0	2	50.0	3	37.5	5	62.5
	Normal	3	37.5	5	62.5	10	62.5	6	37.5
Legs	Gifted	0	0.0	4	100.0	0	0.0	8	100.0
	Normal	2	25.0	6	75.0	4	25.0	12	75.0
Arms1	Gifted	1	25.0	3	75.0	0	0.0	8	100.0
	Normal	3	37.5	5	62.5	8	50.0	8	50.0
Fingers	Gifted	3	75.0	1	25.0	8	100.0	0	0.0
	Normal	6	75.0	2	25.0	14	87.5	2	12.5
Double sided arms2	Gifted	1	25.0	3	75.0	0	0.0	8	100.0
	Normal	3	37.5	5	62.5	8	50.0	8	50.0
Double sid.legs3	Gifted	0	0.0	4	100.0	1	12.5	7	8.5
	Normal	3	37.5	5	62.5	10	62.5	6	37.5
Neck4	Gifted	3	75.0	1	25.0	6	75.0	2	25.0
	Normal	8	100.0	0	0.0	16	100.0	0	0.0
Arms dir5 down	Gifted	4	100.0	0	0.0	3	37.5	5	62.5
	Normal	7	87.5	1	12.5	15	93.8	1	6.3
Hands6	Gifted	3	75.0	1	25.0	1	12.5	7	87.5
	Normal	5	62.5	3	37.5	10	62.5	6	37.5
Eyebrow7	Gifted	2	50.0	2	50.0	7	87.5	1	12.5
	Normal	8	100.0	0	0.0	15	93.8	1	6.3
Pupil8	Gifted	1	25.0	3	75.0	2	25.0	6	75.0
	Normal	7	87.5	1	12.5	15	93.8	1	6.3
Good prop	Gifted	4	100.0	0	0.0	8	100.0	0	0.0
	Normal	8	100.0	0	0.0	16	100.0	0	0.0
Nostrils	Gifted	4	100.0	0	0.0	7	87.5	1	12.5
	Normal	8	100.0	0	0.0	16	100.0	0	0.0
Arms fr. Sho.9	Gifted	3	75.0	1	25.0	5	62.5	3	37.5
	Normal	8	100.0	0	0.0	16	100.0	0	0.0
Lips	Gifted	3	75.0	1	25.0	3	75.0	1	25.0
	Normal	8	100.0	0	0.0	8	100.0	0	0.0
One trait or none/Clothing	Gifted	3	75.0	1	25.0	8	100.0	0	0.0
	Normal	5	62.5	3	37.5	14	87.5	2	12.5
Two-three traits/ Clothing	Gifted	0	0.0	0	0.0	5	62.5	3	37.5
	Normal	0	0.0	0	0.0	14	87.5	2	12.5
Four-five traits Clothing	Gifted	0	0.0	0	0.0	7	87.5	1	12.5
	Normal	0	0.0	0	0.0	16	100.0	0	0.0

(1: x^2=6,00 sd=1 p= ,014/ **2:** x^2=6,00 sd=1 p= ,014 / **3:** x^2=4,36 sd=1 p= ,037/ **4:** x^2=9,00 sd=1 p=,003/ **5:**x^2=5,37 sd=1 p= ,020/ **6:** x^2=4,8 sd=1 p=,028/ **7:** x^2=4,68sd=1 p= ,03/ **8:** x^2=12,20 sd=1 p= ,000/ **9:**x^2=6,86 sd=1 p= ,009**)**

Table 3 shows that there is no difference between 5 year old gifted and normally developing girls' and boys' head, eye, nose, mouth and body drawings within the criteria "expected" (p> 0.05). No meaningful difference was found between the expected arm drawings of gifted and normally developing girls.The same is also true for the expected arm drawings of gifted and normally developing boys.

Table 3: The distribution of 5 year-old children's HFD scores obtained from the 4 criteria of Koppitz with respect to giftedness

		Boys				Girls			
		Absent		Exist		Absent		Exist	
		n	%	n	%	n	%	n	%
Expected									
Head	Gifted	0	0.0	3	100.0	0	0.0	5	100.0
	Normal	0	0.0	6	100.0	0	0.0	10	100.0
Eyes	Gifted	0	0.0	3	100.0	0	0.0	5	100.0
	Normal	0	0.0	6	100.0	0	0.0	10	100.0
Nose	Gifted	0	0.0	3	100.0	2	25	6	75.0
	Normal	2	33.3	4	66.7	7	43.8	9	56.3
Mouth	Gifted	0	0.0	3	100.0	0	0.0	5	100.0
	Normal	0	0.0	6	100.0	2	20.0	8	80.0
Body	Gifted	0	0.0	3	100.0	0	0.0	5	100.0
	Normal	4	66.7	2	33.3	2	20.0	8	80.0
Observed									
Arms	Gifted	0	0.0	3	100.0	0	0.0	5	100.0
	Normal	2	33.3	4	66.7	2	20.0	8	80.0
Ordınary									
Double Side Arms	Gifted	0	0.0	3	100.0	0	0.0	5	100.0
	Normal	1	16.7	5	83.3	1	10.0	9	90.0

No meaningful difference was found in the double sided leg drawings that are ordinary for 5 year old gifted and normally developing boys (p> 0.05). For girls, no meaningful difference was found between gifted and normally developing children in the double sided arm drawings that are observed at this age level (p> 0.05). The iris and arm from shoulder drawings that are extraordinary for 5 year old boys revealed no differences between the gifted and normally developing children. Double sided leg and iris drawings that are ordinary for 5 year old girls similarly revealed no difference between gifted and normally developing children (p> 0.05).

The double sided foot drawings that are extraordinary for 5 year old girls revealed no differences between the gifted and normally developing children. At the same time, arm from shoulder drawings, which are also extraordinary for girls in this age group, were drawn by 80% of gifted girls and 20% of normally developing girls. The difference between the two is statistically meaningful (p=0.025).

Table 4 shows the relationship between gifted children's scores on Koppitz's HFD and the intelligence sections.

Table 4: Correlation between the intelligence sections and HFD scores of gifted children

	n	r	p
IQ obtained from the Intelligence test	20	0.131	0.75
HFD score	20		

The intelligence test given to the sample showed that there was an insignificant relationship between gifted children's intelligence test scores and their HFD scores obtained according to Koppitz's criteria.

DISCUSSION AND CONCLUSION

The developmental stages of children's artistic expression are generally the basis of understanding children's drawings. Knowing what is normal or expected for a certain age group is necessary to understand what is extraordinary or unexpected in their drawings. Undertsanding their drawings from a developmental perspective not only provide us with the information that is needed for assessment, but also gives us clues for effective intervention. In the case of gifted children, it is no longer an option but a requirement to know the developmental features in children's drawings. It is of utmost importance that gifted children be identified and educated early. The more diverse measurement tools used at this stage, the more information will be obtained about the children. Thanks to their drawings, we can obtain rich information about gifted children's perception of themselves and their environment, their talents and interests, their observations and small muscle motor skills. When the problems about limited measurement tools in the identification of gifted childrens are taken into account, it becomes apparent that a lot of information which would otherwise be very hard to obtain can be obtained.

In recent years, children's drawings have been used largely for clinical purposes in order to identify emotional and social problems. In this study, rather than clinical use, the aim was to use drawings within the system of identifying gifted preschool children and thus obtain more information about their development. Also, children's HFDs were assessed according to Koppitz's criteria and differences were determined with respect to age and gender.

The statistical analyses in Table 2 showed that the drawings of gifted and normally developing children over the age of 4 have meaningful differences, particularly in favor of gifted girls, in many criteria such as arms, double sided arms, neck, downward arms, hands, irises, and arms out of shoulders. A difference in favor of normally developing girls was found with respect to the drawing of feet. As for boys, a meaningful difference was only found in favor of gifted boys with respect to eyebrow and iris drawings ($p<0.05$).

A detailed examination of the findings reveal that while gifted children over 4 include in their human figure drawings three parts, i.e. the head, body and legs, normally developing children still draw their human figures as consisting only of heads and legs. Of the normally developing children, girls were observed to draw smiling faces and used various colors while boys also drew smiling faces but using pencils or monochrome. In gifted children's drawings, in addition to smiling faces, accessories such as glasses or hairbands were present. Also, they usually drew more than one figure, and drew themselves particularly bigger than others. In gifted boys, a different drawing or detail was almost non-existent.

Yavuzer (2000) writes that 2 to 4 year old children start to realize relationships between the objects they draw, and distinguish basic shapes and forms in their drawings. He also maintains that in human figure drawings, a 4 year old child generally draw a big circle as a head and add parts like eyes, nose and mouth. He also states that the majority of 5 year olds can draw a head and a body, that the head has a nose and mouth, and that arms and legs originate from the body. Therefore the gifted children aged above 4 in the sample, especially girls, can be said to have the drawing characteristics of 5 year olds.

The findings given in Table 3 pertaining to the 5 year olds in the sample show that although the differences are not as meaningful as for 4 year olds, there are still certainresults in favor of gifted girls. While no statistically significant difference was observed between the items in the expected and observed categories of Koppitz's criteria, one item from each of the categories ordinary and extraordinary had differences in favor of gifted girls; but none for boys. However, in the drawings of normally developing girls, the use of smiling faces and accesories such as earrings and necklaces were observed, similar to 4 year olds. In boys, these accessories were mostly belts or hats. In the drawings of gifted children, though, the number and type of accessories were seen to increase when compared to 4 year olds and included details such as buttons, hairstyles, patterns in clothing, hairbands and ties. Boys, on the other hand, did not use many details and accessories, similar to 4 year olds.

Tables 2 and 3 show that in both age groups, gifted children and girls drew more details than normally developing children and boys, respectively.

Nunminen et al. (1996) examined 3-4 and 5 year olds' drawings of themselves and found that 3 year olds drew human figures that are not easily distinguishable but with heads, whereas 4 and 5 year olds drew figures with more details.

Many previous studies have shown that older children include significantly more details in their human figure drawings when compared to younger ones; they were also less willing than younger ones to draw figures with their clothes and to use stick figures. In other words, as they become oldr, children's drawings start to have more noticeable features and become more realistic. Younger children, on the other hand, mainly draw stick figures (Bensur et al. 1997; La Voy et al. 2001; Golomb, 2004; Cherney et al., 2006).

Children's motor development shows that certain differences exist with respect to gender. Boys have been found to be better at big muscle motor skills that require more strength, while girls have been found to be better in small muscle motor skills and certain movements needing balance (Bayhan and Artan, 2005: 179-181).

In the preschool period, girls have faster development than boys and their small muscle motor skills develop quickly between ages 5-9. This explains why the 4 year old gifted girls produce more developed and detailed drawings than boys and that the difference between closes at age 5.

Koppitz (1968), Cherney et al. (2006) conducted a study on 109 children aged between 5-13 and asked each child to freely draw their home and school. The results have shown significant differences with respect to age and gender. Additionally, meaningful differences were found between girls and boys with respect to cliché drawings, use of proportion and clothing criteria.

When the findings are interpreted from gifted children's perspective, it is obvious that they are much more skilled than their peers in creativity and talent. Also, as these children are more curious and observant than their peers, this reflects on to their human figure drawings as well. In the human figure drawings of gifted girls, it can be seen that they pay closer attention to detail in both their figure drawings and the criteria drawn for figures themselves. Observation is of prime importance for these children and they need the sense organs for it. As the effect of sight on learning is over 80% meaningful differences between the two genders with respect to drawing irises particularly in 4 year olds gifted children and the reflection of these in their drawings is to be expected. In addition to giftedness, forming their sexual identities probably leads girls to naturally use more visual details.

Considering Morelock's (1992) definition of asynchronic development emphasizes that cognitive development of gifted children is faster than that in other areas, these children may be thinking faster than their motor skills and thus are unwilling to engage in motor activities, which in turn means that their motor development develop slower. This may be one of the reasons that explain why there is no relationship between gifted children's scores in intelligence parts and HFD(Table 4). Suveren's study (2006) showed that there was no relationship between the intelligence parts obtained from BAT 5-7 Test and Goodenough-Harris DAH. This has been interpreted by Suveren as follows: "This may be explained by delayed preschool education in

Turkey, and a lack of opportunities created by parents for the children to perform small muscle motor activities such as holding a pen to draw, tying shoelaces, using cutlery, and getting dressed". Corroborating this, Worthington (2001) found that children's pre-preschool drawing activities at home were limited to 15 minutes, which is not adequate. In light of these results, many factors seem to affect children's cognitive potential and their drawing performance.

In sum, this study examined the human figure drawings of 4-5 year old gifted and normally developing children from the perspective of Koppitz's criteria and found that in both age groups gifted children, especially girls, drew more developed and detailed drawings, that 5 year olds were more advanced in their drawings quantitatively and qualitatively than 4 year olds. It was also found that the drawing skills of 4 year old gifted children, especially girls, were almost at the level of age 5, and that when criteria are considered as a basis 4 year old gifted children, especially girls, were seen to draw more detailed drawings than their normally developing peers. In addition, no meaningful relationship was found between the intelligence parts and HFD score of gifted children in the sample. At the same time, children's drawing skills can be

said to be affected by factors such as their own mental performance, talents, motor skills, social development, culture, age and gender.

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Okul Öncesi Dönemde Üstün Yetenekli ve Normal Gelişim Gösteren Çocukların İnsan Figürü Çizimleri

ÖZ. Bu araştırma, 4-5 yaş grubu normal gelişim gösteren çocuklar ile üstün yetenekli çocukların çizim aşamalarının ve resim özelliklerinin incelenmesi amacı ile yapılmıştır. Çocukların yapmış oldukları insan figürü çizimleri(İFÇ) Koppitz'in İFÇ kriterleri dikkate alınarak değerlendirilmiştir. Örneklemi, 4-5 yaş grubu 20'si daha önceden tanılanmış üstün yetenekli çocuk ile 40'ı normal gelişim özelliği gösteren toplam 60 çocuk oluşturmaktadır. Araştırmada her iki yaş grubunda da üstün yetenekli çocukların özellikle kızların erkeklere göre daha gelişmiş ve ayrıntılı çizimler yaptıkları, 5 yaşındaki tüm çocukların 4 yaşındakilere göre çizim becerilerinde hem niteliksel hem de niceliksel gelişmeler olduğu sonucuna varılmıştır. Bununla birlikte 4 yaş grubundaki üstün yetenekli çocukların özellikle kızların çizim becerilerinin neredeyse 5 yaş düzeyinde olduğu belirlenmiştir.

Anahtar Kelimeler: Okul Öncesi dönem çocukları, üstün yetenekli çocuklar, insan figürü çizimleri