



## Analysing the Relationship between Critical Thinking Skills and Problem Behaviours of Children at Social Risk through Visual Arts Education \*

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### Abstract

In this study, it is aimed to analyze the relationship between critical thinking skills and problem behaviours of children at social risk through visual arts education. In this context, Mixed method including both quantitative and qualitative dimension was used. Convergent parallel design was used to structure the study. In dimension quantitative of research, one group pre-test-post-test model as one of the pre-experimental models was used by applying the retention test. In the scope of the qualitative dimension, holistic single case design was used as a design of case study. The study was carried out on a group of 54 people (27 females, 27 males) who are identified to be at risk. Quantitative data were collected using the Art Criticism Target Behaviour Scale (ACTBS) that consisted of twenty questions and developed by the researchers. Qualitative data were collected by in-class activities, self-assessment form and performance task developed in two phases including both children's drawing and critical dimension. According to the results; as critical thinking skills develop, the students follow a more sensitive and inquisitive development of behaviours, their prejudices decrease, they gain a positive point of view to establish cause-effect relationship, they develop the ability to control negative behaviours, so their consciousness and awareness increase regarding family, environmental and social fact. As a result, it is recommended that visual arts education should be used effectively in relation to other disciplines in the teaching-learning process.

### Keywords

Visual arts education  
Art criticism  
Critical thinking  
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Children at social risk

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## Introduction

A child is a creature which gets into interaction with its environment starting from the birth and continuously develops itself to be a good or bad human being through experiences. A child's family, social environment, economic and cultural setting as well education it receives are all important factors which determine its experiences and life ahead (Güngör, 2013). Today's widely accepted understanding is that there is an increasing violence and aggression tendencies in the streets and schools as well as a generation that does not tolerate each other, does not listen, does not question with a critical perspective, and taking negative behaviors as a model (Usta, 2008). Socioeconomic differences, classification based on the social structure, and some structural adjustment arising from race diversity have lead to ensue of the concept of risk as important challenges (Shamir & Korat, 2013). According to the Turkish Language Society (TLS, 1997, pp. 628); "the concept of risk is defined as the probability that any event that may lead to a damage or loss is likely to occur." Therefore, adaptation problems that arise due to the concept of risk are a developmental process based on social, familial and environmental factors and affecting the person's psychosocial health, school success, adaptation in transitions to educational stages, arising from the consequences of relations with family members and the environment of person (Hablemitoğlu & Yıldırım, 2009).

Social risk factors are generally evaluated based on the individual characteristics of the children, the favorable living standards provided by the parents to the children, way of favorable behaviour for personal and psychological development of children, and the environmental conditions that they live in (Hablemitoğlu & Yıldırım, 2009; Frankenburg, Emde, & Sullivan, 1985; Kararımak, 2006; Leseman, 2009; Webster-Stratton & Reid, 2012). Individual risk factors is defined as difficult personality characteristics such as low academic achievement of the person, negative relationships with peers, communication skills, social skills that prevent their personal and psychological development, extreme aggression tendency, introversion. Familial risk factors result from difficulties based on low socio-economical status of families, stressful life caused by these difficulties, poverty, limited education opportunities and unemployment apart from several reasons such as whether the child's parents are divorced or live in separate houses, and whether or not any of the mother or father, or both, are alive. As for environmental risk factors are evaluated as living in an environment of exhibit of acts violence, exposure to natural disasters such as migration or earthquakes, and poor home conditions (Leseman, 2009; Wolfe, as cited in Ammerman & Hersen, 1990). Therefore, the concept of social risk should be evaluated with an understanding of education aimed to reintroduce children to society with effective teaching methods and curriculum (Shamir & Korat, 2013).

The child follows a developmental process identifying oneself with them by acquiring moral values or behavioral patterns in the family environment physical, social, spiritual, and psychological needs in which they live intensively. The moral value judgments and behavioral tendencies developed in the family environment of the child get positively or negatively changed depending on their relationship with the peer groups at the school age (Şengün, 2007; Yağlı, 2013). Therefore, it is important for the child to be supported by some protective programs and to decrease the frequency of these negative effects because living conditions which are derive from the family and environment factors are determinative of negative situations that children may face in the future (Gizir, 2007; Yavuzer, 2011). It is known that children at social risk have problem of social adaptation and that less developed than other children of coping skills with the problems (Kaner, 2005). Therefore, reintroducing the children at social risk to society is required to teach what the appropriate behavior patterns are, to be sensitive to duties and responsibilities, and to ensure psychological, social and personality development of the children at social risk (Şengün, 2007). Otherwise, children may exhibit risky behaviors such as "problems with relationships with their peers, oppose, aggression, anxiety and depression, school failure" (Cullinan, as cited in Kaner, 2005).

It is necessary to ensure full compliance with the environment of such children and bring them into society through various educational programs which ensure compliance between their responses to the perceptual arrangements associated with the effect of cognitive processes and their personality development and which rearrange their all behaviours for activation of the harmonization process (Kaymaz, 2007). Karairmak (2006) recommends that national projects supporting the psychological, mental and social development are started in order to train children who are self-confident, critical thinking and develop empathy. It is thought that effective education programs for integrating into the society of children under social risk can be evaluated within the framework of multi-faceted understanding of the art. Then, a visual arts education program focusing on art criticism for development of critical thinking skills can be offered. In this way, the children's psychological, mental and social problems arising from the risk factors can be reduced. According to Ünver (2002), those who have taken critical discipline education have the skills to develop sensitive behaviours to not only works of art but also all social events. Therefore, critical discipline helps individuals realize and explain incidents with reasonable grounds, provide comments and judgement by producing solutions. One part of effective and efficient training is constituted by helping them think, guiding them to reality and helping them analyze the reality through various activities developing critical thinking rather than teaching them the reality. The activities can be planned with the aim of developing critical thinking skills in a way to help such children turn it into a lifestyle to seek their own rights. The first mission is undertaken by arts for guiding and analyzing of reality by children, and art is an important means of reflecting the lifestyle of civilized societies with all its reality (Gökaydın, 2002).

Art excites people by improving the human experience, and allows the individual to project oneself and the society by means of gaining of awareness regarding what and who to believe; also it puts forth perceptions regarding individual's feelings, thoughts and expectations, and it is interested in uniqueness of each individual, exaltation of the individual's existence and development of creative imagination (Michael, 1983). Visual arts education lays the foundation for smart, ethical and sensitive behaviours; and individuals learn to interpret the details which they portray as a reflection of their world such as dreams, nightmares, aspirations or wishes besides their frustrations and fears within social and cultural setting of each individual life (Efland, 2002). According to Lowenfeld (1957), individuals' perceptual, cognitive and emotional experiences should create a whole in a way to show a harmonious relationship with the outside world. In this process, the relationship between the individual's ability that leads to the inner world and the sensitivity towards the outside world becomes influential in discovering of a unique artistic expression through thoughts and feelings by the individual. This trend in children for discovery should be pursued with an effective learning environment in the right place and right time integrated with the outer world instead of blinding their tendency under the brutal impact of academic training (Eisner, 2002). According to the artistic approach based on free expression, teaching of visual arts is important for developing the social and emotional skills which will contribute to children's reflecting their inner world and helping them transform the models of right behaviours into behavioural outcomes (Yusufoff, 2012).

Critical thinking is an active and organized mental process aimed at adapting to the current conditions and questioning the relationships of these facts with one another, taking into account the feelings and thoughts of the individuals with which he or she is interacting (Rainbolt & Dwyer, 2012; Özden, 2008). In critical thinking, a person actively uses own intelligence, knowledge, and cognitive skills while criticizing events or situations. He/She solves the problems by taking decisions independently of others (Özden, 2008). Between the ages of 11 and 13, children search for an expressive way out in issues related to both themselves and the environment. However, after 13 years, they develop a critical attitude towards the work of themselves and others by reflecting the happenings through their own interpretation as a result of the rapid development and socialization during this period (Buyurgan & Buyurgan, 2012). Hence, arts education is extremely important for development of individuals' vocabulary and critical thinking skills by both critical and visual means. Perkins (1994) emphasizes that art criticism is one of the best tools available and used in the development of thinking skills for reasons such as "sensory interlock" and "quick and easy access". Individuals in the quick and easy access discuss

about sense of artwork and discover a way of expression by associating sensory information with their inner world while individuals in the sensory interlock focus on thinking and talking together. Art criticism is a versatile education area which balances the development of ideas with the frame of mind idealized in the imagination by means of an independent and impartial perspective from others, and which paves the way for creativity by eliminating the boundaries between the fantasy world and reality (Yetkin, 1968). Thus, it is thought that art criticism should be used effectively in learning-teaching process within a systematic structure that can be associated with daily life to achieve a well-balanced personality development by softening the truths filtered through reason with emotional expression of art and enriching the experiences in order to combine personal development with art.

Feldman, the first art educator to research how the quality of artwork can be discussed emphasizes the subjective art criticism method, which researches sense of artwork by focusing on a single work of art (Kırıçoğlu & Stokrocki, 1997; Özsoy & Alakuş, 2009; Yolcu, 2009). Art criticism, which is used to investigate the quality of an artwork with the questions and discussions that are made and to draw conclusions about sense of artwork, aims to develop critical thinking skills so that individuals can perform their own behavioral responses to events in their lives (Duron, Limbach, & Waugh, 2006; Özsoy & Alakuş, 2009). The aim of visual arts education is to educate individuals who understand importance of art in human life, evaluate artworks with a critical perspective, and exhibit a positive behavioral development that can be used in every field by adapting the intuitive thinking in the person's daily life. In addition to expressing art in a visual way, there is also a critical direction. Therefore, experts (Altinköprü, 2004; Buyurgan & Buyurgan, 2012; Paktuna Keskin, 2010; Yavuzer, 2010) use art as a way of therapy or knowledge acquisition for a balanced personalize as spiritual and psychological, in the resolution of children's adaptation problems or behaviors. Supporting the information obtained about the child through the picture in order to recognize the child's inner world leads to evaluation about events or people around of child (Yavuzer, 2010).

In this study, a visual arts education program was performed to children at social risk for associate intellectual and emotional structure of the work of art used in art criticism with their own lives. Thus, it was thought that visual arts education program can be useful for the children at social risk by developing critical thinking skills for the purpose of identifying problems which may be encountered in life and evaluating the causes and consequences of these problems. The artwork draw by "Dianne Dengel" is associated with the theme of "the picture of happiness" and is used to teach the children at social risk the benefits they can adapt to the development of critical thinking skills in the study. The performance project (critical dimension and children's paintings) used in the visual arts education and visual arts activities related to the target behaviors of the artwork was supported with the art criticism target behavior scale. They were used pre-and post-implementation for the analysis of the relationship between critical thinking skills and behaviors of children at social risk. In of research, it was questioned whether the development of critical thinking improved children's positive attitude towards risky behaviors and aimed to analyze through visual arts education of the relationship between critical thinking skills and problem behaviors of the children at social risk having education according to visual arts education model.

## Method

In studies of mixed method, It is used both quantitative and qualitative research methods together to diversify, combine and compare the collected data and contribute to better understanding of the research problem (Creswell & Garrett, 2008; Creswell & Plano Clark, 2014). The study was conducted through convergent parallel design; quantitative and qualitative data are collected together, analyzed separately, and the results are interpreted together (Creswell & Plano Clark, 2014). In the quantitative dimension of research, one group pre test-post test model as one of the pre-experimental models was used by applying the retention test. According to Can (2014, pp. 21), "for internal validity is create list of participants consist of people with similar personal characteristics and similar backgrounds with impartial appointment. The investigator collects evidence for external validity, observing all the individuals interested in the behaviors or characteristics. In the study, because the children at social risk were located in different classrooms, courses could not be taught by collecting students in a single class at certain times or outside of school hours. Therefore, as the limit of the research, the teaching process was carried out separately in each classrooms and the data obtained from the students who were determined to be only at risk were included in the study. Starting levels of groups could not be equalized experimental and control groups because of the difficulty of finding participants with similar personal characteristics and similar backgrounds, and different distribution in the classrooms. Therefore, the research was designed according to the one group pre test-post test model and supported with qualitative data to increase the reliability. Holistic single case design is used for study of distinctive events in case studies (Yıldırım & Şimşek, 2013). That's way, in the qualitative dimension of research; holistic single case design was used to examine the effect of visual arts education on behaviours of students at social risk in relation with their critical thinking skills, and to support the quantitative data.

### *Study Group*

According to Parsons (1994), in the age range of 9-12 years expressed as expressionism, individuals can evaluate art works with a broad perspective by associating with their own experiences rather than beautiful appearance of art works, realizing that artworks will not reflect directly. In the 11- to 12-year-olds, individuals have changes emotionally and physically, become aware of their personal reactions and can not remain indifferent to the events around the individual (Buyurgan & Buyurgan, 2012). From this point of view, the study was carried out with the 7th grade primary school students in the age range of 11-12 years from the population expressed as expressionism. According to the social risk factors determination criteria form, 61 students were reached in the study but seven students were not included in the study group for reasons such as lack of attendance, casually response to the applied scales and activities. The study was carried out with a total of 54 primary school 7th grade students (27 females, 27 males) participating voluntarily in an elementary school located in Rize city center and who are determined to be at social risk. All of the students participated in pre-test and post-test and all activities performed in this study. In the performance task, 50 students (26 females, 24 males) took part. According to Çepni (2007), the selection of purposeful sampling is inevitable in some special research studies on individuals with special circumstances. Due to the fact that the study group was composed of children at social risk, purposeful sampling was selected in dimension qualitative of the research (Creswell & Plano Clark, 2014). For identify the working group were interviewed with the counsellors working in primary schools in Rize and the social environment in which the schools was located and the evaluations made by the the counsellors on the students were considered. According to the social risk factors determination criteria form, probabilistic sample was selected to reach a large number of individuals who would represent the population in the quantitative dimension of the study. The study group selected for the qualitative dimension was also identified as the study group in the quantitative dimension as the number of children in the social risk group was large.

For the students who marked one or more option in the social risk factors determination criteria form, risk status was displayed in Table 1.

**Table 1. Social Risk Factors Exposed by Children at Social Risk**

Social Risk Factors		Gender				Total	
		Female		Male			
		f	%	f	%	f	%
Individual	Low academic achievement	5	22,73	16	55,17	21	41,18
	Excessive Tendency to Violence	5	22,73	10	34,48	15	29,41
	Health problem	4	18,18	2	6,90	6	11,76
	Introversion	6	27,27	-	-	6	11,76
	Extreme lying	2	9,09	1	3,45	3	5,88
Total		22	100	29	100	51	100
Environmental	Financial difficulties	6	46,15	4	25,00	10	34,48
	Migration from other cities	4	30,77	2	12,50	6	20,69
	Violence and theft in the living environment	3	23,08	3	18,75	6	20,69
	Labour outside school hours	-	-	3	18,75	3	10,34
	Staying in dorms	-	-	2	12,50	2	6,90
	Friends using alcohol	-	-	1	6,25	1	3,45
	Exposure to natural disasters (earthquake)	-	-	1	6,25	1	3,45
Total		13	100	16	100	29	100
Family	Exposed to parent violence	1	11,11	4	50,00	5	29,41
	Mother dead	2	22,22	1	12,5	3	17,65
	Father dead	2	22,22	1	12,5	3	17,65
	Parents apart	3	33,33	-	-	3	17,65
	Step mother	1	11,11	1	12,5	2	11,76
	Divorced parents	-	-	1	12,5	1	5,88
Total		9	100	8	100	17	100

As shown in Table 1, most of the individual risk factors threatening students emerge as a result of lower levels of academic achievement (41,18%), and males have a lower academic achievement level than females. Moreover, it is seen that 29,41% of the respondents display extremely aggressive behaviours (such as beating, slapping, pull somebody's ears, yelling, hitting with some tools, punching, pull one's hair, swearing, humiliating, not respecting the thoughts of others) males showing a higher level of aggressive behaviours than females. Under the environmental risk factors, it is observed that 34,48% of the students are face to face with "financial difficulties". Apart from that, it is considered a remarkable risk factor that 20,69% of all participants witness violence and theft in their neighbourhood, they are discouraged from pursuing a free life and they might adapt negative behaviours by modelling. Indeed, for a male student, to have friends who use alcohol is an indicator of possible negative effects of environmental risk factors. As for family-related risk factors, it is understood that males are exposed to violence by mother or father more than females. When this case is associate to lower academic success and excessive tendency to violence it is considered that such exposure to violence in family might affect children's relationships with the social environment. Therefore, children might adapt violence as a behavioural pattern in time. Miller (2000) considers violence as a learnt behaviour and describes this learning process as orientation to violence or socialization towards violence. He states that violence becomes the norm as a result of exposure to or witnessing violence during the "being rude" phase, the first stage of learning the violence.

#### **Data Collection Tools**

**Social Risk Factors Determination Criteria Form:** The risk status of the students was determined using the social risk factors determination criteria form. Compliance problems arising from social risk result from problems such as the risk of living conditions, substance dependence, migration, delinquency and turning into crime, working, neglecting, abandonment, health problems, divorce of parents or separating life of parents, not surviving of parents, lack of self-confidence, exposing violence

or turning violence, in addition to the educational performance of the person (Kırımsoy et al., 2013; Kaner, 2005). These features were taken into consideration for developing the social risk factors determination criteria form used in the research. A form consisting of twenty items was formed by taking the expert opinion for identifying the social risk factors of children. The social risk factors determination criteria form were used for identifying risk factors such as parents' togetherness, labour out of school hours, happening violence and theft in the environment which children live , migration from another city, tendency to aggression of children. The reliability of the information obtained from the social risk factors determination criteria form was supported by the opinions of the classroom teachers, counsellors and other subject teachers. Risk status of the students were identified by taking into consideration the information given by the teachers regarding the risk factors such as health problems of students, introversion, financial difficulties, excessive tell lies and excessive tendency to violence.

**Art Criticism Target Behaviour Scale (ACTBS):** In the study, quantitative data were collected using the Art Criticism Target Behaviour Scale (ACTBS) which was developed by researchers to identify the changes in between critical thinking skills and behaviours of children at social risk in the course of time. The scale was developed as a 4-item rating scale ranging from "Completely sufficient (4)", "quite sufficient (3)", "slightly sufficient (2)" and "not sufficient at all (1)". For construct validity of the scale, a pilot study was conducted on a group of 116 students. The scale was collected under four factors and (KMO) coefficient was found to be 0.906. Factor loads of the scale items were found to range between .520 and .813; and item-total correlation values between .476 and .642. The variance rate explained by four factors was calculated as 57,429%. The ACTBS consisting of twenty items yielded the Cronbach's Alpha internal consistency coefficient of, 916. Reliability of the four sub-factors in the scale were found as "providing a perspective (6 items) ,813"; "establishing cause-effect relationship (6 items) ,824"; "producing solutions (4 items) ,792" and "interpretation (4 items) ,725". Also confirmatory factor analysis (CFA) was applied to test the four-factor structure of the scale. Compliance values of the scale were calculated as  $\chi^2/sd (183.294/164)=1.118$  ( $p$  value=0.144), CFI=0.976, TLI=0.972, RMSEA=0.032, SRMR= 0, 0545. These fit indices indicate that the model yields a good level of compliance and ACTBS is verified as a model (Barrett, 2007; Kline, as cited in Çokluk, Şekercioğlu, & Büyüköztürk, 2012; Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999; McDonald & Ho, 2002; Schermelleh-Engel, Moosbrugger, & Müller, 2003). The path diagram for the scale is shown in Figure 1.

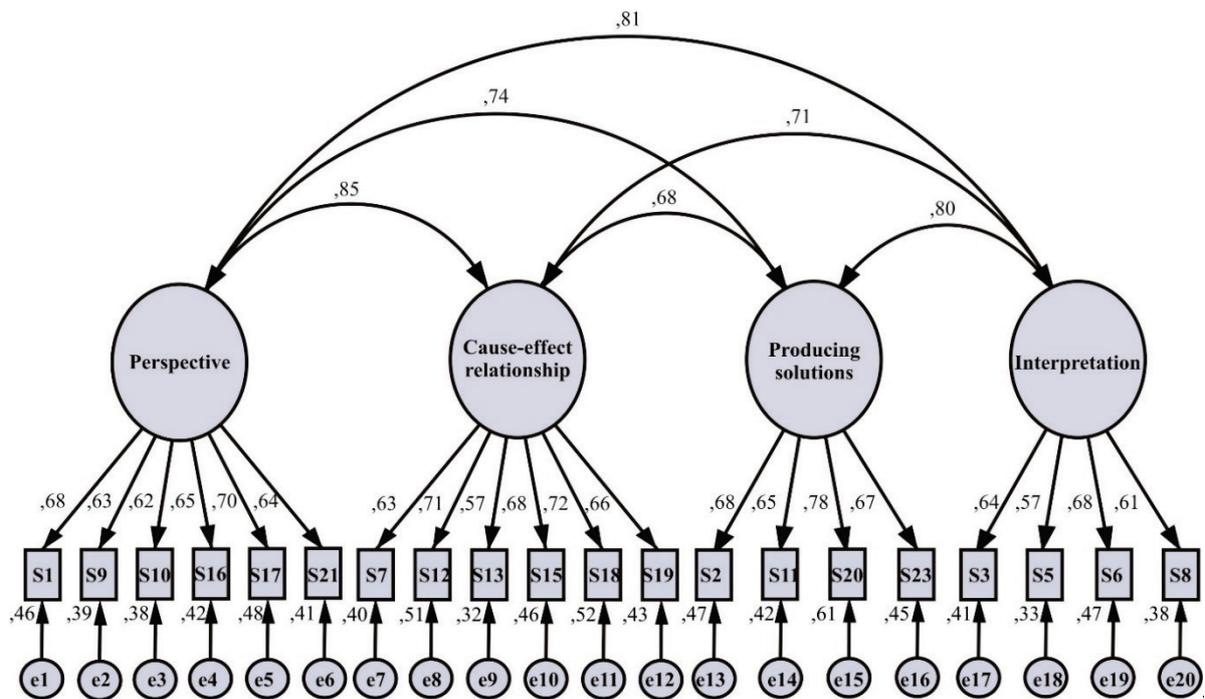


Figure 1. Path diagram of the art criticism target behaviour scale

**Lesson Plans and Activities:** For teaching of the outcomes which can be achieved through development in critical thinking skills of students, activities were developed under headings of “what I want to point out”, “providing a perspective”, “drawing a conclusion” and “If I were in their shoes”. In the developed activities The children gived information about the consequences that can be deduced from the message that the artwork wanted to give, the factors that could cause the events described in the work of art, and what they would do if they encountered such a situation. First, a pilot study was implemented for a group of 18 students. Lecture was given to the participants during the pilot study. Then, an assessment was carried out to see if students could comprehend the topics covered and associate them with everyday life in relation with time, content and relevant target behaviours. The content of the lesson plans and phrasing in the activities were rearranged in the light of the pilot study results. A total of 23 works of art of artists such as Dianne Dengel, Edvard Munch, Fikret Mualla Saygi and Salvador Dali were selected. They were evaluated by three arts education and two psychological counseling and guidance domain experts in terms of their suitability for psychological and artistic development of children at social risk. Of the 23 works of art, 4 were selected by considering the contribution of psychological and artistic development of children to critical thinking and development of behavior. The pilot sampling consisting of 18 students were trained art criticism. According to this training, it was thought that the artwork painted by "Dianne Dengel", which relates to the concepts of happiness and family, which increases the motivation of children towards lessons and activities, which enables the expression of inner worlds of children, lead to a positive attitude towards negativity, should be used by associating with the theme of "picture of happiness".

In practice studies on the actual sample, the students thought about the content of the artwork through art criticism with a story ([YasamdanKucukhikayeler.blogspot.com/2013/12/evim.html](http://YasamdanKucukhikayeler.blogspot.com/2013/12/evim.html)) that explains the intellectual and emotional dimension of the work of art. The questions such as “What do you see in this picture?”, “What do you think is the most impressive element in this picture?”, “Do you think this work has an emotional (spiritual) aspect?” (Artut, 2007; Yilmaz, 2010) were asked for students. The students assessed by relationship between family ties and communication with spiritual aspect of the work of art focusing on the expression of happiness on the faces of the family members painted in poverty and negative living conditions. The lesson plans and activities were adapted to the students at social risk in connection with critical thinking skills in a way to cover each of the target behaviours. The plans and activities were arranged to be implemented through nine hours of lesson.

**Performance Task:** The performance task comprised of two parts as “drawing” and “critical dimension” arranged in relation with themes of happiness/unhappiness. The task consisted of four parts as defining, task, instructions and method of scoring (Kutlu, Doğan, & Karakaya, 2010). In “drawing” including part one of the performance task, the students were asked to conceptualize an event that makes them to be happy or unhappy, and then to convert this concept into a pictorial expression related to their own lives, using their imagination. In “critical dimension” including second part of the performance task, the students were asked to assess their point in their drawing from a critical perspective and relate it with its contribution to their behaviours. To this end, the students were administered a questionnaire in the classroom. The questionnaire, which consisted of seven open-ended questions, was used for analyzing qualitatively the effect of development of critical thinking skills on behaviours of the students. The students’ responses were scored using the analytical rubric developed by researchers in this study. The rubric was comprised of six sub-scales as theme, goal, perspective, cause-effect relationship, drawing a conclusion and producing a solution. The sub-scales of the rubric were evaluated equally out of ten points as they require high-level abilities and creativity including the steps of analysis and synthesis in Bloom’s cognitive taxonomy. As a result, they were rated as at preliminary level (1), acceptable (2), quite good (3), and really good (4) (Baştürk & Taştepe, 2014; Kutlu, Karakaya, & Doğan, 2008). Critical performance levels of students were scored by three different art educators, and consistency of the assessments was calculated with the Kendall’s coefficient of concordance (W) (Can, 2014). The coefficients of concordance among independent assessments conducted by three art education experts at different times was calculated as, 943 ( $p < 0.01$ ).

**Self-Assessment Form:** In order to determine learning levels of students and the extent at which they could acquire the target behaviours whereby they can associate the activities with everyday life, a self-assessment form was used. The form developed by researchers consisted of two open-ended questions.

#### *Analysis of Data*

For quantitative data, compliance of the scores with the normal distribution was determined by checking the skewness-curtosis, normal distribution curves drawn with histograms and Kolmogorov-Smirnov (K-S) test values (Büyüköztürk, 2013; Seer, 2013). Consequently, for overall scale and all sub-scales, skewness in the data set was found to be in the range of (-,167/,785) and curtosis to be (-1,021/-.144)  $\pm 2$ , and the normal distribution values checked with histograms did not show extreme deviations from normality (Erođlu, 2010). As a result, it was found out that the scores calculated for the ACTBS and its sub-scales show normal distribution, and parametric analysis techniques were used accordingly. Significance level of the difference was checked by examining the one way ANOVA results for repeated measures. To find out the variables causing the difference, the “Bonferroni test” was conducted.

Qualitative study data were subjected to content analysis (Şahin, 2010; Yıldırım & Şimşek, 2013). First, open coding was made on views of the students at social risk, and meaningful sections representing a sentence or a paragraph were coded (Elo & Kyngas, 2008; Büyüköztürk, Çakmak, Akgün, Karadeniz, & Demirel, 2008). The students’ responses associated and similar to each other under different questions were collected and arranged (Duncan, 1989; Yıldırım & Şimşek, 2013). Then, “thematic coding” was performed based on the codes obtained at previous stage. The codes were grouped according to meaning and relevance to find out the common points, and new themes were created to explain such similarities, and the codes in the same group were combined under related themes. In the case of a high number of themes, another overcoding was made to exhibit the sub-themes, and the data set was analyzed for several times more in order to check whether the codes under themes create a meaningful body (Elo & Kyngas, 2008; Yıldırım & Şimşek, 2013). At the third stage, the data were arranged so as to explain the data set meaningfully with resulting themes. In order to ensure effectiveness and the clarity of the data set, the tables were simplified and presented by indicating the relationship between obtained themes and sub-themes (Yıldırım & Şimşek, 2013). The study data were analyzed in an unprejudiced and transparent way. During interpretation of the data, the themes were used by giving frequency, supported with students’ views and the views which were considered important were expressed explicitly and interpreted (Yıldırım & Şimşek, 2013).

## Results

### *Results Obtained from Analysis of Quantitative Data*

Changes in critical thinking skills of children at social risk through art criticism that linked with targeted behaviours in the ACTBS were compared with scores of pre and post tests. Descriptive statistics for overall scale and sub-scales are given in Table 2.

**Table 2.** Descriptive statistics from overall scale and sub-scales of ACTBS

Scale and Sub-Scales	Measurement	N	$\bar{X}$	SS
Overall Scale	Pre-Test	54	44,24	12,09
	Post-Test	54	58,98	12,96
	Retention Test	54	58,63	14,88
Sub-scale of Perspective	Pre-Test	54	13,65	4,16
	Post-Test	54	17,85	4,60
	Retention Test	54	17,63	4,66
Sub-scale of Cause-Effect Relation	Pre-Test	54	13,19	3,97
	Post-Test	54	17,85	4,03
	Retention Test	54	17,43	4,69
Sub-scale of Producing Solution	Pre-Test	54	8,26	2,50
	Post-Test	54	11,39	2,79
	Retention Test	54	11,70	3,23
Sub-scale of Interpretation	Pre-Test	54	9,15	2,78
	Post-Test	54	11,89	2,85
	Retention Test	54	11,87	3,06

It is seen in Table 2 that average pre-test scores obtained from the overall ACTBS and all sub-scales are lower than average scores in post-test and retention test. Significance level of the difference was checked by examining the one way ANOVA results for repeated measures and displayed in Table 3.

**Table 3.** One Way ANOVA results for repeated measures from overall scale and sub-scales of ACTBS

Scale and Sub-Scales	Source of Variance	Sum of Squares	Sd	Mean Square	F	p	Significant Difference
Overall Scale	Inter-Subject	17687,605	53	333,728			
	Measurement	7640,160	2	3820,080	37,851	,000*	2-1, 3-1
	Error	10697,840	106	100,923			
	Total	36025,605	161				
Sub-scale of Perspective	Inter-Subject	1669,364	53	31,497			
	Measurement	604,309	2	302,154	21,039	,000*	2-1, 3-1
	Error	1522,358	106	14,362			
	Total	3796,031	161				
Sub-scale of Cause-Effect Relation	Inter-Subject	1709,809	53	32,261			
	Measurement	718,975	2	359,488	33,125	,000*	2-1, 3-1
	Error	1150,358	106	10,852			
	Total	3579,142	161				
Sub-scale of Producing Solution	Inter-Subject	803,438	53	15,159			
	Measurement	391,642	2	195,821	42,101	,000*	2-1, 3-1
	Error	493,025	106	4,651			
	Total	1688,105	161				
Sub-scale of Interpretation	Inter-Subject	834,179	53	15,739			
	Measurement	268,605	2	134,302	28,243	,000*	2-1, 3-1
	Error	504,062	106	4,755			
	Total	1606,846	161				

According to the values in Table 3,  $F(2,106)= 37,851$ ,  $p<.001$  in, there is significant difference between average scores of the variables above. To find out the variables causing the difference, the “Bonferroni test” was conducted. It was seen that the children at social risk could increase their information level in pre-test (1) in post-test (2) and retention test (3). On the other hand, the difference between scores obtained from post-test (2) and retention test (3) is not significant. It shows that measurement of students’ acquired target behaviours in art criticism did not differ in subsequent retention tests. It implies that skills acquired through art education remained after the implementation, too, indicating permanent learning. This suggests that children at social risk displayed a positive developmental process in target behaviours acquired through art criticism in visual arts education to adapt to their everyday life. In particular context of the ACTBS sub-scales, it can be said suggested that children at social risk can establish relationship between acquired knowledge and their everyday life departing from intellectual and emotional aspects of the artwork. Further, they can resolve problems of themselves or others with the help of art and displays a behavioural development which could be adapted to their everyday life.

#### **Results Obtained from Analysis of Qualitative Data**

To investigate skills of children at social risk in transferring critical thinking skills into their behaviours in everyday life; the data collected from in-class activities, self-assessment form, and both drawing and critical parts of the performance task were analyzed with content analysis. Obtained themes referring to happiness and unhappiness in students’ drawings are given in Table 4.

**Table 4.** Distribution of Children at Social Risk by “Selection of Happiness/Unhappiness” in Their Drawings

<b>Happiness</b>	<b>Unhappiness</b>
<b>Theme of Achieving Happiness</b>	<b>Theme of Awareness</b>
<i>Being Strong is Beautiful (F3)</i>	<i>Less talk, more work (M4)</i>
<i>One Book One Lives (F5)</i>	<i>One organ donation for one life (F6)</i>
<i>My World (F7)</i>	<i>Every child is special (M10)</i>
<i>Freedom (F11)</i>	<i>Don't laugh at the other kids, it will happened to you (F14)</i>
<i>Not Being Hopeless (F16)</i>	<i>Environmental pollution (F18)</i>
<i>Colorful Autumn (F20)</i>	<i>Smokeless lives, comfortable brains (M20)</i>
<i>Let All Ways We Go Lead to Happiness (F23)</i>	<i>Environment (F22)</i>
<b>Theme of Unity and Togetherness</b>	<b>Theme of Violence</b>
<i>Subtlety of Life (M2)</i>	<i>What do children have to blame? (M8)</i>
<i>Unification of Loves (M17)</i>	<i>Peaceful lives, colourful thoughts (F9)</i>
<i>Another Beautiful Day (F25)</i>	<i>Newly-weds (M21)</i>
<i>Power of Solidarity (F26)</i>	<i>You're in jail now, worth your slap? (M24)</i>
	<i>Sniveling Fadime (M26)</i>
	<i>It's men who deserve beating (M27)</i>
<b>Theme of Nature Conservation</b>	<b>Theme of Injustice</b>
<i>The Scene on the Wall (M3)</i>	<i>Two sides of the balance (F4)</i>
<i>Let's not Lose the Green (M5)</i>	<i>Injustice can never bring happiness (M7)</i>
<i>Clean Environment, Clean Life (F10)</i>	<i>Don't you see me? (F8)</i>
<i>Clean World, Clean Environment (F12)</i>	<i>Never underestimate ladies, glorify them! (F15)</i>
	<i>Rich girl, poor boy (M18)</i>

**Table 4.** Continue

<b>Theme of Playground</b>	<b>Theme of Death</b>
<i>Children's World (M9)</i>	<i>Importance of traffic (M13)</i>
<i>Leave Children a World (M11, M12, M14)</i>	<i>Disaster of Soma 302 (M15)</i>
	<i>Family resembles a body (F17)</i>
	<i>Importance of people in Soma (M22)</i>
	<i>About Soma (M23)</i>
	<b>Theme of Loneliness</b>
	<i>Broken Hearts, Lonely Lives (F2)</i>
	<i>Wrong friendship, lonely people (F13)</i>
	<i>Loneliness Symphony (F19)</i>
	<i>Loneliness is such a thing (M19)</i>
	<i>Dark world (F21)</i>
	<b>Theme of Hypocrisy</b>
	<i>The face in the mask (F1)</i>
	<i>One thousand cubes in one cube (M6)</i>
	<i>Hypocrisy (F27)</i>

Table 4 shows that the children at social risk consider and call their drawings of everyday life events which make them happy or unhappy from a critical and visual perspective in relation with individual, social and environmental factors. Examination of their drawings in relation to the themes reveals that they assess the violence against women, injustice at individual or social level, and social happenings resulting in death from a critical point of view, and express their aspiration for a happy world where people live in unity and solidarity by drawing unhappiness. Moreover, the themes derived from this study demonstrate that visual arts education, with the emotional development it brings to individuals, can be used as an effective learning, problem statement and problem solution area for individuals to gain positive target behaviours which they can adapt to their everyday life by making assessments about nature of some negative behaviour patterns they see in community life. Thus, it can be suggested that as critical thinking skills develop, individuals' perspective regarding happenings in their environment or everyday life improve, too. In addition, awareness of critical people increases regarding social happenings.

**Table 5.** Distribution of Children at Social Risk by Indicators of Happiness/Unhappiness in their Drawings

<b>Happiness</b>	<b>Unhappiness</b>
<b>Visual Indicators for Family</b>	<b>Visual Indicators for Death</b>
<b>Indicator... Indicated (frequency)</b>	<b>Indicator... Indicated (frequency)</b>
Child... Expectations met (11)	Death... Making life difficult (4)
Home... Sweet home (5)	Miner... Life safety (3)
Window... Path opening to life (5)	Coffin... Indicator of death (2)
Rainbow... Colors of Life (2)	Family Cemetery... Staying alone (1)
Woman... Symbol of solidarity (1)	Car Accident ... Disobedience to rules (1)
Umbrella... Protection from evil (1)	
<b>Visual Indicators for Human Life</b>	<b>Visual Indicators for Violence</b>
<b>Indicator... Indicated</b>	<b>Indicator... Indicated</b>
Tree... Rebirth of human (6)	Child... Piggy in the middle (10)
Heart... Perspective on Life (4)	Tear... Symbol of Sorrow(7)
Playground... fun (4)	Woman... Exposed to violence (3)
Karate Player... Symbol of strength (1)	...Her death destroys the family (1)
Flying Balloon... Freedom of thought (1)	...Unvalued(1)
Flying Carpet ... Symbol of freedom (1)	Cloud... Pessimistic thoughts (3)
Path... Symbol of Time (1)	Lightning... Fight (2)
Shepherd... Our choices in life (1)	War... Social Wound (1)
Sheep... Woman managing the community/Managed man (1)	Weapon... Fight (1)
<b>Visual Indicators for the Nature</b>	<b>Visual Indicators for Human Health</b>
<b>Indicator... Indicated</b>	<b>Indicator... Indicated</b>
Landscape... A happy life (2)	Ill... Symbol of helplessness (3)
Picnic... Nature conservation (2)	Brain... Damaged (2)
Village Life... A happy and peaceful life (1)	Cigarette... Damaging (1)
	<b>Visual Indicators for Spiritual Feelings Feelings</b>
	<b>Indicator... Indicated</b>
	Clown... Hiding the real feeling (1)
	Ice-cream... People's mood (1)
	Sunset... Elapsed time (1)
	Human Shadow... Confronting with oneself (1)
	Cliff... Loneliness (1)
	<b>Other</b>
	<b>Indicator... Indicated</b>
	Rubbish... Polluting the environment (2)
	Balance... Symbol of justice (2)
	Telephone... Communication (1)
	Chain... Making it difficult to step into life (1)

In Table 5, the symbols used by children at social risk to represent happiness and unhappiness were assessed considering the formal expression level (indicator) regarding physical presence of visual indicator (drawings) and the content of the mental concept associated with indicator (indicated) (Günay, 2008). Examination of Table 5 shows that some students (f=11) figured a "child" whose expectations regarding socio-economic and socio-cultural life standards are to represent happiness. Some students (f=10) figured happiness with a "child" as it becomes the most upset in fights and wars between families, societies and countries. On the other side, it is seen that "woman" was figured as a token of solidarity within family in the context of happiness. However, the same concept was figured as an individual who

is unvalued, exposed to violence and whose death destroys the whole family in the context of representation of unhappiness.

As one examines the drawings depicting human life, it can be seen that some of the students (f=6) expressed their feelings and thoughts through a “tree” as a reference to rebirth in relation with struggling with troubles, diseases and challenges faced in life. In addition, some students (f=4) drew a “human’s heart” to illustrate happiness from a point of view which is influential in turning adversities in life into a positive attitude. This can imply the students’ belief that factors bringing happiness might be shaped by a positive point of view. Apart from that, one student (F7) portrayed women as a “shepherd” who is in rule in her drawing implying that the society should be ruled by women. It suggests that worthless social position of women is symbolized with a shepherd with an underlying praise for women as an important value with higher managerial skills that is capable of maintaining balance, communication and unity and solidarity among those under their rule. At the same time, men is portrayed as a “sheep” under rule, which might refer to the idea that women can make much better rulers than men due to their both ideas and way of thinking. This finding also reveals that mental and visual expression enhances critical thinking skills and art criticism can be influential on the development.

As visual representations of spiritual items are examined, one student (M6) is seen to depicted people’s emotional reactions in different moods with ice-cream balls in different colors. This suggests that visual arts education classess given by visual means has an important positive role on visual perception, thus it can be used as an effective learning area by students in discovering an expressive way by which they can express visual concepts mentally. Something else is that the student coded as F19 drew a stiff as a symbol of loneliness since she feels lonely due to her negative contact with her friends. Also it is understood from the drawing of sunset that the student sees her feelings connected with that concept are waste of time. In the study, visual arts education was provided to allow students to assess with a critical perspective a number of concepts concerning various figures, objects or entities in the nature. According to Table 5, it can be said that the visual arts education program could provide considerable contribution to developing imagination and creativity of children at social risk. Similarly, it is inferred from the table that the students attribute different concepts to different emotions through visual arts practices and they discovered a visual and critical way of expression which can be linked with their everyday life in this way.

**Table 6.** Relationship between Critical Thinking Skills and Behaviours of Children at Social Risk

<b>Family-Related Behavioural Attainments</b>	<b>Course-Related Behavioural Attainments</b>
<b>Coping with Financial Difficulties</b>	<b>Artistic Development</b>
<i>Money-happiness relationship (16)</i>	<i>Expression of ideas as artistic (21)</i>
<i>Breadwinning (13)</i>	<i>Realizing one’s own point of view (5)</i>
<i>Being sparing (11)</i>	<b>Associating with Other Courses</b>
<i>Being content what one has (4)</i>	<i>Criticisizing topics (10)</i>
<b>Unity and Togetherness</b>	<i>Increased respect for courses (4)</i>
<i>Standing up to difficulties (14)</i>	<i>Expressing Views (2)</i>
<i>Solidarity in family (11)</i>	<i>Finding it not difficult (1)</i>
<i>Sense of protection (8)</i>	<b>Course Participation</b>
<i>Family bond (4)</i>	<i>Rising of ideas (6)</i>
<b>Intra-family Communication</b>	<i>Ability to respond (4)</i>
<i>Conversation (10)</i>	<i>Learning to listen (2)</i>
<i>Maintaining peace (9)</i>	<i>Habit of learning together(1)</i>
<i>Feeling of mutual confidence (9)</i>	
<i>Relations between parents (4)</i>	

Table 6. Continue

Behavioural Attainments regarding Solution of Problems	Behavioural Attainments regarding Point of View
<b>Overcoming Unhappiness</b>	<b>Positive Thinking</b>
<i>Wholehearted belief in happiness (16)</i>	<i>Approaching to people with love (19)</i>
<i>Begining every work with faith (4)</i>	<i>Approaching to people with respect (17)</i>
<i>Maintaining dreams in spite of lack of money (3)</i>	<i>Being happy from poverty (6)</i>
<i>Not being hypocritical (3)</i>	<i>Feeling of fraternity (3)</i>
<i>Looking at life with colourful thoughts (2)</i>	<i>Being kind (1)</i>
<i>Enjoying oneself (1)</i>	<i>Being tolerant (1)</i>
<i>Making shared decisions (1)</i>	<i>Being patient (1)</i>
<i>Not avoiding apologizing (1)</i>	<i>Distingusihing between right and wrong (1)</i>
<i>Putting an end to resentment (1)</i>	<i>Putting an end to resentment (1)</i>
<i>Not living alone (1)</i>	<b>Showing Empathy</b>
<i>Moving with our own thoughts (1)</i>	<i>Blunting negative behaviours (9)</i>
<b>Coping with Difficulties</b>	<i>Absorb diseases (5)</i>
<i>Maintaining happiness, love and peace (8)</i>	<i>Giving value (2)</i>
<i>Not losing one's hope (6)</i>	<b>Behavioural Attainments regarding Personality Development</b>
<i>Producing solutions for shortcomings (2)</i>	<i>Benevolence (10)</i>
<i>Guiding tomorrow by looking at yesterday (2)</i>	<i>Responsibility (9)</i>
<i>Staying strong (2)</i>	<i>Suppressing violence (9)</i>
<i>Seeking one's right (2)</i>	<i>Awareness of nature conservation (8)</i>
	<i>Being fair (4)</i>
	<i>Realizing bad habits (3)</i>

Table 6 displays behavioural attainments whereby students at social risk associate their developing critical thinking skills with their everyday life as a result of the art criticism program implemented through visual arts education. Examination of "Family-related behavioural outcomes" reveals that majority of the students think that happiness is more important than money in family and family members need to simplify their lives by maintaining happiness even despite the lack of money. The participant F27 stated that she learnt during in-class activities that poverty does not mean unhappiness and happiness cannot be compared to poverty. Another student (F17) indicated that she gained consciousness that happiness is more important than money by saying "...I always wanted money... but everything is about happiness". In addition, the children pointed out that they could associate the emotional point of the artwork with their everyday life; so they gained consciousness for not insisting on their parents' buying things they cannot afford and they need to spend more sparingly. In this connection, the participant F4 stated "...some ask their families for many things and if their families do not buy them, they resent and act in a huff. One of them is me. I will never insist for everything". Another student (F7) said "...sometimes when I go home, I think of what I've done in this lesson. In fact, I decided like this: I must appreciate and value what I have. You helped me a lot through this lesson".

Most of the students said that they could gain awareness concerning family communication thanks to the activities carried out in that lesson. In this scope, they noted the importance of intra-family communication in solution of problems faced within family and the problems can be resolved by through conversation or smoothing the reactions against sudden outflows. For instance, participant F9 noted that she faces sudden outflows in her family from time to time, but she emphasizes with the family in the artwork, so she is trying to improve herself as a result of the activities carried out in this lesson. This is an indication that individuals capable of critical thinking improve emotionally resulting in developing the ability to communicate effectively. As another example, F19 stated that she did not converse much with family members before, but she has improved her relations with them after transferring the lessons learnt from the artwork to her life. Similarly, M4 said that family members can

better express themselves if they talk less and produce more solutions rather than talking a lot and ineffectively. She also emphasized that she realized the importance of communication due to the training she received in this study. In addition, respondent F26 said “...I’m an introvert person. I don’t talk much to my father, mother or sister. I usually listen to music and read books in my bedroom. If I become more talkative, perhaps I can overcome the coldness between me and my family”. The explanation indicates that the visual arts training implemented helped her realize the importance of intra-family communication for mutual understanding between family members and strengthening the emotional bond among them.

The behavioural outcomes listed in Table 6 indicate consensus among respondents that life will be more beautiful with love and respect for people and these concepts smooth perspectives on life. Likewise, the vast majority of the students pointed out that they learnt that living standards that might overcome adverse effects of financial restrictions on human life can be only achieved with positive thinking. In this connection, F2 pointed out that she could associate the artistic activities carried out with her inner world and her everyday life, thus she ended resentment and disappointment in her inner world. Similarly, the student with code F27 stated that she realized that that people should not be approached with prejudice while expressing feelings, instead they should be approached with tolerance and the communication should be maintained along with respect. She stressed that she realized the importance of positive thinking in human beings’ life. She said if she expresses her feelings towards others nicely without being impolite, both sides can be more pleased. This can be due to critical thinking individuals’ controlling their own behaviours in communication and taking a more rational approach to events. Thus, it could be suggested that as critical thinking skills improve, the ability to control negative behaviours improves.

When the theme of “Blunting negative behaviours” is examined, the students at social risk ( $f=9$ ) seem to have gained the ability to notice unwanted effects of their negative acts on others so they followed a path towards positive behavioural changes. In this regard, F6 stressed that she learnt to empathize with others by saying “if I treated someone in an annoying way and s/he did the same to me, how would I feel”. F20 and F23 said they are now trying to look at people from the bright side to be happy. In particular, F23 indicated the positive change in her perspective by saying “My perspective towards people has become more tolerant. Now I can find ways of solution because drawing helped me”. Under the sub-theme of “Taking diseases for granted”, it is seen that some of the participants ( $f=5$ ) became more conscious about diseases experienced by people, particularly by children, and they ended negative behaviours towards such children as a result of the visual arts training received. In this regard, K14 said “I used to look pityingly when I see children with leukemia. Now I will not do such things. I will try now to understand children with leukemia because one day I can be like them”.

In Table 6, as one examines the theme of overcoming unhappiness under the heading “behavioural outcomes regarding solution of problems”, consensus is seen among most participants that they can lead a happier life if they believe in happiness wholeheartedly. Something else is that some of the students ( $f=4$ ) pointed out that problems can be solved by beginning every work with faith and by maintaining their dreams in spite of lack of money ( $f=3$ ). In this respect, a student (F23) said “My perspective towards people has become more tolerant. We shall begin every work with faith, we shall be happy and peaceful”, indicating that she learnt that every work begun in faith will result in success. The respondent F2 pointed out that resentment causes unhappiness for both individuals and communities, and used the metaphors of loneliness and darkness for resentment. Her comments in this regard were as follows: “I gave an end to resentment and disappointment in my inner world. The theme of my drawing is resentment, namely unhappiness. Still, I felt happy because this drawing told people how bad resentment is”. In this way, she emphasized that putting an end to resentment is an effective way of problem solving for overcoming unhappiness and referred to the benefit she obtained from the visual arts education program for settling resentment in her inner world.

In relation with the theme of “coping with difficulties” under behavioural patterns for solution of problems, it is seen that the visual arts education program implemented through art criticism made significant contribution to students’ critical thinking skills. In addition to that, it is seen that the students could adapt art criticism to their everyday life and put such skills into practice effectively for solution of problems. In this regard, it seems that some participants ( $f=8$ ) gained awareness to maintain happiness, love and peace in face of difficulties. Some other participants ( $f=6$ ) explained that struggling with difficulties without losing hope brings human beings closer to life and causes human beings to believe more deeply and embrace the spiritual values they develop. In this connection, F4 reported her views as following: *“We should never give up whatever happens to us... We should cling to what we’ve done and what we’ll do. We should continue without giving up so as to reach the target we want”*. Also F19 mentioned that she gained consciousness that one can offer solutions for her current shortcomings and turn them into values instead of being upset about them. To this end, she noted as following: *“It is important to produce solution and be happy even in desperation case or helplessness. If you lack or miss something, you should produce solution for it”*.

In Table 6, in particular relation to the sub-theme of putting ideas into arts under the heading “course-related behavioural outcomes” and artistic development, it is seen that the artistic activities in the classroom as well as the criticism method enhanced students’ ability to express their thoughts and feelings in artistic terms. The table also suggests that some of the students could notice their own point of view thanks to the activities carried out and they could adapt it to their everyday life ultimately displaying a practical behavioural change. For example, the participant F14 pointed out that various activities carried out during lesson, review and criticism methods enhanced her point of view and helped her gain the skill of producing solutions. The respondent added that she would continuously improve her behaviours acquired through the classroom activities by putting forth her perspective on events. Apart from that, some of the students noted that they would transfer newly learnt knowledge to other courses than visual arts so that they can deal those subjects critically. In this regard, one participant (F1) said *“I learnt to criticize and narrate the topic. From now on, I will make comments on every lesson topic by criticizing”*. The participant F27 said *“I learnt that a lesson can be taken from this picture, and we can simulate what we’ve learnt with difficulties or easiness in our own life or in other courses”*.

The students F2 and F3 noted that they are not offered an atmosphere in other courses where they can express their opinions freely. In this regard, F2 said *“In other courses, we are usually not allowed to express our views freely. If it is nonsense, they tell off us”*. It is also observed that participant M8 could associate the classroom activities and proposed solutions with English course as a difficult subject for him and overcome this difficulty by proposing a solution himself and adapting it to his life. M8 expressed his opinion by saying *“...we see our lessons very hard. We don’t produce solutions for it... I was thinking that English is difficult, but I do not think so anymore”*. In addition, F2, F6, F9, F12, F14 and F19 mentioned that they experienced proliferation of ideas in both artistic and critical terms thanks to the art criticism of the artwork, the replies provided by themselves and the others to the questions and the ideas debated in the class. In this regard, F19 said *“Because the teacher has helped to multiply our ideas, our own ideas, we can say”*. Apart from that, the participants such as F1, F2, F19 and F27 indicated that their responsiveness also developed. F27 expressed her point by saying *“Its being different from usual courses was didactic and distinct. I noticed that our response capability developed through the questions our teacher asked us”*.

In Table 6, it is understood from the heading “behavioural outcomes regarding personality development” that some participants ( $f=10$ ) could acquire the sense of benevolence as a result of the visual arts education. F26 said “*after drawing this picture, I saw that solidarity affects people in many different ways*”, which proves the effect of research and review required by the performance task in understanding the importance of solidarity in human life. It is also seen that the students ( $f=9$ ) went through personality development for undertaking responsibility in the face of happenings that take place in their environment and family settings. As an example, F6 said “*I learnt that I must undertake responsibility, too, I learnt what tasks are my parts*”. F11 said that children’s freedom must be provided by reducing the number of murderers”. In this way, she is able to assess the lessons learnt from the happenings taking place in her surrounding with a critical perspective and she fulfils a social responsibility. Similarly, it is observed that the students ( $f=9$ ) suppress the feeling of violence due to the fact that violent acts recognized by the community affect them and the overall society adversely. The participants remarked that they could assess consequences of violent actions from a critical point of view thanks to the visual arts education program implemented. Consequently, their negative thoughts about violence were replaced with positive behaviours. In this scope, the participant M8 said “*There should not necessarily exist a war between people, the people that fight with each other must also know that children are upset then. After this work, when I fight with my friends, I am trying to act calmly if there is a child nearby*”. The student coded as M24 noted that they realized that violence is wrong by stating “*Violence to women does not bring anything. Only jail. This course has helped me to stand up against violence to women*”.

### Discussion and Conclusion

The study revealed that visual arts education program is an effective learning area for development of critical thinking skills of children at social risk and behavioural outcomes by which they can transfer their experiences gained through art criticism to their behavioural development process. Critical thinking is thought to be an effective learning area in gaining of specific skills in various disciplines by students of each age group. In his study, Coşkun Şentürk (2014) found out that prospective music teachers’ musical performances considerably increased after the critical thinking training. Ersoy and Başer (2011) found out that 7<sup>th</sup> graders (secondary schoolers) have a lower tendency to critical thinking, and they need support for debating and effectively use the learnt knowledge. Present study seems to be a noteworthy note that such support can be provided by means of visual arts education.

As a result of the study, it was seen that the children at social risk could associate higher level target behaviours including detecting specific problems in accordance with the point of the artwork, analyzing these problems, predicting the results, and making decision after thinking sophisticatedly with similarities or differences they encounter in their daily lives. People can understand the realities of life through art and may associate the events with their own lives by filtering events through critical thinking, and this may lead procreation of positive behavioral changes in their own feelings, thoughts and attitudes. In their study, Türkcan and Yaşar (2011) investigated the effect of visual culture works on students’ making sense of the visual world. As a result, they found out that the students could associate the activities with everyday life and they could bring up reflective thoughts to establish cause-effect relationship between events.

Art criticism plays an important role in development of critical reviews and individuals’ ability to earn rational and scientific qualifications (İşler, 2005). It was observed in the study that the children at social risk could associate the intellectual and emotional structure of the artwork with their own lives, and gained a positive perspective discovering how to be able to see the life with positive thoughts against all kinds of difficulties and happiness is an important tool in our everyday lives. Kararmak (2006) reports that exposure to risk factors arising from childhood poverty, familial characteristics or peripheral conditions may affect developmental process of the person in a negative way. In this study, taking into consideration the adverse environments and behaviours exposed by children at social risk; the visual arts education program, the artwork used in this program and the activities were scheduled in a way to strengthen the concept of family and enhance happiness and positive behaviours. Also it

was aimed that the children could assess the financial difficulties in household from a critical perspective and realize positive behaviours which they could resolve. In this way, it is expected that as critical thinking skills of students develop, their perspective towards life will change in a positive direction. Consequently, critical thinking individuals' ability to find solutions for the problems they encounter in their daily lives will grow in direct proportion.

Educating the senses is the most important way to allow students to offer free and creative ideas away from certain patterns. An individual with educated senses become more sensitive to events around and can develop different perspectives for solution of problems (Şahin & Yağcı, 2012). Contemporary art education intends to help individuals and the community to be sensitive to the environment they live in basically through artistic activities, enter into a useful interaction with the environment, meet their aesthetic needs, give products and feed their interpretation instincts, and to make their life more meaningful (Buyurgan & Buyurgan, 2012: 9). According to the study findings, visual arts education seems to be an effective learning area that can be used by students at social risk for seeking solutions for their problems. Also it was concluded that critical judgements and target behaviours acquired through art criticism yield effective results for critical processes as regards to applying to art as a means of problem solving and proposing new ideas by means of artistic figures and objects.

According to Gizir (2007), various prevention programs should be developed to help children at social risk stay psychologically robust by removing the negativity that threatens the development of such children. Art education, by contributing to formation of human's system of values, contributes to rejection of acts that would prevent human thought and ideas (Mercin & Alakuş; 2007). Our study demonstrated that majority of the students at social risk hold the belief that family members should not be discouraged by difficulties and they should mutually propose solutions to cope with the challenges all together. This suggests that visual arts education can be used as a training program to prevent risk factors. It was observed that as children's critical thinking skills develop, their behavioral expectations about the importance of unity and togetherness or communication in family change in a positive way. This could be shown as proof indicating a positive harmony between behavior and critical thinking.

In our study, it was seen concluded that boys exposed to social risk factors display more aggressive behaviours than their female peers. Nevertheless, males portrayed violence as a wrong social behaviour after the visual arts education though they had initially exhibited aggression, which suggests that visual arts education can function as an effective learning area for blunting negative behaviours of children. According to Buyurgan and Kumral (2007), if students go towards "belligerent" period, it cannot be ignored. This situation is also beginning of the ganging up process in schools and might exacerbate resortion to violence. Therefore, peaceful, soothing and relaxing effects of art education can be an important tool to deal with this issue.

The visual arts education program administered through art criticism was seen to increase students' motivation towards the course and the activities prepared. In particular, the classroom activities were reported to help students discover a critical, visual and mental way of expression to which they can resort in everyday life. Also the students were observed to listen to each other's opinions and exchange views. Findings of the study reveal that learning plays a guiding role in its taking place in cognitive, affective and behavioural process depending on the point of interest and thus in completion of artistic development as one of the important stages of visual arts education. The study also placed emphasis on the importance of reaching artistic interpretation in daily life by converting the artistic perspective into practice. Özsoy and Şahan (2009) discuss that positive change is recorded in students' attitude towards art as a result of teaching activities based on art criticism. The art criticism program administered via art education program proves influential in relation with students' configuring knowledge, developing positive attitudes towards the course and their utilizing the knowledge and skills gained by critical thinking in the context of other courses.

As a result, it was concluded that the visual arts education program is an effective learning area for gaining of the ability to control themselves by children under social risk in case of fight and violent behaviours. It was observed that the children at social risk implied that violence is a malignant behaviour as their critical thinking skills developed through art criticism though they noted before the study that they had exhibited extremely aggressive behaviours. Linderman (1997), stating that art is a problem solving area which allows us to obtain information about students' emotional, physical and intellectual development, discusses that students addicted to alcohol or drugs, exposed to sexual or emotional abuse, suffering from homelessness or disease reveal their personal characteristics and express themselves through art. The artistic activities carried out to this end play an effective role in using of art as a means of combating life for solving of problems by children who are facing psychological difficulties (Striker, 2005).

### Suggestions

- Artistic activities such as art criticism or analysing of works of art should be used in educational-learning environments so that they can positively improve their risky behaviors and have different perspectives and skills to think of children at social risk.
- The results of the research showed that as critical thinking skills developed; individuals become more sensitive and inquisitive in their behavior, decrease their prejudices, and evaluate the events around them by establishing a connection between causes and consequences. For this reason, teachers should diversify the answers to the questions while analyzing the different concepts or definitions related to the topic, and ensure to turn into a visual expression of the events in mind. This is thought to be effective in gaining behavioral skills that children at social risk can use to solve the problems they face.
- As the critical thinking skills developed, it was inferred in the research that behavioral expectations regarding the importance of unity and solidarity or communication in the family and the resolution of problems of children, skills to control the negative behaviors and consciousness and awareness regarding familial, environmental and social events also changed positively. For this reason, it is recommended that teachers should adapt art criticism to events taking place in their daily life by integrating students with intellectual and emotional events described in art works to encourage children at social risk to change their behaviours positively.

## References

- Altınköprü, T. (2004). *Karakter bilim ve insan tanımada testler* (3<sup>rd</sup> ed.). İstanbul: Hayat Yayıncılık.
- Ammerman, R. T., & Hersen, M. (1990). Research in Child Abuse and Neglect: Current Status and an Agenda for the Future. In R. T. Ammerman, & M. Hersen (Ed.), *Children at risk an evaluation of factors contributing to child abuse and neglect* (pp. 3-16). New York: Plenum Press.
- Artut, K. (2007). *Sanat eğitimi kuramları ve yöntemleri* (5<sup>th</sup> ed.). Ankara: Anı Yayıncılık.
- Barrett, P. (2007). Structural equation modelling: Adjudging model fit. *Personality and Individual Differences*, 42, 815-824.
- Baştürk, Ş., & Taştepe, M. (2014). Bilişsel davranışların ölçülmesi. In S. Baştürk (Ed.), *Eğitimde ölçme ve değerlendirme* (pp. 307-326). Ankara: Nobel Yayın Dağıtım.
- Buyurgan, S., & Kumral, Ç. (2007). Bireyin eğitim sürecinde sanat eğitimi neden yer almalıdır?. In 3. *Ulusal Sanat Eğitimi ve Şiddet Sempozyumu Bildiri Kitabı* (pp. 99-107). Ankara.
- Buyurgan, S., & Buyurgan, U. (2012). *Sanat eğitimi ve öğretimi* (3<sup>rd</sup> ed.). Ankara: Pegem Akademi.
- Büyüköztürk, Ş. (2013). *Sosyal bilimler için veri analizi el kitabı* (18<sup>th</sup> ed.). Ankara: Pegem Akademi.
- Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2008). *Bilimsel araştırma yöntemleri*. Ankara: Pegem Akademi.
- Can, A. (2014). *SPSS ile bilimsel araştırma sürecinde nicel veri analizi* (2<sup>nd</sup> ed.). Ankara: Pegem Akademi.
- Creswell, J. W., & Garrett, A. L. (2008). The "movement" of mixed methods research and the role of educators. *South African Journal of Education*, 28, 321-333.
- Creswell, J. W., & Plano Clark, V. L. (2014). *Kararlı yöntem araştırmaları, tasarımı ve yürütülmesi* (2<sup>nd</sup> ed.) (Y. Dede, & S. B. Demir, Trans.). Ankara: Anı Yayıncılık.
- Coşkun Şentürk, G. (2014). Eleştirel düşünme eğitiminin müzik eğitiminde performansa etkisi. *Adnan Menderes Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 1(4), 43-56.
- Çepni, S. (2007). *Araştırma ve proje çalışmalarına giriş* (3<sup>rd</sup> ed.). Trabzon: Celepler Matbaacılık.
- Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2012). *Sosyal bilimler için çok değişkenli istatistik, SPSS ve LISREL uygulamaları* (2<sup>nd</sup> ed.). Ankara: Pegem Akademi.
- Duncan, D. F. (1989). Content analysis in health education research: An introduction to purposes and methods. *Health Education*, 20(7), 27-31.
- Duron, R., Limbach, B., & Waugh, W. (2006). Critical thinking framework for any discipline. *International Journal of Teaching and Learning in Higher Education*, 17(2), 160-166.
- Efland, A. D. (2002). *Art and cognition, Integrating the visual arts in the curriculum*. New York: Teachers College Press.
- Eisner, E. W. (2002). *The arts and the creation of mind*. United States of America: Integrated Publishing Solutions.
- Elo, S., & Kyngas, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107-115.
- Eroğlu, A. (2010). Çok değişkenli istatistik tekniklerin varsayımları. In Ş. Kalaycı (Ed.), *SPSS uygulamalı çok değişkenli istatistik teknikleri* (5<sup>th</sup> ed.) (pp. 207-233). Ankara: Asil Yayın Dağıtım.
- Ersoy, E., & Başer, N. (2011). İlköğretim ikinci kademede eleştirel düşünmenin yeri, *Adnan Menderes Üniversitesi Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 2(1), 1-10.
- Frankenburg, W. K., Emde, R. N., & Sullivan, J. W. (1985). *Early identification of children at risk. An international perspective*. New York: Plenum Press.
- Gizir, C. A. (2007). Psikolojik sağlamlık, risk faktörleri ve koruyucu faktörler üzerine bir derleme çalışması. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 3(28), 113-128.
- Gökaydın, N. (2002). *Sanat eğitimi öğretim sistemi ve bilgi kapsamı: Temel sanat eğitimi*. İstanbul: 4. Akşam Sanat Okulu Matbaası.

- Günay, V. D. (2008). Görsel okuryazarlık ve imgenin anlamlandırılması. *Süleyman Demirel Üniversitesi Güzel Sanatlar Fakültesi Hakemli Dergisi*, 1, 1-29.
- Güngör, M. (2013). Risk altındaki çocukların aile yapıları ve suça yönelimleri (Mersin ili örneği). *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 9(2), 421-434.
- Hablemitoğlu, Ş., & Yıldırım, F. (2009). *Risk çağı ve gençler* (1<sup>st</sup> ed.). Ankara: Eflatun Yayınevi.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Hu, L., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.
- İşler, A. Ş. (2005). İlköğretimin ilk yıllarındaki sanat eleştirisi uygulamaları ve bu uygulamaların eleştirel düşünme gelişimi açısından önemi. *Eğitim Fakültesi Dergisi*, XVIII(1), 135-149.
- Kaner, S. (2005). Duygusal ve davranış bozuklukları olan çocuklar. In A. Ataman (Ed.), *Özel gereksinimli çocuklar ve özel eğitime giriş* (pp. 229-259). Ankara: Gündüz Eğitim ve Yayıncılık.
- Kararımak, Ö. (2006). Psikolojik sağlamlık, risk faktörleri ve koruyucu faktörler. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 3(26), 129-142.
- Kaymaz, K. (2007). Davranış boyutuyla performans geribildirim olgusu ve süreci. *Ankara Üniversitesi SBF Dergisi*, 62(4), 141-178.
- Kırımsoy, E., Acar, H., Yokuş Sevük, H., Kaynak, H., Aydın, M., Antakyalıoğlu, ... , Baykara Acar, Y. (Ed.) (2013). *Çocuk adalet sistemi çalışanları eğitim programı, Sosyal çalışma görevlileri için eğitim kitabı*. Retrieved from [http://www.cocuklaricinaadalet.org/.../SCG%20EĞİTİM%20KİTABI\\_SON.pdf](http://www.cocuklaricinaadalet.org/.../SCG%20EĞİTİM%20KİTABI_SON.pdf)
- Kırışoğlu, O., & Stokrocki, M. (1997). *Örtaöğretim sanat öğretimi*. Ankara: YÖK.
- Kutlu, Ö., Doğan, C. D., & Karakaya, İ. (2010). *Öğrenci başarısının belirlenmesi, Performansa ve portfolyoya dayalı durum belirleme* (3<sup>rd</sup> ed.). Ankara: Pegem Akademi.
- Kutlu, Ö., Karakaya, İ., & Doğan, C. D. (2008). Üst düzey zihinsel becerilerin belirlenmesi: Performans görevi yazma. *İlköğretmen eğitimci dergisi*, 18, 10-15.
- Leseman, P. M. (2009). *Avrupa'da erken çocukluk eğitimi ve bakımı: Sosyal ve kültürel eşitsizliklerle ilgilenmek*. Ankara: Eğitim, Görsel İşitsel & Kültür İdari Ajansı.
- Linderman, M. G. (1997). *Art in the elementary school*. United States of America: McGraw-Hill.
- Lowenfeld, V. (1957). *Creative and mental growth*. New York: MacMillan.
- McDonald, R. P., & Ho, R. H. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods*, 7, 64-82.
- Mercin, L., & Alakuş, A. O. (2007). Birey ve toplum için sanat eğitiminin gerekliliği. *D.Ü. Ziya Gökalp Eğitim Fakültesi Dergisi*, 9, 14-20.
- Michael, J. A. (1983). *Art and adolescence, Teaching art at the secondary level*. New York: Teachers College Press.
- Miller, D. W. (2000). A Scholar's Brutal Childhood Inspires His Theories of Violence. *The Chronicle of Higher Education*, 21-22.
- Özden, Y. (2008). *Öğrenme ve Öğretme* (1<sup>st</sup> ed.). Ankara: Pegem Akademi.
- Özsoy, V., & Alakuş, A. O. (2009). *Görsel sanatlar eğitiminde özel öğretim yöntemleri* (1<sup>st</sup> ed.). Ankara: Pegem Akademi.
- Özsoy, V., & Şahan, M. (2009). Çok alanlı sanat eğitimi yönteminin ilköğretim 6. sınıf resim-iş dersinde öğrenci tutumuna etkisi. *Türk Eğitim Bilimleri Dergisi*, 7(1), 205-227.
- Paktuna Keskin, S. (2010). *Çocuk çizgilerindeki giz, Çöp çocuk*. 6. Baskı, İstanbul: Boyut Yayıncılık.
- Parsons, M. J. (1994). Can children do aesthetics? A developmental account. *The Journal of Aesthetic Education*, 28(3), 33-45.
- Perkins, D. N. (1994). *The intelligent eye: Learning to think by looking at art*. Santa Monica, CA: Getty Center For Education in Arts.

- Rainbolt, G. W., & Dwyer, S. L. (2012). *Critical thinking the art of argument*. Canada: Wadsworth Cengage learning.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, F. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8(2), 23-74.
- Seçer, İ. (2013). *SPSS ve LISREL ile pratik veri analizi, Analiz ve raporlaştırma* (1<sup>st</sup> ed.). Ankara: Anı Yayıncılık.
- Shamir, A., & Korat, O. (2013). Introduction: Technology as a support for literacy achievements for children at risk. In A. Shamir, & O. Korat (Eds.). *Technology as a support for literacy achievements for children at risk* (pp. 1-8). London: Springer.
- Striker, S. (2005). *Çocuklarda Sanat Eğitimi* (1<sup>st</sup> ed.) (A. Akın, Trans.). İstanbul: Epsilon Yayınları.
- Şahin, Ç. (2010). Bilimsel araştırma yöntemleri. In R. Y. Kincal (Ed.), *Verilerin analizi* (pp. 181-215). Ankara: Nobel Yayın Dağıtım.
- Şahin, D., & Yağcı, M. M. (2012). Bireyin toplumsallaşma sürecinde sanat eğitiminin önemi. *Batman Üniversitesi Yaşam Bilimleri Dergisi*, 1(1), 273-277.
- Şengün, M. (2007). Ahlak gelişiminin psiko-sosyal dinamikleri. *Ondokuz Mayıs Üniversitesi İlahiyat Fakültesi Dergisi*, 23, 201-221.
- TDK. (1997). *Türk Dil Kurumu sözlüğü*. İstanbul: Milliyet Yayınları.
- Türkcan, B., & Yaşar, Ş. (2011). İlköğretim öğrencilerinin görsel dünyayı anlamlandırmasında görsel kültür çalışmalarının rolü. *Kuram ve Uygulamada Eğitim Bilimleri*, 11(3), 1549-1570.
- Usta, E. (2008). Gözlemsel ya da sosyal öğrenme (ya da diğerlerini seyrederek öğrenme), modelleme, ergende saldırganlık, öğrenme ve Albert Bandura. *İlköğretmen Eğitimci Dergisi*, 18, 44-48.
- Ünver, E. (2002). *Sanat eğitimi* (1<sup>st</sup> ed.). Ankara: Nobel Yayın Dağıtım.
- Webster-Stratton, C., & Reid, M. J. (2012). The incredible years: Evidence-based parenting and child programs for families involved in the child welfare system. In Allen Rubin (Ed.), *Programs and Interventions for Maltreated Children and Families at Risk* (pp. 11-30). United States of America: John Wiley & Sons.
- Yağlı, A. (2013). Çocuğun eğitiminde ve sosyal gelişiminde çizgi filmlerin rolü: Caillou ve Pepee örneği. *International Periodical For The Languages, Literature and History of Turkish or Turkic*, 8(10), 707-719.
- Yaşam Tadında Küçük Hikâyeler. (2014). Evim. Retrieved from <http://yasamdankucukhikayeler.blogspot.com/2013/12/evim.html>
- Yavuzer, H. (2010). *Resimleriyle çocuk, Resimleriyle çocuğu tanıma* (14<sup>th</sup> ed.). İstanbul: Remzi Kitabevi.
- Yavuzer, Y. (2011). Okullarda saldırganlık/şiddet: okul ve öğretmenle ilgili risk faktörleri ve önleme stratejileri. *Milli Eğitim*, 192, 43-61.
- Yetkin, S. K. (1968). Güzel sanatların eğitimdeki yeri. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 1(1), 125-129.
- Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri* (9<sup>th</sup> ed.). Ankara: Seçkin Yayıncılık.
- Yılmaz, M. (2010). Sanat eğitiminde motivasyon, Sanat eğitiminde kopya ve taklit, Görsel sanatlarda teknik ve yöntemler. In K. Artut (Ed.), *Güzel sanatlar eğitiminde özel öğretim yöntemleri* (pp. 193-298). Ankara: Anı Yayıncılık.
- Yolcu, E. (2009). *Sanat eğitimi kuramları ve yöntemleri* (2<sup>nd</sup> ed.). Ankara: Nobel Yayın Dağıtım.
- Yusufoff, Y. (2012). *Bebeklikten ergenliğe pozitif disiplin* (1<sup>st</sup> ed.). İstanbul: Timaş Yayınları.

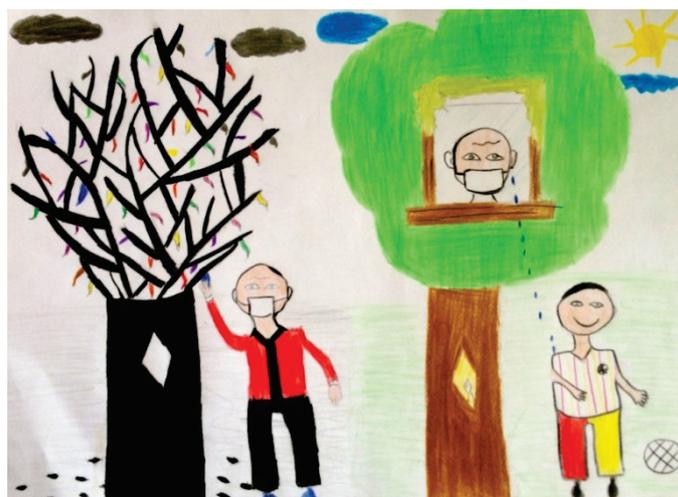
**Appendix 1.** Examples of Student Drawings



Don't You See Me? (Drawing by participant called K8)



Peaceful lives, colourful thoughts (Drawing by student called K9)



Don't laugh at the kid, it will come to your hand (Drawing by student called K14)



Never underestimate ladies, glorify them! (Drawing by student called K15)



Let All Ways We Go Lead to Happiness (Drawing by student called K23)



Sniveling Fadime (Drawing by student called E26)