

Turkish Children's Drawing of Nature in a Certain Way: Range of Mountains in the Back, the Sun, Couple of Clouds, a River Rising from the Mountains*

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Abstract

This study reveals that Turkish kindergarten through 8th Grade (K-8) students draw nature pictures in a certain way; range of mountains in the background, a sun, a couple of clouds, a river rising from the mountains. There are similarities in the K-8 students' nature drawings in the way these nature items are organized on a drawing paper. We conducted a sample study (n=263) of Turkish children aged 6-14 years (Grades K-8). Children were asked, "Please draw a nature picture on the blank white paper in front of you" and each child made a drawing of nature. Results showed that the overwhelming majority of Turkish K-8 students drew nature in a certain way; range of mountains in the back, sun, a couple of clouds, a river rising from the mountains. There was no study performed before to examine Turkish Children's drawings of nature. Future research is needed to explore this phenomenon with different age groups. In what age Turkish children start drawing nature in a certain way? In what age Turkish children stop drawing nature in this certain way? Or do they ever stop?

Key Words

Turkish K-8 Students, Turkish Kindergarten Children, Nature Drawing, Visual Arts Curriculum.

The constructivist approach views learning as an active process, in that the students construct their own meaning by combining their experiences and prior knowledge with what they obtain from the environment instead of building their conceptions totally on formal school science learning (Prokop, Kubiátko, & Fančovičová, 2007). According to Piaget (1971), children reconstruct reality and they create their internalized concepts. Dewey (1938) stated that children should have K-8 experience

themselves so that they may evaluate it. Yilmaz (2012) also agrees that young learners need to construct their knowledge with free play rather than being imposed. Teachers construct classroom themes from daily events and promote children's active participation in free play in student-centered instructional environments (Ulker, 2009). According to Piaget and Szeminska (1952), students move from concrete to pictorial thinking and then to abstract thinking. Abstract thinking in children does not emerge before the age of 7 and it is not very well established before the age of 9 (National Association for the Education of Young Children [NAEYC], 2009).

Various methods can be used to collect information about students' level of knowledge, experiences, mental processes and perceptions. Although some of them; interviews or written response open ended questions are effective ways to gather in depth data about students' thinking they are hard to quantify and can be subjective (Prokop & Fančovičová, 2006). Researchers believes that

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children's drawings can be used as a powerful tool for understanding their thinking and mental processes (Borthwick, 2011; Piaget, 1951; Piaget & Inhelder, 1956). Prokop and Fančovičová states that drawings can be used as a simple but an effective research instrument that provide researchers with the opportunity of international comparison. Moreover, Malchiodi (1998) suggested that "drawings provides a multidimensional view of children" (as cited in Borthwick, 2011, p. 38). According to Weber and Mitchell (1996) drawings are readable since they are a form of a text. They believed that visual representations also obtained strong communicative messages.

Several studies pointed out value of the using drawing tasks to gather information about children's mental images, perceptions and thinking. For instance, Tunnicliffe and Reiss (1999) indicated "Non threatening nature of the task to many pupils and the comparative ease with which a rich mass of data can be obtained" (p. 1188). Weber and Mitchell (1996) thoughts drawings allows people to express their feelings and thoughts in a way language expressions are inadequate to describe their thoughts and emotions. Reiss and Tunnicliffe (2001) also indicated drawings help students, who are very shy in verbal communication, are second language learner and are experiencing some speaking difficulties, to express their thoughts. On the other hand, some studies discussed the possible factors that may affect how students draws for responding a drawing tasks as we gather information about students' mental images and knowledge level. Prokop, Prokop, Tunnicliffe, and Diran (2007) in their study they conducted on how children see animal internal structure, they pointed out that school books, parents' education level, television, encyclopedias and some other factors influenced children's drawings more than their real life experiences.

Art education is one of the most important fields that need special attention since there is linear relation between academic achievement and art education (Winner & Hetland, 2000). Avsar and Soganci (2011) suggested that art education also is important for raising creative individuals and individuals who are good problem solvers. Etike (1991) indicated preschool years and primary school years are critical times for acquiring certain skills such as motivation towards creating new things, expressing thoughts and perceptions through several ways including visual arts. Moreover, Çubukçu and Gultekin (2006) stated that in order to increase social awareness it is so important to implement art

education in primary school. As a result, they suggested that highly qualified and motivated teachers should provide visual arts education in primary schools.

In this study, we particularly focused on how Turkish students draw nature picture. In the existing visual arts 1-8 curriculum standards focuses on observing nature and social events in the environment, realizing the objects and their shapes in the environment, expressing perceptions about nature through drawing, designing drawings including objects from nature (Milli Eğitim Bakanlığı [MEB], 2006). Aims of the visual arts education curriculum were specified under four areas: individual and social aims, perceptual aims, artistic aims and technical aims. First two areas emphasizing awareness about nature, and environment, being sensitive to nature and creating visual arts to express the care about nature. Moreover, specifically perceptual aims emphasize the creativity, transferring observations and perceptions into visual arts (MEB, 2006). Although those components were emphasized as a part of visual art education purposes in Turkey there is still an urgent need to have academically expert teachers to implement these aims in the classroom settings. In Turkey, there is a current effort to improve art education but Yılmaz (1994) suggested that there are some problems in the system to meet the needs for highly qualified art teachers. As a result of inadequate staffed visual arts teachers typically classroom teachers taught art lesson during elementary school. This situation may prevent the way students' perception of art and creativity (Avsar & Soganci, 2011) and those goals may not fully be realized in the classroom settings.

Intense researches have been conducted on children drawings in various fields as psychology, education, biology and art (Golomb, 1994). In those researches drawings were not used just merely a data collection tool, it is also used to understand children's perceptions, experiences and mental images (Golomb; Prokop & Fančovičová, 2006; Reiss & Tunnicliffe, 2001). For instance in education field Prout and Philips (1974) examined students' experiences of school, Prokop, Prokop et al. (2007) investigated the factors that might affect students' understanding of animals' internal structure, Borthwick (2011) examined students' perception of mathematics lesson, and Prokop, Kubiato et al. (2007) identified children's ideas about birds including constructs; bird classification, food, senses, communication, migration and breeding including parental care. Furthermore, in psychology field Matt-

hews (2003) conducted a study on why children's drawings are important as a way of expressing their emotions to adults. In these studies researchers used children's drawings to capture a reliable projection of children's learning, knowledge, perception about a concept(s), feelings and experiences of a phenomena (Reiss et al., 2002).

In the present study, we used only the drawing method to examine Turkish students' nature drawings hoping to collect accurate data from also students who are very shy in conversation, students who lack certain linguistic skills and students who speak a language (languages) different from that that was used by the researchers (Reiss & Tunnicliffe, 2001).

Children's drawings included elements about what they observed in the environment and what they experienced in their lives (Thomas & Jolley, 1998 cited in Yilmaz, Kubiaticko, & Topal, 2012). For instance, Yilmaz et al. conducted a study with Czech students on how Czech children draw nature pictures. In this study they found out that none of the students drew range of mountains in their drawings and only one student drew river rising from mountains. Moreover, Ulker, Yilmaz Prokop & Fančovičová, (2012) worked with Slovakian children and examined how they drew nature in their drawings. Findings of this study revealed, for instance, only two out of 33 drawings included mountain range, and 12 students drew river in their drawings. As a result the purpose of this study is to document how Turkish students from K-8 draw nature picture and to address the following research questions:

1. What are the common features across all students' nature drawings?
2. What are the shared features of Kindergarten students' drawings, also similarly students from 1-8 drawing?

There are similarities in the K-8 students' nature drawings in the way these nature items are organized on a drawing paper. Why Turkish K-8 students are not drawing pictures of canyons, waterfalls, or different kinds of plantation, etc. is interest of this research.

Method

In this study fieldwork was employed in whole classroom settings from K-8 in four different schools one of the schools was private and the rest of them were public. This study was conducted in two phases. In the first phase students were asked

to draw picture of nature. More precise language was used, if needed, to explain the task to young children.

Initially, data collectors distributed a blank white paper, a pencil and an eraser for each student. Kindly asked them to draw a nature picture on one side of the paper. Conducting a research using drawing tasks requires careful attention to researchers' language usage as the task is presented. This may affect students' way of responding the task. Prokop and Fančovičová (2006) discovered that the interview protocol used during drawing might interfere with children's knowledge and affect the results. Accordingly in our research, the script for data collectors was "Please draw a nature picture on the blank white paper in front of you". In addition data collectors remind some of the rules to students before they started to draw. These were:

1. Do not help any students with their drawings.
2. Do not prompt any students to change anything that they drew.
3. Students should also not see each other's drawing.
4. Students should not help each other with their drawings.
5. There is no time limit for students to finish their drawings.
6. Collect finished drawings.

Although students were told not to copy their peers' work they were not examined under formal examination procedure. This non-threatening environment in the classroom help us to obtain several complete students work. In all 263 students' drawings were collected from both kindergarten and grades 1-8 students (153 drawings from kindergarten students and 110 from grades 1-8 students).

In the second phase coding schema of the study was determined and appropriate statistical analysis was done. Next section will examine the second phase of the methodology of this study. This study was not focused on gender differences.

Analysis of the Data

In this study content analysis method (Finson, Beaver, & Cramond, 1995) was used to analyze and explore each drawing. Two education researchers determined the coding schema of the study by examining each student's drawing. One education

Table 1.
Coding Schema of the Study and Description of Categories

Categories	Description
Presence of river	Student draws a river that typically originates from a mountain (typically river flow direction is from right corner to left corner of the drawing paper)
Shape, size and location of Sun (right-left-mid)	Student locates the sun as follows: 1) Typically in the middle of the sky with circular shape (typically size of a coin size)
	2) On the right of left corner of the mountain range or the paper with non circular shape (as if newly rising sun, typically size of 1/4 th of a coin size)
	3) Between two of the mountains with non circular shape (as if newly rising sun, typically size of 1/3 rd of a coin size)
Space Allocation for Sky	Student allocates typically 1/4 th of the top part of the drawing paper for picturing sky. Students clearly separate a certain space for the sky from the earth in their drawings.
Shape and Location of Clouds (linear)	Student draws linear curvy clouds into the specific space that was allocated for the sky.
Mountain Range	Student draws mountain range under the space on the drawing paper that was allocated for the sky.

researcher, and the author of this study, is a professor of Early Childhood Education. The other education researcher is his assistant. They are working together on similar drawing studies in different contexts (Czech Republic, Slovakia etc.) to prove that this type of nature drawing (range of mountains in the background, a sun, a couple of clouds, a river rising from the mountains) is not universal and only Turkish children are drawing this way. As the students' drawings were categorized, "artistic" quality of the drawings was not considered as an influential factor. Five main categories were determined. Table 1 represented each coding schema, and their descriptions.

To ensure the reliability of the coding schema, two education researchers independently sorted each drawings using coding schema of the study. These researchers sorted all the drawings under the four categories with a few differences in categorizations. In this sorting process, many drawings included the features belonging to more than one category. Each feature was coded under the related category. In

those cases, researchers discussed the cases and agreed on under which category the drawings should be included. There were 12 cases out of 263 cases that researchers had different categorizations. Then frequency count of students' drawing was obtained for each category and an exemplar from students' work determined that are, we believed, comprehensive exemplar of the categories. The next section will report findings of the study and show evidences from the students' works to support each finding.

Findings

This section will report on the findings viewing the data from the perspective of two groups of students: Kindergarten through 8th grade. The analyses were divided into these groups since students in the same group exhibits similar drawings in their pictures. The analysis will be discussed under these two categories.

Table 2 shows the number of drawings in each category for K-8 students.

Table 2.
The number of drawings coded under each category from 153 drawings from Kindergarten and 110 drawings from grades 1-8

Category	Label	Number of Drawings from Kindergarten	Number of Drawings from Grades 1-8	Total Number of Drawings
Presence of river	A	0	36	36
Shape, size and location of the sun	B	99	70	169
Space allocation for sky	C	84	60	144
Shape and location of clouds	D	99	46	145
Presence of mountain range	E	7	58	65

Table 2 shows that, overall, across all students' drawings, 36 out of 263 drawings were examples of students drew a river that originates from the mountains. There were only two students' drawing students did not include a river figure that originated from the mountains. In addition only one student drew a river that did not follow the flow direction of top right corner to bottom left corner of the drawing paper. One can also see from the table that there was not a single drawing with river in across all kindergarten drawings where as this number increased to 36 for the grades 1-8. This result indicates that although kindergarten students did not draw a river, in later grades the feature of drawing a river emerges.

In the shape, size and location of the sun category, 169 out of 263 students' drawings were coded. 99 of these drawings were coded from the kindergarten. This suggests that both kindergarten and grades 1 to 8 students mainly drew sun either in the middle of the sky with circular shape, or on the right or left corner of the mountain range as if newly rising sun, or between two of the mountains as if newly rising sun. For space allocation for the sky category, overall 144 students allocated a specific space for sky. 84 out of 153 kindergarten and 60 out of 110 grades 1 to 8 students' drawings was categorized under this category. Overall provision of allocating certain space for sky observed in overwhelming majority of both kindergarten and grades 1 to 8 students' drawings. Table 1 also shows that, overall, 99 of the kindergarten students' drawings were examples of shape and location of clouds category and 46 of the grades 1-8 students' drawings were examples of this category. Figure 1 shows one kindergarten student drawing that was coded under categories B, C and D.

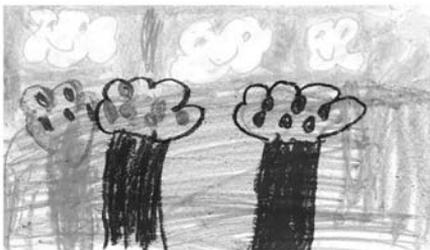


Figure 1. A kindergarten student's drawing sample, coded under categories: B, C and D

In figure 1 a kindergarten student allocated a specific space for the sky (category C) approximately

1/4th of the drawing paper size. S/he located a coin size sun in the sky (category B) approximately size of a silver coin. Also s/he drew linear curvy clouds into the space that was allocated for the sky.

For the last category, 65 out of 263 students' drawings include mountain range. One can also see from the table that there were only seven drawings that included mountain range in across all Kindergarten drawings where as this number increased to 58 for the grades 1-8. It is evident that drawing mountain range emerges in the Kindergarten and then it becomes a common feature of the nature drawings among grades 1 to 8 students' drawings (58 out of 110 drawings from grades 1-8). Figure 2A and 2B offer drawing of two different students' drawings that were included features coded under all categories: A-E.



Figure 2A. A grades 1-8 student's drawing sample, located sun top left corner of the drawing paper and coded under categories: A-E



Figure 2B. A grades 1-8 student's drawing sample, located sun between two mountains and coded under categories: A-E

Although two different students drew those pictures, both of them includes mountain range in the same format, river originated from mountain from right to left direction, clouds were in the same curvy shape and most of them linearly located in

the space that was specifically allocated for the sky. The minor difference between these two drawings was in the figure 2A student drew the sun on top left of corner of the page whereas in the figure 2B other student drew the sun between two mountains. This evidence supports our claim that Turkish students draw nature pictures in a certain way.

This section offers percentage distribution of the students' drawings that fell under particular categories by grade levels. Because the number of drawings collected from kindergarten and grades 1 to 8 students differed. Across all 263 student drawings, nearly 14 % of them included river, 64 % of them located sun either middle of the sky or top right/left corner of the drawing paper, 55 % of them allocated a certain space for sky and drew linear and curvy clouds in the sky and 25 % percent of them included mountain range in the drawings.

When separately examined kindergarten and grades 1-8 students' drawings, we can report percentages as follows. 153 drawings were collected from Kindergarten students. None of the drawings included a river in the picture. In approximately 65 % of the drawings sun was located as it is described in the coding schema also same percentage calculated for the category D in which curvy and linear clouds were included in the picture. Nearly 55% of the drawings had the feature of category C in which students allocated a specific space for the sky in their drawings. Only 4.5 % of the drawings were coded as an exemplar of category E. These results indicate that majority of kindergarten students drew sun and linear curvy clouds and allocate space for sky, but just a few of them drew mountain range and none of them drew river in their drawings.

Analysis of 110 drawings from 1-8 grades students' drawings showed that unlikely kindergarten students' drawings 33% percent of 1-8 grades students' drawings include a river. Similarly kindergarten students nearly 64% of drawings were example of category B and 55 % of them were coded under category C. 41% of the drawings included curvy and linear clouds figures. Finally, one could observe a huge increase in the number of drawings that included mountain range in grades 1-8. Approximately 53% of the drawings were coded under category E. These results suggest that majority of the 1-8 grades students start to draw mountain range and river in their nature drawings unlikely the kindergarten students' drawings.

Although some differences observed between kindergarten and grades 1-8 students' drawings results of this study acknowledged that the overwhelming

majority of Turkish students drew nature in a certain way; Range of Mountains in the Back, a Sun, Couple of Clouds, a River Rising from the Mountains. It is evident from the finding the number of drawings included river and mountain range dramatically increased after kindergarten.

Discussion

Our data suggests that students' concept about location is independent from function of nature items. This is because the nature items drawn by students were generally well located, but the understanding of their function was usually lacking.

Using the drawing method raises several limitations. First of all, the space to draw in is limited and hence certain details would be difficult to show. Moreover, in the nature students observed the objects in 3-D space but they need to transfer this 3-D environment onto 2-D drawing paper. Furthermore most of nature items are difficult to draw. A student could be just omitting certain nature items because drawing them is too much of a complex task or because there is not enough space on the paper provided. Piaget and Inhelder (1956) discussed how drawings of children provide clues about their conception of spatial mathematical concepts. They suggested that younger children started to discover topological relations but ignore the Euclidean relations such as location, shape, distance, proportion and area. As children get older they started to recognize projective and Euclidean relations, as a result they can transfer 3-D objects onto 2-D space with certain components and fidelity. As children gets older previously stated hardness of drawings is resolved for certain degree not because of the just "artistic" ability of children, it is also because of improvement in children's conception of space.

Although those difficulties of drawing method and some of the observed in students' drawings such as drawing sun in a certain size, allocating certain space for sky or drawing clouds in similar linear manner and shape, our study findings clearly framed that Turkish students grades K-8 drew nature picture in a certain way. This raised questions that aim to investigate the possible reasons for why Turkish students' drew nature in a certain way. Children's knowledge about nature can be influenced through experience with nature. It was pointed out that those K-8 children that visited a forest had a better knowledge about forest inhabitants than those that did not. (Prokop, Kubiak et al., 2007) In general, special attention should be addressed to

children from families with parents who only attained a lower education level. Future research should experimentally examine how various factors, such as experiences with nature, parents' education, age and gender influence Turkish children's drawings of nature.

In addition, future research is needed to explore this phenomenon with different ages groups. In what age Turkish children start drawing nature in a certain way? In what age Turkish children stop drawing nature in this certain way? Or do they ever stop?

Finally this study initiates a set of future researches questions, all are needed to explore through empirical studies. They are:

- 1) Why Turkish K-8 students' draw nature in a certain way? What are the possible reasons for this?
- 2) What is the role of students' previous experiences (Turkey does not have a rich variety of natural sights, students spend less time in nature, students watch less documentary movies on nature, see less nature photos or read less books about nature, with nature) on how Turkish students draw nature picture?
- 3) What is the role of students' Turkish Visual Arts Classroom experiences (art class teachers teach how to draw nature in a certain way, limited materials are used in the art classes in Turkish K-8 Visual Art Classes, limited class periods are allocated for art classes in Turkish Visual Art Classes) on how they draw nature picture?
- 4) What is the role of cultural background of students and their families on how Turkish students draw nature picture? Do Turkish K-8 students' drawings of nature in a certain way is a cultural phenomenon that has been passed from generation to generation; are parents teaching Turkish K-8 students draw nature in a certain way?
- 5) What is the role of the instructional materials that are used in the art classes on how Turkish students draw nature picture? Do Turkish K-8 students' drawing of nature in a certain way is due to having too many coloring activities during early years of Turkish Students? (Students coloring pre-drawn nature pictures)
- 6) What is the role students' experience with dimension in mathematics classroom on how they draw nature pictures? Do Turkish K-8 students' conception of space and dimension affects the way they located nature items on the drawing paper in a specific way? (e.g. allocated space for the sky on top 1/4th of the drawing paper)

Conclusion

Drawings of nature are effective to reveal students' concepts of size, shape and location of nature items. The current study proves that as children get older their drawing of nature in a certain way become clearer. The present study also provides the first evidence of how Turkish children of various age groups draw nature in a similar way.

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