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Developmental characteristics of gifted children aged 0–6 years: parental observations

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ABSTRACT

The objective of this study was to examine the different development characteristics of gifted children during the preschool period in comparison with normal developing children according to family observation. For this purpose, face-to-face interviews were carried out with the parents of 112 children identified as gifted and data regarding the differences of these children in comparison with their peer groups of 0–2, 2–4, 4–6 age intervals were acquired via semi-structured questionnaire form. The data were analysed according to content analysis rules. The data obtained as a result of this analysis were interpreted and classified with an inductive approach. It was determined as a result of the study that gifted children display different characteristics in cognitive, linguistic, affective and psychomotor skills in comparison with other children at dimensions which can be recognized by the families.

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1. Introduction

The development of each child is unique. However, gifted children have developmental differences in comparison with average children in physical, cognitive, linguistic and social/emotional areas (Clark, 2002; Manning, 2006; Renzulli et al., 2002). Even though parents and researchers talk about increased physical development of gifted children, it is possible to state that this is not the case for each gifted child. Hall and Skinner (1980) indicated that gifted children developed 30% more in comparison with normal population. In another related study, Gross (1993) examined 40 gifted children from Australia longitudinally as a result of which it was put forth that a gifted child may sit unassisted in the sixth month, whereas an average child may sit unassisted during the seventh to eighth months, that gifted children frequently crawl earlier according to family statements. In addition, it was also set forth in the studies that some gifted children walk earlier and that their fine motor skills develop earlier.

Gifted children stand out in the cognitive area at an early age with their wonder, wide range of interests, questioning attitudes and persistent questions (Bloom, 1982; Clark, 2002; Davis & Rimm, 2004; Renzulli et al., 2002; Silverman, 2004) and they can be observed from birth thanks to their cognitive characteristics such as being alert, curiosity and interaction with the environment (Porter, 2005). Kitano (1985) indicated that some cognitive skills of gifted children are observed frequently during the preschool period, but that it is not for certain and that they have high levels of acquired knowledge in academic fields such as mathematics and reading. In addition, Porter (2005) also determined that they are advanced in areas such as theoretical knowledge and advanced thinking skills while also putting forth that mentally gifted children may not always be academically superior.

Gifted children during the preschool period may also display superior metacognitive skills. These metacognitive skills emerge mostly when the child is working on a specific task. Gifted children's memory enables them to learn more quickly, solve complex problems and remember even the tiniest details (Porter, 2005; Renzulli et al., 2002). Silverman (1981) reported in a study with parents the children of whom have been identified as gifted that the children had a unique memory and an insatiable sense of wonder at an early age. The parents also mentioned that their children asked complex verification questions.

Gifted children show a command of language earlier in comparison with normal children. It was set forth by Gross (1993) in a study carried out on 40 gifted children that the first words were spoken during the 9.1 months. When two siblings that spoke on the 18th and 20th months were excluded, it was observed that the average was 8.6 months. In addition, it was observed that their speech included fluent and complex sentences. It was also determined that when the command of language was combined with early cognitive skills, the children were prone to wordplay. In addition to early language development, Clark (2002) and Silverman (1981) indicate that a perfect sense of humour may be observed in gifted children because they like wordplay. However, early linguistic development may not always be a certain indication for being gifted. Gross (1999) defended the opinion that late speech does not always mean that the child is not gifted. Some children may remain silent before deciding on forming complete sentences. Silverman (1981) expresses that some gifted children do not speak until the age of 4. Gross (1999) put forth that some gifted children camouflage their verbal skills in order to be accepted by their classmates and that they use a narrower vocabulary in class and a richer vocabulary at home.

Another indication in gifted children is the ability to read at an early age (Clark, 2002; Gross, 1999; Robinson, 1995; Terman, 1926). Gross (1993) carried out a study in which it was determined that 36 out of 40 children started reading before the age of 5. It was indicated that the reading, understanding and fluent reading levels of these children are at the levels of children at least 3 years older than themselves. It was put forth in a study carried out by VanTassel-Baska (1983) on 270 gifted children between the ages of 13–14 in the 90% interval in the intelligence test that 80% of the group started reading at the age of 5, whereas 55% started reading at the age of 4.

Majority of the studies carried out with gifted children in the social emotional field support the existence of an incompatible development. This incompatibility is expressed more with advancing age and intelligence (Liu & Lien, 2005; Webb et al., 2005). It has been proposed that the majority of gifted children tend to question rules, feel unfairness and injustice in comparison with their peers having normal development and that they tend to be more mature (Clark, 2002; Lovecky, 1997). Von Karolyi (2006) carried out a study on children in the 1–3rd grades of the primary school in order to understand whether the awareness of gifted children is greater in comparison with average children or not. Data obtained from the parents and the opinions of children along with the intelligence test results suggest that gifted children develop awareness earlier in social and emotional areas. This awareness in the social and emotional areas has enabled the children to make generalisations outside the scope of their own experiences. However, these advantages also bring forth various disadvantages as well. It has been observed that as the moral sensitivity of gifted children increases, the pain they feel inside due to feelings of injustice increase which is due to the fact that they do not have sufficient maturity to cope with strong emotions (Silverman, 1994). However, it is also stated that some gifted children may not display above average moral sensitivity, feelings of justice and compassion until adolescence and that such gifted children will start to give more importance to the feelings of others, put forth a high moral development as they start establishing bonds with adults (Silverman, 2009).

In addition to the aforementioned areas, gifted children in the preschool period also differ from children with normal development in different areas as well. It is stated that gifted children differ in games as well which are very important for the preschool period. Terman (1926) set forth that gifted children prefer intellectual games rather than physical games and that they are less noisy and less interested in competition in games. Whereas Liu and Lien (2005) asserted that gifted children

finding the games and activities of children with normal development to be boring may be another indication of superiority. It is expressed that gifted children display different behaviours regarding the rules during games as well as in their lives outside of games. Kitano (1985) also stated that gifted children in the preschool period are more sensitive to obeying the rules and making people obey the rules. It has been observed that most tend to be perfectionists in carrying out the tasks assigned to them. It has been indicated that they tend to have competitive approaches such as finishing first, answering more questions or winning. In addition to games, the characteristics of the individuals they will establish relations with also differ. Wright (1990) expresses that gifted children in the preschool period prefer games with fantastic elements as frequently as constructive games when they play games with their peers. In addition, it has also been determined that gifted children tend to play alone in accordance with his/her own unique talents and interests if there is no peer around. Sankar-DeLeeuw (2007) stated that gifted children prefer befriending older children and even adults.

Gifted children are interested in activities that other children also like during the preschool period; however, they enjoy a greater depth and more detail. They want to learn new knowledge and concepts (Foster, 1993). Gifted children with such a potential should be detected and identified early in order to ensure that they become adults who will play important roles in the future. Families will be the first source of reference for making such identification.

There are many researchers who are of the opinion that families, observations of teachers and the products presented by the child are important factors for detecting gifted children (Cohen, 1989; Louis, Lewis, & Feiring, 1991; McWilliam, 2005; Pletan, 1995; Wolfle, 1989; Wortham, 2005). Silverman (2009) concluded that many parents are able to detect gifted children. It has been determined according to the observations of parents that 84% of the children out of 1000 candidates with 75% of the general properties of gifted children have scored above 120 in intelligence tests. Whereas the remaining 11% received scores of below 120 despite having superior characteristics in certain areas.

Even though the determination of gifted children by the parents has been emphasised in the literature, there is no education programme for parents in Turkey towards the characteristics of these children. This is also emphasised in the study by Karakuş (2010) with the families of 97 gifted children. It was determined as a result of the study that the families of gifted children experience guidance problems in the direction of the common characteristics of the families of children as well as their interests and abilities. However, it is advocated that the family members who have a significant impact the development and education of the children should be well informed on the issues of child development and education, that they should be trained in accordance with a programme or at least that they should participate in the education lives of their children and interact with them (Üstünoğlu, 1990).

Family education in early childhood in Turkey is insufficient also for children with normal development. It was determined in the study carried out by Şahin and Turla (2003) that family meetings and individual interviews with families in case of problems are carried out at education institutions; however, it was determined that studies regarding the participation of parents to early childhood education programme were not included. Families having knowledge of the development of their children has a positive impact not only on gifted children but on all children. Indeed, Gürşimşek, Girgin, and Harmanlı (2001) carried out a study examining the effects of child-rearing attitude during the early childhood period and participation to the education on the psycho-social development of children as a result of which a statistically significant relationship was determined between the participation of the families to the education and the psycho-social development of children. Polat-Unutkan (1998) carried out a study on the effects of family education on the social development of children between the ages of 5–6 in which it was determined that family education is effective. Therefore, it is thought that when families observe various indicator behaviours of their children starting from an early age shall contribute to both the determination of such children at an early age as well as contributing to their psycho-social development. It can be stated that parents of

gifted children require a greater consciousness for the education of their children as well as for preventing possible problems that might arise. Indeed, Davasligil (2000) reports that parents of gifted children require more education in comparison with the parents of children with normal development.

Even a conscious family may not feel that they are ready for such an effort as they deal with children the skills and abilities of whom develop faster than other children during the early childhood period. At this point, families should be aware of the long- and short-term problems that gifted children might face if it is not determined at an early age that they are gifted. When the long-term problems are examined, it is observed that there is a risk of gifted children losing their abilities if they are not determined at an early age and they do not use their extraordinary potential (Simonton, 1988). Whereas in the short term, these children face risks of being angry individuals who harm their environment and who also face risks of depression when they do not use their potential efficiently. It is, therefore, important to determine gifted children at an early age (Robinson, 1993).

Some of these children make themselves easier to be detected due to their superior development and successes. However, the abilities of others may remain hidden due to various reasons. That is why, family observation is very important in the selection of gifted children. However, it is possible that teachers will miss out the superior characteristics of children if the parents fail to realise it (Dickinson, 1970). Gifted children are identified after the age of 6 in Turkey and receive a special education at the Science and Art Centers during the primary school period which are state institutions. However, studies for determining and training gifted children during the preschool period are insufficient despite the fact that there is a consensus on the need for a curriculum that meets their unique learning characteristics (Maker, 1986; Maker & Schiever, 2005; Robinson, Reis, Neihart, & Moon, 2002).

1.1. Studies on gifted children during the preschool period in Turkey

There are a limited number of studies on gifted children during the preschool period in Turkey. The primary reason for this is the lack of sufficient measurement tools. Despite this, some studies have been carried out with limited measurement tools. Dağlıoğlu (2002) carried out a study for determining the level of success of the methods of determination used for determining children gifted in the field of mathematics from among children aged 5–6 at kindergartens, nurseries, nursing homes and preschools in which a four-stage system was developed for determining children gifted in the field of mathematics. The first stage was the Child Evaluation Form for the Teachers and the Child Evaluation Form for the Families for recording the children thought to be gifted; the second stage was the Basic Skills 5–7 Test for measuring the general mental performances of the children nominated by both the teachers and the families, the third stage was the Skill Determination Activities comprised of mathematics, mental and creativity sections and the fourth stage was the application of 5–8 age level mathematics activities. At the end of the study, it was determined that 50% of the 220 children in the 5–6 age group nominated by the Child Evaluation Form for the Teachers and the Child Evaluation Form for the Families scored 130 and above in the TKT5–7. The 29 children with ZB above 130 who were successful in the 5–8 age level mathematics activities two calendar years above their age were determined as 'gifted in mathematics'. It was determined according to the analysis results that teachers have more positive opinions on the actual performances of the children in comparison with the families and that the teachers are better at evaluating the mathematical skills of children in comparison with the families.

Dağlıoğlu and Suveren (2013) carried out a study with the objective of determining gifted children from among those continuing nursery class, determining how successful the families and teachers are in choosing these children and to observe how consistent the teacher and family opinions are with the performances of these children. Relational screening model was used in the study in the first stage of which Family Observation Form and Teacher Observation Form were used in order for the teachers and/or families to nominate the children they consider as gifted, whereas in the second stage, a two-stage determination system comprised of Basic Skills

Test 5–7 and Goodenough-Harris Draw a Person Test was prepared for use on the children. The study group was comprised of 113 children nominated from among the 600 children continuing the kindergarten class at the Düzce city centre nominated by the teachers and/or families on whom determination procedures were applied. It was determined in this study that the opinions of teachers and families are successful at a ratio of 44.3% for determining the gifted children (50 children). It was observed that families were more successful in determining gifted children in comparison with the teachers; whereas it was also determined in accordance with the consistency between the teacher and family opinions and the performances of the children that teachers make better evaluations in the light of the applied tests and scores but that the performances of the children were much higher than the opinions of the teachers and families. When the scores of children determined to be gifted received from the Basic Skills 5–7 Test and Goodenough-Harris test were examined, no statistically significant relationship was determined between the two tests.

Karadağ (2016) carried out studies for adapting the 'Gifted Rating Scale Preschool Kindergarten Form' for determining the potentials for giftedness of children in the preschool period between the ages of 4 and 6 in addition to completing the reliability and validity of studies. The sample group of the study was comprised of 390 students continuing their preschool education during the 2014–2015 education year in the city of Izmir and the 30 teachers who are working at these institutions. Study data were acquired from 15 kindergartens and preschool institutions. The teachers who participated in the study filled out the Gifted Rating Scale-Preschool/Kindergarten adapted to our language. Internal consistency coefficients were determined in the data analysis section of the study for reliability studies. Content and construct validity operations were carried out within the scope of validity studies. It was determined as a result of the study that the Gifted Rating Scale-Preschool/Kindergarten scale adapted to our language is a reliable and valid evaluation tool.

Bildiren, Kargin, and Korkmaz (2017) carried out a study for determining gifted children in the preschool period in which they carried out the reliability and validity studies for Coloured Progressive Matrices Test on 640 children between the ages of 4 and 6. Bildiren (2017) also carried out a reliability and validity study for the Coloured Progressive Matrices Test between the ages of 3–9 determining the gifted children in the preschool period. It is expected that studies on gifted children will increase for the preschool period as more and more measurement tools are included in the field.

It is thought that the study results will contribute to studies for the preparation of observation forms for the preschool period. The objective of this study was to examine the differences of children identified as gifted during the primary school period in comparison with their peers according to family observations. For this purpose, answers were sought for the following question:

- (1) What kinds of differences did gifted children put forth in comparison with their peers during the 0–2, 2–4 and 4–6 age periods?

2. Method

The study has been designed as a case study from among the qualitative research patterns. Creswell (2005) stated that case study is used for examining and analysing one or more special cases in more detail. Data sources in phenomenological studies are individuals or groups who experience the phenomena that the study is focused on and who can express or reflect it. In this study, families who observe gifted children from birth were selected since they are the individuals who experience the phenomena.

2.1. Participants

The sample group of the study was comprised of the parents of 112 children diagnosed as gifted at the Izmir Sıdika Akdemir Science and Art Center according to the WISC-R test. The age average of the

children was 7.9. The Performance IQ average of the children was 132.65, verbal IQ average was 135.02, whereas total IQ average was 137.48. Of the mothers who participated in the study, 14 were primary school (12.5%) graduates, 2 were high school (1.8%) graduates, 26 were associate degree graduates (23.2%), 61 were university (54.5%) graduates and 9 (8%) were master's degree graduates. Of the fathers, 8 were primary school (7.1%) graduates, 4 were high school (3.6%) graduates, 14 were associate degree (12.5%) graduates, 75 were university (67%) graduates and 11 were master's degree (9.8%) graduates.

2.2. Instrumentation

Semi-structured interview method was selected in the study since it provides means to explain the opinions of the interviewed individual in more detail and depth in comparison with other data acquisition methods in addition to enabling the consideration of the issue from the perspective of the interviewed individual (Yıldırım & Şimşek, 2013). Another advantage of the interview forms was that open-ended questions prepared beforehand could be asked in a systematic manner. This provides flexibility to the interview, allows the interviewed individual to talk more and therefore enabling more detailed information to be acquired from the interview process (Kuş, 2003).

Opinions of the participating families regarding the differences put forth by their children in comparison with the peer groups with age intervals of 0–2, 2–4, 4–6 were collected by way of a semi-structured question form comprised of open-ended questions. The question form has eight questions. The three questions of the study were questions related with the different characteristics of gifted children between the ages of 0–2, 2–4 and 4–6 in comparison with normal developing children. Whereas the other five items include questions on family and personal information. Study questions were taken as basis when preparing the interview questions and relevant literature was also examined. The prepared interview form was revised in accordance with the opinions of an expert on measurement and evaluation and a linguistic expert. The form was revised following the pilot application after analysing the flaws. Care was given to ensure that the interview questions are on a specific topic. Data acquired from the interviews were examined by three field specialists. Codes and themes were given their final state following the examinations.

Interview questions were prepared at the end of the following stages in order to ensure that they serve the objective and sub-objectives efficiently and that they are carried out in accordance with the nature of qualitative study:

- (1) The researcher used an inductive approach and prepared draft interview questions for putting forth the characteristics of gifted children in the preschool period by the families taking into consideration the literature survey, opinions of experts in the field as well as similar studies.
- (2) The prepared interview questions were presented to one linguistic expert for their accordance with grammar as well as for an analysis of their comprehensibility in addition to three experts in the field.
- (3) Pre-applications were carried out prior to the study in order to receive feedback on whether the questions are comprehensible or not and whether they serve the intended purpose or not. Semi-structured interviews were carried out with 10 families as pre-applications on predetermined dates using the questions revised according to expert opinions. It was observed that the pre-applications took about 25–30 minutes.

It was also examined during the pre-applications whether the questions are open and understandable, if there are problematic issues or not and whether the participants had difficulty responding to the questions. The researchers compared what the pre-application participants understood from the questions and what they were expected to understand within the scope of the study. It was determined as a result of this comparison that the families who participated in the pre-application

understood the questions correctly. Results from the pre-application were presented to expert opinion once again after which the study questions were given their final state.

2.3. Data collection and analysis

Study data were acquired via qualitative research method. Face-to-face interviews were carried out with the participating parents. Various questions were asked regarding their observations on the different reactions of their children in comparison with the children in the 0–2, 2–4, 4–6 age intervals using the open-ended questions in the question form. Common observations of the parents were recorded in writing.

Repeated concepts were determined and grouped in the table prepared after the open-ended questions in the form were answered. The grouped data were then analysed according to content analysis rules (Miles & Huberman, 1994; Silverman, 2000). The data acquired as a result of the analysis were then interpreted and classified with an inductive approach (Stake, 1995). The acquired data were recorded in a database. The results were transformed into graphs, frequencies and percentage tables and presented descriptively.

Another researcher also carried out coding on the same data set independently in order to ensure the reliability of the analysis. Afterwards, the formula of Miles and ve Huberman (1994) was used to calculate $\text{Reliability} = [\text{Consensus} / (\text{Consensus} + \text{Dissidence})] \times 100$ in order to carry out reliability analysis among the coders as a result of which the reliability was calculated as 0.83. When it is considered that the coding reliability should be at least 70% (Miles & ve Huberman, 1994), the calculated value (88%) is an indication that the coding has taken place in a reliable manner. Data were re-examined according to the codes on which a consensus was reached. The acquired codes were classified with regard to similarities as a result of which themes and sub-themes were determined. The explanation of the acquired results and findings were supported with direct citations.

3. Findings

The study findings were analysed based on the research questions. Differences with the peer groups during the 0–2 age period were examined for the first research question and the findings in Figure 1 were determined. It can be observed upon examining Figure 1 that majority of the gifted children in the 0–2 age period walk and speak earlier in comparison with their peer group (Table 1).

As show in Table 1 according to family observations, gifted children display differences in perception in comparison with non-gifted children in addition to early walking and talking. The families stated that gifted children in the 0–2 age period use more words at the right time in comparison with their ungifted peers, that they have a larger vocabulary and that they perceive what is said at a very early age and do what is asked of them. In addition, parents of three children in the study group indicated that their children started talking at a later period. One family described the characteristics of their children in comparison with ungifted children during this period as follows:

He walked earlier than his peers. He started talking clearly at the age of 1.5 with a rich vocabulary. His perception was always very high. We experienced no communication problems. (p. 12)

Another family observed this period as follows:

He started talking when he was 6 months old (that is forming his first sentences). He was talking perfectly at the age of 1. (p. 38)

Another family stated their observations as follows:

He talked very early; he was interested in the outside world, was curious with a strong memory and interest in numbers, mind games and he was very open to communication. He was a child who loved discovering, using electronic tools and he was quick to discover things. (p. 87)

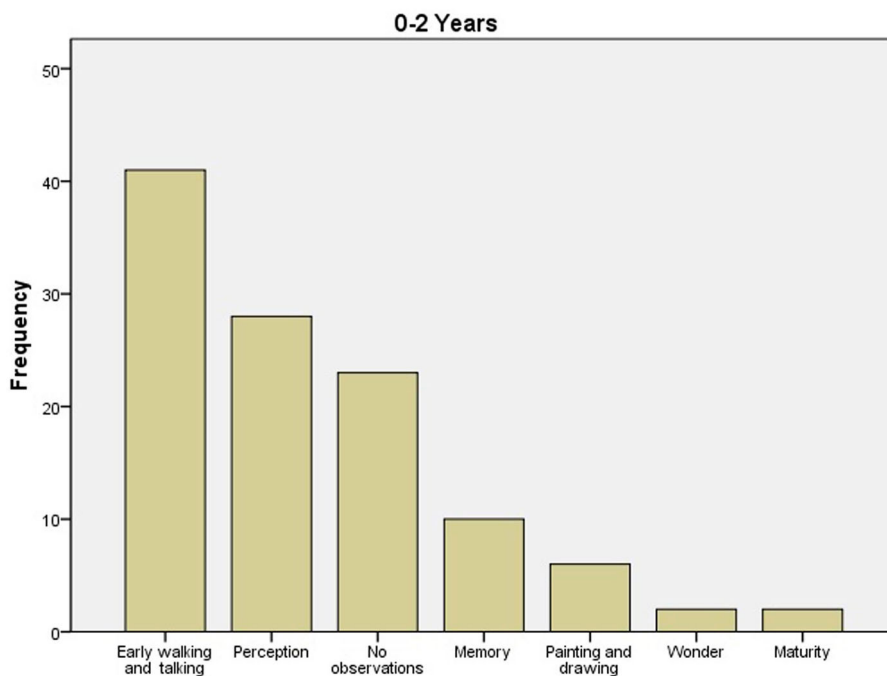


Figure 1. Characteristics of gifted children in the 0–2 age period according to family observations.

Some of the families (20.5%) indicated that there were no differences in comparison with ungifted children. Only one of the families indicated that they do not remember the 0–2 age period. Therefore, those who did not remember any difference stated that they remember the period but that they made no observations regarding differences during that period. This is an expected result. As is stated in the related literature (Kitano, 1985; Porter, 2005), all gifted children may not put forth differences in comparison with other peers (Figure 2; Table 2).

The distinctive result that emerged according to family observation for the 2–4 age period is the characteristic of gifted children in perception in comparison with ungifted children. Families have indicated that gifted children perceive a new situation very fast either when they face a new stimulant or when they develop a new skill with an already existing situation and that they solve the problems rapidly. The different characteristics in the 2–4 age period which is given Figure 2 and Table 2 have been explained as follows by the families:

We realized that he has a very strong memory. He did not forget what he learned and he was able to connect it with other subjects at other times. He had a very strong imagination. He was able to add 3 numbers between 1–10 at the age of 3. (p. 67)

Table 1. Characteristics of gifted children in the 0–2 age period according to family observations.

Order of importance	Observations of families	<i>n</i>	<i>f</i>	%
1	Early walking and talking	112	41	36.6
2	Perception	112	28	25.0
3	No observations	112	23	20.5
4	Memory	112	10	8.9
5	Painting and drawing	112	6	5.4
6	Wonder	112	2	1.8
7	Maturity	112	2	1.8
	Total	112	112	100.0

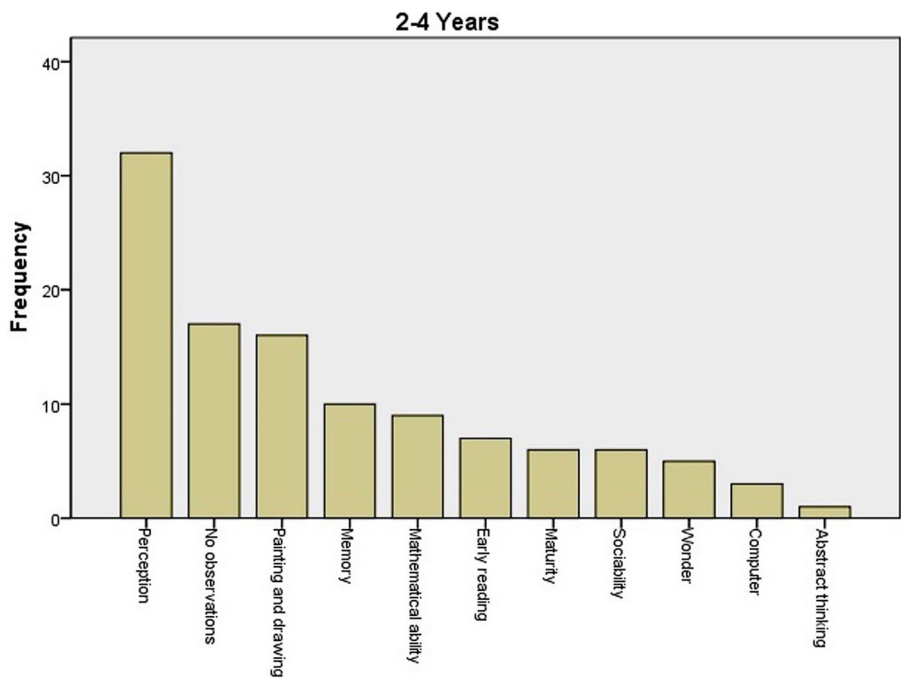


Figure 2. Characteristics of gifted children during the 2–4 age period according to family observations.

Another family explained it as follows:

He recognized geometric shapes and could group them according to color and shapes. He was able to find the missing parts and he was also able to explain it. He recognized the numbers. He was able to group objects according to their characteristics. (p. 91)

Another family stated that they remember this period perfectly well and made the following explanation:

He had a much greater vocabulary than his peers. He talked in long, meaningful sentences. He asked interesting questions. He had started to be interested in numbers. He acted mature. He was using the computer. He was able to access a part in the software he saw only once even though he did not know the letters.

The different characteristics set forth by gifted children differentiated more during this period in comparison with the 0–2 age period. Early reading, using computer and abstract thinking characteristics were observed during the 2–4 age period even though the ratio was low. It is especially striking that

Table 2. Characteristics of gifted children during the 2–4 age period according to family observations.

Order of importance	Observations of families	<i>n</i>	<i>f</i>	%
1	Perception	112	32	28.6
2	No observations	112	17	15.2
3	Painting and drawing	112	16	14.3
4	Memory	112	10	8.9
5	Mathematical ability	112	9	8.0
6	Early reading	112	7	6.3
7	Maturity	112	6	5.4
8	Sociability	112	6	5.4
9	Wonder	112	5	4.5
10	Computer	112	3	2.7
11	Abstract thinking	112	1	0.9
	Total	112	112	100.0

seven gifted children started to read and write between the ages of 2–3. In addition, the ratio of families that did not observe any differences decreased in this period in comparison with the 0–2 age period (15.2%) (Figure 3; Table 3).

It was determined clearly that families observed early reading and writing during the 4–6 age period. All the families of gifted children who learned to read and write stated that their children learned it by themselves without the families putting in any effort. Gifted children again displayed different characteristics in the field of mathematics in comparison with ungifted children. One family stated the following observation for this period:

He learned to read and write by himself. He was able to solve math problems. He played games with adults that required reading and writing skills. He was playing chess. (p. 9)

Another family:

He learned to read. He was able to read three, four, five digit numbers. He had strong expression and narration skills. He was able to subtract and add two digit numbers. (p. 22)

Another family made the following observation:

He started reading books. He was reading fairy tales from books to his peers at the nursery class and kindergarten. (p. 54)

Another family compared this period of their child with his sister thus stating their observations as follows:

He was able to read-write. He was able to solve the questions in the differences and similarities book of his sister, he was able to complete sentences from the first word or the words from the first syllables. (p. 103)

Figure 3 and Table 3 reveal that similar characteristics with the previous period were observed by the families during this period as well and in addition, a desire for research and a motivation for learning

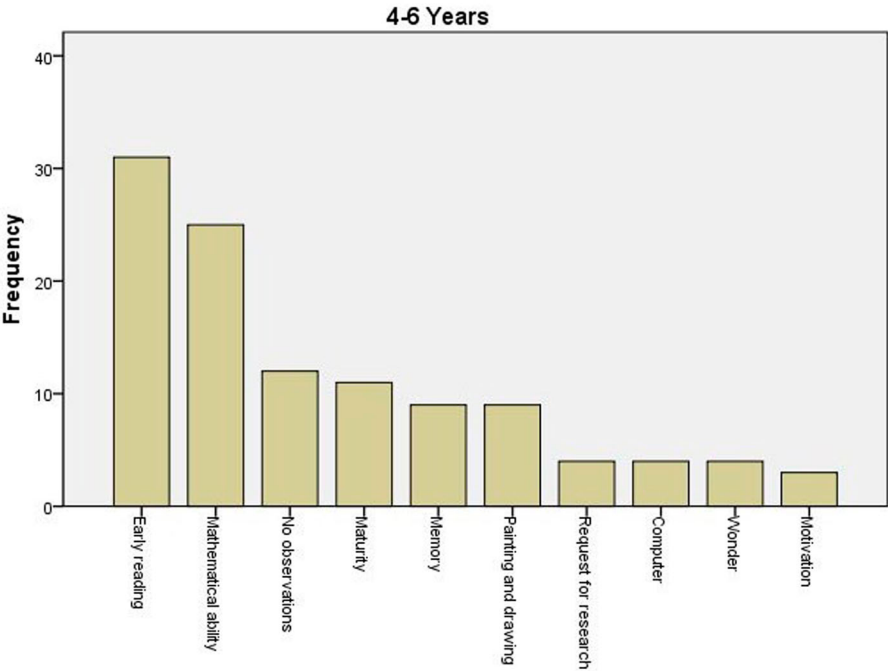


Figure 3. Characteristics of gifted children during the 4–6 age period according to family observations.

Table 3. Characteristics of gifted children during the 4–6 age period according to family observations.

Order of importance	Observations of families	<i>n</i>	<i>f</i>	%
1	Early reading	112	31	27.7
2	Mathematical ability	112	25	22.3
3	No observations	112	12	10.7
4	Maturity	112	11	9.8
5	Memory	112	9	8.0
6	Painting and drawing	112	9	8.0
7	Request for research	112	4	3.6
8	Computer	112	4	3.6
9	Wonder	112	4	3.6
10	Motivation	112	3	2.7
	Total	112	112	100.0

new things were observed. The ratio of families that did not observe any difference decreased in comparison with the previous period (10.7%).

4. Discussion

The findings of this study indicate that gifted children may show different characteristics during the preschool period in comparison with ungifted children. Starting from birth, they have put forth different characteristics in many dimensions such as cognitive, sensory and psychomotor skills which can be observed by the families. When the findings for three different age groups were evaluated together, it can be understood that the common characteristics are perception, memory, wonder, painting skill and behaviours that are more mature than their ages.

Family observations for gifted children in the 0–2 age period in this study such as early walking and talking, perception, painting and wonder were in parallel with those of previous studies (Bloom, 1982; Clark, 2002; Davis & Rimm, 2004; Gross, 1993; Hall & Skinner, 1980; Renzulli et al., 2002; Silverman, 2004). The most distinctive characteristics are early walking and early speech. Advanced linguistic skills of gifted children during the ages of 0–2 were also emphasised in previous studies. According to Clark (2002) and Silverman (2004), gifted children have a wide range of vocabulary between the ages of 0 and 3 and they use complex sentence structures. Early speech is a means for the children to express their thoughts and to acquire information by way of questions. They are in verbal interaction with the family members when their peers have not yet reached this state. Bildiren, Uzun, and Demiral (2012) carried out a study in which gifted children between the ages of 0 and 2 displayed characteristics such as early speech and walking, perception, memory, drawing skills and rich vocabulary. The observation by the families of these and other similar characteristics may enable the detection of these children first by their families. Children are not in an education institution during this period in Turkey and in general either the families or baby-sitters take care of the children. Providing an enriched atmosphere for gifted children in the family environment prior to preschool education will make a significant contribution to their development. In addition, determining this in the later period (2–4 age) during the preschool education period will also result in the changing of the education environment. Because it has been determined that gifted children face risks of failure in case they are not identified early on or that they tend to hide their abilities in order to blend in with the other children (Gubbins et al., 2002; Karnes & Johnson, 1991; Siegle & McCoach, 2005). Of course, it cannot be stated that children who display such characteristics are certainly gifted or that those who do not are not gifted. However, taking into consideration these symptoms may contribute to the identification.

Renzulli et al. (2002) expresses that the memory potential of gifted children allows them to learn much faster, solve complex problems and remember even the tiniest details. Study results indicate that gifted children in this age period display characteristics such as advanced vocabulary, asynchronous development, persistent observation and curiosity, having extraordinary knowledge, long and intensive concentration, early indications of tendency towards art and devotion to tasks more than their peers (Clark, 2002; Smutny, 1998; Smutny & von Fremd, 2004). Bildiren, Uzun, and Demiral (2012)

carried out a study in which they also pointed out that gifted children between the ages of 2 and 4 displayed characteristics such as mathematical ability, perception, drawing, memory, mature behaviours, early reading-writing and abstract thinking. The 2–4 age findings of the study also support this interpretation. Families making a different evaluation in comparison with other children with regard to perceiving gifted children, reflecting many different details while drawing and distinctive mathematical abilities increase the possibility of being connected with their superior cognitive performances. The minimum Total IQ average of the children in the study group was 130, whereas the maximum Total IQ average was 160. It is possible that perception at an early age will be fast when this performance is taken into consideration.

It is especially striking that a portion of the children in the 4–6 age group started reading and writing early without any help. Clark (2002) and Stainthorp and Hughes (2004) also defined early reading children as children who have learned reading by themselves before going to school and who are able to read fluently and understand what they read. Early reading, empathy skills and emotional intensiveness are among frequently observed characteristics during the 4–6 age period (Clark, 2002; Eby & Smutny, 1991; Robinson, 1995; Silverman, 2004; Walker, Hafenstein, & Crow-Enslow, 1999). Bildiren, Uzun, and Demiral (2012) carried out a study in which it was indicated that gifted children between the ages of 4–6 displayed characteristics of early reading-writing, mathematical skills, rich vocabulary, memory, self-confidence, curiosity, leadership and the competence in computer use. Study results were in parallel with these findings. Majority of the interviewed families indicated that gifted children were reading books during the primary school period and that they were reading fluently. Early reading and writing skills of gifted children during the 4–6 age period can be interpreted as an important characteristic that should be observed during this period. However, as has been stated before, not all children who have started reading and writing at an early age can be evaluated as gifted. Nor can it be interpreted that children who do not read and write early may not be gifted. Evaluating the study results with other characteristics that emerged in other studies may lead us to better interpretations.

The most efficient application in identifying gifted children is comprised of three stages in which formal and informal tools of evaluation are used together. These are: candidacy stage, identification stage and selection-placement stage (Johnsen, 2009). Using the data acquired in each stage, it is evaluated whether the child has the required criteria for passing onto the next stage. The characteristics that emerge for all age groups in the study do not include sufficient data for identification. These data may provide data to the families and teachers during the candidacy stage for identifying the children as gifted. In addition to these symptoms, the child has to be evaluated via objective tests in the accompaniment of a specialist and the identification has to be made by a group of psychological counsellors and experts on gifted children (Coleman, 1994; Ellsworth, 2002; Hodge & Kemp, 2006; Johnsen, 2009; Schroth & Helfer, 2008).

Characteristics of gifted children according to family observation during the preschool period may contribute to the observation forms that will be prepared in the future. The ratio of families that did not observe any difference during the ages of 4–6 decreased in the study. This can be interpreted as a more distinctive emergence of these characteristics during this age period. It is planned by the Ministry of National Education to include preschool education during the ages of 4–6 as part of compulsory education in upcoming years. The number of students will increase when preschool education is included as part of the compulsory education. This increase may make it difficult to observe the students correctly. Early detection of gifted children in this period may speed up the process of these students facing the curricula that meets their unique learning characteristics.

5. Limitation and future research

The study results for which qualitative research method was used to seek answers along with the phenomenological pattern used for examining the problem bring with them various limitations as well. In this regard, the participants of the study were limited with the parents of 112 children identified as gifted according to the WISC-R test carried out at the İzmir Sıdika Akdemir Science and Art

Center and the data acquisition tool of the study. In addition, the fact that the results obtained using data acquired from the participants determined in accordance with the voluntary basis cannot be generalised for all gifted children since only WISC-R test was used for determining the gifted children is observed as another limitation that should be taken into consideration when interpreting the study results.

In this study, the different characteristics of gifted children between the ages of 0 and 6 in comparison with their normal developing peers were acquired via family interviews. It is suggested that the video images of the children in this age group should also be analysed in future studies.

6. Conclusion

It is thought that this study will contribute to the early identification of gifted children. It has been shown as part of the study findings that gifted children in the 0–6 age period show more distinctive differences in cognitive, metacognitive, linguistic, emotional and psychomotor areas in comparison with ungifted children. It is stated that gifted children may experience problems of accordance, failure and disinterest since their school curricula are not arranged according to their performance levels and interests (Gross, 1999). The early indicators of the physical, mental, sensory and social abilities of these children should first be identified by the families and later on by the people who will serve them in order for the gifted children in the preschool period to receive an education that will improve their abilities. Starting from this point, discovering the characteristics of gifted children during this period shall make a positive contribution to their educational lives. In this way, the mental, physical, linguistic, social and emotional developments may be maximised. In addition, academic failure problem for gifted children will also be prevented early on by way of early identification and placement to a proper preschool programme (Kitano & Kirby, 1986).

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributor

Ahmet Bildiren is an expert in the field of Special Education. He has undergradiaye degree in Primary Education, master degree in Psychological Counseling and doctorate degree in special education. He has a number of researches on gifted children.

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