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A NEW PERSPECTIVE ON GLOBAL CLIMATE CHANGE, WATER LITERACY AND WATER CONSERVATION; WATER CONCERN

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ABSTRACT

While global climate change and water literacy aim at the usage of water resources most effective as possible, natural events have brought water concerns to the agenda. The aim of this study is to determine the opinions of high school students attending BİLSEM about water anxiety in the context of climate change, water literacy and water conservation. In this study, case study, which is a type of qualitative research, was included in the research. The participants of the study of eight students with criterion sampling from purposive sampling methods. Participants consist of high school group students who attend the Science and Art Center. Data were collected in the research with the interview technique, which is a data collection method. In order to qualify the study as an academic study, after the opinions of the experts, the semi-structured interview form was arranged by including 9 open-ended interview questions and questions with demographic characteristics. At this stage, the opinions of 2 independent academicians who are experts in their fields were taken. The reliability of the study was calculated as 85% using the Miles and Huberman formula. Using and Consciousness; Increase, Future and Deterioration in the categories of the second sub-problem; In the categories of the third sub-problem, Decline and Fear; In the categories of the fourth sub-problem, Decrease, Exhaustion and Increase; In the categories of the fifth sub-problem, Teaching and Consciousness; Categories of the sixth sub-problem, Inadequacy; In the seventh sub-problem categories, Inadequacy; In the eighth sub-problem categories, Water depletion; In the ninth sub-problem categories, the words "Being Conscious" were the most preferred expressions by the participants. The increase in the number of water literate individuals is among the important measures to prevent possible water crises in the future. It is thought that these measures will reduce water concerns and enable individuals to approach the future more hopefully.

Keywords: Water literacy, Water conservation, Climate change, Water concern

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1. INTRODUCTION

While global climate change and water literacy aim at the most effective use of water resources, natural events have brought water concerns to the agenda. Water anxiety can be defined as the intensity of negative emotions that individuals create due to the increasing water scarcity due to global warming and climate change. According to the literature, anxiety causes psychological excitement, distress, fear that something bad will happen suddenly, or similar feelings (Karamustafalıoğlu & Yumrukçal, 2011). Anxiety affects the lives and eating habits of individuals (Mendeş, Can, & Yılmaz, 2022). One of the situations that individuals encounter very frequently through TV and social media, which is thought to affect their anxieties, is water problems.

In the context of rapid increase in human population, unconscious behaviors of people, developing and changing industry and technology, and increasing urbanization, many environmental problems arise. Many people are not aware of or do not care about the environmental problems around them (Özerdinç & Hamalosmanoğlu, 2021). The Earth we live in is currently the only planet that can be a resource for human beings when they need it. For this reason, protecting the environment and giving importance to its protection should be the responsibility of every individual. The most accessible method of raising awareness in people on this subject is through the education to be given at school. In this context, it is thought that water literacy education will create awareness in people from a young age on protecting the environment and giving importance to environmental problems.

It is thought that one of the biggest measures that can be taken within the scope of water literacy and water conservation is climate change. It is thought that reasons such as depletion of water resources, drought, increase in greenhouse effect, depletion of the ozone layer and the resulting increase in global temperature arise because of not taking precautions regarding climate change. Since climate change is a global event that concerns the whole world within the scope of its causes and consequences, the measures to be taken should also be on a global scale (Ağıralan and Sadioğlu, 2021). It is thought that the fight against climate change will be realized by raising awareness about climate change throughout the society (Albayrak and Atasayan, 2017). It is unequivocally said that as a result of people's continuing actions that disrupt the natural balance without taking any precautions, the effects of climate change will increase and the consequences of climate change will increase, which can be very negative for human beings and the world (Biçer and Vaizoğlu, 2015). It is thought that drought, water scarcity and water need that will arise in this context will push people who have been able to raise awareness within the scope of climate change to worry about water. It is thought that water anxiety in people, who have a sense of anxiety over the absence of water, will affect people in the right way within the scope of measures that can be taken.

Looking at the studies in the literature in the Turkish sample, Ağıralan & Sadioğlu (2021) tried to measure the climate change awareness of citizens in Istanbul and to determine how much awareness varies according to age, gender, education level, marital status and income.

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In their study, they concluded that the knowledge level of climate change in the society is high.

Albayrak and Atasayan (2017) tried to create awareness about climate change, which is a global problem, and to determine the dimensions of this awareness in Gebze. In their study, they determined that there is an awareness of climate change in the example of Gebze.

Biçer and Vaizoğlu (2015) tried to determine the awareness of the students of Hacettepe University Faculty of Health Sciences (HÜSBF) Nursing Department about global warming and climate change and its consequences, to determine the solution proposals and to determine the relationship between some sociodemographic characteristics and their knowledge and awareness about global warming/climate change. In their studies, they determined that most of the students had incomplete and wrong information about global warming, while a small part of them had sufficient information.

Atik and Doğan (2019) tried to determine the knowledge level of high school students about the subject and their incomplete and wrong learning. While nearly half of the participants in their studies could not define the concept of global climate change, they determined that the definitions of the remaining students were superficial and unscientific, and they had misconceptions and wrong information.

Uzun (2021) tried to determine the knowledge level and awareness of the students who are actively studying in the undergraduate departments of Düzce University, which provide nature-based education and have courses on climate change in the curriculum. In their study, they determined that more than half of the participating students did not have any knowledge of the concept of "climate change" before they started their university education, and that the students who had knowledge generally had knowledge about greenhouse gases and their effects, global warming and the change of seasons.

Gezer and Erdem (2018) tried to determine the awareness levels of academic and administrative staff working in Akdeniz University and undergraduate and graduate students residing in the campus about “water scarcity, water stress and water conservation”. In their studies, regardless of age, education level, monthly income level, women are more sensitive to water stress, water scarcity and water conservation than men, and young participants generally have the opinion that there is water stress and water scarcity in our country and will continue to happen in the future. They determined that in families where the number of residents is low, people pay more attention to water conservation, there is an inverse relationship between income level and water saving behavior, and the participants demanded more educational and promotional activities on environmental issues.

Importance of Research

When we look at the literature review, it is seen that many studies have been carried out to determine the views of the students who continue their education on water literacy, water conservation and climate change. However, no study has been found on "water anxiety", which has not been studied before in the literature, especially in which the interview

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technique is used. In this respect, it is thought that this research will contribute to the literature, other researchers and water research.

Aim

“ The aim of this study is to determine the opinions of high school students attending BİLSEM about water anxiety in the context of climate change, water literacy and water conservation.” In line with this purpose, the main problem of the research is determined as “What are the opinions of Bilsem high school students about water literacy and water conservation?” The sub-problems are;

1. How do participants define water literacy?
2. What does the concept of Global Climate Change evoke to the participants?
3. What comes to mind of the participants when water anxiety is mentioned?
4. How do the participants think that global climate change will affect water resources in the future?
5. Participants; Do you think that what kind of measures can be taken against the water problems that will arise in the future with the water literacy education given at the school?
6. Do the participants think that there is enough content about water anxiety in TV (news, documentaries, talk shows, etc.) broadcasts?
7. Do the participants think that there is enough content and sharing about water anxiety on social media?
8. What kind of problems do the participants think they will face in the future if water literacy is not paid attention to?
9. What individual measures are participants taking to address future water concerns?

It is determined in the form.

2. METHOD

Model of the Research

This study has a qualitative research feature. The research method, which uses methods such as document analysis, observation, and interview to collect data, is called "qualitative research" (Yıldırım & Şimşek, 2011). In this study, case study, which is a type of qualitative research, was included in the research. According to the study of Subaşı and Okumuş (2017) and Merriam (2013), the detailed description and examination of a system with an end is called a "case study".

Data Collection Method

The interview technique, which is a data collection method, was used in the research. The use of the structured interview form was deemed appropriate by the researchers. The researchers followed the following steps in the preparation of the interview form;

A- Literature review and collection of basic information:

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Older studies using the interview method were examined by scanning the literature. As a result of the examinations, the information gained from the studies were recorded as notes.

B- **Creating the first draft of the semi-structured interview form:**
The researchers created the first example of the semi-structured interview form by making use of the prior knowledge they gained. The interview form included 9 open-ended questions and questions examining demographic characteristics.

C- **Obtaining expert opinions about the semi-structured interview form:**
The semi-structured interview form was sent by the researchers to experts in the field in order to add academic value to the study and to have a minimum error rate. In order to qualify the study as an academic study, after the opinions of the experts, the semi-structured interview form was arranged by including 9 open-ended interview questions and questions with demographic characteristics. At this stage, the opinions of 2 independent academicians who are experts in their fields were taken.

D- Finalizing the semi-structured interview form according to expert opinions:
The semi-structured interview form was given its final form after receiving expert opinions.

E- Determination of the participants:
Attention was paid while determining the participants so that they could answer the main problem of the research. The participants of this study consisted of eight students with the criterion sample, which is one of the purposeful sampling types. The detailed investigation of situations that are thought to be the source of rich information is called the "purposive sampling method" (Duran & Kurt, 2019). Particular attention was paid to the fact that the participants were high school students attending BİLSEM. Gender is a factor that will not affect the study. The participants of the study were two BİLSEM high school students at the age of 15; Two BİLSEM high school students at the age of 16 and three BİLSEM high school students at the age of 18 were determined.

F- Conducting the interview:
Due to the pandemic conditions, the interview was conducted using virtual communication channels. The researchers interviewed the determined participants by transferring the questions on the virtual form and sharing them with the participants.

Analysis of Data
Codes were created using content analysis from the data obtained as a result of the research. It is very important for the reliability of the study that the participants of the research encode the same document at different times (Türnüklü, 2000).

The interview records from the participants were transcribed by the researchers. The obtained data were analyzed independently by the researchers and codes were created. Then, the codes of the researchers were compared and common codes were determined. After determining the common codes, categories were created and transferred to the tables.

While the volunteering of the participants increased the validity of the study, it also increased the reliability by giving the statements of the participants directly in the text.

The reliability of data analysis made in this way; It was calculated using the formula of consensus / (agreement + disagreement) x 100 (Miles & Huberman, 1994). Using the Miles and Huberman formula, the reliability of the study was calculated as 85%. According to Yıldırım and Şimşek (2013), if the reliability value is 70%, it is sufficient for the study to be considered reliable.

3. FINDINGS

In this part of the study, the findings obtained during the research are given in tables. Participants were coded as K1, K2, K3, K4, K5, K6, K7, K8.

Findings of the First Sub-Problem

Table.1. The codes created by the participants about the definition of water literacy

		K1	K2	K3	K4	K5	K6	K7	K8	T
Codes	water use	x					x	x		3
	water requirement	x								1
	Saving on water	x								1
	water resources	x	x							2
	put into action	x								1
	proper use		x							1
	care about water		x		x					2
	conscious use			x	x				x	3
	managing water resources			x						1
	water quality					x				1
	water content					x				1
	conscious individual							x		1
Total										**18**

Table 1 shows the codes created by the participants regarding the definition of water literacy. When the generated codes are examined, in terms of “water use” of K1, K6 and K7; On the “water resources” of K1 and K2; In terms of “giving importance to water” of K2 and K4; It was determined that K3, K4 and K8 formed a common code on “conscious use”.

Table.2. Categories belonging to the unitist subproblem

categories	**f**	**%**
to use	8	44.44%
resources	3	16.67%
contents	2	11.11%
consciousness	5	27.78%
Total	18	100.00%

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When the categories of the unitary sub-problem were examined, it was determined that the "use" category was the most preferred expression with 44.44%, and the "content" category was the least preferred expression with a rate of 11,11%.

Findings of the Second Sub-Problem

Table.3. The codes created by the participants about the concept of global climate change

		K1	K2	K3	K4	K5	K6	K7	K8	T
Codes	temperature rise	x	x		x					3
	climate time change	x								1
	glacier melt	x								1
	sea level rise	x								1
	increase in drought	x								1
	extinction	x								1
	global warming		x							1
	air imbalance		x							1
	fossil fuel use			x						1
	greenhouse effect			x						1
	climate change				x				x	2
	human activities					x				1
	damaged nature					x				1
	disruption of nature balance					x				1
	end of the world						x			1
	bad future						x			1
	end of humanity							x		1
	Total									**20**

In Table 3, the codes created by the participants regarding the concept of global climate change are given. When the generated codes are examined, on the "temperature increase" of K1, K2 and K4; It was determined that K4 and K8 shared similar thoughts on “climate change”.

Table.4. Categories of the second sub-problem

categories	**f**	**%**
climate	3	15.00%
the future	4	20.00%
corruption	4	20.00%
water level	2	10.00%
increase	5	25.00%
human activity	2	10.00%
Total	**20**	**100.00%**

Looking at Table 4, it is seen that the category of "increase" is the most preferred expression with a rate of 25.00%, while the categories of "water level and human activity" are the least preferred with a rate of 10.00%.

Findings of the Third Sub-Problem

Table.5. The codes created by the participants about the concept of water anxiety

		K1	K2	K3	K4	K5	K6	K7	K8	T
Codes	unnecessary use of water	x								1
	water contamination	x								1
	lack of water	x								1
	running out of water		x			x	x		x	4
	glacier melt		x							1
	submersion of land		x							1
	untreated water resources			x						1
	water conservation			x						1
	concern for water			x		x		x		3
	decreased water				x					1
	intervene				x					1
	finding water						x			1
	can't find water							x		1
	scary situation							x		1
	drought								x	1
	Total									**20**

In Table 5, the codes created by the participants regarding the concept of water anxiety are given. When the generated codes are examined, it is seen that K2, K5, K6 and K8 are about "water depletion"; It was determined that K3, P5 and K7 shared similar thoughts about "anxiety for water".

Table.6. Categories of the third sub-problem

categories	**f**	**%**
indifference	3	15.00%
to find	2	10.00%
waste	2	10.00%
decrease	7	35.00%
melting	2	10.00%
fear	4	20.00%
Total	**20**	**100.00%**

The categories of the third sub-problem are given in Table 6. It was stated that the category of “decrease” was the most preferred expression with a rate of 35.00%, and the categories of “finding, wastage and melting” were the least preferred expressions with a rate of 10.00%.

Findings of the Fourth Sub-Problem

Table.7. The codes created by the participants about the impact of global climate change on water resources in the future

		K1	**K2**	**K3**	**K4**	**K5**	**K6**	**K7**	**K8**	**T**
Codes	decreased water	x				x		x		3
	drought	x						x		2
	increase in water vapor	x								1
	world change		x							1
	exhaustion of everything		x							1
	running out of water		x		x				x	3
	temperature rise			x			x	x		3
	glacier melt			x		x				2
	submersion of the world			x						1
	a big change				x					1
	affecting the water cycle						x			1
	decreased resources						x			1
	Total									**20**

Table 7 shows the codes created by the participants regarding the impact of global climate change on water resources in the future. When the generated codes are examined, in terms of “water reduction” of K1, K5 and K7; On the "drought" of K1 and K7; On the “running out of water” of K2, K4 and K8; On the "temperature rise" of K3, K6 and K7; It has been determined that K3 and K5 form a common code for "glacial melting".

Table.8. Categories of the fourth sub-problem

categories	**f**	**%**
run out	4	20.00%
reduction	6	30.00%
change	3	15.00%
increase	4	20.00%
water rise	3	15.00%
Total	**20**	**100.00%**

When the categories belonging to the fourth sub-problem are examined, it is seen that the "reduction" category is the most preferred expression with a rate of 30.00%, and the categories of "change and water rise" are the least preferred expressions with a rate of 15.00%.

Findings of the Fifth Sub-Problem

Table.9. The codes created by the participants about the future water problems and how to take precautions with the water literacy education given at the school

		K1	K2	K3	K4	K5	K6	K7	K8	T
Codes	remarkable situation	x								1
	play a game	x								1
	involving the audience	x								1
	talk to each other	x								1
	give examples	x								1
	to encourage conservation		x		x					2
	raise awareness		x			x	x			3
	water problems		x							1
	teach the student		x							1
	get water literacy training			x						1
	economical use			x					x	2
	come to prominence			x						1
	take precautions			x						1
	not having enough information				x					1
	problem that may arise				x					1
	correct use of water				x					1
	set an example				x					1
	hold a conference					x				1
	educate						x	x		2
	not to mention							x		1
	faulty faucet repair								x	1
	Total									**26**

In Table 9, the codes created by the participants about the water problems that will arise in the future and how to take precautions with the water literacy education given at the school are given. When the created codes are examined, it is stated that K2 and K4 are "encouraging conservation "; On "raising awareness" of K2, K5, K6; On the " conservative use" of K3 and K8; It was determined that K6 and K7 shared similar ideas about “teaching”.

Table.10. Categories belonging to the fifth sub-problem

categories	**f**	**%**
precaution	3	11.54%
conservation	4	15.38%
to teach	6	23.08%
problems	2	7.69%
examples	2	7.69%
sociability	2	7.69%
sufficient Hardware	2	7.69%
consciousness	5	19.23%
Total	**26**	**100.00%**

When Table 10 is examined, it is seen that the category of "teaching" is the most preferred expression with a rate of 23.08%, and the categories of "problems, examples, sociability and adequate skills" are the least preferred expressions with a rate of 7.69%.

Findings of the Sixth Sub-Problem

Table.11. The codes created by the participants about the content related to water anxiety in TV broadcasts

		K1	**K2**	**K3**	**K4**	**K5**	**K6**	**K7**	**K8**	**T**
Codes	not enough content	x	x	x	x	x	x	x	x	8
	the issue will be	x								1
	take action	x								1
	living comfortably	x								1
	global warming	x								1
	water problem	x								1
	state of being thrown back	x								1
	give due importance		x							1
	state of not being enough		x							1
	see as news					x				1
	pass quickly					x				1
	Total									**18**

In Table 11, the codes created by the participants regarding the content related to water anxiety in TV broadcasts are given. When the generated codes were examined, it was determined that all participants shared similar ideas about the lack of sufficient content for water anxiety in TV broadcasts.

Table.12. Categories of the sixth sub-problem

categories	**f**	**%**
interest	1	5.56%
insufficiency	9	50.00%
movement	3	16.67%
problem	3	16.67%
triviality	2	11.11%
Total	**18**	**100.00%**

When we look at Table 12, where the categories of the sixth sub-problem are given, it is seen that the category of "inadequacy" is the most preferred expression with a rate of 50.00%, and the category of "interest" is the least preferred one with a rate of 5.56%.

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Findings of the Seventh Sub-Problem

Table.13. The codes created by the participants about the content related to water anxiety in social media

		K1	K2	K3	K4	K5	K6	K7	K8	T
Codes	state of being common	x								1
	see the same	x								1
	to be fed up	x								1
	diverting to different content	x								1
	conscious individual		x							1
	do your best		x							1
	mobilize the public		x							1
	share increase		x							1
	the state of being unaware			x						1
	state of not being enough			x	x	x	x		x	5
	something not changing			x						1
	content entity							x		1
	want more						x			1
	Total									**17**

Table 13 shows the codes created by the participants regarding the content related to water anxiety in social media. When the generated codes were examined, it was determined that K3, P4, K5, K6 and K8 shared similar ideas about the lack of sufficient content for water anxiety in social media.

Table.14. Categories of the seventh sub-problem

categories	**f**	**%**
prevalence	3	17.65%
recession	2	11.76%
innovation	3	17.65%
consciousness	2	11.76%
insufficiency	5	29.41%
movement	2	11.76%
Total	**17**	**100.00%**

The categories of the seventh sub-problem are given in Table 14. It was stated that the category of "inadequacy" was the most preferred expression with a rate of 29.41%, while the categories of "stagnation, consciousness and movement" were the least preferred with a rate of 11.76%.

Findings of the Eighth Sub-Problem

Table.15. The codes created by the participants about what kind of problems they will face in the future if water literacy is not paid attention to.

		K1	K2	K3	K4	K5	K6	K7	K8	T
Codes	unconscious use	x	x							2
	water contamination	x				x				2
	human unconsciousness	x								1
	take legal action	x								1
	decreased water	x				x				2
	not being water literate		x							1
	ecological balance disruption		x							1
	to cause		x							1
	depletion of water resources		x						x	2
	climate change		x							1
	global warming		x							1
	cause trouble		x							1
	resource exhaustion			x						1
	worse situation			x						1
	water war				x					1
	thirst pill				x					1
	get into trouble					x				1
	encounter danger						x			1
	drought						x	x		2
	loss of life						x			1
	water scarcity							x		1
	Total									**26**

Table 15 shows the codes that the participants created about what kind of problems they will face in the future if water literacy is not paid attention to. When the generated codes are examined, it is stated that the "unconscious use" of K1 and K2; K1 and K5 on “water pollution” and “water reduction”; On the “depletion of water resources” of K2 and K8; It has been determined that K6 and K7 share similar ideas about a drought.

Table.16. Categories of the eighth sub-problem

categories	**f**	**%**
consciousness	3	11.54%
water reduction	8	30.77%
bad Situation	2	7.69%
danger	4	15.38%
negative change	5	19.23%
precaution	3	11.54%
live	1	3.85%
Total	**26**	**100.00%**

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In Table 16, where the categories of the eighth sub-problem are given, it is stated that the "water reduction" category is the most preferred expression with a rate of 30.77%, and the "negative change" categories are the least preferred expressions with a rate of 19.23%.

Findings of the Ninth Sub-Problem

Table.17. The codes created by the participants regarding the measures they take for the future water concern

		K1	**K2**	**K3**	**K4**	**K5**	**K6**	**K7**	**K8**	**T**
Codes	not taking action	x								1
	don't leave the water on	x	x			x			x	4
	not assessing the water	x								1
	replacing a faulty faucet		x							1
	not spilling waste oil		x							1
	save water			x	x					2
	raise awareness			x						1
	assessing the water			x						1
	global warming trigger				x					1
	avoid doing				x					1
	don't waste water					x		x		2
	washing the dishes in the						x			1
	to be careful						x			1
	Total									**18**

Table 17 shows the codes created by the participants regarding the measures they take for future water concerns. When the created codes are examined, K1, K2, K5 and K8's about not leaving the water open; In terms of “saving water” of K3 and K4; It was determined that K5 and K7 formed similar codes about “not spending water unnecessarily”.

Table.18. Categories of the ninth sub-problem

categories	**f**	**%**
being conscious	10	55.56%
fix	1	5.56%
precaution	3	16.67%
machine	1	5.56%
danger	1	5.56%
disregard	2	11.11%
Total	**18**	**100.00%**

When Table 18 is examined, it is seen that the category of “being conscious” is the most preferred expression with 55.56%, and the categories of “repair, machinery and danger” are the least preferred with 5.56%.

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4. DISCUSSION AND CONCLUSION

The data obtained from this study, which aims to determine the views of BİLSEM high school students about water anxiety, are interpreted in this section.

When the categories created by the participants regarding the definition of water literacy are examined, the expression "to use" stands out. The next expression was “consciousness”. From this point of view, it can be evaluated that the participants used expressions about conscious use while defining water literacy and that they argued that this awareness should be possessed. They also emphasized the importance of using water resources carefully. Gezer and Erdem (2018) also determined that young participants generally have the opinion that there is water stress and water scarcity in our country, and that it will happen in the future, and in this context, the participants are conscious individuals. Akgün, Tokur, and Duruk (2016) stated that the level of awareness of students about water and water literacy is low, and that awareness should be raised by relating it to daily life.

When the categories created by the participants regarding the concept of global climate change were examined, it was determined that they expressed opinions that climate change is "increasing" and that water resources and climates are gradually deteriorating. It has also been observed that they think that there will be gradual deterioration in water levels and climates in the future. This shows that the participants have concerns about the future about climate and water. Ağıralan and Sadioğlu (2021) similarly concluded that individuals have a high level of knowledge about climate change in society.

When the categories created by the participants regarding the concept of water anxiety are examined, it has been determined that the usable waters in the world for water anxiety are gradually decreasing and this situation causes anxiety in individuals. In addition, indifference and waste were pointed out as the cause of this situation. The fact that the participants also stated that the melting of glaciers is a bad result of climate change shows that they have a holistic approach.

When the categories created by the participants regarding the impact of global climate change on water resources in the future are examined, it is seen that the increase in climate change increases many negative effects such as the depletion of water resources. It has been stated that the most obvious example of this is the rise in water level due to glacial melting. This situation, Albayrak and Atasayan (2017) also determined that the negative impact of water resources due to climate change in Gebze campus causes anxiety on individuals.

When the codes created by the participants about the water problems that will arise in the future and how to take precautions with the water literacy education given at the school, they stated that the increase in the knowledge and awareness levels of the participants about the use of water is through training and this must be taught. This shows that the participants think that the education system and schools are structures that are of great importance for individuals' water sensitivity. Similarly, Gezer and Erdem (2018) determined that individuals

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demand an increase in educational and promotional activities on environmental issues, thus creating a general awareness.

When the codes created by the participants about the content related to water anxiety in TV broadcasts were examined, they stated that the broadcasts on the TV screens about water sensitivity were insufficient, and that action should definitely be taken in response to the water problems encountered and likely to be carried into the future. Some participants, on the other hand, stated that the necessary importance was not given to water problems in TV broadcasts, and they even became unimportant. This situation shows that the participants think that television, which is one of today's technological tools, should be used as an effective broadcasting tool in terms of water sensitivity in a positive way. Uzun (2021) stated that the participants did not have information about these contents through any media, and that the students who had knowledge generally had information about greenhouse gases and their effects, global warming and the change of seasons.

When the codes created by the participants about the content related to water anxiety in social media were examined, they stated that there was not enough interest in water awareness in the social media, and that the necessary dissemination was not made for the problems and solutions. It was also stated by some participants that there is a stagnation in social media on this issue and that awareness should be raised. In this respect, it shows that the positive effects of rapidly advancing technology in communication should be used in a way that contributes to the increase in the importance given to water sensitivity and solutions for water concern. Similarly, Gezer and Erdem (2018) determined that the participants demanded an increase in educational and promotional activities on environmental issues, and in this context, there is not enough content on social media about water saving and water scarcity.

When the codes created by the participants about what kind of problems they will face in the future if water literacy is not taken into account, the participants stated that as a society, awareness should be gained against the decreasing amount of water. This shows that the participants are of the opinion that the decrease in the amount of water is gradually increasing, and that this situation will trigger both dangerous and bad situations for the future. They added that awareness should be raised as a solution. Albayrak and Atasayan (2017) also concluded that an awareness should be created in the society and that we can protect our resources within this awareness.

When the codes created by the participants regarding the measures they take for the future water concerns are examined, it is stated that the participants need to be conscious to a large extent and that measures should be taken to reduce the water concerns that may occur in the future. The water problems experienced should not be insensitive and the necessary importance should be given. Atik and Doğan (2019) similarly found that many participants had incomplete and incorrect information, and in this context, they did not take any precautions or took the wrong precautions.

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5. SUGGESTIONS

Water anxiety can cause individuals to have a negative view of the future sometimes. Because while recognizing water as the main source of life, any negative life that will occur in it will also reflect on itself. The continuation of the life of humans and all living things on earth depends on the suitability of the climate and the amount of usable water (Sen, 2022). From this perspective the followings are recommended:

Sufficient and realistic information should be given to individuals about water literacy,
The idea that human activities related to global climate change is caused by individuals should be gained,
Waste and unconscious use should be prevented in order to reduce the water anxiety that may occur in individuals,
It is necessary to take individual measures against the gradual decrease of water resources,
It is necessary to carry out the necessary awareness-raising activities at schools against water problems by doing and practicing,
It is necessary to make more attention-grabbing and actionable broadcasts against water problems on TV screens,
Sufficient attention should be given to water problems in social media and more frequently sharings should be done,
It is necessary to bring awareness to the individuals that dangerous and negative situations can occur in case of not protecting the gradually decreasing water resources,
It is necessary to take into account daily water problems while taking measures for future water problems.

RESOURCES

Ağıralan, E., & Sadioğlu, U. (2021). İklim değişikliği farkındalığı ve toplum bilinci: İstanbul örneği. Anadolu Üniversitesi Sosyal Bilimler Dergisi, 21(2), 627-654.
Akgün, A., Tokur, F., & Duruk, Ü. (2016). Fen öğretiminde öğrenilen kavramların günlük yaşamla ilişkilendirilmesi: Su kimyası ve su arıtımı. *Adıyaman University Journal of Educational Sciences*, *6*(1), 161-178.
Albayrak, A. N., & Atasayan, Ö. (2017). Yerel Düzeyde İklim Değişikliği Farkındalığı Analizi/Gebze Örneği. TÜBAV Bilim Dergisi, 10(4), 1-10.
Atik, A. D., & Doğan, Y. (2019). Lise öğrencilerinin küresel iklim değişikliği hakkındaki görüşleri. Academy Journal of Educational Sciences, 3(1), 84-100.
Biçer, B. K., & Vaizoğlu, S. A. (2015). Hemşirelik Bölümü Öğrencilerinin Küresel Isınma/İklim Değişikliği Hakkındaki Bilgi ve Farkındalıklarının Belirlenmesi. Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi, 2(2), 30-43.
Boylu, A. A., & Yertutan, C. (2012). Erkeklerin evde enerji ve su tasarrufu konusundaki alışkanlık ve satın alma odaklı davranışlarının incelenmesi. Sosyoekonomi, 17(17).
Gezer, A., & Erdem, A. (2018). Su stresi, su kıtlığı ve su tasarrufu hakkında halkın farkındalığının belirlenmesi: Akdeniz Üniversitesi örnek çalışması. Doğal Afetler ve Çevre Dergisi, 4(2), 113-122.

Dinç. H., (2018). Su Okuryazarlığı Eğitiminin Gerekliliği Ve Etki Gücü Üzerine Bir Deneme. Anadolu Öğretmen Dergisi, 2(2), 169-176.

Karamustafalıoğlu O, Yumrukçal H. (2011). Depresyon ve anksiyete bozuklukları. Şişli Etfal Hastanesi Tıp Bülteni. 2011;45(2):65-74.

Konak, N. (2012). Küresel iklim değişikliği ve gençlerin katılımı. *Sosyal Ve Beşeri Bilimler Dergisi, 3(1),* 77-86.

Mendeş, B., Can, Y., & Yılmaz, S. (2022). COVID-19 Pandemisinde Bireylerin Kaygı Düzeylerinin ve Ortoreksiya Nervoza Eğilimlerinin Değerlendirilmesi. *İstanbul Gelişim Üniversitesi Sağlık Bilimleri Dergisi*, (16), 258-270.

Miles, M, B., ve Huberman, A. M. (1994). *Qualitative data analysis: An expanded Sourcebook. (2nd ed).* Thousand Oaks, CA: Sage.

Özerdinç, F., & Hamalosmanoğlu, M. Ortaokul Öğrencilerinin Su Ayak İzi, Su Farkındalığı Ve Su Okuryazarlığı Hakkındaki Görüşleri. Anadolu Öğretmen Dergisi, 5(2), 296-315.

Şen, Z., (2022). İklim Değişikliği Ve Türkiye. *Çevre Şehir ve İklim Dergisi*, *1*(1), 1-19.

Türnüklü, A. (2000). Eğitimbilim araştırmalarında etkin olarak kullanılabilecek nitel bir araştırma tekniği: Görüşme. *Kuram ve Uygulamada Eğitim Yönetimi, 24(24),* 543-559.

Ursavaş, N., & Aytar, A. (2018). Okul öncesi öğrencilerin su farkındalığı ve su okuryazarlıklarındaki gelişimin incelenmesi: Proje tabanlı bir araştırma. İnformal Ortamlarda Araştırmalar Dergisi, 3(1), 19-45.

Ursavaş, N., (2022). Çevresel Atık Farkındalığı Ve Su Okuryazarlığı

Uzun, S., Üniversite Öğrencilerinin İklim Değişikliği Konusunda Farkındalıklarının Belirlenmesi: Düzce Üniversitesi İlgili Grupları Örneği. *Anadolu Orman Araştırmaları Dergisi, 7(2),* 161-174.

Yıldırım, A., ve Şimşek, H. (2013). *Nitel Araştırma Yöntemleri*. Seçkin Yayıncılık.