



Pre-service teachers' reflections of their concerns about social, environmental and global problems via drawing cartoons

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Abstract

The present study aimed to determine the viewpoints of student teachers at a state university in Turkey about the most important social, environmental, and global problems. For this purpose, one of the qualitative research methods, the art-based research method was adopted. The participants' cartoon drawings were utilized as the data collecting tools along with face to face interviews on describing their cartoons verbally. In the study, participant students were invited to draw cartoons about the social, environmental and global issues that they were concerned about most in November 2019, during the fall semester of 2019-2020 academic year. Findings of the research illustrated that the student teachers were affected by the current events and media reports about the social, environmental and global issues. In addition, the cartoon drawings of the participant students helped them reveal their creative and critical thinking skills, decision making ability, perception and evaluation power, environmental literacy, empathy, observation and visual literacy skills. Moreover, the present study demonstrated that when the student teachers were encouraged and were provided with sufficient freedom, they could reflect their creative and critical thinking skills via drawing thematic cartoons.

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Keywords: Cartoons, art, education, student teachers, social, environmental and global problems

1. Introduction

Cartoons are described as drawings that exaggerate certain physical features, actions or qualities of a depicted individual or an object (Thakur, 2015). These drawings have certain degree of depth since they have to reflect a lot with little material (Ramachandran & Hirstein, 1999). Cartoons facilitate the analysis and interpretation of complex social, economic and cultural issues by reaching a wide audience, and presenting these issues in a way that students could understand and ensuring the inclusion of these

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issues in knowledge production (Gafoor & Shilna, 2013; Kleeman, 2006). The reflection of the observations of students on cartoons leads to the development of their humor and creativity. This allows students to criticize, interpret and conduct original evaluations (Sexton, Gervasoni & Brandenburg, 2009). It is easier to explain our views and respond to disturbing events, especially psychosocial problems, via cartoons (Kauffman, 1997). In fact, several educators reported that cartoons could be useful when used as a motivation tool in the expression of student ideas and encouraging the students with low self-esteem in education (Bahrani & Soltani, 2011; Guthrie, 1999; Haugaard, 1973; Kleeman, 2006; Mahmoudabadi & Nadimi, 2015; Parrott 1994; Tamblyn, 2002; Ulloth, 2002). According to Akengin and İbrahimoglu (2010), it is also possible for students to produce different ideas in classroom environments where cartoons are employed since it allows active student participation. In fact, cartoons have the potential to improve thinking processes and discussion skills (Bahrani & Soltani, 2011; Clark, 2000; Srinivasalu, 2016). Because, the same thought processes are involved in both humor and problem solving and these factors strengthen each other (Berk, 2002). However, humor is like a dynamite. It could remove the obstacles between the topic and the student when used by the teacher. However, when used by a novice, it could easily destroy the class (Wandersee, 1982).

As a language of communications, cartoons include all communication elements. The artist who draws the cartoon, or the cartoonist, is the sender and the created work contains a message (Özçubukçu, 2013). This message is a universal message presented to all humanity (Başol, 2004). The illustrator communicates secretly and non-verbally with the audience (Karakas, 2012). In fact, it is a communication tool that could be seen almost every day in newspapers, magazines, television, advertisements, t-shirts or packaging, sometimes laughed at and sometimes contemplated about. In the instructional communication, cartoons could be employed as an instructional media in a way to demand creativity from the learner, as well as improving critical thinking and intellectual skills, the imagination and raising social awareness (Syamsuri, Muhsin & Nurmayani, 2016). The cartoons inform, criticize, entertain, and educate.

Cartoons are well suited to initiate classroom discussions, support multidisciplinary courses, visualize the instruction, support high-level questions, and supply a basis for original analysis (Bahrani & Soltani, 2011; Heitzmann, 1998; Srinivasalu, 2016). Cartoons have several contributions to the educational environment. The most important of these include the mobilization of prior knowledge, integration of knowledge information, facilitation of comprehension, mental structuring, and retention of knowledge. Certain reasons for the employment of cartoons in education could be listed as follows:

- Cartoon is an interesting art for the students due to humorous content.
- Uncovering a joke hidden between the lines means solving a puzzle or discovering something new for the students.

- Cartoons develop thinking, perception, comprehension, recognition, creative, and imagination skills of the students.
- Cartoons could be employed in every course and on every topic.
- Cartoons improve the student interest in the course and prevent boredom.
- Cartoons allow permanent and fun learning since they involve a higher number of sensory organs and intellectual activities.
- Cartoons improve reasoning skills.
- Cartoons allow the students to recognize their environment and the society better.
- Cartoons increase students' interest in arts and develop their aesthetic senses.

The cartoons may be useful tools in all courses since they are about the real life and the real people in life. The cartoons have potential to allow students to get better acquainted with their environment and the society, and as a consequence the child's perspective on social events may improve. Cartoons allows teachers to access students' minds, especially to intervene their misunderstandings or to encourage further learning. Efe (2008) reports three steps in the integration of the cartoons with the course topic. These steps include the initial focus on the cartoon, the employment of the cartoon in the intermediate stage, the focus on the subject in the final step. In the stage of the initial focus on the cartoon, the motivation begins. As a visual text, the association of the cartoon with the topic motivates the students and attracts their interest in the subject. In the intermediate stage, the teacher, who started to instruct the topic, could animate the topic using cartoons to attract the interest of the students after 10-15 minutes. Because the interest of the student who could not understand the topic at the beginning, could be attracted in the intermediate stage. The student, who is now motivated, perceives the remaining part of the instruction, and the previous part could be recovered by the student with a brief repetition. Thus, the student's attention is concentrated on the instruction. In the final stage of the focus on the subject, the students who could not comprehend the topic or got distracted throughout the instruction, could comprehend the whole topic that they missed by briefly focusing on the topic in this stage. Several previous studies reported the benefits of exposing the students to cartoons in the classroom (Dougherty, 2002; Ersoy & Turkkan, 2010; Keoght, Naylor & Eilson, 1998; Kleeman, 2006; Smith & Leptich, 1963, Srinivasalu, 2016; Rule & Auge, 2005). Van Wyk (2011) reported that activities conducted with cartoons allowed interaction; thus, the students had the opportunity to share their ideas and discuss the views of other students. Kroehnert (1999) also emphasized that cartoons helped overcome social stereotypes. Bahrani and Soltani (2011) argued that activities conducted with cartoons led to a stress-free, relaxing atmosphere and improved the relationships between the teacher and

students. Macgillivray (2011) also reported that cartoons could help students identify and analyze biased behavior, events and phenomena.

In general, educators tend to utilize cartoons in two ways: they either analyze a pre-drawn cartoon or they create a new cartoon on a specific topic. Either method is effective in instruction (Lynch, 2018). Often, cartoons address and try to comment on public and environmental issues, personalities, events or social trends. A well-designed cartoon makes complex problems comprehensible for a wider (non-specialist) audience (Kleeman, 2006). Prior experiences demonstrated that it has been difficult to encourage students to think and discuss certain issues and new concepts, especially in the early years of higher education (Doring, 1998). Eulie (1969) argued that when cartoons are used in instruction, (1) interest could be aroused and sustained, (2) students could be encouraged to think, and (3) it could help us understand the issues. When cartoons are employed, the active participation of the students should be maintained by a) thinking about the issues depicted in the cartoons, b) discussing their meaning, and c) allowing the students to draw or create cartoons when possible. In fact, cartoons drawn by students would encourage them to think about certain issues and support the students in expressing their positions on the issue (Khalid, Meerah & Halim, 2010; Witkin, 1999). The cartoons drawn by the students could reveal the meanings they assign to local and global problems and provide an important source of information for the educators on student values, skills and rules. The present study aimed to identify the social, environmental and global problems that education faculty students considered important and to analyze their views and observations via cartoons. Based on this general aim, the following research questions were identified as in the following:

- 1) What are the social, environmental, and global problems that student teachers are concerned about most?*
- 2) How do student teachers depict the social, environmental, and global problems via drawing cartoons?*

2. Method

2.1. The research model

The study was based on an art-based research method as one of the qualitative research methods. An art-based research design is considered an adequate method to research complex processes and to explore and interpret educational cases (Freitas, 2007; Sullivan, 2006). In the study, the collected data were supported by standardized interviews conducted with the participants to reveal their perceptions about their inner world and social, environmental and global problems when the art-based research approach was employed. Because, students need to verbally explain their drawings to understand the meanings of their cartoons (Richardson, 1982). Thus, the aim of the study

was to determine the student perspectives on various concepts, events or cases through their perceptions reflected in their artistic drawings (Denzin & Lincoln, 2005).

2.2. The study group

In the study, the maximum diversity sampling as a purposive sampling method was employed. The maximum diversity method aims to explore major themes that include several differences associated with the event or phenomenon of study (Neuman, 2014). The study group was assigned purposively on voluntary basis, and the participants were selected from different departments in the Faculty of Education to obtain maximum diversity. The maximum diversity sampling aims to identify similarities and differences between various groups (Yıldırım & Şimşek, 2016). The participants comprised 74 student teachers in the Faculty of Education at a state university in the east of Turkey in the 2019-2020 academic year. During the cartoon-based activities, it is necessary to target high student participation (Nichol, 1984). Participants' demographic features are presented in Table 1.

Table 1. Participants' demographic features

		GENDER					
		Female		Male		Total	
		N	%	N	%	N	%
DEPARTMENT	Primary School Mathematics Instruction	7	10	9	12	16	22
	English Language Instruction	8	11	5	7	13	18
	Social Studies Instruction	6	8	8	11	14	19
	Psychological Counseling and Guidance	10	14	4	5	14	19
	Primary School Instruction	5	7	2	3	7	9
	Science Instruction	3	4	4	5	7	9
	Turkish Language Instruction	2	3	1	2	3	4
	Total	41	55	33	45	74	100

The analysis of the data presented in Table 1 demonstrates that 55% of the participants were female students and 45% were male students. The participants were pursuing their education in the Departments of Primary School Mathematics, English Language Teaching, Social Studies, Psychological Counseling and Guidance, Primary School Instruction, Science and Turkish Language.

2.3. Data collection and analysis

The study data were collected in the elective Human Relations and Communications course in November 2019 during the fall semester of 2019-2020 academic year. During the instruction of the course topic 'Empathy in Communication', current events reported in newspapers were reviewed in group discussions on how these events affect the individuals and the social, environmental and global natural life, solution suggestions were presented, and the participants were asked to approach these issues with empathy.

Then, a standardized open-ended interview form, developed by the researcher, was applied to the participants. During the development of the form, a literature review was conducted to ensure content validity. Standardized interviews are designed to reveal available information using a set of predefined questions that are expected to reveal the views, ideas and attitudes of study participants on relevant topics (Berg & Lune, 2016). Researchers who employ this technique have solid ideas about what they want to reveal during the interviews (Schwartz & Jacobs, 1979). To identify the social, environmental and global problems that the participants considered important, they were provided with cards on which the current problems were written and blank cards that would allow them to write a social, environmental and global problem that they recognized, and they were asked to order these problems based on their importance on a form. Then, they were expected to draw a cartoon on the same form about the problem they considered most important, and to explain the main theme of the cartoon they drew. Finally, the problem ranking, cartoons, and views of the participants were analyzed. In the analysis of the data, the cartoons drawn by the participants were reviewed by the author and two field experts. In this review, the components associated with the selected problem in each cartoon were determined and coded, and descriptive analysis was conducted. In fact, transferability (generalizability or applicability in another field) of qualitative research findings depends on the adequate description of the data (Yıldırım & Şimşek, 2016). In the reliability analysis conducted on the codes determined by the experts and the author, the Miles and Huberman (1994) formula ($\text{Reliability} = \frac{\text{Agreement}}{\text{Agreement} + \text{Disagreement}} \times 100$) was employed. Thus, the reliability coefficient was calculated as 85% in the study. Miles and Huberman (1994) argued that the reliability coefficient should be over 70% to consider a study reliable.

3. Findings

The findings of the study are reported as follows covering 18 sample cartoon drawings of the participant student teachers. The cartoons are presented with the participants' explanations about the particular depicted problems illustrated in each of them.

3.1. The ranking of the social problems that were considered important by the participants

To identify the social problems that the participants deemed important, they were given a blank card to write a social problem along with the cards on which social problems were written by the author, and they were asked to rank these problems in the area indicated on the form. The participant rankings are presented in Table 2.

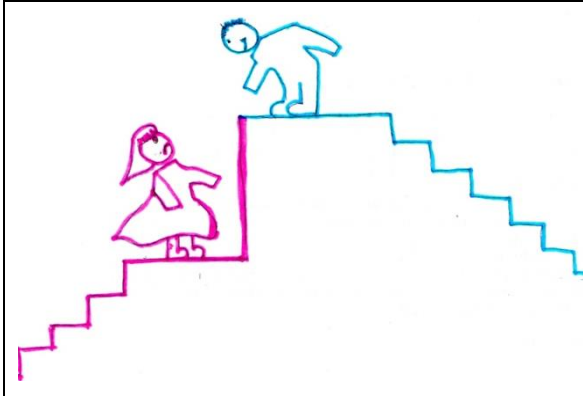
Table 2. The ranking of social problems according to the participants

Social problems mentioned in the 1st rank	(f)	Social problems mentioned in the 2nd rank	(f)	Social problems mentioned in the 3rd rank	(f)
<i>Social justice and inequality</i>	18	<i>Education problems</i>	14	<i>Violence</i>	16
<i>Education problems</i>	16	<i>Social justice and inequality</i>	12	<i>Education problems</i>	11
<i>Abuse</i>	12	<i>Violence</i>	11	<i>Social justice and inequality</i>	9
<i>Violence</i>	8	<i>Gender inequality and discrimination</i>	9	<i>Abuse</i>	7
<i>Gender inequality and discrimination</i>	5	<i>Unemployment</i>	7	<i>Unemployment</i>	7
<i>Unemployment</i>	5	<i>Abuse</i>	6	<i>Poverty</i>	5
<i>Poverty</i>	3	<i>Unhealthy life and food problems</i>	5	<i>Gender inequality and discrimination</i>	5
<i>Shelter</i>	2	<i>Epidemics</i>	2	<i>Consumption addiction</i>	4
<i>Unhealthy life and food problems</i>	2	<i>Poverty</i>	2	<i>Unhealthy life and food problems</i>	3
<i>Media dependency</i>	2	<i>Consumption addiction</i>	2	<i>Income distribution inequality</i>	3
<i>Income distribution inequality</i>	1	<i>Income distribution inequality</i>	2	<i>Media dependency</i>	3
		<i>Employment</i>	1	<i>Employment</i>	1
		<i>Divorce</i>	1		

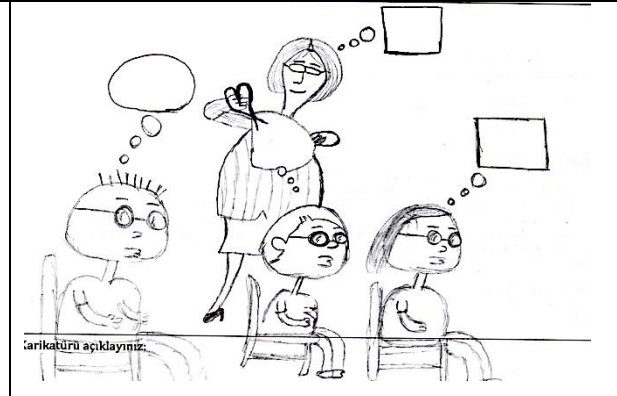
As seen in Table 2, the most important social problems according to the participants were social justice and inequality (1st rank), education problems (2nd rank), and violence (3rd rank). Furthermore, abuse, gender inequality and discrimination, and unemployment were also mentioned by the participants. The least mentioned problems included income distribution inequality, employment and divorce.

3.2. Social problems depicted in cartoons

In 23 cartoons on social problems drawn by the participants, social justice and inequality, educational problems, abuse, violence, gender inequality and discrimination, unemployment, poverty, shelter, unhealthy living conditions and nutritional problems, media dependence, and divorce were mentioned. Among these, problems associated with violence and media dependency were considered more important by the participants, and there were more cartoons on these issues. Certain samples of social problems considered important by the participants and their views on the cartoons they drew who argued that the most important way to overcome environmental and global problems is live happy and satisfied social lives are presented below:

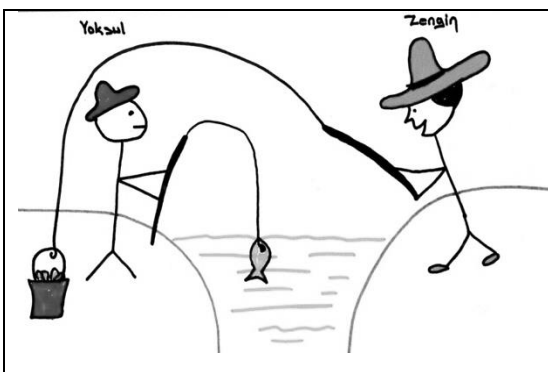


CARTOON 1 (P9), Gender inequality

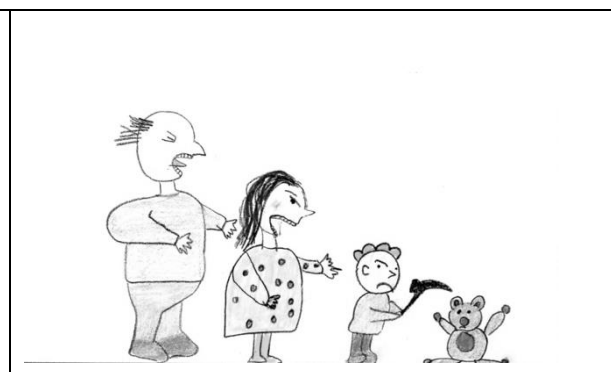


CARTOON 2 (P50), Educational problems

Participant 9, who addressed gender inequality in Cartoon 1 stated that *"it is easier for men to climb the ladder of success and it is not easy for women to achieve success, they are forced to face several difficulties."* The cartoon the participant 9 drew depicted stairs to represent this difficulty, by drawing higher steps for the female individual to reflect the difficulties induced by gender inequality. On educational problems, participant 50 stated that *"education destroys students' creativity and molds them into the same shape, and since it makes people afraid of doing wrong, it creates hesitation in revealing their main abilities."* The participant 50 expressed this view in Cartoon 2 by allowing a teacher to shape the thought bubbles of the students. Participant 50 stated that she/he was influenced by a similar drawing and suggested that *"education should be prioritized since the education of its members determines the future of a society, and it should aim to reveal the skills of the students by creating educational opportunities."*



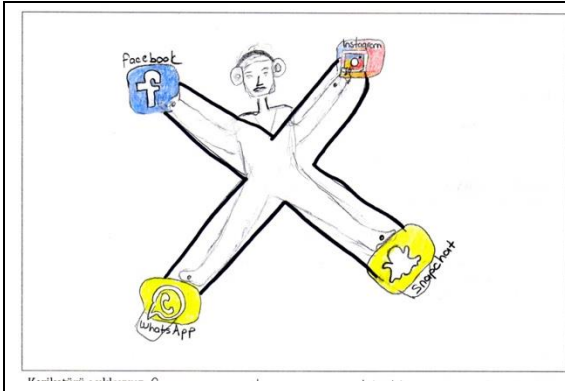
CARTOON 3 (P13), Poverty



CARTOON 4 (P11), Domestic violence

The participant P13 drew fishing people on a poverty theme in Cartoon 3 by advocating the following: *"To prevent poverty, there is a need for practices that would*

improve the conditions of the poor, ensure that the income equality would be prevalent in larger sections of the society, and prevent income from accumulating in the hands of a certain class". The fisherman who symbolized a wealthy man in the cartoon makes unfair money using a fishing rod while a poor fisherman labored to fish. The participant 11 depicted a chain of violence that includes mechanisms that feed and produce one another in a family setting in Cartoon 4 on domestic violence. In the cartoon, the father resorts to violence against the mother, the mother against the child and the child against the toy.



CARTOON 5 (P36), Media dependency



CARTOON 6 (P55), Media dependency

Participant 36 stated that “the most important problem of our times is the lack of communication based on technology dependency that almost enslaved all, and social media dependency, which is considered as a developmental criterion, has crucified humanity and imprisoned in an eternal global lie.” In Cartoon 5 that reflected the idea, it could be observed that the limbs of a crucified individual are surrounded by Facebook, Instagram, WhatsApp and Snapchat. According to the participant 55, media dependency negatively affects the personality and mental health of individuals, and the participant reflected the negative effects of media addiction on a cartoon, where a patient waiting in front of the social media hospital emergency department door tries to select the adequate door among the WhatsApp oncology, Instagram surgery, troll outpatient clinic, face angiography, tweet therapy, battery and charge diseases, facetime unit departments that suits her/his problem.

3.3. The ranking of the environmental problems that were considered important by the participants

The fact that individuals utilize nature without considering the consequences, forcing its internal dynamics, consuming more and more, leads to environmental damages and certain problems. The environmental problems that the participants focused on and considered important are presented in Table 3.

Table 3. The ranking of environmental problems according to the participants

Environmental problems mentioned in the 1 st rank	(f)	Environmental problems mentioned in the 2 nd rank	(f)	Environmental problems mentioned in the 3 rd rank	(f)
Pollution	37	Pollution	20	Damages to vegetation and animal communities	22
Damages to vegetation and animal communities	16	Damages to vegetation and animal communities	15	Traffic and transportation problems	12
Rapid population growth	10	Deforestation	13	Urban sprawl	11
Traffic and transportation problems	4	Traffic and transportation problems	11	Deforestation	9
Urban sprawl	3	Urban sprawl	7	Pollution	8
Deforestation	2	Rapid population growth	6	Rapid population growth	8
Natural disasters problem	1	Natural disasters problem	2	Natural disasters problem	3
Waste of natural resources	1			Waste of natural resources	1

As seen in Table 3, the most important environmental problems according to the participants were pollution and damages to vegetation and animal communities, followed by rapid population growth, traffic and transportation problems, urban sprawl, and deforestation. Natural disasters and waste of natural resources were the least mentioned problems.

3.4. Environmental problems depicted in cartoons

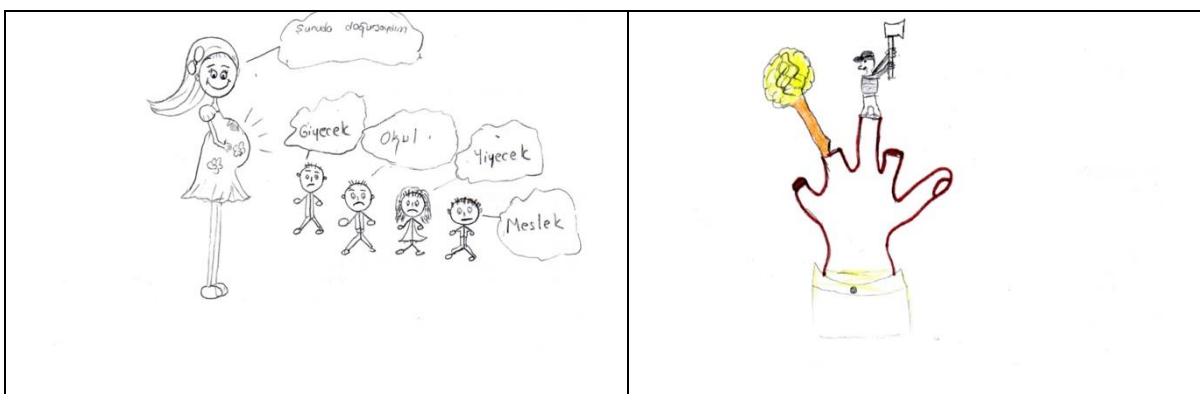
Nineteen participants, who reflected environmental problems in their cartoons, considered pollution, urban sprawl, damages to vegetation and animal communities, rapid population growth, deforestation, traffic, and transportation problems as the most important problems. Among these, the pollution and deforestation were considered as more important by the participants and cartoons associated with these were produced the most. Participants stated that they have taken personal initiatives to support afforestation activities, participated in scientific activities (conferences, seminars etc.) to raise awareness, promote clean environment, recycling, protection and feeding the animals. Samples of related cartoons are presented below:



CARTOON 7 (P29), Urban sprawl

CARTOON 8 (P73), Pollution

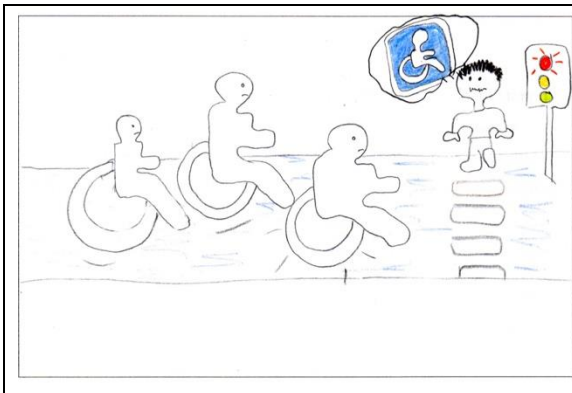
Participant 29, who addressed the urban sprawl in Cartoon 7, emphasized this problem by stating that *"this unplanned, rapid and uncontrolled process affects human life negatively."* The review of the Cartoon 7 could reveal that the presence of green trees in the thought bubble of a woman walking in an environment with several gray buildings demonstrated that she was uncomfortable with the current environment and longed for green areas. In Cartoon 8th that reflected the theme of pollution, the participant 73 drew a student throwing thrash on the street although there was a litter box outside the school and stated in the interview form that she/he was *"uncomfortable with the presence of educated but environmentally unaware individuals."*



CARTOON 9 (P33), Rapid population growth

CARTOON 10 (P35), Deforestation

Participant P33 considered high population growth rate as the most important problem, and stated that if no precautions are taken, *"billions of people would face droughts, hunger and detrimental living conditions, as well as conflicts due to drought, food shortages, urban poverty, migration and rapidly depleting natural resources since they could not fulfill their needs,"* and drew a pregnant woman and desires of her four children. In Cartoon 9, the pregnant woman is happy for giving birth, but the children express their concerns about education, future anxiety, and living conditions. Participant 35 stated that deforestation has reached significant dimensions and equaled deforestation to losing an organ and likened a human finger, cut by another human, to a tree, visualizing the harms done by the humankind.



CARTOON 11 (P52), Traffic and transportation problems



CARTOON 12 (P25), Damages to animal communities

Due to the population growth and the rising number of vehicles in traffic, traffic became one of the significant urban problems. In Cartoon 11, the vehicle traffic was replaced by wheelchair traffic on the roads. This drawing by the Participant P52 shows an individual who could be disabled if he does not follow the traffic rules when crossing a road. In Cartoon 12 that addressed the problem of the destruction of animal communities, the desperation of a bear, a turtle, a cat, a bird, and a scorpion when a human with a gun asked them to raise their hands was pictured. Participant 25, who drew the cartoon, stated that “*animal habitats have been invaded by humans and therefore I drew this caricature to demonstrate the danger of extinction.*”

3.5. The ranking of the global problems that were considered important by the participants

The globalization process introduced new opportunities as well as leading to novel global problems. The most important global problems according to the participants are presented in Table 4.

Table 4. The ranking of global problems according to the participants

Global problems mentioned in the 1 st rank	(f)	Global problems mentioned in 2 nd rank	(f)	Global problems mentioned in 3 rd rank	(f)
<i>Human rights violations</i>	22	<i>Climate change and desertification</i>	17	<i>National economy and hunger</i>	18
<i>War</i>	15	<i>Human rights violations</i>	13	<i>War</i>	12
<i>National economy and hunger</i>	10	<i>International terrorism</i>	9	<i>Global environmental problems</i>	9
<i>Climate change and desertification</i>	7	<i>National economy and hunger</i>	8	<i>International migration</i>	6
<i>Minority problems</i>	4	<i>Ethnic conflicts</i>	4	<i>Destruction of the ozone layer</i>	5

<i>International migration</i>	3	<i>Religious problems</i>	4	<i>Religious problems</i>	5
<i>Religious problems</i>	3	<i>Melting glaciers and rising sea level</i>	4	<i>Climate change and desertification</i>	3
<i>International politics</i>	2	<i>International migration</i>	3	<i>Pollution of the oceans</i>	3
<i>Ethnic conflicts</i>	2	<i>Global environmental problems</i>	3	<i>Ethnic conflicts</i>	3
<i>Pollution of the oceans</i>	1	<i>Minority problems</i>	2	<i>Reduction in biodiversity</i>	3
<i>Linguistic rights problems</i>	1	<i>Pollution of the oceans</i>	2	<i>Global energy problem</i>	2
<i>Global environmental problems</i>	1	<i>International politics</i>	2	<i>Informatics and media problems</i>	2
<i>Reduction in biodiversity</i>	1	<i>The problem of international waters</i>	1	<i>Melting glaciers and rising sea level</i>	1
<i>Colonialism</i>	1	<i>Informatics and media problems</i>	1	<i>International politics</i>	1
<i>Epidemics</i>	1	<i>Reduction in biodiversity</i>	1	<i>Epidemics</i>	1

As seen in Table 4, the most important global problems were human rights violations (1st rank), climate change and desertification (2nd rank), and national economy and hunger (3rd rank) according to the participants. The other important global problems mentioned by the participants included war, international terrorism, minority problems, melting glaciers and rising sea level, international migration, religious problems, international politics, ethnic conflicts, and pollution of the oceans. The participants rarely mentioned epidemics, reduction in biodiversity, colonialism, the problem of international waters, and informatics and media problems.

3.6. *Global problems depicted in cartoons*

In 32 cartoons that reflect the global problems and drawn by the participants, global environmental problems, human rights violations, war, national economic and hunger issues, international migration problem, climate change and desertification issues were addressed. It was determined that the theme of war was more dominant in cartoons drawn about global problems. Samples of the cartoons drawn by the participants on globalization and associated global problems are presented below:



CARTOON 13 (P5), Global environmental problems

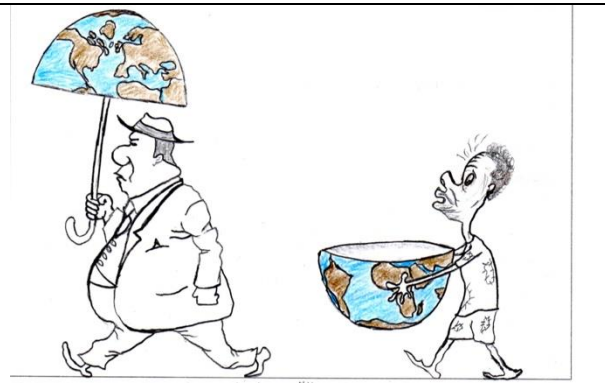


CARTOON 14 (P64), Global warming

The participant P5 stated that “the ecological imbalance due to pollution threatens the lives of all living creatures in the world; therefore, I see global environmental problems as the most important problem”. As is known, radioactive waste pollutes the air, water, soil, and plant habitats due to the electrons it emits. In Cartoon 13, air and water pollution due to industrial wastes and the global effects of pollution could be observed. The expression on the face of the world depicted in the cartoon reflects the pain and the magnitude of this impact. The Cartoon 14 on global warming includes the image of a polar bear performing ballet on a small ice mass. The participant P5 stated that the ecological imbalance due to pollution was reflected in the thought bubble of the polar bear; ‘I would have wanted to do sports, but I started ballet due to compulsory reasons.’ It could be seen that the living space of the polar bear has diminished, and they could not do what they want due to the melting of the glaciers. The participant P64 stated in the interview that she/he drew the cartoon since she/he was affected by the fact that the “global warming led to the extinction of several plants and animal species all over the world” and she/he was mostly affected by the harm done to the animals.

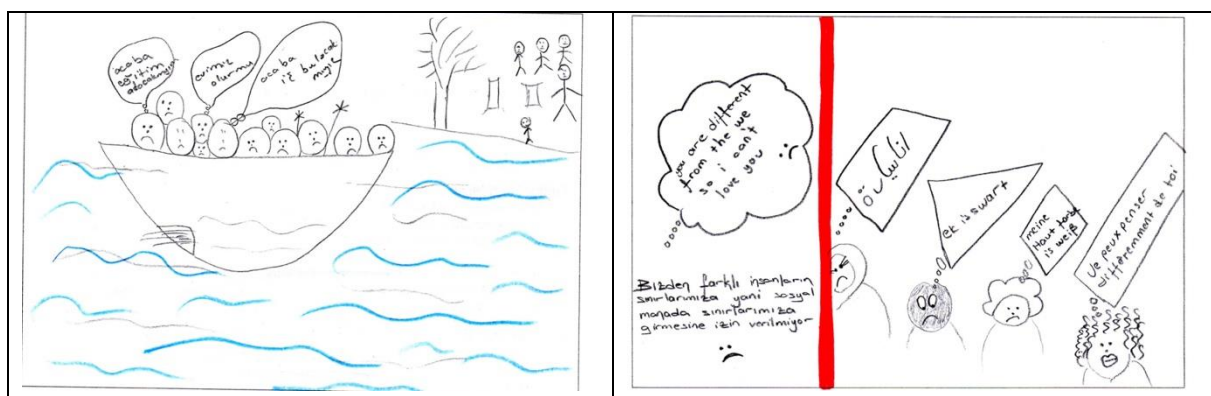


CARTOON 15 (P3), War



CARTOON 16 (P2), National economy and hunger

Participant 3 reflected her/his approach to war by stating that “In the Middle East, regional conflicts, which are getting harder to understand every day, have grown like a snowball and engulfed the whole region. It would be wrong to think of the organizations in the Middle East independent of global powers. I did not want to be insensitive to all these developments, so I drew this cartoon.” In the cartoon, P3 depicted the conditions of war and buildings destroyed by bombs and wanted to show that the wars are the normal in the region and named the cartoon as “An ordinary day in the Middle East”. In the cartoon drawn by Participant 2 (Cartoon 16) on national economy and the problem of hunger, a man who represented the side with a better economy held an umbrella, the man who represented the side with worse economy held an empty container to depict the differences in the economic wealth of northern and southern hemispheres. This cartoon is important since it reflects the perception of the participant about the global economy.



CARTOON 17 (P69), International migration

CARTOON 18 (P34), Human rights violations

"Since Turkey is not a country with only incoming or outgoing migration but also a transit country that migrants who desire to migrate to other countries pass through", Participant P69 stated that she/he wanted to draw a cartoon on migration. The participant reflected the dreams of refugees, who want to transit to other countries and look unhappy, on work, education and shelter (Cartoon 17). All individuals are equal before the law independent of gender, race, color, religion, language, age, nationality, idea, national or social origin, and wealth differences. P34, who stated that *"however, since people's tolerance towards others has been reduced recently, we have not allowed people whom we consider different to enter our country"* and reflected this view on the cartoon (Cartoon 18). On one side of the border drawn with a red line, the thought bubble reads 'You are different; thus, I cannot love you,' and on the other side, the bubble reads 'I am black' in an African language, and 'I am Arab' in Arabic, 'I am white' in German, and 'I might think different than you' in French, reflecting the inability of the differences to penetrate the borders.

4. Conclusion and Discussion

In the study, the participants ranked the importance of social, environmental, and global problems and reflected the problems they considered important in their cartoons. The important social problems according to the participants included social justice and inequality, educational problems, and violence. Furthermore, they also considered abuse, gender inequality and discrimination, and unemployment as other social problems. Income injustice, employment and divorce were considered as the least important problems. In 23 cartoons drawn by the participants on social problems, issues such as social justice and inequality, educational problems, abuse, violence, gender inequality and discrimination, unemployment, poverty, housing, health and nutritional problems, media dependence, and divorce were addressed. Among these, problems associated with violence and media dependency were considered more important by the participants, and the number of cartoons on these issues were more prevalent. The violence observed in almost every area of our lives continues to exist as a hidden threat that affects the lives, physical and mental health, peace and happiness of several individuals like an avalanche. It is important how the phenomenon of violence, which has become one of the prominent research topics today, is presented and accepted by the society. It was observed that the participants who witnessed violence felt uncomfortable with individuals who used the violence as a coping mechanism and questioned these individuals. Vogler (2013) reported that cartoons could be used to improve students' verbal questioning skills. It was observed that the participants, who were reluctant to state that they were disturbed by violence in their daily lives, expressed this fact more comfortably in their drawings. This was consistent with the finding reported by Keogh and Naylor (1999) that it was easier for students to express their innermost thoughts through cartoons, and they focused on events they considered problematic." The fact that the issue of "violence" was included in the cartoons on social problems revealed the need to emphasize the significance of love, respect, tolerance and peace. Furthermore, it was determined that programs and applications such as interpersonal problem-solving skills education, peer counseling, character training, conflict resolution and mediation training should be more prevalent and accessible, especially for those with violent tendencies. Another important social problem, which was included in many cartoons, was media dependency. Easy accessibility of technologies has led to 'media dependency,' which could be described as a novel dependency. The fact that the participants considered media dependency as the reason for several insensitive behavior was a reflection of their observations. In fact, it could be suggested that the issues reflected in the classroom are the reflections of real-life observations. The review of the cartoons demonstrated that social problems were often depicted with human figures, and the participants reflected their creativity and critical perspective on events and described spaces. In general, it was determined that current events and media were effective on the identification of social

problems. The success of the media in determining the framework of remembrance and creating instant memory is due to the technological advantages and its ability to infiltrate all social and human spaces, no matter how far and isolated it is to other mnemonic agents. (Başaran-İnce, 2010).

The review of the environmental problems specified by the participants demonstrated that the most important problems were pollution, endangered vegetation and animal communities, while rapid population growth, traffic and transportation problems, urban sprawl and deforestation were also mentioned as important environmental problems. Natural disasters and misuse of natural resources were the least prevalent problems. In the cartoons drawn by 19 participants on environmental problems, the most important problems included pollution, urban sprawl, endangered vegetation and animal communities, rapid population growth, deforestation, traffic and transportation problems. Among these problems, issues associated with pollution and deforestation were considered more important by the participants and cartoons related to these problems were drawn in greater numbers. Furthermore, it was determined that female participants drew cartoons more on environmental problems. Tikka, Kuitunen and Tynys (2000) reported that women were more sensitive towards the nature and men tend to dominate nature and benefit from natural resources more. The review of the cartoons on environmental problems revealed that environmental problems were depicted using animal, human, organ and plant images and associated events were addressed. It was observed that the participants drew cartoons based on critical thinking critically perceived the environmental problems accurately, conducted realistic analyses and empathized with these problems. For example, the fact that they reflected the environment through the eyes of a trash bin, a tree, or an animal demonstrated that the participants approached the environmental problems with empathy. It was also observed that the participants reflected their sensitivity and discomfort on environmental issues to their cartoons and were environment literate. In fact, individuals with environmental literacy have awareness, knowledge and sensitivity about the natural system and how human activities affect this system (Kaplowitz & Levine, 2005). Participants stated that they took individual initiatives in afforestation activities, participated in scientific activities (conferences, seminars etc.) to raise awareness, cared for a clean environment, spent efforts to recycle, and protected and fed animals. The approach of the participants to the problems they observed was an indication that they were not afraid to act as sensitive individuals. This finding was consistent with the results reported by Ersoy and Türkkan (2010).

The global problems that participants considered as the most important were human rights violations, climate change and desertification, national economy, and hunger problems. Issues such as war, international terrorism, climate change and desertification, the minority problem, rising sea level, and international migration problem were other global problems mentioned by the participants. Epidemics, reduced

biodiversity, colonialism, international water conflicts, informatics and media problems were reported as the least prominent issues. Covid-19 pandemic is an important current health problem and affected all humanity on a global scale. The fact that epidemics were considered as one of the least important problems in the present study was due to collection of the data when the disease was still not a global health problem. In fact, the global crisis induced by the epidemic significantly destroyed the basis of global production, leading to problems in the global supply chain and further problems.

The 32 cartoons drawn by the participants on global problems included global environmental problems, human rights violations, war, national economy and hunger problems, international migration problem, climate change and desertification issues. It was determined that the number of cartoons drawn about global problems was higher when compared to social and environmental problems. This suggested that students were more sensitive about global issues. Thus, the sensitive and positive attitude developed by the participants was significant. Because, desensitization to global risks would lead to the worst consequences for all humanity. The review of the cartoons drawn about global problems demonstrated that the theme of war was the most dominant theme. It was observed in the cartoons that global problems were generally depicted with geographical elements, a war atmosphere, and human images; their creativity was reflected with frequent exaggerations and parables on global environmental problems, national economies and hunger, global warming and war. In particular, the courage and critical approach of the participants, who expressed their attitude towards global issues more clearly in their drawings, as reported by Khalid, Meerah and Halim (2010) and Witkin (1999), supported the view that cartoons encouraged individuals to think about the issues in detail and take bold action.

In conclusion, the findings of the study have revealed that fact that the student teachers are affected by current events and media about social, environmental and global issues; the student teachers can reflect their concerns about these problems via drawing cartoons and; such an activity can be helpful to develop student teachers' skills and abilities of creative and critical thinking, decision making, perception, analysis, environmental literacy, empathy, observation and visual literacy. Studies such as the present one can serve as a guide in determining the effects of the problems on student teachers and developing realistic solutions to overcome such problems. The present study also demonstrates that when students are motivated on a topic and given enough freedom, they can reflect their creative and critical thinking skills via some art-based practices. It is safe to infer that allowing students to draw cartoons on different topics frequently in courses may help them develop their perspectives and contribute to develop their general competencies as prospective teachers.

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