

“A School Polluted by Noise”: A Semiotic Analysis of Children's Pictures

Mızrap Bulunuz¹, Derya Bekiroğlu², Melike Tantan³, Nermin Bulunuz⁴

Article History

Received: 05.05.2022
Received in revised form
Accepted: 03.10.2022
Available online:
04.10.2022

Abstract

In this study, pictures drawn by primary school students about noise were analyzed semiotically. The study was carried out with 20 primary school student volunteers. Research data are the pictures drawn by the children and semi-structured interview records. From the analysis of the students' drawings, three main themes, namely "visual indicator", "sign", and "symbol" are identified in this paper. The reasons for the noise in the school are depicted quite well in the student pictures; noise is reflected as a phenomenon that is disturbing, destructive, threatening physiological-psychological health, and negatively affecting social life and learning in school. However, paintings also showed that the children perceived sound and noise as the same concept. Students identified calmness in the classroom with the teacher. Findings suggested that activities should be included to improve the sound and noise awareness of the students at the school, initiate awareness in a school of silence as a shared social value, and physically improve school acoustic quality.

©IJERE.Allrightsreserved

Keywords: Noise in primary school, children's pictures, semiotic analysis

INTRODUCTION

Besides being an activity that appeals to the inner colorful world of the child, painting is one of the communication indicators that give clues about how s/he perceives the outside world. When we examine the picture drawn by a child on the noise at school in Turkey, it appears as a “noise-polluted school”. When the results of the research are examined, it is understood that almost all the schools are polluted by noise (Akabay & Bulunuz, 2019; Bulunuz & Akyün, 2019; Bulunuz, 2014; Bulunuz et al., 2017; Güremen, 2012; Kenber- Çiftçi & Kırıl, 2021; Merkit & Bulunuz, 2019; Özbıçakçı et al., 2012; Polat & Buluş-Kırıkkaya, 2007; Savcı-Özgüven, 2015; Tamer-Bayazıt et al., 2011; Yalılı-Kılıç & Adalı, 2020). This situation is worrying for our country. A study on how teachers spend their time at school revealed that teachers spend most of their time silencing students' unnecessary talk, reducing classroom noise, and preventing discipline problems (Can & Ermeydan, 2017). It shows that noise is a huger barrier to quality education than education programs, training policies, and inadequate equipment. If not a suitable learning environment is provided, even the world's best education curriculum and the most appropriate equipment will not be effective for quality education. There is a consensus that environmental factors are optimal levels for an effective educational environment and have a reinforcing effect on learning. Noise is an undesirable factor in the learning environment because it interferes with the brain's thinking and processing of the received information (Zentall, 1983). Students who create negative behaviors by being influenced by each other turn into attitudes over time. The fact that teachers get used to this situation and remain unresponsive causes an increase in the noise problem in the school (Bulunuz et al., 2017; Jaramillo et al., 2013). Additionally, the noise factors caused by the social structure, other factors such as the effects of the environment in which the schools are located (closeness to centers such as hospitals, and police stations), the bells used in the school, the cars entering and leaving the school also cause the formation of noise pollution in school (Bulunuz et al., 2017; Grebennikov, 2007). Noise pollution arises as a consequence of the holistic interaction of environmental and social factors. Considering that one of the main purposes of education is learning-teaching processes, there is a need for an in-depth examination of the negative effects of noise on these processes.

¹ mizrap@uludag.edu.tr <https://orcid.org/0000-0002-6650-088X>

² deryabekir@gmail.com <https://orcid.org/0000-0002-5322-8290>

³ tantanmelike@gmail.com <https://orcid.org/0000-0002-2486-6365>

⁴ bulunuz@uludag.edu.tr <https://orcid.org/0000-0001-7891-00079>

* This study was produced from the project numbered 114K738 "Noise Pollution in School: Causes, Effects and its Control" supported by TUBITAK.

In the Dictionary of the Turkish Language Institution, painting is defined as the forms of the appearance of beings in nature made on paper or cloth with tools such as pencils and brushes. In contrast, painting is considered an act of in-depth creativity (Paine, 1997). Similarly, painting is defined as a basic form of expression that allows children to develop their imagination, emotional reactions, and personality creatively (Eisner, 2013). Many scientists today define a painting as a product, a process, and an expression of relationships, and regard it as a method of creating meaningful signs (Adams, 2002; Albers, 2007; Coates & Coates, 2011; Hall, 2008; Kress, 2012). Painting is an impressive visual language for children to express themselves (Clark, 2005). According to Piaget; "Painting is a symbolic game for children" (Piaget, 1953, cited in Kırıçoğlu, 2002, p. 56). Yavuzer (2015) also similarly defined painting and expressed painting for children as a part of playful activity. Additionally, to enjoying painting, children also enjoy expressing their paintings (Yavuzer, 2015). Recently, there has been increasing interest in paintings of children. Paintings are particularly important for counselors and educators who collect data about the way children express themselves (Malchiodi, 2005).

The goal of painting education is to raise individuals who can not only examine, but also see, make sense of what they see, think, question, criticize, and make aesthetic judgments (Türkcan, 2013). Also, semiotics is a method of analyzing and describing children's art products. Semiotic analysis is an approach that is frequently used in research, as it provides access to personal and social codes through the analysis of children's drawings (Türkcan, 2013; Demirel, 2018). In semiotic analysis, the combination of the signifier and the signified is called the "indicator" (Saussure, 1998). Within the framework of the basic principles of the semiotic analysis approach, it can be expressed as a "visual indicator" if it has a plain or true meaning. If the indicator contains a cause-effect relationship, it can be defined as a "sign". The indicator is grouped as a "symbol" if it has symbolic and more conceptual connotations. In summary, these are the triad of "visual indicator, sign, symbol". A visual indicator is a sign that directly animates what it indicates. It contains the true meaning of the object. It contains the true meaning of the object. A sign is an indicator determined by this object due to its relationship with the object. For example, it is based on a cause-effect relationship between two things since the cross on a dry skull is a sign of danger. The symbol is a sign based on compromise and has a symbolic meaning. For example, the scales being the symbol of justice carries a symbolic meaning (Rifat, 1996).

In the literature review, publications on semiotics are mostly focused on music education (DunbarHall, 1991; Grant, 2003), language education (Andrews, 2007; Demir, 2007; Moore, 1998), mathematics education (Bakker & Hoffmann, 2005; Ernest, 2006; Gordino et al., 2007) and painting education (Bayav, 2006; Burunsuz, 2007; Hancı, 2008; Özmutlu, 2009; Sezen, 2007). Akgün- Gezgin et al. (2021) evaluated the acoustic comfort level of a public primary school in primary school with objective and subjective data, and they concluded that the noise level of the school is high as a result of objective evaluations. Coşkun (2021), in his study examining teachers' opinions about noise, concluded that students come first among the sources of noise at school. Bulunuz and Güner (2017) have concluded that the noise level is high in schools in Turkey in their studies on the evaluation of the noise level according to the opinions of teachers in Turkey and France. Gerebennikov and Wiggins (2006) examined the psychological effects of noise and listed its negative effects in early childhood. Shield and Dockrell (2004) examined internal and external noise in a primary school in London and concluded that the physical structure of school buildings is weak. Taş (2010) stated in his study that the sound of bells is a source of noise in schools and drew the framework of the understanding of schools without bells with less noise. Imhof et al. (2009) concluded in their study on the cognitive effects of noise in primary school that loud noise causes distraction in classrooms. The literature review, however, did not uncover any studies in which the phenomenon of noise at school, pictures, and interviews were analyzed together analytically and thus focused on students. The primary objective of the study is to analyze the pictures drawn by primary school students about noise from a semiological perspective.

METHOD

Research Design

This study was carried out according to the art-based research method. In the art-based research method, which is a qualitative method, data has been tried to be analyzed systematically with an "art-based approach" (Huss & Cwikel, 2005; Mcniff, 1998). In the art-based approach, children's painting works related to the concept of noise and noise school were analyzed and it was tried to reveal what the students' perceptions and views were about the noisy school.

Study Group

The study group of this research consists of 20 primary school students attending the 2nd, 3rd and 4th grades in the 2017-2018 spring term. The selected school is one of the primary schools of the TUBİTAK project no 114K738 "Noise Pollution in School: Causes, Effects, and its Control". The selection of the study group was based on volunteerism and the easily accessible sampling method was adopted.

Data Collection Instruments and Process

In this study, the art-based research method was used. Students' pictures were analyzed with a semiotic approach, together with interviews about the paintings (Denzin & Lincoln, 2005; Erişti, 2012; Huss & Cwikel, 2005). In the study, the drawings of the students were evaluated by the indicator, sign, and symbol dimensions of the semiotics approach. The verbal results of the interviews were not included. The information obtained during the interview is explained under the visuals. Paintings have been a guide while establishing meaning relations with images and making a classification. To conduct the research, the Ministry of National Education granted permission.

Data Analysis

The paintings of the students were analyzed with a semiotic approach. Semiotic analysis is an analytical approach commonly used in educational research, as it provides access to personal and social codes through the analysis of children's drawings (Demirel, 2018; Türkcan, 2013). In this context, the images that have a clear or real meaning can be classified as visual indicators if they contain a cause-and-effect relationship, or as a sign, if they lend themselves to more symbolic and conceptual connotations. The "visual indicator", "sign" and "symbol" themes created in Figure 2 is presented.

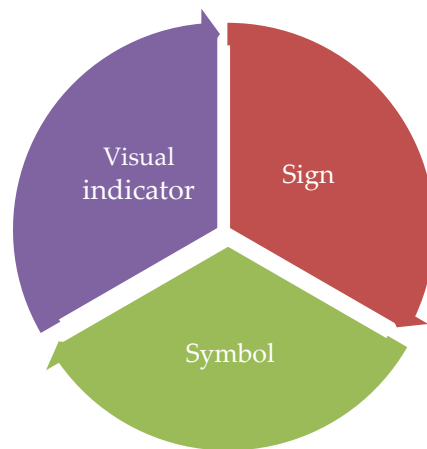


Figure 2: Themes for the semiotic analysis of children's paintings "A school polluted by noise"

Validity and Reliability

For this study, the qualitative validity strategies of "detailed description and confirmability" proposed by Creswell and Poth (2016) were used to increase reliability. While the children's pictures were analyzed, the pictures were presented visually and their contents were described in detail. Additionally, the "confirmability" strategy was used by allowing students to express their feelings, thoughts, and opinions about their drawings.

FINDINGS

Findings on the Theme of "Visual Indicators" in "A School Polluted by Noise" Paintings

"Visual indicators" were formed by the figures and symbols that students used by expressing their real and literal meanings from their pictures. Under this theme, 3 categories were created "sexist indicators", "communication indicators" and "environmental indicators" as shown in Figure 2.

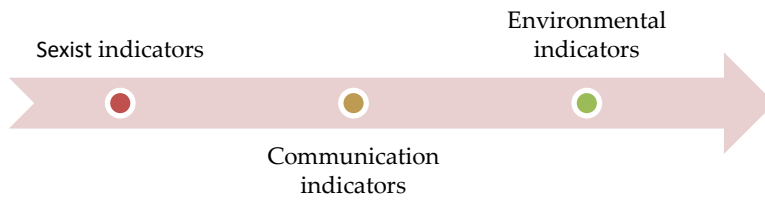


Figure 2: Categories created for the theme of “visual indicators”

As seen in Figure 2, the first category is “sexist indicators”. This code was created as a consequence of the students' use of male and female figures while expressing the noise sources in their drawings. An example of sexist indicators in students' drawings is shown in Figure 3.



Figure 3. “Visual Indicators”: An example of the “sexist indicators” category

As seen in Figure 3, in the picture drawn by the student, female students see male students as a cause of noise and warn them not to make noise. Male students responded adversely to this warning and said "let's make a noise". It is clear from the picture drawn by the student that the girls see the boys as a source of the noise.

The second category created for the visual indicators theme is “Communication indicators”. In the drawings, they depicted in-school communication tools such as bells, loudspeakers, and megaphones as causes of noise. An example student picture is shown in Figure 4.



Figure 4. “Visual indicator”: An example of the “communication indicators” category

As seen in Figure 4, the students reflected tools such as bells, loudspeakers, and megaphones that provide in-school communication as noise sources. In the interviews, the students expressed their opinions as “The ringing sound also causes noise”. In another example of communication indicators, students portrayed speaking loudly and inharmoniously as a source of the noise. The picture related to this is presented in Figure 5.

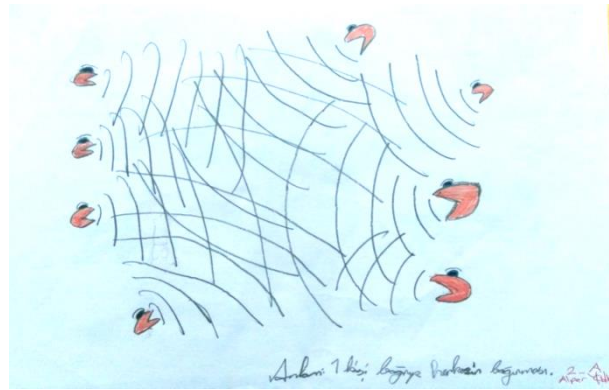


Figure 5.“Visual indicator”: An example of the category of “communication indicators”

As seen in Figure 5, the 2nd-grade student underlined that the conversation between students is a source of the noise. Regarding the painting, the student defined the noise as “a person shouting, everyone shouting”. The student described speaking loudly as opening her mouth huge, sound waves as interconnected thin lines, and the mixing of these lines. This picture expresses very clearly and truly the reason for the school noise, especially during break time.

The third category created on the theme of visual indicators is “Environmental Indicators”. This code was created in line with the noise sources that the students drew about the environment of the school. . In Figures 6 and 7, the pictures of this category reflected by the student in two different indicators and supported by the interviews are shown.



Figures 6 and 7: “Visual indicator”: An example of the category of the “environmental indicators”

As seen in Figure 6, the large garden area shown by the student represents the primary noise source in the school. Therefore, the garden is larger than the school. Cars, highways, and other outside noises have also been shown to cause noise at school. The image in Figure 7 shows that aircraft, such as airplanes and helicopters are also seen as a source of noise by students. In particular, sound waves directed downwards are directed towards the school and show the seriousness of the situation.

Findings on the Theme of “Sign” in “A School Polluted by Noise” Paintings

The “Sign” theme was created as a result of students' drawings containing cause-effect relationships. There are 3 categories under this theme. These are “exaggerated signs”, “discomfort signs” and “self-awareness signs” as shown in Figure 8.

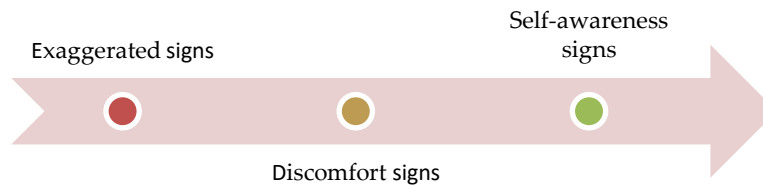


Figure 8: Categories created for the “Signs” theme

As seen in Figure 8, the first category is “exaggerated signs”. Two types of exaggeration signs were found in this code. In the picture in Figure 9, the sign of exaggeration is seen.



Figure 9: “Sign”: An example of the category of “exaggerated signs”

As seen in Figure 8, the first category is “exaggerated signs”. Two types of exaggeration signs were found in this code. In the picture in Figure 9, the sign of exaggeration is seen. In the picture, large sound waves were emitted from the school windows, and a student reacted to this by saying, “I think I will die from the noise.”

The second category created for the sign theme is “discomfort signs”. An example image of this category is presented in Figure 10.



Figure 10. “Sign”: An example of the category of “discomfort signs”

Figure 10 shows a girl who is unhappy because of the noise. The child, who was unhappy with the sounds of cars and hammers, explained this situation by saying “My ears”. The picture highlights the negative effects of noise on both psychological and health.

The third category created for the sign theme is “Self-awareness signs”. This code was created as a result of drawing the noise awareness and verbal warnings in the pictures. “Sometimes I warn my friends.” expressions in the form support this code. In Figures 11-12, sample pictures belonging to this category are presented.



Figure 10. "Sign": An example of the category "self-awareness signs"

As seen in Figure 11, in the picture it is shown that people who are disturbed by the noisy school are complaining about the school closing. Figure 12 in the panting depicts break time and the noise in the school canteen. A child expressed his discomfort with this noise. "Could you be quiet a bit?" the other boy asked his friend and warned.

Findings on the Theme of "Symbol" in the Painting "A School Polluted by Noise"

Due to the conceptual connotations in the drawings of the students, the symbol theme, which is one of the three basic steps of semiotic analysis, was created. Figure 13 shows the categories related to this theme.

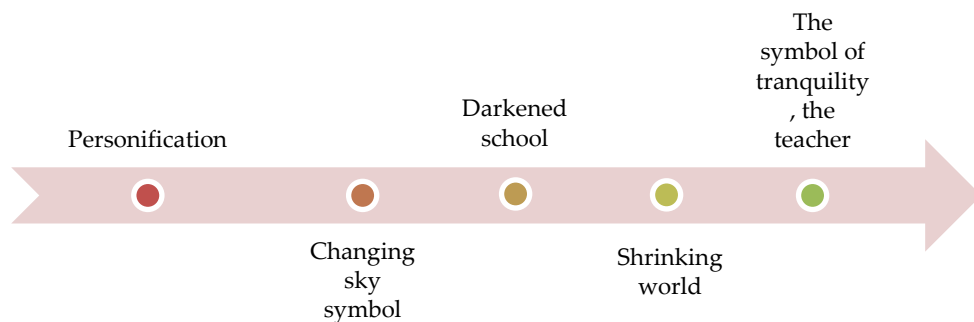


Figure 13: Categories created for the "Symbol" theme

As seen in Figure 13, student pictures are "personalization" in terms of giving human characteristics to school buildings; "changing sky" in terms of the effects of noise on nature and the sky; "darkening school" in terms of the picture suggesting that the school is completely covered with noise; "shrinking world" in terms of symbolizing the reflection of the noise in schools to the whole universe; Since the absence of the teacher in the environment, even the mere mention of his name, leads to a certain discipline, the codes of "teacher symbol of tranquility" were created.

The picture for the "personalization" category created for the symbol theme is shown in Figure 14.



Figure 14: "Symbol": An example of the "personalization symbol" category

As seen in Figure 14, the picture shows the school crying and covering its ears, just like a human being, in the face of noise. Similarly, in the interviews, the students stated that the school may also be disturbed by noise. The picture for the category of "darkening school" for the icon theme is shown in Figure 15.



Figure 15: "Symbol": An example of the "darkened school" category

As seen in Figure 15, in the picture, the student depicted the noise as a frightening black fog surrounding the school. He tried to portray the negative effect of noise by drawing an aggressive dog in the picture. The picture for the "changing sky" category for the symbol theme is shown in Figure 16.



Figure 16: "Symbol": An example of the "changing sky" category

As seen in Figure 16, noise affects not only people but also nature and the sky. This situation is depicted as the sun and the clouds being angry. Some students expressed this situation with the crying of the sky stakeholders. The photo for the fourth "shrinking world" category of the sign theme is shown in Figure 17.

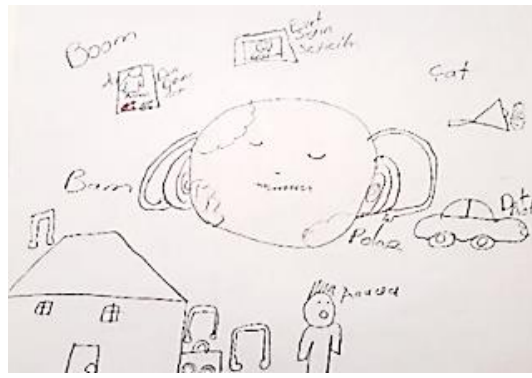


Figure 17: "Symbol: An example of the "shrinking world" category

As can be seen in Figure 17, the sounds coming out of the school surround the world and the world is getting smaller because of this. The picture for the "teacher symbol of tranquility" category for the symbol theme is shown in Figure 18.



Figure 18. "Symbol": An example of the "teacher, symbol of tranquility" category

As seen in Figure 18, although the student in the picture depicted the presence of the teacher and symbolized it against the noise, she stated that even talking about the presence of the teacher in the interviews was effective in maintaining calm in the classroom.

DISCUSSION AND CONCLUSION

In this study, students' pictures with the theme "A School Polluted by Noise" were analyzed with a semiotic approach. "Visual indicators" showing sources of noise; "signs" of the causes and consequences of noise; and "symbols" describing situations caused by noise are presented below, respectively. The results regarding visual indicators indicated that students pictured the causes of noise in school as noisy groups. In general, girls described boys as the source of noise and boys described girls as the source of the noise. From this, it was concluded that there was a "sexist approach" among the students. In the pictures, the speech bubble of girls saying "don't make noise" clearly indicates this problematic situation. From the pictures, it can be interpreted that female students are more sensitive to noise than male students. However, this shows that students evaluate noise pollution in a narrow framework. Because noisy behaviors at school can be seen in both boys and girls. For example, in the picture where the sound waves are intertwined and each mouth speaks loudly with its mouth wide open, no gender is specified. This painting reflected one of the main causes of noise in the school with objective observation. According to Gürtuna (2003), students' drawings reflect their inner worlds. Children between the ages of 9 and 12, which Piaget refers to as the grouping stage, have developmental characteristics such as playing and sharing games with their fellows and supporting their fellows in a possible problematic situation. In addition, there is a clear distinction in the paintings of girls and boys in this period (Piaget, 1952, cited by Gürtuna, 2003). In the pictures, girls are drawn closer to each other, boys are farther from each other and larger than girls. According to Arıcı (2006), large objects drawn in children's drawings highlight the desired situation.

Another visual indicator in the drawings of the students is the drawings of "communication tools" accompanied by sound waves. These means of communication are not always attractive to students; sometimes it is an indication that there is a disturbing noise element. The striking detail in the pictures is that the students describe the ringing sound as a source of the noise. This finding of the research shows that the literature studies (Akyün et al., 2021; Aydın, 2019; Bulunuz et al., 2017; Bulunuz, 2018; Gezgin et al., 2021; Kenber- Çiftçi & Kırıl, 2021; Taş, 2010) have found that the ringing can be a source of noise for schools. On the other hand, Akbaba and Turhan (2016) found that schools comply with the Ministry of National Education's directive on the application of the ringtone in a tone and time that will not disturb the environment and cause noise.

"Environmental indicators" is another visual indicator of noise pollution at school. Students reflected in their paintings on how much they were affected by environmental factors. Describing that they were exposed to heavy traffic from air vehicles, the students pictured that they were quite uncomfortable with this situation. However, there is no airport where the school is located. Students may have probably seen images that associate airplanes with noise before. These pictures may have created a visual perception in children. In addition, the proximity of the school to crowded places such as parks was reflected as a problem in the pictures. Some students even stated that the voices of the students who had a physical education lesson during the lesson were disturbing and caused noise pollution. The absence of gymnasiums in the majority of schools is an important shortcoming. Although physical education classes have to be held in the schoolyard, certain rules must be introduced. For example, the far corners of the schoolyard to the classrooms may be preferred for games, or rules such as communicating with a low tone of voice may be introduced. Although the children drew the school smaller than the environment in their pictures, they did not think of the school independently from the external environment. The relatively higher expression of out-of-school noises in the pictures may indicate that the students feel the environmental noise sources more than the noise sources in the school. On the other hand, in the literature, it is stated that the noise inside the school is much higher than the noise originating outside the school (Akabay & Bulunuz, 2018; Bulunuz & Akyün, 2019; Kılıç & Adalı, 2021; Merkit & Bulunuz, 2019; Özbıçakçı et al., 2012; Tamer-Bayazıt et al., 2013) and there are articles sent to schools from the *Ministry of National Education* to reduce the noise of schools since school noise disturbs the residents, especially the elderly and babies (Bulunuz et al., 2018). As a matter of fact, in the study of Coşkun (2021), in which she examined the opinions of teachers, students come first as the source of noise in the school. Therefore, the fact that the noise sources outside the school are relatively high in the pictures of the children shows that the students may have gotten used to the noise inside the school after a while. Because in today's society, children are born in a noisy city, so the noise has become ordinary and widespread throughout society (Tan, 2021). Shouting, running, chasing, and talking loudly are normal for students in a schoolyard where the noise level is high. Inevitably, a quiet student will not be included in a noisy group. Because in a noisy environment, the heart rate increases and movement occurs. Namely, a noisy environment encourages noise.

A good education and training process is not only that the school consists of a suitable physical structure, but also that the school environment is structured in an environment that will facilitate learning, motivate, and will not cause distraction (Bulunuz et al., 2017). This situation, which is often overlooked, is reflected in children's paintings as a noisy school that occupies a small area in life. Children can reflect on their experiences with pictures in simple language (Ring, 2006). The results regarding the "signs" in the drawings of the students showed that the children with the same grade level and developmental characteristics formed different signs in their drawings. Some students expressed the effects of noise in an exaggerated way. This description is far from reality. For example, the student's drawing reflecting that the windows of the school were broken due to the noise has "exaggerated signs". With this symptom, the student may not only emphasize that the noise has a violent content but may also reveal that it has an effect that can break even the windows with the intensity of the noise. However, many studies are revealing that the noise that occurs is at a level that negatively affects students' psychology and hinders their learning (Gerebennikov & Wiggins, 2006; Shield & Dockrell, 2004; Şan, 2010).

Exaggerated drawings are important in children's paintings, and in its sub-theme, it describes the situations of negative emotional impact and anxiety (Çankırlı, 2011). Another student, by saying "my ears" in the painting, reflected the damage caused by the noise to the sensory organ. They think it is a disturbing phenomenon. Bilgili et al. (2011) stated that noise levels between 30-65 dBA can lead to situations such as anger, discomfort, concentration, and sleep disturbance; the noise level between 65-90 dBA will negatively affect health by creating conditions such as rapid breathing, changes in heartbeat, and decrease in pressure in the brain. This finding study supports the findings from the literature studies (Bulunuz, 2021; Bulunuz, et al., 2021) that students are disturbed "physically and mentally" by noise.

The results regarding the "symbols" in the students' pictures pointed to various forms of the symbols. It was observed that the students reflected their experiences in the face of noise in the school buildings by making "personalization". In one of her paintings, a student has depicted that the school is crying and closing her ears, just like a human being, in the face of the noises around her. In this direction, the students put themselves in the school place and approached the noise in an empathetic way. Another student reflected that the noise disturbed the sky and the sun, so they were angry. In another picture, they reflected on how disturbing the noise in the school was by using the "changing sky" symbol. In addition, some students became aware of noise pollution through the project. Drawing themselves "while warning their friends" in their pictures demonstrated their support for this awareness. One of the students added a barking dog next to the school and surrounded it with "darkening fog" in his painting. This shows that the noise is "dark, enveloping and offensive". Another student states that the sounds coming out of his school "make the world smaller by enveloping it". This symbol shows that the noise has an intellectual and emotional effect on the student who owns the picture, "shrinking his world". The teacher figure, seen in almost every student's painting, is seen as a "symbol" against the noise. It can be concluded that the role of the teacher as a symbol of discipline in every subject is also valid for noise. However, the fact that the students paint a quiet environment with the teacher present in the pictures may be an indication that they perceive the noise as a normal situation in the absence of a teacher. This finding may be related to the reactions of teachers when they are exposed to noise. Literature studies (Coşkun, 2021; Kenber-Çiftçi & Kırıl, 2020) show that the first behavior of teachers during noise is to warn students. This situation necessitates the development of self-control and self-management skills in terms of calmness rather than temporary warnings against noise. Imhofvd. (2009) emphasized that children can control noise better starting from the 4th grade, so awareness-raising activities should start from the pre-school period. Noise, a social problem today, can be minimized with awareness-raising activities to be held with all education stakeholders starting from the pre-school period.

The findings of this study are limited to the results obtained from the pictures of 2nd, 3rd, and 4th-grade students who volunteered in a visual arts class in a state primary school in the 2017-2018 academic spring term, with the subject of "a school polluted by noise". Based on these limitations, the students perceive noise as a disturbing, destructive phenomenon in school and social life, threatening physical and psychological health, and negatively affecting learning. However, it was seen that the focus was on the concepts of noise and sound in the paintings. In other words, the concepts of noise and sound were reflected in the pictures as the same concept for the students. Students believe that the teacher will solve the noise problem in the classroom. In addition, it has been determined that the students are aware of the noise problem and reflect an empathic perspective, which is a part of the solution to this problem in their pictures.

SUGGESTIONS

As a result of the research, it was seen that the students mostly perceived sound waves as noise and reflected them on the pictures. In this context, activities can be organized for students to learn the differences between the concepts of noise and sound. This difference in the outcomes related to sound in science lessons may be grasped by using alternative teaching methods. Then, applications should be made in the form of integrative activities in all courses with an interdisciplinary understanding.

Students have reflected that unnecessary communication tools are also sources of noise. Accordingly, the ringing volume should be kept at an optimal level during breaks and unnecessary announcements should not be made. Students are introduced to recess during the primary school period. Classroom teachers and school principals, who take on most of the responsibility in this period, should focus on recess education. Students should be taught how to go out and how to play in a way that does not disturb their friends and in the school garden.

The students explained the reason for the noise in the classroom with a sexist approach in a narrow frame. The fact that male students were more active than girls in the schoolyard might have strengthened the perception of sound and being noisy. In this direction, the rules of peaceful life, regardless of gender, should be internalized in students. However, the school garden is a place where students channel their energies. Pollution of these places by noise should be prevented. In this regard, the school garden should be designed in a way that will not cause noise, and the rules of use should be determined by taking the opinion of the architects. Schools should have gyms away from classrooms. The curriculum should be arranged accordingly. Classes such as physical education should be placed in a class time that will not disturb other classes, usually in the last class hours.

The students saw the teachers as the “symbol of calmness the students saw the teacher as a power that reduces the noise in the classroom and as an element of discipline. However, even in the classroom where the teacher is, there may be noise. For this reason, it is necessary to carry out activities in which students can internalize tranquility. The main goal is that calmness is a value shared by students at school. When the students avoid noisy attitudes and behaviors even when the teacher is not in the environment, a quiet learning environment can be provided in the school. If noise pollution at school can be reduced, the number of students who are aware of this issue will increase. As a result, social awareness of noise rises, and a peaceful society can be created. The important point here is to make students aware that noise is a social problem, not just a classroom problem.

REFERENCES

- Adams, E. (2002). Power drawing. *International Journal of Art & Design Education*, 21(3), 220–233. <https://doi.org/10.1111/1468-5949.00319>
- Akbaba, A., & Turhan, M. (2016). İlköğretim okul binalarının fiziksel sorunlarına ilişkin öğretmen görüşlerinin incelenmesi. *Karadeniz Teknik Üniversitesi Sosyal Bilimler Enstitüsü Sosyal Bilimler Dergisi*, 6(12), 341-356.
- Albers, P. (2007). *Finding the artist within: Creating and reading visual texts in the English Language Arts Classroom*. International Reading Association.
- Andrews, E. (2007). Second language teaching: A view from the right side of the brain (review). *Language*, 83(2), 430–431. <https://doi.org/10.1353/lan.2007.0052>
- Arıcı, B. (2006). Resim, psikoloji ve çocuğun dünyasında resim. *Sanat Dergisi*, (10), 15-22.
- Aydın, F. U. (2019). *Okullardaki gürültüyü etkileyen faktörlerin veri madenciliği ve deneysel tasarım ile analizi* [Yayımlanmamış Doktora Tezi]. Bursa Uludağ University.
- Bakker, A., & Hoffmann, M. H. (2005). Diagrammatic reasoning as the basis for developing concepts: A semiotic analysis of Students' learning about statistical distribution. *Educational Studies in Mathematics*, 60(3), 333–358. <https://doi.org/10.1007/s10649-005-5536-8>
- Bayav, D. (2006). *Resimde göstergebilim, çocuk resimlerinin göstergebilimsel çözümlenmesi* [Yayımlanmamış doktora tezi]. Marmara Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Bilgili, S., Türkel, E., Altınoluk, H.M., Hüsmen, N., Bütün, A., & Ertorun, H. (2011). Çevre ve Orman Bakanlığı Çevre Yönetimi Genel Müdürlüğü, çevresel gürültü ölçüm ve değerlendirme kılavuzu. Ankara. Erişim adresi:<https://webdosya.csb.gov.tr/db/cygm/icerikler/cevresel-gurultuolcum-ve-degerlend-rme-klavuzu-20180209145104.pdf>
- Bulunuz, M. (2021). *Okulda gürültü kirliliği: çözüm için faaliyetler ve projeler*. Uludağ Üniversitesi Basımevi.
- Bulunuz, M., & Akyün, C. S. (2019). Bursa’da bir devlet okulundaki gürültü düzeyi ve akustik ortamın değerlendirilmesi. *Milli Eğitim Dergisi*, 48(1), 535-552.
- Bulunuz, M., & Güner, F. (2017). Öğretmen görüşlerine göre okulda gürültü düzeyinin değerlendirilmesi: Fransa ve Türkiye örneği. *Electronic Turkish Studies*, 12(35), 69-87.
- Bulunuz, M., Bulunuz, N., & Kelmendi -Tuncal, J. (2017). Akustik iyileştirme yapılmış bir okulda gürültü düzeyinin değerlendirilmesi. *Eğitimde Kuram ve Uygulama*, 13(4), 637–658. <https://doi.org/10.17244/eku.347793>
- Bulunuz, M., Bulunuz, N., Tavşanlı, Ö. F., Orbak, A. Y., & Mutlu, N. (2018). İlkokullarda gürültü kirliliğinin düzeyi, etkileri ve kontrol edilmesine yönelik sınıf öğretmenlerinin görüşlerinin değerlendirilmesi. *Kastamonu Eğitim Dergisi*, 26(3), 661-671. <https://doi.org/10.24106/kefdergi.412246>

- Bulunuz, N. (2014). Noise pollution in Turkish elementary schools: Evaluation of noise pollution awareness and sensitivity training. *International Journal of Environmental & Science Education*, 9, 215-234. <https://doi.org/10.12973/ijese.2014.212a>
- Bulunuz, N., Onan, B. C., & Bulunuz, M. (2021). Öğretmenlerin gürültü hassasiyeti ve okulda gürültü kirliliğini önleme çabaları. *Journal of Qualitative Research in Education*, 26, 171-197. <https://doi.org/10.14689/enad.26.8>
- Burunsuz, M. (2007). *Semiyolojik açıdan soyut resimde imge* [Yayımlanmamış yüksek lisans tezi]. Dokuz Eylül Üniversitesi, Eğitim Bilimleri Enstitüsü.
- Can, N., & Ermeýdan, M. (2017). Disiplin sorunları ve sınıf yönetimine ilişkin öğretmen ve yönetici görüşleri. *Kahramanmaraş Sütçü İmam Üniversitesi Eğitim Dergisi*, 1(1), 38-58.
- Coates, E., & Coates, A. (2017). Participant observation as a means of examining young children's scribble drawings and their accompanying narratives. <https://doi.org/10.4135/9781526423580>
- Coşkun, Y. (2021). Öğretmen görüşleri bağlamında okullarda gürültü kirliliği sorunsalı, teknolojik ve eğitsel çözüm önerileri. *Itobiad: Journal of the Human & Social Science Researches*, 10(1), 207-230. <https://doi.org/10.15869/itobiad.833459>
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
- Çankırılı, A. (2011). *Çocuk resimlerinin dili*. Zafer Yayınları.
- Demir, S. (2008). *İlköğretim 6, 7 ve 8. sınıflar Türkçe ders kitaplarındaki öykülerin metin dilbilimsel yöntemlerle incelenmesi ve bu metinlerin öğrencilerin anlama düzeylerine etkisi (Malatya ili örneği)*[Yayımlanmamış yüksek lisans tezi]. Fırat Üniversitesi, Sosyal Bilimler Enstitüsü.
- Dunbar-Hall, P. (1991). Semiotics as a method for the study of Popular Music. *International Review of the Aesthetics and Sociology of Music*, 22(2), 127. <https://doi.org/10.2307/836920>
- Ernest, P. (2006). A semiotic perspective of mathematical activity: The case of number. *Educational Studies in Mathematics*, 61 (1-2), 67-101. <https://doi.org/10.1007/s10649-006-6423-7>
- Godino, J. D., Batanero, C., & Font, V. (2007). The onto-semiotic approach to research in Mathematics Education. *ZDM*, 39(1-2), 127-135. <https://doi.org/10.1007/s11858-006-0004-1>
- Grant, M. J. (2003). Experimental music semiotics. *International Review of the Aesthetic and Sociology of Music*, 34 (2), 173-191.
- Grebennikov, L. (2006). Preschool teachers' exposure to classroom noise. *International Journal of Early Years Education*, 14(1), 35-44. <https://doi.org/10.1080/09669760500446382>
- Grebennikov, L., & Wiggins, M. (2006). Psychological effects of classroom noise on early childhood teachers. *The Australian educational researcher*, 33(3), 35-53. <https://doi.org/10.1007/BF03216841>
- Güremen, L. (2012). İlköğretim okullarında iç ve dış ortam işitsel konfor koşullarının kullanıcılarındaki etkisinin değerlendirilmesi üzerine bir çalışma: Amasya kenti örneği. *E-Journal of New World Sciences Academy, NWSA-Engineering Sciences*, 7(3), 580-604.
- Hall, E. (2008). My brain printed it out! Drawing, communication, and young children: A discussion. Paper presented at the British Educational Research Association Annual Conference, Heriot-Watt University, Edinburgh, September 3-6.
- Hancı, H. (2008). *Göstergebilimin grafik tasarım dersi alan öğrenciler üzerindeki etkisi*. [Yayımlanmamış yüksek lisans

tezi]. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü.

- Huss, E., & Cwikel, J. (2005). Researching creations: Applying arts-based research to Bedouin women's drawings. *International Journal of Qualitative Methods*, 4(4), 44–62. <https://doi.org/10.1177/160940690500400404>
- Imhof, M., Henning, N., & Kreft, S. (2009). Effects of background noise on cognitive performance in elementary school children, listening education. www.researchgate.net/publication/307856096_Effects_of_Background_noise_on_cognitive_performance_in_elementary_school_children.
- Kenber-Çiftçi, A. K., & Kıral, B. (2020). Sınıf öğretmenlerinin okul gürültüsüne ilişkin görüşleri. *Kilis 7 Aralık Üniversitesi Sosyal Bilimler Dergisi*, 10(19), 127-149. <https://doi.org/10.31834/kilissbd.715338>
- Kılıç, M. Y., & Adalı, S. (2020). İlkokul çevresinde gürültü kirliliğinin belirlenmesi: Bursa ili örneği. *Journal of the Institute of Science and Technology*, 10(3), 1607-1615. <https://doi.org/10.21597/jist.692523>
- Kırıçođlu, O. T. (2002). *Sanatta eğitim*. Pegem Yayıncılık.
- Kress, G. (2013). Perspectives on making meaning: The differential principles and means of adults and children. *The SAGE Handbook of Early Childhood Literacy*, 329–344. <https://doi.org/10.4135/9781446247518.n19>
- Kress, G., Hall, N., Larson, J., & Marsh, J. (2012). Perspectives on making meaning: The differential principles and means of adults and children. *Handbook of Early Childhood Literacy*. 2nd ed. Thousand Oaks, CA: Sage, 329-344.
- Machón Antonio, Eisner, E. W., & Dodman, J. F. (2013). *Children's drawings: The Genesis and nature of graphic representation: A developmental study*. Flibulas.
- Malchiiodii, C. (2005). *Çocukların resimlerini anlamak*. Epsilon Yayınları.
- McNiff, S. (1998). *Art-based research*. Jessica Kingsley Publishers.
- Özbiçakçı, F. Ş., Çapık, C., Gördes, N., Ersin, F., & Kıssal, A. (2012). Bir okul toplumunda gürültü düzeyi tanılması ve duyarlılık eğitimi. *Eğitim ve Bilim*, 37(165).
- Özmutlu, A. (2009). *Grafik tasarım atölye derslerinde afiş konusunun uygulama ve çözümleme süreçlerinde göstergebilimsel çözümleme yönteminin kullanımı*. [Yayımlanmamış yüksek lisans tezi]. Ondokuz Mayıs Üniversitesi, Sosyal Bilimler Enstitüsü,
- Paine, S. (1997). Early obsessive drawings and personal development. *Journal of Art & Design Education*, 16(2), 147–155. <https://doi.org/10.1111/1468-5949.00067>
- Polat, S., & Buluş-Kırıkkaya, E. (2007). İlk ve ortaöğretim okullarındaki ses düzeyleri. *İzaleasyon Dergisi*, 66, 78-82.
- Ring, K. (2006). Supporting young children drawing: Developing a role. *International Journal of Education through Art*, 2(3), 195–209. https://doi.org/10.1386/etar.2.3.195_1
- Sadık, F., Çakan, H., & Artut, K. (2011). Analysis of the environmental problems pictures of children from different socio-economical level. *Elementary Education Online*, 10(3), 1066-1080.
- Saussure, F. (1998). *Genel dil bilim dersleri* (Çev.B.Vardar). Multilingual Yayınları.
- Savcı-Özğüven, İ.Z. (2015) *İlköğretim binalarında konuşma anlaşılabilirliği ve ses kalitesini incelemek üzerine bir alan araştırması* [Yayımlanmamış yüksek lisans tezi]. İTÜ, Fen Bilimleri Enstitüsü.

- Sezen, E. (2007). *Plastik sanatlarda imgeye öznal yaklaşımlar*. [Yayımlanmamış yüksek lisans tezi]. Dokuz Eylül Üniversitesi, Güzel Sanatlar Enstitüsü.
- Shield, B., & Dockrell, J. E. (2004). External and internal noise surveys of London primary schools. *The Journal of the Acoustical Society of America*, 115(2), 730-738. <https://doi.org/10.1121/1.1635837>
- Tamer-Bayazıt, N., Küçükçifçi, S., & Şan, B. (2011). İlköğretim okullarında gürültüden rahatsızlığın alan çalışmalarına bağlı olarak saptanması. *İTÜ Dergisi*, 10(2), 169-181.
- Tan, M. (2021). Modernite, gürültü ve sessizlik: Sosyolojik Bir Eleştiri. *Sosyolojik Bağlam Dergisi*, 2(2), 107-118. <https://doi.org/10.52108/2757-5942.2.2.7>
- Taş, S. (2010). Yenilikçi bir eğitim anlayışı: zilsiz okul. *Süleyman Demirel Üniversitesi Fen-Edebiyat Fakültesi Sosyal Bilimler Dergisi*, 2010(22), 207-226.
- Türkcan, B. (2013). Çocuk resimlerinin analizinde göstergebilimsel bir yaklaşım. *Educational Sciences: Theory&Practice* - 13(1), 585-607.
- Yalılı Kılıç, M, Adalı, S. (2020). Pazar yerinde gürültü kirliliğinin belirlenmesi: Bursa İli Örneği. *Dicle Üniversitesi Mühendislik Fakültesi Mühendislik Dergisi*, 11 (3), 1421-1430. <https://doi.org/10.24012/dumf.736027>
- Yavuzer, H. (2015). *Resimleriyle çocuk* (19. basım). Remzi Kitabevi.
- Zentall, S. S. (1983). Learning environments: A review of physical and temporal factors. *Exceptional Education Quarterly*, 4(2), 90-115.