Examination of children's expression of basic emotions with drawings

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Abstract

This study aims to investigate children's situations of giving details in expressing their basic emotions and the reasons for preferring basic emotions by examining the facial expression drawings of children in detail. The study's design is a phenomenological approach, one of the qualitative research methods. The sampling method is homogeneous. Thirty-nine children aged five years attending preschool education in the fall semester of 2021-2022 participated in the study. As a result of the research, the children included the basic emotions of happiness, sadness, surprise, and anger in their drawings. The most preferred basic emotion was happiness whereas the least preferred basic emotion was anger. All four basic emotions in children's drawings included eye and mouth signs; all children with angry basic emotions drew eyebrows and teeth. The children did not use teeth as an indicator in expressing any basic emotions other than the angry basic emotion, and they never used tongue as an indicator in sad and angry expressions. The children could express their basic emotions through the facial expressions and pictures they drew. The study results are significant because they reveal that children recognize their basic emotions and can express them in detail through drawings.

Keywords: Basic emotions, children's drawings, preschool period

1. Introduction

1.1. Introduce the problem

Emotions are a way of communicating and correctly expressing emotions is necessary in social life (Artan & Bayhan, 2007). Every person has some emotions. It is usual for mentally healthy people to display these emotions at the appropriate place and time. (Seven, 2013). Emotions enable the child to communicate and direct their behaviors. Healthy emotional development can help create a healthy personality. Adults talking to

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children about their feelings and helping them to express their feelings support healthy emotional development (Çakmak & Pektaş, 2019).

Emotional expression is people's primary means of communication. Basic emotions are ubiquitous and recognized emotions that people express through facial expressions. Discussions on basic emotions have been going on for several thousand years. (Solomon, 2002). The first scientific studies on the recognition of various facial expressions of people began in the middle of the 19th century. In 1872, an English scientist Darwin wrote the book "The Expression of Emotions in Man and Animals". In this book, he posed the problem of recognizing facial expressions. Later, contemporary researchers identified six basic emotions not acquired due to learning and found in every culture. These basic emotions are happiness, fear, sadness, anger, surprise, and disgust. Basic emotions change rapidly depending on the increase and decrease of human motives. Emotions enable us to understand people's views of life (LeCompte, 1982).

Emotions are an essential feature of human beings. Humans have the same basic emotions from infancy: happiness, surprise, fear, anger, and sadness. Emotions are necessary for establishing social bonds. People can feel different emotions in the same situation and reflect these emotions in different ways (Çakmak & Pektaş, 2019; Seven, 2013; Artan & Bayhan, 2007).

Teachers should organize the appropriate environment to develop preschool children's ability to understand, express and regulate emotions and support children in expressing their emotions (Erden, 2017). The basis of emotional development is psychoanalytic, psycho-social, and ethological theory (Erden, 2017). Needs to be met and conflicts to be resolved in specific periods form the basis of psychoanalytic and psycho-social theory. Conflicts should be resolved in the most appropriate way for healthy personality development. If the conflicts are not resolved, the child will remain attached to that period, and personality development will be adversely affected in the next period. All aspects of a person, especially emotions, form his personality (Senemoğlu, 2018).

Socio-emotional development in early childhood enables children to grow up with a strong identity. Children reflect their socio-emotional development characteristics through drawing in the preschool period. With visual art activities such as drawing, children can express themselves and reflect on their feelings and imaginations (Zakaria, Yunus & Mohamed, 2021). Drawing activities help children's efforts to communicate. Children communicate with others through drawing (Papandreou, 2014). By painting, the child expresses and communicates through drawings (Chang, 2012).

Communication covers the process that a person starts with himself and expands to the society he lives. Communication is affected by factors such as the environment, time, tools, and sense organs, and can vary. The person can express himself verbally or non-verbally (Ahmetoğlu & Akşin Yavuz, 2017; Durualp, 2017). When children cannot express themselves through verbal communication, they express themselves with

pictures, which is a way of nonverbal communication. Children's drawings have particular importance in the pre-schema period. The child expresses feelings and thoughts that he is not aware of in the way of painting. The pictures drawn in the pre-schema period enable children to present their feelings and thoughts concretely. Children's drawings not only help to understand the child's feelings and thoughts but also help to understand his mental development. Children's drawing and expressing themselves through painting is a way of facilitating and strengthening communication. By this way, parents and teachers can understand the child correctly (Yavuzer, 1995; Halmatov, 2018).

At the age of 5-6, the child in the pre-schema period draws pictures to reflect his feelings and thoughts. A 5-year-old child can paint according to purpose. He can reflect the situation or emotion he wants to reflect in his paintings. If the adult observes the child well and can communicate well, he or she can obtain explanatory information about the child's thoughts and feelings (Yavuzer, 1995). Examining children's pictures reveals the child's emotional state, communication skills, and conflicts (Halmatov, 2018).

People reflect what they think and what is in their subconscious with facial expressions. Eyes, eyebrows, mouth, nose, forehead, and lips come to the fore by examining facial expressions (Ercan, 2017). 5-year-olds love to make human figures in their paintings and often draw a head and a body in their paintings. They draw the arms and body coming out of the head with the front view of the face (Yavuzer, 1995). In this period, they draw the human figure with pictures defined as "stickman". The drawing of the human figure has a round head, large or point-like eyes, a horizontally curved mouth, arms, and legs coming out of the head. Color selection is unrealistic, and emotional factors influence color selection (Artut, 2007).

Girls give more importance to the use of color in their paintings than boys. There is a relationship between the colors used by children and their behaviors. Warm colors in the pictures are harmonious by affectionate children; Children with maladaptive behaviors and difficulties controlling prefer cold colors. Children who use red frequently have aggressive characteristics (Yavuzer, 1995). The more children age, the more they include details in their pictures. Pictures can help explain feelings and thoughts. The pictures drawn by children reflect their personality traits (Yavuzer, 1995).

There must be more than the picture to correctly analyze the child's feelings and thoughts. Using more than one method together gives more accurate results. The picture gives us information about the child's inner world at a young age. Painting is a communication tool for the child to express himself. Children's self-expression through pictures is an example of nonverbal communication (Yavuzer, 1995).

Human is a being with feelings. In preschool education, children reveal their basic emotions by drawing facial expressions, and painting improves their multi-dimensional communication skills. The person can express himself verbally and non-verbally. During

the preschool education period, children's ability to use verbal language may not be exactly developed since their vocabulary is not precisely developed for various reasons. The picture enables the child to convey his feelings directly and embody his feelings through non-verbal communication. Children's expression of their emotions helps them understand their feelings in the face of situations, establish healthy communication, and lay the foundation for healthy personality development. In this study, by examining children's facial expression drawings, children's situations of giving details in expressing their basic emotions and the reasons for preferring basic emotions were examined. The research problems are:

1. Is there a relationship between the basic emotions chosen by the children and the inclusion of details in their facial expression drawings?

2. With which idea do children prefer the basic emotion they draw?

1.2. Assumptions

We assumed that the children participating in the research reflected their emotions in the way they felt in the pictures they drew to express their emotions. We assumed that the children participating in the study consisted of children with typical development.

2. Method

2.1. Research Model

The phenomenological approach, one of the qualitative research methods, was used in the study to examine the situations of giving details in the pictures drawn by children to express their basic emotions and the reasons for preferring basic emotions. A phenomenological study explains the meaning of multiple people's experiences with a concept or phenomenon (Creswell, 2007).

2.2. Research Group

The participants are 39 5-year-old children attending preschool education in Kastamonu, located in Turkey's Western Black Sea Region. The children in the study group consisted of children with normal development according to the opinion of the family and the teacher.

The sampling method is homogeneous. It is possible to work with easily accessible participants and to reduce diversity and simplify analysis with this method (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2016; Baltacı, 2018).

2.3. Process

The author collected data from the pictures drawn by 5-year-old children attending preschool education to express their basic emotions and interview the children after they completed the drawing process. Before collecting the data, the author held interviews with the children's teachers and families for preliminary information. They were informed that participation in the study was voluntary and that children could leave the study any time after it started. The researcher also explained the purpose of the study and process. After obtaining the necessary permissions, the families of the children filled out a consent form.

It was explained to the children that they would draw pictures and do activities by chatting and that there would be no notes or punishments before, during, or when the activity was over. Four children stated that they did not want to participate in the study. The researcher did not include these four children in the study; the sample size was thirty-nine children who wanted to participate. The children chatted about basic emotions at first to understand whether they knew them. The children in the study group talked about each basic emotion. After the children moved to the activity table, they found pastel and dry paints of 12 colors, pencils, erasers, and white A4 papers prepared by the researcher. The researcher asked the children, "If you want to express yourself with an emotion, which emotion and which facial expression would you use?" and told them that they could use any materials and asked them to describe the basic emotion they wanted by drawing it with the facial expression. The children had enough working time so that they could finish their drawings without being under pressure and with feeling comfortable. When the children finished their pictures, the researcher asked them which basic emotion they described and which facial expression they drew, and which details they included in the facial expression. The researcher asked them, "You have this emotion because of what you are doing in this painting?" to understand the reason for the basic emotion children prefer and investigated the source of the emotion expressed by the child. After writing the children's answers on the pictures, the data collection phase was concluded by thanking them for participating in the study.

2.4. Analysis of data

The data collected from the children were analyzed based on the phenomenological approach. By examining the children's pictures and answers, the researcher filled out the "coding table of facial expression", which contains the details of basic emotions and facial expressions for the first step. The second step was to understand the preference reason for the basic emotions and examine the answers to questions asked in the interview after the drawing stage. The third step was to record this data in the "emotion preference theme chart". The final step was to group and analyze the obtained data.

As a result of the examination of the pictures, there are six themes in the basic feeling of happiness, four themes in the basic feeling of sadness, four themes in the basic feeling of surprise, and two themes in the basic feeling of anger. An external evaluator followed the same steps as the researcher to calculate the reliability of the codings. As a result of the examination, "consensus" was accepted if the evaluators agreed on the coding, and "disagreement" if they did not agree. To calculate the reliability of the coding

Reliability = consensus / (consensus + disagreement)

the formula was used (Miles & Huberman, 1994). There was a difference of opinion between the two evaluators only in one child's picture belonging to the theme of happiness. Accordingly, the reliability coefficient for the pictures of happy basic emotion was 0.92, while the reliability coefficient 1.00 for the pictures of other basic emotions and 0.97 for all the pictures. Afterward, the two evaluators agreed on the painting with a difference of opinion. Since the reliability coefficient of the coding for each theme was greater than 0.70, it was accepted that the coding was reliable.

3. Results

Examining the drawings reflecting the basic emotions of the children helped create the coding table of facial expressions. This review certainly does not cover a psychological analysis. Considering the use of facial expressions in the children's pictures and their answers in the interview created facial expression indicators. Facial expression indicators in basic emotions and the total use of facial expressions are in Table 1 below.

Table 1. The Coding Table of Facial Expression

Facial expression indicators	Basic Emotions																																							Total Usage
	Happiness														Sadness								Surprise											Anger						
	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	S1	S2	S3	S4	S5	S6	S7	S8	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	A1	A2	A3	A4	A5	A6	
Eyebrow								√							√			√		√		√		√		√	√	√			√			√	√	√	√	√	√	16
Eyelash	√						√	√							√																									4
Eyes	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	39
Pupil	√			√														√					√			√	√	√	√		√	√	√	√	√					13
Tears																√																								1
Nose				√		√					√								√		√			√		√					√	√						√	√	11
Mouth	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	39
Teeth																																		√	√	√	√	√	√	6
Tongue				√								√																√												3
Hair				√		√	√		√		√				√		√		√							√		√											√	11
Head		√		√	√	√	√	√	√	√	√	√	√	√	√		√		√	√	√	√				√			√	√	√			√	√	√	√		√	30
Face	√		√												√		√							√			√	√				√						√		9
Arms							√		√			√			√		√		√				√	√	√				√					√	√				√	13
Hands																							√												√				√	3
Body		√		√	√		√			√					√	√		√		√			√	√	√				√					√	√				√	16
Legs			√						√			√	√		√		√		√				√	√	√									√	√				√	12
Feet															√								√																	2

Examining the children's pictures to express their basic emotions, we give Table 1 above as facial expression indicators. This table contains four basic emotions, the indicators of these basic emotions and the total frequency of use of the indicators. According to Table 1, the most frequently drawn facial expression indicators are eyes and mouth. Children included these two indicators in all basic emotions drawings. The children with anger drew eyebrows and teeth indicators, and those with other basic emotions never drew teeth. Only a child drew tears with a basic sense of sadness. The tongue was the indicator of sadness and anger. On the other hand, no child with a happy and angry basic emotion drew the foot indicator. In addition, considering the total use of children's drawings, facial expression indicators from the most used to the least used; eye and mouth, head, eyebrow and body, pupil, arms, legs and nose, hair and face, teeth, forehead and tongue, feet, tears.

The distribution of 39 children participating in the study on basic emotions was 14 happy, 8 sad, 11 surprised, and 6 angry. The researcher interviewed the children to determine why they preferred basic emotions after they finished their drawings. She asked the children which emotion they drew and why they preferred it and wrote the answers on their drawings. Then she coded the data and the themes that caused the children to prefer the basic emotion. Table 2 below shows the preference for the basic feeling of "happiness" according to the number of children and themes.

Table 2. Determination of preference of basic emotions according to themes: Happiness

Theme	Number of children	
	n	%
Cartoon	2	14.3
Game	5	35.7
Holiday	3	21.5
Shopping	2	14.3
Friend	1	7.1
New toy	1	7.1
Total	14	100.0

Six themes related to the basic feeling of happiness were determined based on the children's drawings and the interviews the researcher conducted with the children, in which the children explained their drawings. Fourteen children expressed themselves by using the feeling of happiness in their drawings. The themes of these drawings are

"cartoon" (2 children; H1, H3), "game" (5 children; H2, H4, H9, H10, H13), "holiday" (3 children; H5, H12, H14), "shopping" (2 children; H6, H7), "friend" (1 child; H8) and "new toy" (1 child; H11).

Children in the theme of cartoons stated that he/she is happy "because of watching cartoons", children in the theme of game "because of playing games", children in the theme of holiday "because of going on vacation", children in the theme of shopping "because of going on shopping", the child in the theme of friend "because of meeting with a friend", the child in new toy theme "because of buying a new toy".

Below are examples of the drawings about the basic feeling of happiness and the pictures with their answers describing the emotion they feel while performing their drawings.
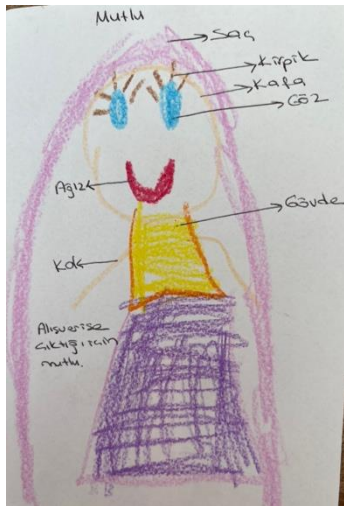
Figure 1. Theme: Shopping. The child is happy to go shopping (H7)
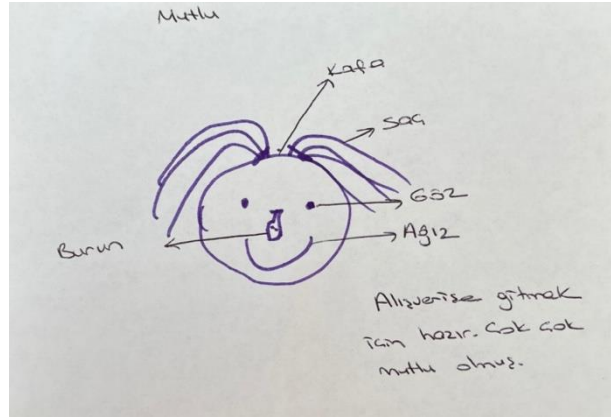
Figure 2. Theme: Shopping. The child is very happy to go shopping (H6)
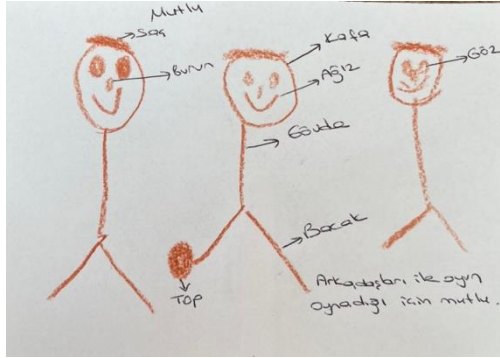
Figure 3. Theme: Game. The child is happy to play ball with his friends (H4)
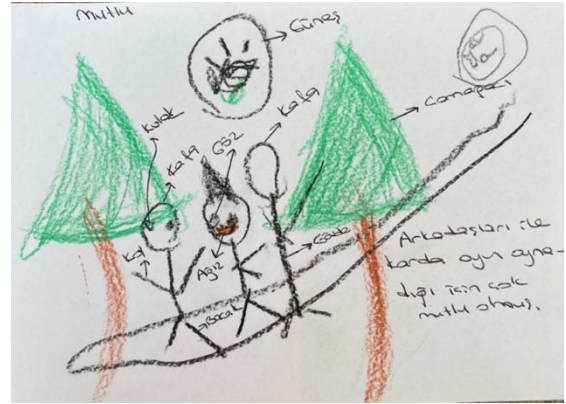
Figure 4. Theme: Game. The child is very happy to play with his friends in the snow (H13)
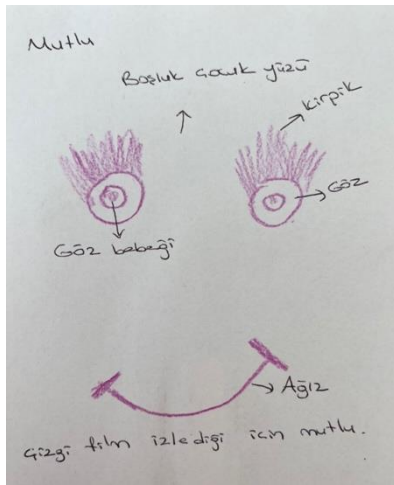
Figure 5. Theme: Cartoon. The child is happy to watch cartoons (H1)
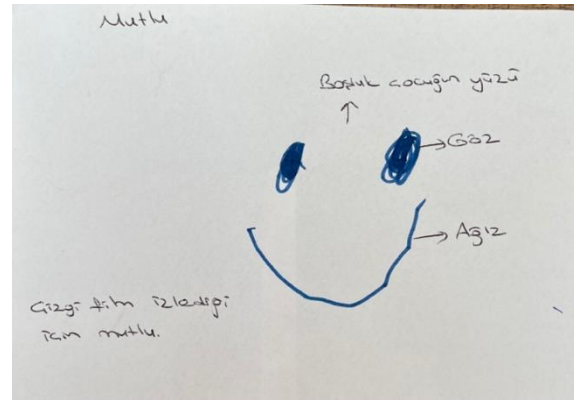
Figure 6. Theme: Cartoon. The child is happy to watch cartoons (H3)

Table 3 below shows the preference for the "sad" basic emotion according to the number of children and themes.

Table 3. Determination of preference of basic emotions according to themes: Sadness

Theme	Number of children	
	n	%
Absence of friends	2	25.0
Unable to play with friends	3	37.5
Lack of technology	1	12.5
Unable to go on vacation	2	25.0
Total	8	100.0

There are four themes related to the sad basic emotion. Eight children expressed themselves by using their sad feeling in their drawings. These themes are "absence of friends" (2 children; S1, S2), "unable to play with friends" (3 children; S3, S4, S5), "lack of technology" (1 child; S6), "unable to go on vacation" (2 children; S7, S8).

The children in the theme of absence of friends stated that they were sad "because they have no friends", the children in the theme of unable to play with friends stated that "because they could not play in the garden with their friends", the child in the theme of lack of technology stated that "because he could not play games on the tablet", and the children in the theme of unable to go on vacation expressed that they were sad "because they cannot go on vacation".

Below are examples of pictures of children's drawings about the sad basic emotion and their answers describing the emotion they felt while performing their drawings
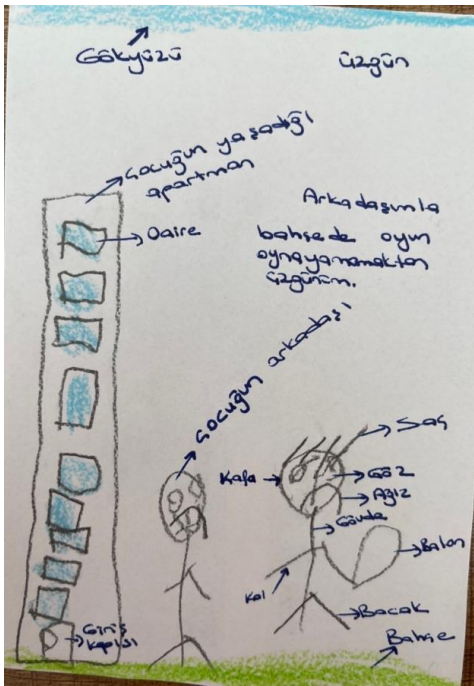
Figure 7. Theme: Unable to play with friends. The child is upset that he/she cannot play with his/her friend in the garden (S5)
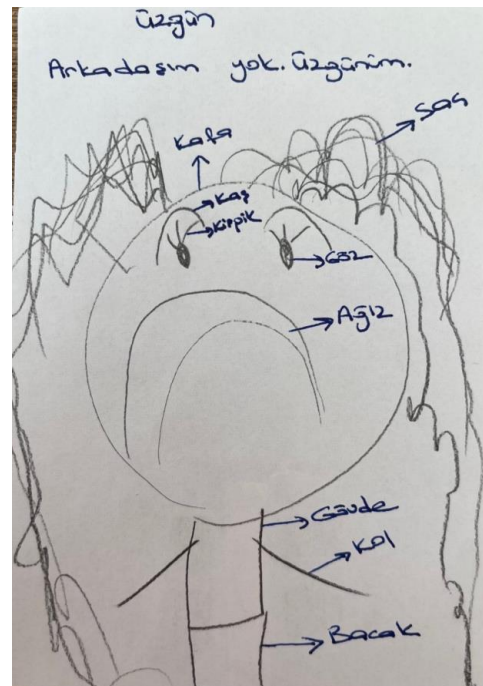
Figure 8. Theme: Absence of friends. The child is upset that he/she has no friends. (S1)
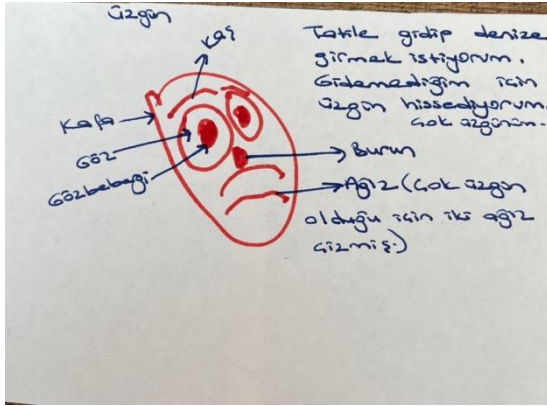
Figure 9. Theme: Unable to go on vacation. The child wants to go to vacation and swim in the sea. He/she is very upset that he/she cannot go on vacation. He/she stated that he/she had drawn two mouths to show that he/she was very upset (S8)
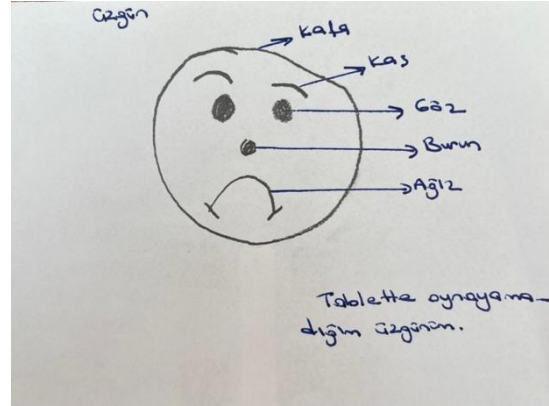
Figure 10. Theme: Lack of technology. The child is upset that he/she cannot play games on the tablet (S6)

Table 4 below shows the preference of the "surprised" basic emotion according to the number of children and themes.

Table 4. Determination of preference of basic emotions according to themes: Surprise

Theme	Number of children	
	n	%
Gift	4	36.3
Arrival of guests	3	27.3
New sibling tidings	3	27.3
Utopian	1	9.1
Total	11	100.0

There were four themes related to the surprised basic feeling. Eleven children expressed themselves by using their surprised feeling in their drawings. These themes are "gift" (4 children; C1, C2, C3, C11), "arrival of guests" (3 children; C4, C5, C8), "new sibling tidings" (3 children; C6, C7, C9) and "utopian" (1 child; C10).

The children in the theme of gift stated that they were surprised "because they received a surprise gift", the children in the theme of arrival guests stated that "because their friend came to their house as a guest", the children in the theme of the new sibling

tidings stated that "because they learned that they would have a sibling", the child in the theme of utopian stated that "because he/she saw a too big animal".

Below are some pictures of children's drawings about the basic sense of surprise and their answers describing the emotion they felt while performing their drawings.
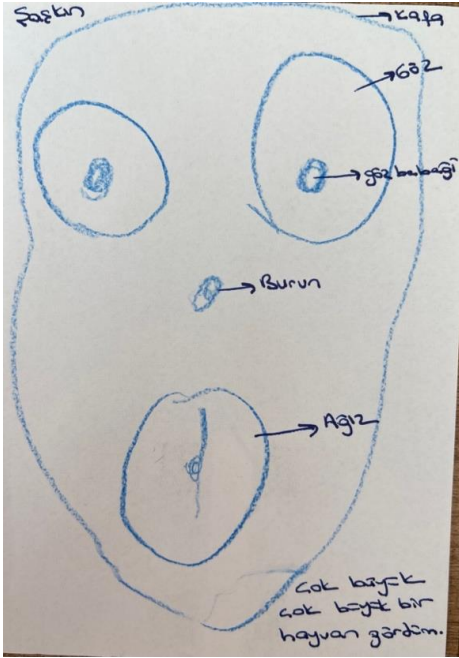

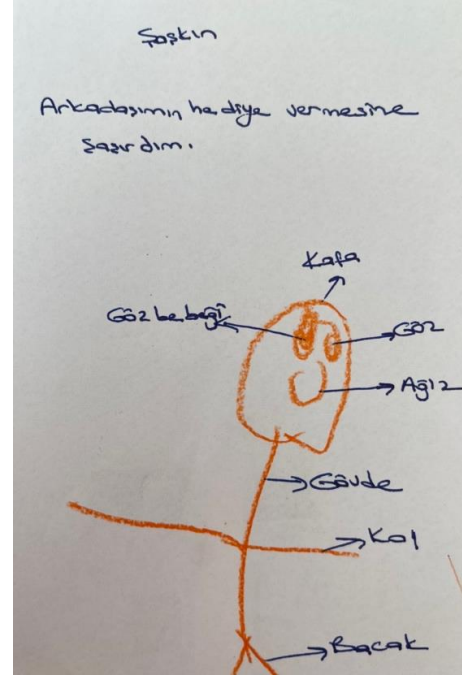Figure 11. Theme: Utopian. The child is surprised to see a very big animal (C10)

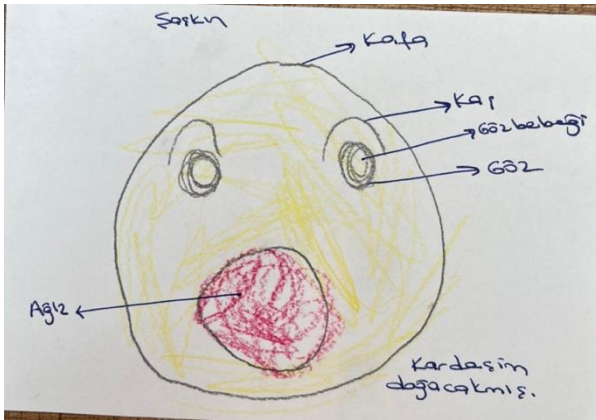Figure 12. Theme: Gift. The child is surprised that his/her friend gave him/her a gift (C3)

Figure 13. Theme: New sibling tidings. The child is surprised to learn that his/her sibling will be born (C9)
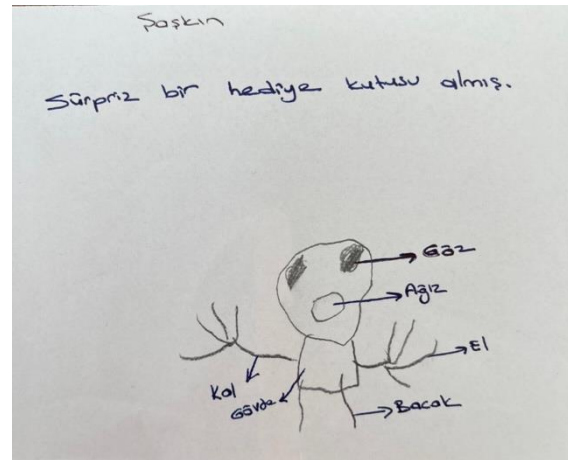

Figure 14. Theme: Gift. The child is surprised to receive a surprise gift box (C1)

Table 5 below shows the preference for the "angry" basic emotion according to the number of children and themes.

Table 5. Determination of preference of basic emotions according to themes: Anger

Theme	Number of children	
	n	%
Toy	4	66.7
Technological gadget	2	33.3
Total	6	100.0

There were two themes related to the angry basic emotion. Six children expressed themselves by using their surprised feeling in their drawings. These themes are "toy" (4 children; A1, A2, A5, A6) and "technological gadget" (2 children; A3, A4).

Children in the theme of toy stated that they were angry "because their friend took their toys or their mother threw away their toys", while children in the theme of technological gadgets stated that they were angry because "his brother broke his tablet".

Below are examples of pictures of children's drawings about angry basic emotion and their answers describing the emotion they felt while performing their drawings.
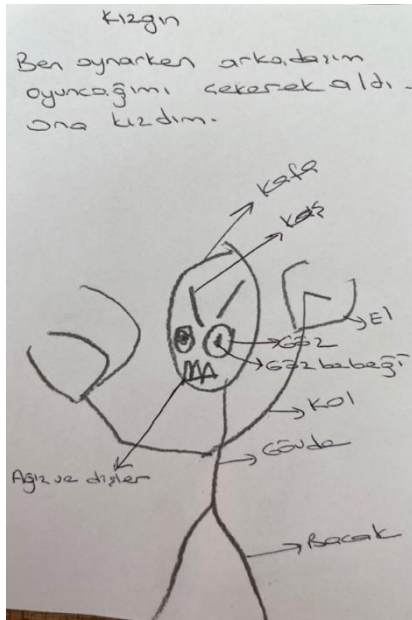

Figure 15. Theme: Toy. While playing with the child's toy, he/she is angry that his/her friend took the toy from his/her hand (A2)
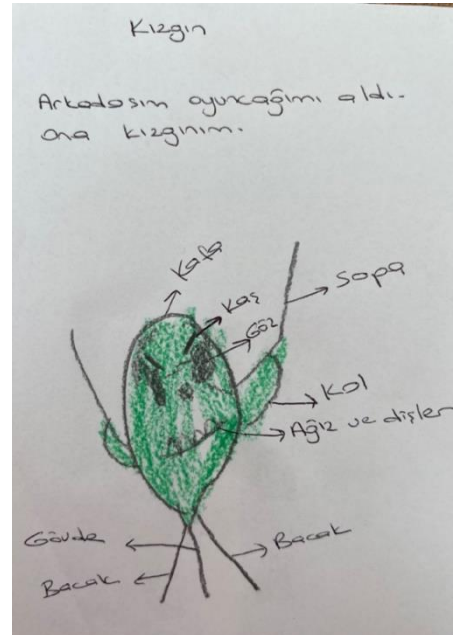

Figure 16. Theme: Toy. The child is angry because his/her friend took his toy (A1)
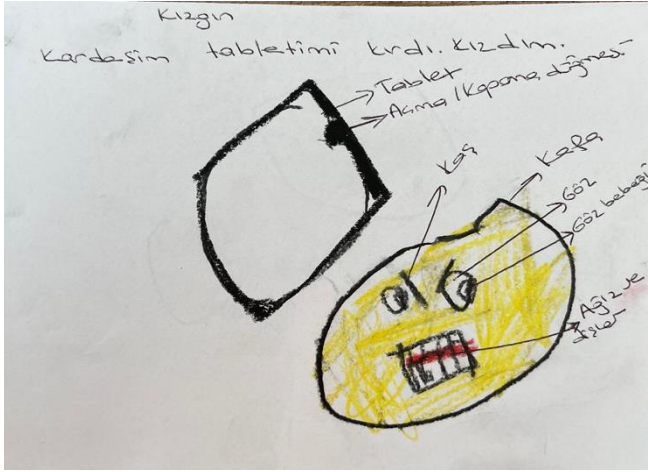
Figure 17. Theme: Technological gadget. The child is angry that his/her sibling broke his/her tablet. The child stated that he/she scratched his/her teeth to show that he/she was too angry (A3)
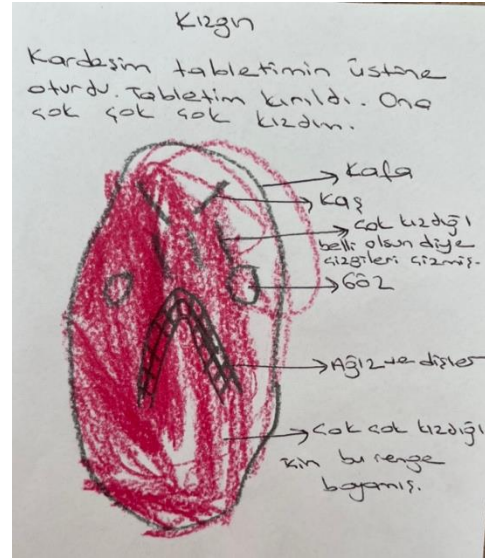

Figure 18. Theme: Technological gadget. The child is too angry at his/her sibling for breaking his/her tablet by sitting on it. The child stated that he/she scratched the pink color and teeth because he/she was too angry (A4)

4. Discussion and Conclusions

This study aims to investigate the reasons for preferring basic emotions by examining children's facial expression drawings and the situations of children's drawing details in expressing their basic emotions. The participations are 39 children attending preschool education. At the time of data collection, these children are studying preschool education in Kastamonu, a city in the Western Black Sea Region of Turkey. In the first step of the study, the children chatted about their previously determined basic emotions of anger, happiness, sadness, and surprise. The second step was to ask them which emotion they would express by drawing if they wanted to express themselves with an emotion. The third step was presenting the necessary materials to the children and asking them to convey their emotions with facial expressions and drawings. Each child had enough time to complete his/her work, and the researcher interviewed the child who completed his/her work about the basic emotion he/she drew. The fourth step was to record the children's

answers by writing on the drawings of the children. The last step was to record the drawings in the coding table of facial expressions.

Results indicate that while children reflect four basic emotions, they include eye and mouth indicators in all four basic emotions. All the children with the angry basic emotion drew eyebrows and teeth, and no children used the teeth indicator to express any basic emotion other than the angry basic emotion. No children used the tongue indicator in sad and angry expressions.

Based on the findings obtained from the study, the children can express their basic emotions (angry, happy, sad, surprised) through the facial expressions and pictures they draw. there are some studies in which children reveal their feelings and thoughts through drawings. (Güngör Aytar, Kara Eren, Aşkan & Şahin, 2019; Şener, 2018; Düzenli & Deniz, 2019; Geyik, Çalışkan & Bay, 2019; Ramazan & Öveç, 2017; Çeri, 2019; Papandreou, 2014; Bonoti & Misailidi, 2006; Chang, 2012; Akgün & Ergül, 2015; Zakaria, Yunus & Mohamed, 2021). The findings of the present study support these studies. From this point of view, we can say that children can embody their abstract thoughts, communicate and present themselves most naturally through their drawings.

The children included the basic emotions of happiness, sadness, surprise, and anger to reflect by drawing the basic emotion they felt. The most preferred basic emotion was happiness (n=14). In response to why they feel happy, five children said they felt happy because of playing games, and this was the largest group. Gür and Koçak (2016) conducted a study with the participation of 643 5-year-old children to determine which emotion children prefer to describe their emotions. They determined that the majority of children used the feeling of happiness to describe the emotion they felt. Güngör Aytar, Eren, Aşkan, and Şahin (2019) stated that most children who preferred the feeling of happiness in which they examined the emotions of children through the pictures drawn by children indicated that physical activity was the reason for feeling this emotion. Akgün and Ergül (2015) stated that children usually use positive facial expressions in their drawings. Considering the result of the study and other studies, we can say that children give more place to positive emotions in describing their emotions. Playing and moving are among the things that make children feel happy.

Eight children preferred the sad basic emotion. Three of them said they preferred sadness because they were unable to play friends.) Children mostly explain the state of having sad feelings in the pictures they draw with physical-emotional violence within the family (Gübgör Aytar, Eren, et al., 2019). They use the feeling of sadness to express themselves in their drawings (Gür & Koçak, 2016). The children cited the discomfort caused by their friends, such as not letting their friends play and being alone, as the reason for feeling sad. Being unable able to play causes children to feel sad, and children reveal this sadness he feels through his drawing.

Eleven children preferred the surprised basic emotion. The basic emotion of surprise is the second most preferred basic emotion by children after happiness. The group that said they were surprised because they received a gift was the largest group (n=4). Children reflect their sense of surprise in their drawings (Gür & Koçak, 2016). Children who expressed themselves as surprised stated that their astonishment was mostly due to seeing something new that they had not seen before. Giving gifts to children without being informed beforehand causes them to feel surprised and children express themselves by drawing their surprised feeling.

Six children preferred the angry basic emotion. Angry basic emotion is the least preferred basic emotion to be drawn by children (happy n=14, sad n=8, surprised n=11). Four children stated that they were angry because his/her mother or his/her friend took his/her toy. The most common reason children feel angry is when they experience conflicts with their friends, such as sharing toys (Gür & Koçak, 2016). Taking children's toys from them causes them to feel angry, and the results are similar to the literature.

The study results are significant because they reveal that children recognize their basic emotions and can express them in detail through drawings. During the preschool education period, children may or may not always be able to express themselves by speaking. Evaluating alternatives other than verbal expression contributes to the complete and correct understanding of the child. This study reveals that drawing lets children express their basic emotions in detail.

According to the results of the study, we recommend the followings:

Other researchers can examine children's expressing their emotions through drawings based on their feelings of fear and disgust.

Preschool children in different age groups can be shown an event and a situation and asked to express their feelings by drawing.

Drawings in which preschool children express their basic emotions are recorded, and children can be asked to draw their emotions again when they start primary school. It can be evaluated whether age and education affect how emotions are expressed.

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