



ASSESSING ENVIRONMENTAL AWARENESS OF FIRST-YEAR UNDERGRADUATE  
STUDENTS IN AZERBAIJAN

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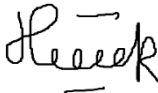
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STATEMENT OF AUTHENTICITY

I have read ADA's policy on plagiarism and certify that, to the best of my knowledge, the content of this thesis, entitled (Assessing Environmental Awareness of first-year undergraduate students in Azerbaijan), is all my own work and does not contain any unacknowledged work.

Hereby I declare that this master thesis, my original investigation and achievement, submitted for the master's degree at ADA University has not been submitted for any degree or examination.

Signature:  \_\_\_\_\_

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### **Abstract**

This study explored the perceptions of undergraduate students regarding the status of environmental awareness in Azerbaijani society. Additionally, it explored students' reflections on how environmental awareness is promoted through key sources, including media, social networks, and textbooks. By examining these perspectives, the research sought to provide insights into the role of educational materials and public messaging in shaping young people's environmental

consciousness and to identify potential gaps or opportunities for enhancing environmental awareness in Azerbaijan. The Environmental Literacy Framework by McBeth and Volk (2010) which emphasizes knowledge, attitudes, and skills as main components of environmental literacy was used as a theoretical framework in the research. Based on this framework, this research investigates how first-year students perceive environmental issues in Azerbaijani society and how sources such as media, social networks, and textbooks shape their awareness.

Qualitative research approach was used and data was collected through semi-structured interviews with 16 students from four public universities and three experts from environmental science, media and non-governmental organization. Thematic analysis used revealed that while first-year students generally understand basic environmental challenges such as pollution and climate change, their depth of knowledge varies in a significant manner. Social media appeared to be one of the main sources of environmental information, while school textbooks were considered insufficient by the majority of the students. Students also expressed the role of the practical experiences, such as university eco-clubs, and events such as COP29 as more impactful way of learning in developing environmental knowledge rather than only-theoretical-based learning.

Despite theoretical knowledge, majority of students interviewed lacked the motivation or opportunity to engage in environmental actions which highlighted a gap between awareness and behavior. Findings showed certain consistency with the findings from reviewed research conducted in other contexts. Students showing foundational knowledge about key issues like pollution and climate change and those who participated in practical activities such as eco-projects demonstrating deeper environmental awareness shows the consistency with the reviewed literature.

The results of the research also showed necessity for more intervention to foster environmental education in educational institutions. Large-scale research may be conducted to investigate more about environmental awareness, to explore the opinions of students from different educational backgrounds, which in turn may contribute to the improvement of environmental awareness among students.

*Keywords:* Environmental Awareness, Environmental Literacy, Azerbaijani Higher Education, Social Media, Environmental Education

## **CHAPTER 1: INTRODUCTION**

Human relationship with nature is always considered vital for environmental protection (Keniger et al., 2013). The world today is struggling with severe environmental challenges, including global warming, climate change, pollution, ozone layer depletion, biodiversity loss, and resource scarcity. Human activities such as urbanization, overconsumption, and population growth

are the primary drivers of environmental degradation (IPCC, 2022). These man-made actions not only worsen the crisis but also highlight the urgent need to foster environmental values and promote eco-friendly behaviors, particularly among youth, through collective efforts (Mahanta & Sarkar, 2023).

Environmental awareness is critical to coping with global problems and unsustainable use of resources. Education has a significant role in fostering environmental awareness and educational institutions are the foundation for creating environmentally friendly environment and promote young people's environmentally responsible behavior (Nowothny et al., 2018). Environmental education is defined as a process that helps individuals to explore environmental issues, engage in discussions and foster their awareness (NAAEE, 2010). Environmental education provides the knowledge and develop the positive attitudes necessary to address environmental challenges effectively (Arslan, 2012). Programs in environmental education empower individuals to make well-informed decisions and take responsible actions in tackling environmental issues. According to the UNESCO, mainly in developing countries, many educational systems cannot fully integrate environmental awareness or climate change education into their curricula. According to UNESCO analysis in 2021, findings also revealed that around half (47%) of 100 countries had no mention of climate change in their national curriculum. Also, while 95 % of professors in global scope believe that teaching climate change is significant, only smaller percentage feel fully prepared to teach about these issues. In this matter, 70 % of young people either cannot adequately explain climate change or know only its broad concepts.

Since the 1960s, the number of environmental projects implemented by international organizations such as United Nations (UN), United Nations Environment Program (UNEP) has steadily increased (Braus, 2001). Key milestones in Environmental Education (EE) include the Stockholm Declaration (1972), which first highlighted addressing environmental challenges

through education ( Krzesni, 2015), and the Belgrade Charter (1975), which emphasized fundamental principles for EE (Braus, 2001).

Over the years, number of conferences and congresses have been organized that calls for new ways of seeing the world and addressing education for environment. One of the latest congresses has been the 12th World Environmental Education Congress (WEEC) taking place in 2024, in Abu Dhabi, UAE on the theme of Connecting People, Creating Tomorrow. However, the Tbilisi Intergovernmental Conference on Environmental Education was considered largest conference on environmental education, reaffirmed the principles of environmental education, defining the main goals of EE as fostering *awareness, knowledge, attitudes, skills, and participation* to address environmental issues (UNESCO, 1978).

As many countries, Azerbaijan also faces similar problems and ranked 121st out of 180 countries on the Environmental Performance Index (YCELP, 2024). The Environmental Performance Index assesses countries' progress to environmental health and ecosystem vitality by using 58 indicators in 11 categories, including climate change, air pollution, water sanitation, waste management, and biodiversity. Countries are scored on their alignment with global environmental goals like the Sustainable Development Goals and the Paris Agreement (YCELP, 2024). Integrating environmental education into education systems remains as a challenge. While Azerbaijan also is witnessing the negative effects of climate change, pollution, and unsustainable resource use, still there is limited practical engagement of students in environmental challenges, even though there may have some theoretical understanding (Gurbuz et al. 2021).

Azerbaijan has been historically criticized by global organizations for noticeable gaps in its environmental strategies and its lack of readiness to address the environmental challenges posed by climate change (UNECE, 2011). Although Azerbaijan over the years made effort to protect its

environment and to restore its ecosystems, lack of awareness among young people on environmental changes prevents progress of environmental protection and this lack of youth awareness come from insufficient integration of environmental awareness into the national curriculum (United Nations, Voluntary National Review, 2019).

Previously, according to the Programme for International Student Assessment (PISA, 2006), it showed that fewer students across OECD countries could fully explain environmental processes. In countries like Qatar, Kyrgyzstan and Azerbaijan 20 % of students demonstrated an understanding of environmental processes while it went up to 80 % in Finland. Since then, Azerbaijan has participated in other PISA assessments, as well. Results from PISA 2018 show slight increase in students' environmental awareness even though the gap between Azerbaijan and countries such as Finland remained significant (OECD, 2019). The 2022 PISA assessment continued to assess students' environmental knowledge and showed ongoing challenges and the lack of environmental knowledge among students in Azerbaijan in explaining environmental issues (OECD, 2022).

#### Problem statement

While many students may have some understanding of global environmental challenges, the extent to which undergraduate students in Azerbaijani universities perceive the current state of environmental awareness in their society and the channels through which they develop this awareness remain unclear. Based on Yin and Foy (2021), where environmental knowledge was defined as the amount of information individuals have concerning environmental issues and their ability to understand and evaluate its impact on society and the environment, this research aims to explore the perceptions of undergraduate students regarding the status of environmental awareness in Azerbaijani society. Additionally, it explores students' reflections on how environmental

awareness is promoted through key sources, including media, social networks, and textbooks. By examining these perspectives, the research seeks to provide insights into the role of educational materials and public messaging in shaping young people's environmental consciousness and to identify potential gaps or opportunities for enhancing environmental awareness in Azerbaijan.

### Significance of the Study

As a lack of environmental awareness has become an issue, despite the increasing urgency of addressing environmental challenges, many individuals fail to understand the significance of sustainable resource management (Sutoris, 2021). Education plays an important role in addressing this gap, yet structured programs focusing on fostering environmental awareness and responsibility remain underdeveloped in higher education institutions which emphasize need for comprehensive environmental education at universities to promote awareness, encourage sustainable practices, and prepare students to deal with environmental challenges effectively (Del Rey et al., 2022).

PISA studies have also highlighted the significance of assessing students' knowledge of and attitudes toward environmental issues (OECD, 2022). Such assessments, as in OECD's *Green at Fifteen* report (2009), provide information on how students understand ecosystems and environmental challenges, being considered a foundation for initiatives aimed at improving environmental literacy. PISA (2018) also shows that, students who mostly show strong environmental attitudes score higher in science than their peers. Environmentally enthusiastic students who have awareness and self-efficacy in environmental understanding scored on around 100 points higher than their environmentally indifferent peers (PISA, 2018). Additionally, while international assessments provide a general perspective on Azerbaijani students' academic performance, still there is a limited data on students' perceptions of environmental awareness within Azerbaijani society. On the other hand, different tools such as media, social networks, and

secondary school textbooks play an important role in shaping public understanding and attitudes toward environmental challenges, however their influence on Azerbaijani youth's understanding of these issues remain underexplored.

This research may contribute valuable insights into what ways in Azerbaijani society environmental awareness can be better promoted among young people. This research can be relevant for a number of stakeholders. Firstly, this research can be helpful for other researchers who are interested in exploring similar topics. On the other hand, especially the Ministry of Science and Education as in a main leading role, can use the findings to develop more policies which may promote practices for student engagement regarding environmental awareness in education system.

### **Research Questions**

This research will focus on following questions to examine the phenomenon.

1. What are the first-year undergraduate students' perceptions of the environmental awareness in Azerbaijani society?
2. Which sources do undergraduate students use to learn about environmental issues?

## **CHAPTER 2: LITERATURE REVIEW**

### **Introduction**

This part focuses on the literature review to gain a deeper understanding of what has already been explored regarding students' perceptions of environmental awareness and the factors influencing their understanding of environmental issues. The main aim of this research is to assess how first-year university students in Azerbaijan perceive environmental awareness and the role of educational and societal influence such as media, social networks, and textbooks, in forming their environmental knowledge and attitudes. The literature review aims to see the phenomenon from a broader perspective to discuss similar issues that have been studied across different contexts.

To ensure relevance and accuracy, a wide range of academic sources from the past 25 years was reviewed. These sources included peer-reviewed journal articles, books, reports, and conference papers, collected from well-known academic databases such as ResearchGate, Google Scholar, ERIC, and ProQuest. The reviewed literature focused on key topics related to environmental education and awareness, especially in educational institutions. In addition to global perspectives, particular attention was given to regional studies from Eastern Europe and post-Soviet countries where we share similar historical backgrounds such as Kazakhstan, Georgia and other neighbor countries with broader regional and cultural similarities has been explored. To enhance the scope of the research, literature is also examined from Asian countries to compare trends in promoting environmental awareness.

### **The Definitions of Key Terms**

Even though the word *literacy* appeared after the 19<sup>th</sup> century and the initial meaning of the term was considered the ability to read and write, its usage in different contexts from diversity of perspectives has been extended over the years (McBride,2013). Environmental literacy was first appeared in 1968 in the *Massachusetts Audubon* article and the author Charles Roth was asking how we can distinguish environmentally literate citizen (McBride et al., 2013). Since then, the concept started to be used extensively (e.g., North American Association for Environmental Education (NAAEE) 2004; O'Brien 2007). The new NAAEE framework defines an environmentally literate person “as someone who, both individually and together with others, makes informed decisions concerning the environment (Daniš, 2013, p.6). Over the years significant efforts have been made in different educational institutions to build a consensus framework in order to guide educators to promote environmental literacy (McBride et al., 2013). As for the environmental education, environmental literacy was considered the fundamental goal

of EE and the importance of it was stated in the article *Environmental Literacy for All* in the publication of UNESCO-UNEP (1989).

While “low literacy levels are believed to be one of the causes of environmental damage problems, current learning models are not considered optimal in increasing students’ environmental literacy” (Prasetyo et al., 2024, p.384). Educational institutions such as schools and universities can serve as learning laboratories where students may acquire new skills and these institutions may have their strategic role in making students well aware of environmental problems and students’ environmental literacy may enable them to be involved in protection of the nature (Alkahrer & Goldman, 2018). In the United States, “the call for research on the status of environmental literacy among K-12 students, post-secondary students, pre- and in-service teachers, and the general public was first articulated as part of a larger set of research needs developed by a working group of environmental educators in 1990” (Hollweg et al., 2011, p.8).

If citizens may develop environmental knowledge, the number of environmental problems could be reduced significantly in societies (Ergodan et al., 2009). It is also presumed that more responsible environmental behavior in the protection of the environment would be achieved with the help of the environmentally literate citizens (Stevenson, 2007). Some research discuss how level of environmental knowledge of young people affects their environmental behavior ( Ertz & Sarigollü, 2018; Nguyen et al., 2018; Yadav & Pathak, 2017). As for the term ‘responsible environmental behaviour’, it is “the variety of recognized approaches to environmental actions by individuals and groups in preventing or resolving environmental problems” (Hsu and Roth 1988, p.232).

The term *knowledge* can be considered anything ranging from general knowledge to specific skill related knowledge. The literature states different definitions of environmental

knowledge. According to Roczen, Kaiser, and Bogner (2013) environmental knowledge is considered a broad understanding of the facts, ideas, and connections relating to the natural world.

The term *awareness* according to the American Psychological Association (APA, 2018), is defined as "perception or knowledge of something" which is often linked to consciousness and the capacity to accurately report on one's perceptions or knowledge. As for environmental awareness, it is considered understanding and knowledge individuals have regarding environmental issues and sustainability (Schleich, 2019).

The term *attitudes* are defined as "favorable or unfavorable evaluations and reactions to objects, people, situations or any other aspects" (Atkinson et al., 1996, p. 606). As for environmental attitudes, it is considered "a psychological tendency expressed by evaluating the natural environment with some degree of favor and disfavor" (Gifford & Sussman, 2012, p. 65-66). As for the pro-environmental attitudes, it is defined as concern for the environment or caring about environmental issues (Bamberg & Möser, 2007).

### **Theoretical framework**

This research uses the *Environmental Literacy Framework*, as described by McBeth and Volk (2010), to guide the exploration of environmental knowledge, awareness and attitudes among first-year undergraduate students. This framework can provide a broader foundation for understanding youth environmental literacy.

The Environmental Literacy Framework is an approach aimed at evaluating individuals with the knowledge, awareness and attitudes to make effective decisions and engage in behaviors to promote environmental awareness. Environmental literacy framework was designed to be a guidance for analyzing environmental challenges and developing potential solutions (Hollweg et al., 2011). The framework focus on the three dimensions and it can be helpful in evaluating

students' perceptions on environmental knowledge and awareness. Those dimensions are as follows:

**Knowledge:** Understanding environmental systems and the challenges they face

**Attitudes:** Developing values and feelings of concern that motivate individuals to act

**Skills:** Obtaining problem-solving abilities to address environmental issues in effective ways

This framework also states that providing individuals with knowledge and skills will lead to action which do not take the gaps in behaviors into consideration where knowledge does not always turn into pro-environmental behavior.

Although it remains unclear whether improved environmental knowledge directly increase environmental behavior, several authors state a positive correlation between environmental knowledge and attitudes (Al Balushi & Ambusaidi, 2023; Lieflander & Bogner, 2018). While having theoretical knowledge is not considered enough to predict environmental behavior, positive attitudes seem to play a crucial role in turning that knowledge into meaningful action (Dopelt et al., 2019).

This research will use the Environmental Literacy Framework to assess students' awareness. The research will also analyze motivation and external factors such as media, textbooks and social networks that influence students' environmental attitudes and behaviors. This framework will help to analyze how students feel about environmental issues .

### **Benefits of environmental awareness in Society and Education**

Increased environmental awareness also leads to increased engagement in eco-friendly activities (Wetering et al., 2022). A study exploring the relationship between environmental

awareness and habitat quality found that young people with greater environmental awareness are more likely to take part in pro-environmental behavior (Si et al., 2022). The research highlighted the role of supportive environment in promoting sustainable actions against environmental challenges.

Environmental awareness has been indicated to have a positive impact in environmental quality by promoting actions such as eco-friendly consumption and pollution control (Wu et al., 2023). These efforts are particularly effective in areas facing severe pollution and other environmental issues, showing that enhancing environmental awareness can play an important role in addressing environmental challenges.

Integration of environmental topics into educational curricula can also increase students' critical thinking and problem-solving skills (Project Learning Tree, n.d.). It can encourage students to understand the interconnections between social, ecological, economic and political issues and it can foster a broader understanding of how systems are interrelated and environmental issues affect communities.

### **The Impact of Media, Social Networks, and Textbooks**

In today's digital era, media and social networks have become powerful tools for raising environmental awareness. Research indicate that these platforms can shape public perceptions of environmental challenges and prepare youth toward sustainable practices (Anderson, 2017). However, their positive impact is often limited by the prevalence of misinformation and a lack of critical engagement (Leiserowitz et al., 2020).

Studies by Otto & Kaiser (2014) indicate that digital platforms are increasingly influential, with students citing websites, documentaries, and social media as significant sources of

environmental information. Campaigns like Greta Thunberg's Fridays for Future have encouraged youth engagement through these channels (Fisher, 2019).

In South Korea, Yoon & Ahn (2020) shows that societal awareness of environmental challenges is high due to media campaigns and government policies promoting green energy and waste reduction. Public participation in recycling programs is among the highest globally.

Survey conducted in Kazakhstan shows that first-year undergraduate students' background knowledge about environmental challenges mostly likely 45% based on the social media resources (Sapanova et al., 2024). Kazakhstani students with mean score 1,5 point out of 3 point scale participating in the questionnaire have awareness about environmental challenges such as air pollution, water shortages however they cannot explain the phenomenon in a detailed way. According to the study carried out in higher educational institutions of Tajikistan, Kazakhstan, Kyrgyzstan and Uzbekistan, the results show that the majority of students do not know Sustainable Development Goals and their background knowledge regarding environmental issues come from the social media rather than national curriculum and “despite high awareness and understanding of responsibility towards future generations, the majority of students from Central Asian countries who took part in the study are not confident that they have an impact on solving global issues” (Sergey et al., 2024, p.12).

According to the Bozoglu et al. (2016), survey results from university students in Turkiye show that majority of students (81%) uses or learn information regarding the environmental issues from social media as the main source of information and the Internet stands out as more popular way of information source. Another study in European union countries shows that “higher education students with the rest of the national population strata, we find that online social networks are more important in this section of the population” (European Commission, 2020).

## **Impact of textbooks in general education and higher education on Environmental Awareness**

School textbooks play a significant role in shaping students' perceptions about environmental issues and they can be significant sources to foster environmental literacy among students (Laaloua, 2023). Textbooks remain crucial in delivering structured environmental content, though their effectiveness depends on how well they integrate local and global environmental issues (Stukalina, 2016).

Research shows that the way environmental issues are explained in textbooks influences students' understanding and their awareness (Şeker, 2023). An analysis of Geography textbooks at the senior high school level in Türkiye showed that themes related to environmental issues contributes to students' better understanding and sensitivity to the protection of environment (Şeker, 2023).

According to the research, in spite of the purpose of English textbooks being to help students to learn the language and communicate effectively in English, topics related to environmental issues encourage students to engage in discussions about these topics, research and explore relevant global issues (Anggun, 2016).

Environmental science courses, sustainability programs, and campus initiatives are considered primary sources of knowledge (Tilbury & Wortman, 2004). However, access to such education differs widely across regions, with students in developing countries often reporting gaps in environmental topics within their school textbooks (UNESCO, 2017).

In Japan, environmental education is integrated into school and university curricula, with a focus on experiential learning. The Ministry of Education, Culture, Sports, Science, and

Technology (MEXT) has developed programs and school textbooks emphasizing environmental sustainability as a main value (Kodama, 2017).

Illustrations integrated in textbooks and educational materials also enable students to develop a deeper sense of environmental awareness, and it not only inform but also motivate students to take action in addressing environmental issues ( Goodwill et al., 2010; Chen, 2022). Illustrations in educational materials also help to bridge gaps between abstract ideas and concrete understanding on environmental issues (Yeşilyurt, 2020).

### **Environmental Awareness in the Azerbaijani Context**

Research shows that although efforts have been made to incorporate environmental sustainability topics in Azerbaijani higher education, the overall emphasis on environmental education remains underdeveloped. For example, Azerbaijan's strategic documents, such as the “State Strategy for the Development of Education,” aim to modernize education system by integrating sustainability and innovation, however these efforts are prevented by a lack of practical implementation mechanisms, as the strategy focuses primarily on aligning with international standards without concrete implementation mechanism ( Strategic Roadmap, 2016).

The United Nations’ Voluntary National Review (2019) on Azerbaijan emphasizes the need for improved public awareness and education to address environmental challenges. While some efforts, such as environmental extracurricular activities and thematic school events, have been introduced, their long-term impact remains unclear. This research draws on the theoretical underpinnings of EE to explore how Azerbaijani students perceive environmental awareness and the tools—media, social networks, and textbooks—that shape their understanding.

### **Summary**

The reviewed literature shows several key findings from different studies and those key findings include : the importance of environmental education in shaping environmental awareness among young people, the significant role of media, social networks, and textbooks in influencing students' environmental knowledge and awareness, and the impact of societal and educational factors on students' environmental awareness. Research from different geographical contexts have been explored to see the factors shaping students' environmental awareness.

The literature also showed a significant gap in research, especially in the context of Azerbaijan. Even though the topic has been explored by a number of researchers, qualitative research to explore young students' perceptions or views on environmental issues, especially, first-year students have been limited. The literature shows the impact of external sources in shaping students' understanding of environmental issues however research lacks on how sources- specifically textbooks, social media and social networks shape students' environmental awareness in Azerbaijan. Furthermore, existing studies do not fully explore the role of environmental awareness in fostering environmental responsibility among students. This gap gives an opportunity to explore the topic from different perspective and learn about students' perceptions and see which sources are more commonly used among students to increase their environmental awareness.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **Research paradigm**

The research questions of my thesis fall under paradigm called interpretivist, which recognizes that each participant's understanding of reality is formed by their unique experiences, and can vary based on their social or professional context (Denzin & Lincoln, 2018). Similarly, Marriam and Tisdell (2016) also stated that the interpretivist paradigm emphasizes the understanding of the individuals' experiences and viewpoints. This aligns with the aim of the research to explore first-year undergraduate students' perceptions on environmental issues. The paradigm also focuses on how people create their understanding and knowledge based on their personal experiences (Adom et al., 2016). The research explored which sources shape young people's knowledge, attitudes and behaviors on environmental awareness.

## **Research site**

The research was conducted among first-year undergraduate students from 4 universities located in Baku and one university situated in a nearby city. These universities were selected using purposeful sampling criteria that aims purposefully selection of individuals who have specific knowledge or experience related to the topic (Creswell & Clark, 2011) and factors such as their high rankings in QS ranking, varying institutional characteristics (one institution being newly established and equipped with contemporary technologies, another one of the rooted universities in the country), and their geographical diversity (one university outside the capital city) was taking into consideration. Additionally, the selection of universities provided access to a diverse group of students with varied academic and social backgrounds.

## **Participants**

The research involved two main groups of participants. The first group of participants of this research was 16 first-year undergraduate students from 3 higher educational institutions in Baku and one outside of the city. One of the reasons to focus mainly on first-year students was to explore their perspective on environmental issues as they have recently experienced secondary education, first-year students are better positioned to compare and reflect on the differences between school and university approaches to environmental awareness. Additionally, as they come from diverse background, they represent a wide spectrum of societal views and educational experiences, so it can provide a more comprehensive understanding in environmental awareness among students. All participants were Azerbaijani citizens, as the research aims to examine environmental awareness among Azerbaijani students. To ensure the diversity of interviewees, participants were selected using purposeful sampling method as I choose specific 4 universities for the research and involvement of students from a different academic and social backgrounds were focused. First permission letters were sent to the universities and they were asked to provide

us with the list of first-year students from their university who are eager to participate. According to the list, using random sampling method, contact of certain number of students were asked to be shared in order to conduct an interview. Additionally, a second group of participants was 3 experts in related fields (one from environmental sciences that shared perspectives on current environmental education, one media expert to learn how they see the youth involvement in environmental actions, one expert from non-governmental organization that works closely with youth in environmental campaigns and actions). These experts were chosen through convenience sampling as I had connections with them and based on their academic expertise and relevance to the topic, they provided their perspectives on the current state of environmental education and its role in promoting environmental awareness.

### **Sampling**

In the research, a non-probability sampling method, specifically purposeful sampling was used to select participants based on specific criteria (involving purposefully only first year undergraduate students). Universities were also chosen through purposeful sampling as the research focused on chosen 4 universities according to specific criteria and according to the permission letter sent to universities, students who were willing to participate which helped to gather meaningful and detailed data (Creswell, 2012).

The sample size was determined based on the saturation principle that data collection will continue until now new information presented (Merriam & Tisdell, 2016). The number of participants was 16 students. In order to maintain ethical approval and access to participants, permission letters were sent to universities and responsible persons were asked for help to reach target population of the research. Relevant university staff from 4 chosen universities were contacted to explain the purpose of the research and their assistance was asked to inform

undergraduate students about the research. Students who expressed interest and meet the criteria were invited to join the research.

### **Data collection**

The data collection was carried out using semi-structure interviews. As considered one of the most effective methods for understanding individuals (Fontana & Frey, 2000), semi-structured interviews were chosen as the primary data collection tool. This interview format allowed for flexible procedure and enabled follow-up questions to explore more about the current status of environmental awareness among students and gather valuable data (Creswell & Clark, 2011). It also provided an opportunity for participants to elaborate on their perspectives and expand on their thoughts. Semi-structured interviews with experts focused on a broader understanding of environmental awareness in the education system.

According to the list from universities, certain students were selected and universities were asked to provide us with their contact details to arrange an interview. Then I explained each student the research topic in more details and gave clarification about anonymity, and ensured that they understood their rights as it was stated in the Consent Form. Based on the ethical consideration, Consent Forms were sent online or presented in a printed version. Interviews were conducted both online with those could not manage to meet in person and offline those agree to meet face-to-face.

### **Data analysis**

The qualitative data that was collected through interviews was analyzed simultaneously with the data collection process. After each interview was completed, it was transcribed and initial coding process was used. Specific data units was identified and as defined by Saldaña (2013), as a way of organizing and analyzing data systematically, codes were created to make the process

easier. These codes were categorized into different groups, which Merriam and Tisdell (2016) describe as conceptual elements that include multiple units or examples from the data collected.

The simultaneous process of transcription and coding were helpful in identifying the point of saturation, until the point that no new information was noted. The names of the participants were coded with pseudonyms to keep the anonymity of the personal data.

Throughout the data analysis process, regular meetings and discussions were held with the research supervisor. Peer review of the anonymized data provided additional perspectives and ensured the reliability and credibility of the analysis process.

### **Trustworthiness**

The main aim of providing trustworthiness was to show a reader that the research findings are valuable and reliable (Polit & Beck, 2012). For this research, the trustworthiness of the research was evaluated using the framework proposed by Lincoln and Guba (1985), that includes four ways *credibility, dependability, confirmability, and transferability*. Above-mentioned strategies assured that the findings about environmental awareness among first year undergraduate students were reliable and applicable for the research context.

#### *Credibility*

Credibility showed that the findings represent the perspectives of the participants and the research's conclusions were reliable (Lincoln & Guba, 1985).

In order to achieve credibility, triangulation and member check were used in the research.

#### *Member checking*

In order to ensure data accuracy and validity of the study (Merriam & Tisdell, 2015), member checking was conducted by sharing the data with participants to confirm the accuracy and reliability of interpretations.

### *Triangulation*

Multiple sources of data were used to increase credibility. Semi-structured interviews were conducted with first-year undergraduate students as a flexible interview guide with open-ended questions, to better explore participants' perceptions while also following up on interesting or relevant points raised by them (Creswell, 2012). In addition to that, semi-structured interviews were conducted with experts in the field to see the professional perspectives on the role of education in achieving environmental awareness.

### *Audit Trail*

An audit trail was used to document every step of the research process which includes participant recruitment, interview protocols, coding notes and data analysis. Detailed notes were kept to achieve the systematic procedure (Merriam & Tisdell, 2016).

### *Confirmability*

Confirmability showed that the findings of the research were based on the participants' personal views and perspectives and not influenced by the researcher's personal biases (Elo et al., 2014). By using direct quotes and ideas from the participants the research ensured that the findings were reliable and based on participants' perspectives. Additionally, peer review from supervisor and committee members ensured there was no misinterpretation and personal biases were minimized.

### *Transferability*

Transferability showed to what extent the findings could be used in other educational settings and applied to other contexts (Guest et al. 2012).

### *Thick and Rich Descriptions*

The research context, participants, and the findings were described in a detailed way to support transferability. The characteristics of the first-year undergraduate students and their experiences and views about environmental problems were documented. Quotes from the students and experts were included to present a clearer data analysis that can be applicable for readers to apply in other educational settings.

### **Ethical consideration**

One of the significant aspects of the qualitative research is to maintain the ethical standards especially, when the data collection is being proceeded (Hammersley & Traianou , 2012). In this research firstly before participating, all individuals were provided with a consent form that shows the purpose of the research, participants rights that they may withdraw anytime they want to (APA,2017). To maintain anonymity, instead of exact names pseudonyms were used, personal data were not stated in the research and encrypted files were used for digital data to ensure all personal data was securely stored (British Educational Research Association, 2018). Additionally, all the data were kept by the researcher and were not shared with anyone else to achieve confidentiality. By following European Code of Conduct for Research Integrity (2017) before the interview it was emphasized that choosing not to participate or withdrawing from the interview will not have any consequences for the participants.

### **Limitations**

One of the possible limitations of the research was limited time available to conduct the interviews and data analysis as we were supposed to start data collection February 1 and finish last

week of the February. As the research focused on students from universities located in Baku and near city, because of the easy accessibility and permission procedure, the geographical limitation occurred by excluding the perspectives of the students from other regions of Azerbaijan which might have provided more diverse views into environmental awareness of students studying in rural areas. One of the significant limitations was possibility of losing data in the process of translation. In order for participants to share their perceptions openly, mainly the interviews were in Azerbaijani, so it might affect the data analysis procedure and some nuances might be lost during the translation.

## CHAPTER 4: FINDINGS

The main aim of this research was to explore the perceptions of first-year undergraduate students regarding the current state of environmental awareness in their communities. Additionally, it explored students' reflections on how environmental awareness is promoted through key sources, including media, social networks, and textbooks. This chapter covers a detailed overview of the findings that took the following research questions into consideration:

1. What are the first-year undergraduate students' perceptions of the environmental awareness in Azerbaijani society?
2. Which sources do undergraduate students use to learn about environmental issues ?

To find answers to these questions, qualitative data was collected through semi-structured interviews with 16 first-year undergraduate students from four different public universities (University A, University B, University C, University D) and 3 experts from related fields ( one from environmental sciences that may share perspectives on current environmental education, one media expert to learn how they see the youth involvement in environmental actions, one expert from non-governmental organization that works closely with youth in environmental campaigns and actions). Fresh graduates from different schools studying at 4 public universities consist of 7 male and 9 female students. Data collection was obtained during spring semester in the 2024-2025

academic year. The purposeful sampling and estimation of participant numbers helped for data saturation and involving students from different specialties.

The interviewees' views and experiences were analyzed by using thematic analyses and codes were collected from the data. Interviews were conducted in Azerbaijani with students and in English with experts based on their preferences. To find core understanding of students' environmental awareness, the questions were asked about the factors that may have contributed to their knowledge in the research topic. In addition, participants were asked to define the main sources that helped to shape their environmental awareness. In alignment with the aims of the study, the findings were structured around some key themes closely related to the research questions of this study.

In the table below, according to the first question directed to the interview participants, detailed description has been provided separately by following the principles of confidentiality and anonymity.

**Table 1**

*Pseudo names for the chosen participants during the interview process*

University	Participant name	Background
Uni-1	Ms. Abdullayeva	Field of study: Business administration Gender identity: female School education: rural village
Uni-1	Mr. Karimov	Field of study: Economics Gender identity: male School education: rural village
Uni-1	Ms. Mirzayeva	Field of study: Management Gender identity: female School education: Baku
Uni-1	Mr. Abdullayev	Field of study: Business Administration Gender identity: male School education: Baku
Uni-2	Ms. Jalilova	Field of study: Philology

		Gender identity: female School education: rural village
Uni-2	Mr. Rustamzade	Field of study: Engineering Gender identity: male School education: rural village + Baku
Uni-2	Ms. Nabiyeva	Field of study: Pre-school education Gender identity: female School education: rural village
Uni-2	Mr. Gurbanov	Field of study: Social-psychological service in education Gender identity: male School education: rural village
Uni-3	Ms. Mammadova	Field of study: English Studies Gender identity: female School education: Baku
Uni-3	Mr. Aliyev	Field of study: International Relations Gender identity: male School education: rural village
Uni-3	Ms. Rahimli	Field of study: English studies Gender identity: female School education: Baku
Uni-3	Ms. Gasimova	Field of study: Communication and Digital Media Gender identity: female School education: Baku
Uni-4	Ms. Mehdizade	Field of study: Industrial Engineering Gender identity: female School education: Baku
Uni-4	Ms. Seyidova	Field of study: Transport Engineering Gender identity: female School education: Baku
Uni-4	Mr. Gahramanli	Field of study: Device Engineering Gender identity: male School education: rural village + Baku
Uni-4	Mr. Babayev	Field of study: Management Gender identity: male School education: rural village

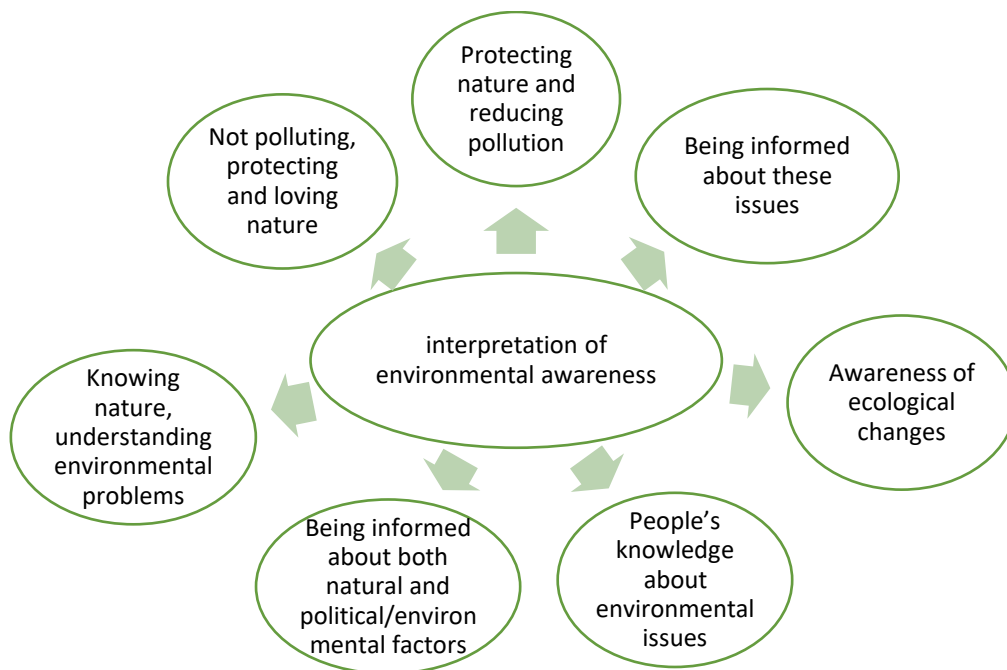
### **Students' perception of environmental awareness**

This research was centered in understanding students' awareness on environmental challenges. The first interview question was asked to guide this study. At the beginning of the interview, students were asked “ *Ətraf mühit məlumatlılığı termini sizin üçün nə mənə ifadə edir?/What does*

*the term environmental awareness mean to you? ”* to learn about their perceptions in the topic. The concept of environmental awareness was interpreted by students through different expressions. Figure 2 describes some key findings from the interviews regarding students’ varying levels of environmental knowledge .

**Figure 2**

*Some students’ perceptions of Environmental Awareness during the interview process*



As for environmental awareness, it is considered understanding and knowledge individuals have regarding environmental issues and sustainability (Schleich, 2019). According to the interviews, some participants could not demonstrate basic environmental knowledge and they aligned their lack of knowledge with less information they acquired from school or university. And some of them stated that as it is not related to their major, they have never been interested fully to research about the topic. On the other hand, some students showed a theoretical understanding of

environmental awareness, with associating the term environmental awareness with the natural components about the environment, such as air, water, trees, animals, and the atmosphere. Participants described the term as the ability to comprehend and understand environmental elements and the need to protect them.

For example, Mr. Abdullayev stated:

Ətraf mühit savadlılığı dedikdə yəni ağaclar haqqında məlumatlılıq, insanların ətrafi qorunmalı olduğunu başa düşməsi deməkdir.

[Environmental awareness, that is, awareness about trees, means that people understand that they need to protect the environment.]

As well as, one of the participants, Ms. Rahimli also shared her similar opinions regarding this point:

Ətraf mühit savadlılığı yəni təbiəti tanımaq bir növ, ətraf mühiti problemlərini bilmək kimi başa düşürəm.

[I understand environmental awareness, that is, knowing nature, as a kind of knowledge of environmental problems.]

On the other hand, Mr. Rustamzade, who studied in lyceum both in rural area and in Baku mentioned how well he is informed about the topic from the school and shared his understanding of environmental awareness in a detailed way.

Ətraf mühit savadlılığı deyəndə, ətraf mühitlə bağlı məlumatlılıq, şüurlu olmaq kimi başa düşürəm. Yəni mənə hal-hazırda ilkin olaraq önümüzdəki və bundan əvvəlki son 20 və yaxud da 30 il ərzində dünyada baş verən ekoloji dəyişikliklər və təbiətin qorunması

haqqında bizim təbii sərvətlərimizin, resurslarımızın necə istifadə olunması, bunların nə qədər xeyrə, nə qədər ziyana getməsi ilə bağlı məlumatlılıqdı.

[When I say environmental awareness, I understand it as environmental literacy. In other words, I think that currently, it is primarily awareness of the ecological changes taking place in the world over the past 20 or 30 years and the protection of nature, how our natural resources and resources are used, how much benefit and how much harm they cause.]

Some students also expressed their sense of responsibility toward the environment and emphasized the importance of action individually in keeping environment clean and protecting nature.

Ms. Mammadova answered the question by emphasizing the role of keeping the environment clean :

Məncə, ətrafi ümumiyyətlə qorunmalı olduğumuzu başa düşməkdir, ətraf mühitin çirkinlənməsini dərk etməyimiz və bu çirkinləmədən necə qoruya bilərik, çirkinlənmənin əsas səbəbləri nələrdir- yəni, bunlar haqqında məlumatlı olmaq deməkdir .

[I think it means understanding that we need to protect the environment in general, understanding the pollution of the environment and how we can protect it from this pollution, what are the main causes of pollution - in other words, being aware of these things.]

On the other hand, there were some students that could not define the term broadly, and added that they don't remember the time they were involved the discussions in related topic. Mr.Gurbanov who studied in a rural school and now studying in one of the universities outside Baku has seen the term from different point and answered the question :

Belə ətraf mühitin çirklənməsi, ətraf mühitin təmizlənməsi kimi başa düşürəm.

[I understand this as environmental pollution or environmental cleaning.]

In similar words, another participant, Mr. Babayev shared his insights about the term accordingly:

Tam xatırlamıram, məktəb vaxtında amma məlumatlılıq deyəndə, ətraf mühitin yəni çirklənməsini görürdük. Belə düşünürəm, hər kəs öz ekoloji təmizliyini qorusa, böyük çirkliliklər də yaranmaz.

[I don't remember exactly, but when we were talking about awareness in school, we saw the pollution of the environment. I think that if everyone maintained their ecological cleanliness, major pollution wouldn't occur.]

Furthermore, there were some students who mentioned a few times that, if they could not the answer the questions or describe the terms accurately, it is because they did not get much relevant information at school or university or was not involved in discussions in this topic before. Another similar response was by Ms. Jalilova, who similarly studied in a rural school and currently studies at one of the universities outside Baku. She had one of the interesting responses. When the question was asked, she got confused and responded:

Düzü bu sahədə təhsil almıram, dəqiq deyə bilməyəcəm.....Yəni belə ətrafımızdakı hər şey kimi başa düşürəm.

[Honestly, I'm not educated in this field, so I can't say for sure... I mean, I understand it like everything around us.]

Mr. Aliyev was also one of those students did not fully understand the question as he is not studying in this major and asked for explanation.

Tam olaraq anlamadım, ətraf mühit yəni cəmiyyətlə bağlı məlumatımın olub-olmadığını nəzərdə tutursunuz yoxsa necə.... Belə təbiəti nəzərdə tutursunuzsa, hava çirklənməsi kimi problem ağıma gəlir.

[ I didn't quite understand, do you mean my knowledge of the environment, that is, society, or what... If you mean nature, problem like air pollution come to mind.]

Similarly, Ms. Mirzayeva who studied in one of the gymnasiums in Baku stated her lack of interest in the topic and replied to the question:

Nə yalan deyim, çox maraqlanmamışam, məlumatım yoxdur, amma səhf etmirəmsə, COP29-u ən son xatırlayıram, ətraf mühitlə bağlı məsələlərə toxunurdu.

[I'm not going to lie, I wasn't very interested, I don't have any information, but if I'm not mistaken, the last thing I remember was COP29, it touched on environmental issues.]

## **Summary**

These findings showed that students interpret the concept of environmental awareness in diverse ways, ranging from basic connection with pollution and cleanliness to more comprehensive understandings involving ecological change and sustainability. Majority linked the term to elements of the natural environment such as air, water, and trees and highlighted the need to protect these resources. A common theme among many responses was about the sense of individual responsibility in keeping the environment clean. However, deeper understanding varied significantly. While some students, especially those who had attended lyceums or been integrated to environmental topics through school or extracurricular activities, provided thoughtful and detailed definitions, some others struggled even to describe the term. Some of the participants stated that they had never engaged deeply with the topic, often connecting it to a lack of discussion

about environmental issues in their school or university. This contrast showed how students' educational backgrounds, previous experiences, and interest levels influence their awareness.

### **Research question 1**

In order to answer the first research question, students were asked to describe their perceptions of environmental awareness in Azerbaijani society? Based on their answers, the content is structured under two sub-sections.

#### **Students see environmental awareness in Azerbaijani society as limited and underdeveloped**

Most participants in the interview expressed their view that environmental awareness in Azerbaijani society is quite limited and not quite developed. Students often stated that environmental topics are rarely discussed in their daily life, and attitudes toward environmental protection in society is considered passive. Ms. Seyidova noted, “İnsanlar çox vaxt bu məsələləri ciddiyyə almırlar/ People often don't take these issues seriously)”, which showing that environmental challenges are not considered as urgent matters within the society. Ms. Mirzayeva shared, “Ətraf mühit haqqında gündəlik söhbətlərdə heç nə eşitmirik / We don't hear anything about the environment in daily conversations”, which underlining a lack of integration of environmental awareness into everyday life and social conversations.

Furthermore, some students' perceptions were that our society as a whole does not show a strong sense of environmental responsibility. As Mr. Rustamzade clearly noted, “Cəmiyyət olaraq ekoloji problemlərə qarşı o qədər də həssas deyilik/ As a society, we are not very sensitive to ecological problems”. This indicates an emotional distance from environmental issues. Despite growing exposure to global climate challenges, students felt that environmental consciousness had not yet been sufficiently internalized by the public in Azerbaijan.

## **There is a Recognition of the Problem, but a Lack of Widespread Engagement**

Interviewed students also acknowledged that young people most often show a disconnect between knowledge and action. Some participants told that although issues like air pollution or plastic waste are recognized as harmful, there is little motivation or effort to address environmental issues. Mr. Karimov reflected, “Çoxumuz bilirik ki, hava çirklənməsi, plastik tullantılar zərərlidir, amma tədbir görənlər azdır/ Most of us know that air pollution and plastic waste are harmful, but few take action”. This points to a gap in environmental attitude, where awareness does not translate into meaningful engagement.

Some also highlighted that available environmental information is not actively used. As Mr. Abdullayev noted, “İnformasiyalar var, amma tətbiq olunmur”/ The information exists, but it's not applied”, indicate a failure to turn environmental knowledge into practical application.

Overall, these insights say that although many students in the society are somehow aware of environmental issues, this awareness often remains at a surface level. There is not enough motivation, support, or opportunities for practical application to turn that awareness into real action. Environmental topics are rarely discussed in everyday life, and many students do not feel personally responsible or involved in addressing environmental issues.

## **Environmental Challenges Identified by Students**

To dive into deeper understanding of students' perception of environmental issues, another question was asked to students to give examples of environmental problems they know. Based on thematic analysis of participant responses, it showed overall view about students' awareness of key environmental problems. The participants' responses covered a number of environmental issues that align with the concept of environmental awareness. There was a strong emphasis on pollution, especially in air and in land, and on human behavior contributing to environmental

degradation. This was followed by other examples to global warming and climate change by 7 students. Some participants also discussed improper waste throwing, especially the public tendency to litter the environment . Table 3 shows the interpretation of the data from the interviews.

**Table 3**

*Frequency of identified environmental issues*

Environmental issues	Number of mentions	% of Total Participants
Pollution (air, land, water)	12	75%
Global warming & Climate change	7	43,75%
Improper waste throwing	6	37,5%
Deforestation/ Loss of green places	3	23,5 %
Factory waste	4	25%
Loss of biodiversity/ animal extinction	2	12,5%

While 8 participants who obtained their school education in Baku and urban centers mentioned more examples of pollution such as emissions from industries and waste disposal, those with rural school experiences showed examples for environmental issues such as deforestation, global warming and loss of biodiversity.

For example, one of the participants, Mr. Gahramanli shared his examples:

Ən çox ətraf mühitin çirklənməsi, məsələn, zavodların, maşınların tüstüsü ilə havanın çirklənməsini deyə bilərəm, sonra, məsələn, paketlərin çölə atılması, zibiliyə yox, geri dönüşüm qutuları var, amma onlara yox yerə atılması, ağacların qırılması və s. kimi problemlər ağıma gəlir.

[The most common problem that comes to mind is environmental pollution, for example, air pollution from factories and cars, then, for example, problems such as throwing packages outside, throwing them on the ground instead of in the trash, recycling bins but not in them, cutting down trees, etc.]

According to some students, environmental problems are generally related to human behavior and they shared examples based on their observations and information obtained from news channels. Ms. Seyidova believed that :

İlk olaraq, ətrafa baxanda insanların yaratdığı çirklilikləri deyə bilərəm , havanın çirkinlənməsi, ətrafa tökülən tullantılar, dənizə buraxılan neft, qaz məhsulları. Bundan başqa, xəbərlərdən də tez-tez eşidirik, qlobal istiləşmə deyə bilərəm, o da insan əməllərindən biridir.

[First of all, when I look at the environment, I can say the pollution caused by humans, air pollution, waste dumped around, oil and gas products released into the sea. In addition, we often hear in the news, I can say global warming, which is also one of the human actions.]

Another participant, Ms. Nabiyeva also expressed her disappointment by giving examples from her life experiences and difficulties she faced :

Mən rayonda böyümüşəm, orda çox ətraf mühitlə bağlı problemlər görməmişdim, məktəbdə də çox məlumatlı olmamışam. Amma şəhərə gələndən sonra təəssüf ki, insanların hara gəldi zibil atmağını, maşınların tüstüsünün, yaşadığım bölgədə zavodların tüstüsünün havanı necə çirkləndirdiyini müşahidə elədim, bəzən normal nəfəs almaq da olmur, zavodların pis qoxusundan. Sonra dəniz kənarına gedəndə görürsən ki, dənizi necə çirkləndirirlər.

[I grew up in the district, I didn't see many environmental problems there, and I wasn't very informed at school. But unfortunately, after coming to the city, I noticed how people throw garbage everywhere, how the smoke from cars, and the smoke from factories in the area

where I live, pollute the air, sometimes you can't even breathe normally, because of the bad smell from the factories. Then when you go to the seaside, you see how they pollute the sea.]

On the other hand, some participants mentioned their lack of information in the topic as they have not discussed these topics at school or university. For example, Mr. Karimov stated that:

Ətraf mühit problemləri haqqında, yəni, ətraf mühitin çirkliliyi, ekoloji təmizliyin pozulması deyə bilərəm. Bu sahədə çox məlumatım olmayıb, bu sahədə oxumadığım üçün araşdırmamışam düzü.

[I can say about environmental problems, that is, environmental pollution, ecological degradation. I don't have much knowledge in this field, and I haven't studied in this field, so I haven't researched it.]

Similarly, Ms. Gasimova shared her concern and said that she was not well aware of the topic because it has not been discussed broadly at her school, however currently at university with the help of eco clubs and debates she learned more information. She stated:

Hava ilə bağlı problemlər, məsələn, göz önünə gələ bilər, amma havanın çikləndirməsinin azaldırılması necə mümkün ola bilər? Şəxsən, məsələn, mənim də məlumatım yox idi. Amma universitetdə debatlarda iştirak edərək, həm də simulyasiyaya qoşulduqca daha çox bu sahələrdə məlumat əldə etdim.

[Air-related problems, for example, may come to mind, but how can air pollution be reduced? Personally, for example, I had no idea. But by participating in debates at university and also participating in simulations, I gained more knowledge in these areas.]

## **Research Question 2**

The second research question of the study was “ Which sources do undergraduate students use to learn about environmental issues?” and helped to explore the students’ views on how environmental awareness is promoted through key sources, including media, social networks, and textbooks.

### **Role of school on Environmental Awareness**

Based on the responses, the role of school environment and textbooks were mentioned during the interviews by the students. This section is divided into two subthemes ( Impact of school textbooks in environmental awareness; Theoretical knowledge versus practical application).

#### **Impact of school textbooks in environmental awareness**

One of the questions raised during the interview was “*Məktəb dərsləkləri ekoloji mövzuları nə dərəcədə effektiv əhatə edirdi?/ How effectively did school textbooks cover environmental topics?*” to learn about their perceptions in the role of school textbooks based on their experiences.

Based on the analysis of participants responses, mixed perceptions appeared related to the role of school textbooks in shaping students’ environmental knowledge. Majority of the students participated in the interviews stated that they were informed about environmental topics to some extent in one of the primary-school subject, Həyat bilgisi (World Knowledge) and in secondary-school subject, Coğrafiya (Geography). However, when it comes to effectiveness and depth of these resources, responses varied in a significant manner.

Some students stated that, even though basic knowledge was given to them about environmental issues in Həyat bilgisi (World Knowledge) textbooks, knowledge was forgotten or became less prominent in higher grades. For example, Ms. Abdullayeva stated that:

Əsasən, aşağı siniflərdə tədris edilən həyat bilgisi dərsliyi var idi ki, bu mövzularda toxunulurdu, sadəcə sırf mövzumuz ətraf mühit deyil idi, kiçik bir nəzəriyyə verilirdi bizə. Düşünürəm ki, yuxarı siniflərdə artıq dərsliklərimiz ekoloji mövzuları çox əhatə etməyib. Yəni vurguladığım kimi, kiçik bir əhatəsi olsa həyat bilgisi dərslikləri vardır ki, onun da təsirini mən çox hiss etməmişəm.

[Basically, there was a life science textbook taught in the lower grades that touched on these topics, but our topic was not just the environment, we were given a small theory. I think that in the upper grades, our textbooks no longer covered much of the environmental topics. So, as I emphasized, there are life science textbooks that have a small scope, but I didn't feel much of their impact.]

Similarly, Ms. Mammadova shared her disappointment by stating that even though this is one of the urging issues in our society, in the world, textbooks' content lacks continuity, especially she did not get efficient information in environmental topics after 7<sup>th</sup>-8<sup>th</sup> grade. As she was not majored in subjects such as Geography or Biology, it limited her learning.

Yəni, biz ancaq Həyat bilgisi ya da Coğrafiya kitablarını oxuyub öyrənə bilirdik. Bir də daha çox ibtidai sinifdə bizə bu bilgiler və s. verilirdi. Əslində, yuxarı siniflərdə də bizə həmin məlumatlar aşılmalıdır. Məsələn, ikinci qrup üzrə hazırlaşmadığıma görə, coğrafiya kimi fənnlər oxumadığıma görə bu mövzuda təməl məlumatlılığım azdır. Dərsliklərdə az məlumat olub. Baxmayaraq ki, vacib məsələlərdən biridir, bu mövzularda resurslar az idi.

[That is, we could only read and learn from books on World Knowledge or Geography. Moreover, we were given this information, mostly in primary school. In fact, we should be taught this information in the upper grades as well. For example, since I did not prepare for the second group, since I did not study subjects like geography, I have little basic awareness

on this subject. There was little information in textbooks. Although it is one of the important issues, there were few resources on these subjects.]

On the other hand, there were some participants who stated about the repetitive nature of school textbooks. They connected their lack of interest in the topic with the lack of updated information in textbooks. Mr. Abdullayev emphasized that :

...Düşünürəm ki, kitablarımızda bəyənmədiyim məqam o idi ki, hər il məlumat təkrarlanırdı. Dəyişmirdi, əslində. Və bu, mənim fikrimcə, əslində böyük bir mənfi idi. Ona görə də çoxlu yeni məlumat almamışam. Araşdırmayanda, müəllim heç bir fakt göstərmirdisə, yeni nəşə fakt öyrənmirdim.

[...I think what I didn't like about our books was that the information was repeated every year. It didn't change, really. And that was actually a big disadvantage, in my opinion. So I didn't get a lot of new information. When I wasn't doing research, if the teacher wasn't showing me any facts, I wasn't learning anything new.]

These points were similarly highlighted by three other students as well, who mentioned that textbooks failed to engage them with currently happening environmental issues or inspired them to do an action in this regard. Ms. Rahimli shared her concerns :

Müəyyən qədər dərslilər əhatə eləyib, amma məlumatdan daha çox fəaliyyət, yəni hərəkətə keçmək daha vacibdir, mənəcə. Az da olsa məlumat veriblər, amma nə etməli olduğumuza gələndə qismən yetərsizlik var idi, bu da şəxsən mənəcə mənim marağımın az olmağına səbəb olub.

[Textbooks covered somehow, but I think it's more important to take action than to learn theoretically. They gave a little information, but there was a bit of a lack of what we should do, which is why I personally think I was less interested.]

There were also two students who both studied in public school and private school. They compared their way of learning in both educational institutions and stated the strong emphasis to environmental awareness from private school they studied. Mr. Rustamzade stressed :

Yadımda deyil ki, mən dövlət məktəbində ətraf mühit məsələləri ilə bağlı geniş məlumat alım, bir neçə dəfə həyat bilgisi fənnində ötəri dərstdə məlumat verilib, amma daha çox özəl məktəbdə məlumat almışam, həm teorik biliklər, həm praktiki layihələrimiz olub.

[I don't remember receiving extensive information about environmental issues at my public school. I was given information a few times in a life science class, but I received more information at a private school, where we had both theoretical knowledge and practical projects.]

Overall, the findings show that while textbooks give a basic understanding to environmental topics, they often fall short in helping students maintain lasting awareness especially when not supported by engaging teaching methods or activities outside the classroom.

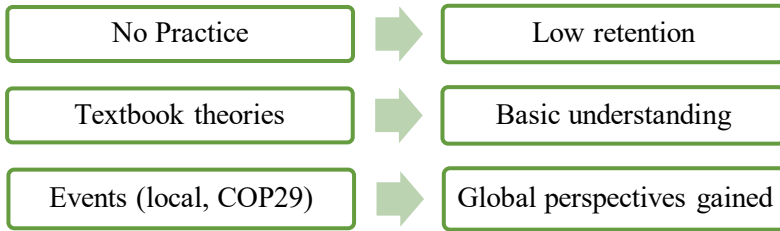
### **Theoretical knowledge versus practical application**

The following question was related to the role of theoretical and practical application in students' learning that has been done at their schools.

Students' responses analysis showed the gap between theoretical understanding and actual practice in their curriculum for environmental awareness. As stated in Table 4, students believe that even though it gave them an introductory basis to the topic, students felt the lack of hands-on exercises and highlighted significant role of practical activities.

### **Table 4**

### *Student perceptions*



Majority of participants emphasized how theoretical learning dominated through both school life and currently their ongoing university life, spread most often through textbooks or class discussions. For example, Mr. Rustamzade underlined the value of practical activities:

Düzü çox da praktiki işlər görməmişik nə məktəbdə, nə də universitetdə. amma praktikanın daha çox tərəfdarıyam. Oxumaqdansa nəyi isə təcrübə eləmək, görmək, onun üzərində çalışmaq insanın aqlında daha yaxşı qalır.

[To be honest, we didn't do much practical work, neither at school nor at university. But I'm more of a proponent of practice. It's better to experience something, see it, and work on it than to read about it.]

Similarly, another participant, Mr. Babayev also linked his demotivation in the topic with the lack of practical approaches and added:

Məndə daha çox teorik məlumatlardır, praktiki məlumatlar az idi nisbətən. Amma teorik məlumatlar kifayət deyil, daha da dərindən öyrənməyim daha vacibdir mənə. Məktəb və universitet tərəfdən təşəbbüslərinin az olması, mənə, bizə, belə deyim, marağımızın az olmasına səbəb ola bilər.

[I have more theoretical knowledge, relatively less practical knowledge. But theoretical knowledge is not enough, I think it is more important for me to study more deeply. I think

the lack of initiatives from schools and universities may be the reason for our, so to speak, lack of interest.]

On the other hand, some of the participants who had the benefit of practical learning such as tree-planting activities, eco-simulations, or outdoor explorations reported their increased engagement and retention. Mr. Aliyev, who studied in one of the rural schools shared his experiences:

Mənim oxuduğum məktəbdə o barədə tədbirlər, çıxışlar olurdu, hətta 100 dənə ağac gətirmişdilər. 3-4 nəfər bir ağac əkirdik. İzahlar olurdu, başa salırdılar ki, onlara ziyan verməyə, ağacları qırmayaq. Ona görə də praktiki biliklər bu mövzularda məlumatlılığımıza kömək olub, ağılımda qalıb.

[At the school I attended, there were events and speeches about it, and they even brought 100 trees. Three or four of us would plant one tree. There were explanations, they explained that we shouldn't harm them, that we shouldn't cut down the trees. Therefore, practical knowledge helped me to be aware of these topics, and it stuck in my mind.]

Ms. Gasimova, who also studied in one of the rural villages mentioned that at some point in their school being involved in outdoor activities and group works helped her to love the nature and do her best to protect, not to pollute.

Qrup işləri kimi praktiki işlər görürdük, məsələn, qruplar halında işləyirdik. Sonra sual cavaplar hazır edirdik, biologiya dərslərinə yarışmalar edirdik.

[We did practical things like group work, for example, working in groups. Then we prepared questions and answers, and we had competitions for biology classes.]

Meanwhile, university student clubs, along with local and international events organized with the help of student unions, were often highlighted by participants as significant contributors to their understanding of environmental issues. For example, Mr. Karimov mentioned that after attending simulation conferences at their university and joining university's eco-club, his understanding has broadened in the topic. He stated that:

Universitet daxili eco-club kimi təşkilatların təşkil etdiyi tədbirlər olubdu, onlara qoşuluram. Məsələn, ən sonuncusu Türkiyəli mütəxəssislərin vasitəsi ilə həyata keçirilmişdi.

[There were events created and organized by internal university organizations. This was carried out through Turkish experts and specialists.]

Another participant, Ms. Jalilova also shared her experiences at university:

Məktəbdə praktiki layihələr çox olmayıb, universitetdə olmuşdu. Layihə idi, yaşıl həyat layihəsi. O da, dənizin çirklənməsini qarşı belə bir layihə olmuşdu. İqlim dəyişikliyi olsun və yaxud da ki, başqa bir şeylər. layihələr, tədbirləri bu haqda müəyyən qədər olub.

[There weren't many practical projects at school, but there were at the university. It was a project, a green life project. It was a project against marine pollution. Whether it was climate change or something else. There were some projects and events about it.]

When asking about practical experiences and projects, majority of the students also recalled one of the most recent international projects, COP29 with some having participated as volunteers and others learning about it through peers who were involved. Table 5 shows some of the answers coming from students.

## **Table 5**

*Students' thoughts*

<p>Son dəfə keçirilən COP29 tədbiri məsələn, o tədbir olmazdan əvvəl bizim universitetdə də məlumat verici sessiya keçirildi, tələbələr arasında, xüsusilə də birinci kurslara iştirakda önəm verilmişdi. Məsələn, onların bizə məlumatlandırmağı çox yüksək idi.</p>	<p>For example, the last COP29 event, before that event, an information session was held at our university, and the importance of participation among students, especially first-year students, was emphasized. For example, their level of information to us was very high.</p>
<p>Məncə COP 29 çox yaxşı bir tədbir oldu, həm də Azərbaycanda bunun keçirilməsi. Çünki burada ən azından könüllü iştirak etdik, məlumatımız artdı, ən azından ekoloji problemi varmış, məlumatlandıq.</p>	<p>I think COP 29 was a very good event, especially holding it in Azerbaijan. Because at least we participated here voluntarily, our knowledge increased, at least we were informed that there was an ecological problem.</p>
<p>COP29 kimi tədbirində çox müsbət tərəfləri vardır, universitetimizin köməyi ilə iştirak etmə şansım olmuşdu. Güzəl təcrübə idi. Yəni, məncə bir-iki əyani iş gördükdən sonra həmin şeyə marağımız artır</p>	<p>There are many positive aspects to an event like COP29, and I had the chance to participate with the help of our university. It was a great experience. I mean, I think that after doing a couple of hands-on activities, our interest in that thing increases.</p>
<p>Mən şəxsən qatıla bilməmişdim amma qrup yoldaşlarım məlumat verirdi. COP29 zamanı onlar göürdü, müəyyən tədbirlərdə iştirak edirdilər, gördükdən sonra nəyəsə bir marağın artması da məncə olur.</p>	<p>I wasn't able to attend in person, but my group mates were providing information. During COP29, they saw it, participated in certain events, and I think it's possible that after seeing it, there's a growing interest in something.</p>

<p>COP29 olmayana qədər məncə ekoloji məsələlər çox gündəmdə deyildir. Bacım iştirak edirdi, çoxlu insanlar ölkəmizdə və digər ölkələrdə ekologiya ilə bağlı mövcud vəziyyət haqqında çoxlu dərin məlumatlar verildiyini deyirdi. Bu tədbirlər elə təşkil olunub ki, biz vəziyyətə müxtəlif tərəflərdən baxa bilirik və bəzi insanlar üçün bu, daha maraqlı olur</p>	<p>Until COP29, I don't think environmental issues are on the agenda much. My sister was there, and many people said that there was a lot of in-depth information about the current environmental situation in our country and other countries. These events are organized in such a way that we can look at the situation from different angles, and for some people, this is more interesting.</p>
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Also, one of the experts interviewed, NGO expert who is working with youth and implementing several environmental initiatives both in Baku and in rural regions, she shared her insights too. She mentioned that their network uses interactive and artistic approaches ( for example, plastic-to-art workshops, beach cleanups, animal welfare) that encourage hands-on problem solving and community engagement She stated that one of the recent projects which was about from plastic to art was especially impactful:

Usually, young people love this kind of workshops when they do some kind of interactive experiences. I have seen a lot of students who joined first unwillingly, but then they came up with their own project ideas about nature, or pollution. It is mostly about showing them, involving them to be part of the change-making process.

On the other hand, another interviewee, the Professor who is working at one of the universities, teaching Environmental Sciences to first-year undergraduate students, during the interview she highlighted the role of project-based learning in her classes.

Students coming from different backgrounds with little knowledge about environmental problems. Their environmental knowledge is like pieces of puzzles, they somehow know, but there is no holistic approach. In our classes, we are going to the field trips, or spending time in the labs. I see their acceptance of the nature and environmental problems . Learning process should come with joy, they have to feel it.

## **Summary**

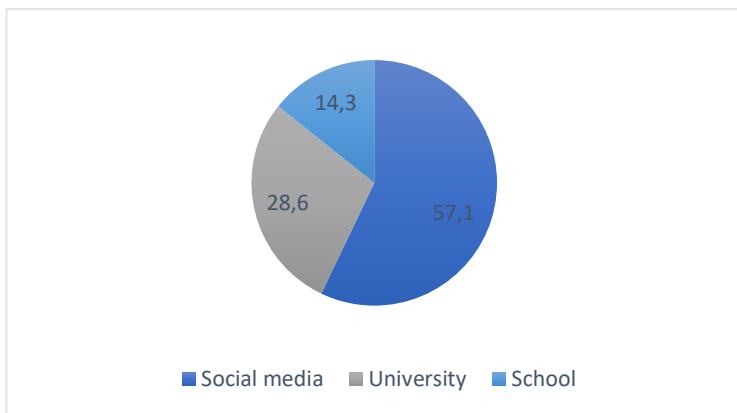
Many students said they mostly learned about environmental issues through theoretical knowledge such as textbooks and some class discussions without much practical experience in school or university which made it harder for them to stay interested or fully understand the topic. However, students who took part in projects like tree planting, eco-club events, or COP29 activities felt more engaged and recalled the lessons better. Experts also shared that when students are involved in real-life, interactive activities, they become more motivated and it increases their critical thinking.

## **Impact of Social Media on Environmental Awareness**

The analysis of the students' responses underline the value of the social media, a significant contributor to students' environmental awareness. As stated in Table 6, out of 16 participants, most of them ranked social media as the first or second most efficient source of environmental information in their lives. Instagram, TikTok, and YouTube were some of the social media platforms most mentioned by the students as areas where they acquired information related to environmental issues such as climate change, pollution, and global warming.

## **Figure 6**

*Primary source of environmental awareness*



For example, Ms. Abdullayeva stated:

Yəni, elə xəbər platformaları var ki,

onlarda düzgün, aydın-səliş şəkildə məlumat alıram. Bu mövzuda məlumatlı olmağıma kömək olub. Ümumi müqayisə etsəm deyərdim ki bu mövzuda məlumatlı olmağıma daha çox sosial şəbəkələr kömək olub. Məktəb vaxtlarımdan bəri düzü araşdırardım, xəbərlərə baxardım. İndi də ingilis dilində məsələn məqalələr oxuyuram. Həm dil bacarıqlarımı artırmaq üçün, həm də hansı ətraf mühit problemləri nədən yaranır, nələr etməliyik, araşdırıram.

[There are news platforms where I get accurate, clear information. It has helped me to be informed on this topic. If I were to make a general comparison, I would say that social networks have helped me to be more informed on this topic. Since my school days, I have been researching honestly, watching the news. Now, for example, I read articles in English. I research both to improve my language skills and to find out what environmental problems arise, why they arise, and what we should do.]

Some students also highlighted that while schools and universities provided with some basic knowledge, it is from social media that they gain new, relevant, and interesting content. Ms. Mirzayeva shared :

Məktəb düzdü təməlini qoyub, ilk dəfə məktəbdə olanda eşitmişik. Amma belə 6-7-ci siniflərə qədər sonra düzü danışılmayıb. Universitetimizdə də deyim ki dərslərdə danışılır

yox. Tələbələrimizin qurduğu klublar var, oradan müəyyən qədər debatlarda olub məlumat almışam. Amma bu mövzuda məlumatlılığımın böyük bir hissəsin sosial mediaya borcluyam. Belə İnstagramda vaxt keçirmək üçün belə girəndə, qarşıma bu mövzuda nəşə çıxıb oxumuşam məsələn. Ya məşhur bloqqlərin, aktivistlərin videolarına baxmışam.

[We first heard it when we were in school. But it wasn't really talked about until the 6th or 7th grade. I'll say that it's not talked about in our university either. There are clubs founded by our students, and I've been to some debates there and gotten some information. But I owe a large part of my awareness on this topic to social media. When I went on Instagram to spend time, I read something about it, for example. Or I watched videos of famous bloggers and activists.]

Data also was collected from one of the Media expert, working with students at university. One of the questions directed to her was *“How do you think media platforms influence young people’s understanding and engagement with environmental challenges?”* She provided her insights how media especially social media influences student understanding of the environmental challenges and described it as a dynamic and youth-friendly tool for disseminating environmental information.

...As students were asked to research, to create a content regarding one of the environmental issues, they definitely started getting more and more interested and more conscious about the issues of environment and sustainability... Our purpose was not only to talk about the environment, but to precisely look at sustainable solutions... So unless someone, some source, some media platform, really puts it in front of them, I don't really see students getting interested.

Overall, a majority of the respondents commented that social media postings have an impact “to spark personal interest”, which is then expanded through additional online exploration. Some others commented that even observing events like COP29 on social media also helped to create motivation and awareness, especially together with real activities or university events. For example, Mr. Gurbanov also added:

İlk öncə universitetimizin İnstagram səhifəsində tapmışdım bu mövzuda ağacəkmə aksiyasına gedilirdi. Sonra universitetimizdə təşkilatlardan maraqlanmağa, qoşulmağa başladım. Ən son dəniz sahilinin təmizlənməsi aksiyasına getmişdik, məsələn. Maraqlı tədbir idi, çox şey öyrəndim.

[First, I found out on our university's Instagram page that there was a tree planting campaign on this topic. Then I started to get interested in organizations at our university and join them. Most recently, we went to a beach cleanup campaign, for example. It was an interesting event, I learned a lot.]

Also, one of the students , Mr. Gahramanli who studied in a private school also shared his experiences in this regard.

Özəl məktəbdə bununla bağlı çoxlu videolara baxırdıq, maarifləndirici çoxlu məqalələr və kitablar oxuyurduq. Sosial mediada çoxlu yazılar var həqiqətən bəyənirəm və onları izləyib baxanda ətraf mühitlə bağlı eşitmədiyim çoxlu maraqlı faktlar tapmışam. Və başqa bir məqam, məsələn, YouTube kimi, burada ətraf mühiti, heyvanları və onun necə təsir etdiyini araşdıran çoxlu videolar və izahatlar tapmışdım. Yəni, sosial medianın çox təsirin görmüşəm.

[In private school, we watched a lot of videos about it, we read a lot of educational articles and books. There are a lot of posts on social media that I really like, and when I watch them,

I find a lot of interesting facts about the environment that I had not heard before. And another point, like YouTube, where I found a lot of videos and explanations that explore the environment, animals and how it affects them. So, I have seen a lot of influence of social media.]

## **Summary**

Overall, majority of the students interviewed stated that social media plays a crucial role in shaping their environmental awareness, often more than school or university lessons. Platforms such as Instagram, TikTok, and YouTube were mostly mentioned as key sources where they learned information about environmental issues. While schools provided some basic knowledge, many students found social media providing with more updated and engaging content. Some students were interested to take part in real-life environmental events after seeing them online, such as tree planting or beach clean-ups. Experts also agreed that social media helps to get students' interest. Overall, social media was seen as a powerful and motivating tool for learning and getting involved.

In conclusion, The findings of this research demonstrated different levels of perceptions on environmental awareness among first-year undergraduate students in Azerbaijan based on their educational background, personal interest, and access to information. While many students showed a basic understanding of environmental issues, deeper knowledge and engagement were often lacking. Most students described limited role of formal education, especially mentioning about textbooks and classroom learning, where they stated only surface-level knowledge is provided. On the other hand, responses showed that practical experiences such as eco-projects, tree planting, and participation in events like COP29 significantly increased students' awareness and motivation. Social media was considered as a key source of information helping students learn in engaging

ways. Some of the students noted that they became more interested in environmental topics after seeing them online, especially when these were connected to real-life activities or university events. However, the findings also revealed that based on interviews environmental awareness in Azerbaijani society is seen as limited and underdeveloped that is related to a clear gap between awareness and action. Students emphasized that it is needed to have more practical learning opportunities, to better integrate environmental content into education, and achieve wider public engagement in society in addressing environmental challenges.

## **CHAPTER 5: DISCUSSION**

The main aim of this research was to explore the perceptions of first-year undergraduate students regarding the current state of environmental awareness in their communities and it explored students' reflections on how environmental awareness is promoted through key sources, including media, social networks, and textbooks. Addition to 16 students' responses, 3 experts' insights were provided with additional depth and nuances to the findings.

Following research questions were guided :

1. What are the first-year undergraduate students' perceptions of the environmental awareness in Azerbaijani society?
2. Which sources do undergraduate students use to learn about environmental issues ?

The literature review in Chapter 2 presented an overview of the theoretical and practical perspectives on environmental awareness and literacy among young people. It begins with theoretical foundation of the Environmental Literacy Framework presented by McBeth and

Volk (2010) and they emphasized three key components- knowledge, attitudes, and skills- as essential dimensions of environmental awareness. The chapter also provided a discussion on how environmental awareness has appeared globally and locally, as well as, the role of education systems in promoting environmental values, and the significant influence of social media in shaping young people's perceptions.

The literature also explored the gaps between knowledge and behaviour and underlined the connection between awareness and action. Specific attention was given to environmental education in Azerbaijan, both integration and lack of environmental topics in national curricula. The role of extracurricular activities and local or international events were discussed.

This chapter aims to compare and contrast literature findings with possible perceptions and awareness patterns of students and experts in the study.

### **Theoretical Framework and Study Findings**

This study was based on Environmental Literacy Framework (ELF), that evaluates environmental literacy through three components: knowledge, attitudes and skills. This part discusses the research's findings related to the framework.

### **Perceptions of Environmental Awareness: Knowledge and Attitudes.**

Understanding of environmental awareness by the students differed from knowing basics about pollution and climate change to a more detailed understanding of ecological problems. The majority of students could give examples of main issues such as pollution and climate change that aligns with the ELF's focus on getting knowledge. For example, one of the students described her understanding of environmental awareness as “ *ətraf mühitlə bağlı savadlılıq, şüurlu olmaq/environmental literacy, being conscious*”. But there were some students who were not

certain of basic definition, linking awareness to cleanliness and some got confused and mixed concern for environment with concerns for society. It aligns with Hollweg et al's (2011) findings that environmental awareness often depends on educational knowledge and hands-on experiences. Students who studied in private schools or participated in practical activities such as eco clubs or projects appeared to show a deeper understanding and it emphasized the importance of contextual learning highlighted in the ELF. It also aligns with researches by Alkaher and Goldman (2018) and Prasetyo et al.(2024) who supported the role of active educational environments in improving students' awareness.

### **Sources of Environmental Awareness: The influence from social media**

When questions asked where students learn about the environment, the majority of students answered that social media was the one of the main sources for acquiring knowledge. The most mentioned platforms were Instagram, Tiktok and Youtube. One of the students, Ms. Seyidova mentioned “məlumatlı olmağım daha çox sosial şəbəkələr yardım edib.. məşhur bloqerlərin, aktivistlərin videolarına baxmışam/ Social media has helped me to be more informed. I have watched videos of famous bloggers and activists”. It aligns with Bozoglu et al.(2016) and European Commission (2020) which show that social media has an important role in educating students about the environmental issues where formal school or university education is not easily accessed. The media expert's experiences also supported this idea. She explained “Young people do not tend to read serious news; they rely on social media, which provides snapshots of issues. Unless they're asked to engage deeply in class, they remain at a surface level of awareness.” Her reflections align with McBeth and Volk's (2010) quotes knowledge alone do not ensure action, especially when they see it incomplete or uninteresting. However, when learning through coursework such as writing, being involved in discussions, making presentation on these topics. Reports show that students' curiosity and motivation increases accordingly. As also stated by Otto

& Kaiser (2014) that social media platforms can be primary channels for getting environmental knowledge.

### **The significant role of university**

In spite of role of social media in shaping students' awareness, some of students highlighted that meaningful understanding came from hands-on experiences and activities at the university level. As one of the students mentioned "Debatlardan və simulyasiyalardan çox şey öyrəndim/ I learned a lot from the debates and simulations". Also the media expert described a case where students got involved in one of the events organized at the university and this engagement deepened students' engagement:

They got excited and delivered speeches and group works. Our purpose was not to only talk about the environment, but to look at sustainable solutions... They started getting more and more interested and conscious.

Such examples reflects the skills and actions of ELF and suggest that practical experiences can improve environmental awareness in a significant way.

### **Formal Education & Informal Education**

Findings also showed a discrepancy between formal educational materials especially, textbooks and informal learning via media. While students said textbooks helped them learn basic theory—especially in classes like World Knowledge or Geography—but many said the content was insufficient, repetitive, or not applicable. This aligns what Şeker (2023) and Stukalina (2016) found, that environmental problems were present in textbooks in many countries but only in a basic level.

Meanwhile, social media was seen as accessible and open, and it was discussed as it could teach people things that school did not cover. This contrast aligns with research by Sergey et al.

(2024), which shows students in Central Asia also depending heavily on social media instead of school teachings in their nation for knowledge on the environment, yet doing so in general basis without critically analyzing or fully understanding it.

Students who participated in practical activities such as tree planting, beach clean-ups, it showed higher engagement and deeper awarenees. It also aligns with research by Si et al. (2022) and Wu et al. (2023) where they showed a positive connection between practical experiences and sustainable behaviour. Both student and environmental expert, Professor supported this idea. Another student, Mr. Mammadov said:

Hesab edirəm ki, COP29 çox yaxşı tədbir idi... biz könüllü olduq, biliklərimiz artdı

[I think COP29 was a very good event... we volunteered, our knowledge increased]

Similary, NGO expert described the significant role of activities in the interviews. NGO expert stated:

Usually, young people love this kind of workshop... then they came up with their own project ideas about nature or pollution.

## **Implication**

This research may serve as a primary study case for further inquiries regarding the environmental awareness and sustainability literacy among in Azerbaijan. This study based on Environmental Literacy Framework (ELF), provided valuable insights from different interviewees about their perceptions and knowledge sources to the environmental issues. Further research with diverse participant scope may be conducted upon this study by exploring additional dimensions of the ELF, such as behaviour change.

As this research generally surrounded first-year undergraduate students at a number of universities, future researches may cover and explore students studying at different academic levels such as seniors or sophomores or at different types of educational institutions (medical or technical).

Future research could also explore the environmental awareness from the regional perspectives, comparing students from rural, urban or suburban school backgrounds to see how environmental awareness is impacted in different geographic conditions.

The research would also contribute to the educational policies in secondary and high education levels. Further researches on policy analysis may be conducted to see how environmental content is integrate into national curriculum from general education to higher education.

As current educational materials were stated by interviewees to be unsatisfying, the role of practical experiences may be more explored in the context of educational institutions.

While the significant role of social media highlighted by interviewees, beneficial usage of social media can be explored to see how effective it might be in learning process.

## **Conclusion**

This research aimed to explore first-year undergraduate students' perceptions of the environmental awareness in Azerbaijani society. It also researched which sources undergraduate students use to learn about environmental issues.

The study was carried out with 16 first-year undergraduate students and 3 expert from related fields. It showed that even though students may have basic theoretical knowledge about environmental issues, overall, they lack depth of their knowledge in the topic. Their current knowledge came from different sources, mainly mentioned from social media to schools and

universities. Those students, who exposed to practical activities whether at school or university, stated its important role in shaping their environmental awareness. Some also shared primary level school textbooks as one of the sources that they used to learn about the topic.

One of the main results was that academic theoretical knowledge alone is not able to help students to comprehend the environmental issues deeply and cope with them. Participants highlighted the significant impact of engaging activities such tree planting, clearing the environment, creating art from plastic rubbish, local or international events such as COP29 in attracting students interests and motivation in this regard.

Last but not least, the research also revealed how social media is considered as one of the main sources for participants to shape their knowledge in the environmental issues. It also showed how social media or digital sources can sometimes be used as an educational tool to better involve students in the topic.

## References

- Arslan, S. (2012). The influence of environmental education on critical thinking and environmental attitude. *Procedia - Social and Behavioral Sciences*, 55, 902–909. <https://doi.org/10.1016/j.sbspro.2012.09.579>
- Al-Balushi, S. M., & Al-Aamri, S. S. (2014). The effect of environmental science projects on students' environmental knowledge and science attitudes. *International Research in Geographical and Environmental Education*, 23(3), 213-227. <https://doi.org/10.1080/10382046.2014.927167>
- Alkaher, I., & Goldman, D. (2018). Characterizing the motives and environmental literacy of undergraduate and graduate students who elect environmental programs: A comparison between teaching-oriented and other students. *Environmental Education Research*, 24(7), 969–999. <https://doi.org/10.1080/13504622.2017.1362372>
- Atkinson, R. L., Atkinson, R. C., Smith, E. E., Bem, D. J., & Nolen-Hoeksema, S. (1996). *Introduction to psychology* (12th ed.). Harcourt Brace College Publishers.
- Anggun, S. K. (2016). An analysis of descriptive text in english textbook using transitivity system (A case study of reading passages). *Journal of English and Education*, 4(1), 147-158.
- Bozoglu, M., Bilgiç, A., Topuz, B. K., & Ardali, Y. (2016). Factors affecting the students' environmental awareness, attitudes and behaviors in Ondokuz Mayıs University, Turkey. *Fresenius Environmental Bulletin*, 25(7), 2539–2553.

- Bespalyy, S., Akhrorova, A., Alnazarova, G., Adieva, A., & Petrenko, A. (2024). Education for sustainable development: Comparative analysis and prospects at universities in Kazakhstan, Tajikistan, Kyrgyzstan, and Uzbekistan. *Discover Sustainability*, 5(1), 1-15. <https://doi.org/10.1007/s43621-024-00343-x>
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson.
- Chen, S.-Y. (2022). To explore the impact of augmented reality digital picture books in environmental education courses on environmental attitudes and environmental behaviors of children from different cultures. *Frontiers in Psychology*, 13, 1063659. <https://doi.org/10.3389/fpsyg.2022.1063659>
- Daniš, P. (2013). *A new definition of environmental literacy and a proposal for its international assessment in PISA 2015*. *Envigogika*, 8(3). <https://doi.org/10.14712/18023061.385>
- Del Rey, R., Ojeda, M., Mora-Merchán, J. A., Sánchez-Díaz, M. N., Morgado, B., & Lasaga, M. J. (2022). Environmental education: Effects on knowledge, attitudes and perceptions, and gender differences. *International Research in Geographical and Environmental Education*, 31(4), 282-303.
- Dopelt, K., Radon, P., and Davidovitch, N. (2019). Environmental effects of the livestock industry: the relationship between knowledge, attitudes, and behavior among students in Israel. *Int. J. Environ. Res. Public Health* 16:1359. doi: 10.3390/ijerph16081359
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, 4(1), 1–10. <https://doi.org/10.1177/2158244014522633>

- Ertz, M., & Sarigöllü, E. (2019). The Behavior-Attitude Relationship and Satisfaction in Proenvironmental Behavior. *Environment and Behavior*, 51(9-10), 1106-1132. <https://doi.org/10.1177/0013916518783241>
- European Commission. (2020). *2020 European Semester: Country Reports*. Retrieved from [https://commission.europa.eu/publications/2020-european-semester-country-reports\\_en](https://commission.europa.eu/publications/2020-european-semester-country-reports_en)
- Fontana, A., & Frey, J. H. (2000). The interview: From structured questions to negotiated text. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 645–672). Sage Publications.
- Fisher, D. R. (2019). The broader importance of #FridaysForFuture. *Nature Climate Change*, 9(6), 430–431. <https://doi.org/10.1038/s41558-019-0484-y>
- Galletta, A. (2013). *Mastering the semi-structured interview and beyond: From research design to analysis and publication*. NYU Press.
- Guest, G., MacQueen, K. M., & Namey, E. E. (2012). *Applied thematic analysis*. SAGE Publications.
- Gurbuz, I. B., Nesirov, E., & Ozkan, G. (2021). Investigating environmental awareness of citizens of Azerbaijan: A survey on ecological footprint. *Environment, Development and Sustainability*, 23(1). <https://doi.org/10.1007/s10668-020-01061-w>
- Gifford, R., & Sussman, R. (2012). Environmental attitudes. In S. Clayton (Ed.), *The Oxford handbook of environmental and conservation psychology* (pp. 65–80). Oxford University Press.

- Goodwin, M. J., Greasley, S., John, P., & Richardson, L. (2010). Can we make environmental citizens? A randomised control trial of the effects of a school-based intervention on the attitudes and knowledge of young people. *Environmental Politics*, 19(3), 392-412. doi:10.1080/09644011003690807
- Kagawa, F. (2007). Dissonance in students' perceptions of sustainable development and sustainability: Implications for curriculum change. *International Journal of Sustainability in Higher Education*, 8(3), 317-338.
- Hammersley, M., & Traianou, A. (2012). *Ethics in qualitative research: Controversies and contexts*. SAGE Publications.
- Heale, R., & Forbes, D. (2013). Understanding triangulation in research. *Evidence-Based Nursing*, 16(4), 98. <https://doi.org/10.1136/eb-2013-101494>
- Hollweg, K., Taylor, J., Bybee, R., Marcinkowski, T., McBeth, W., & Zoido, P. (2011). Developing a framework for assessing environmental literacy. North American Association for Environmental Education (NAAEE).
- Hsu, H. S. (2004). The effect of an environmental education program on responsible environmental behavior and associated environmental literacy variables in Taiwanese college students. *The Journal of Environmental Education*, 34(2), 37-48.
- Hungerford, H. R., & Volk, T. L. (1990). Changing learner behavior through environmental education. *Journal of Environmental Education*, 21(3), 8-21.
- Kodama, T. (2017). Environmental education in formal education in Japan. *Japanese Journal of Environmental Education*, 26(4), 21-26. [https://doi.org/10.5647/jsoee.26.4\\_21](https://doi.org/10.5647/jsoee.26.4_21)
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.

- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing*, 18(6), 503–520.
- Liefländer, A. K., & Bogner, F. X. (2018). Educational impact on the relationship of environmental knowledge and attitudes. *Environmental Education Research*, 24(4), 611-624. <https://doi.org/10.1080/13504622.2016.1188265>
- Mahanta, B. (2023). Environmental awareness among higher education students. *International Journal for Multidisciplinary Research (IJFMR)*, 5(5), September-October, 7040. <https://doi.org/10.36948/ijfmr.2023.v05i05.7040>
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.
- Marcinkowski, T., & Reid, A. (2019). Reviews of research on the attitude–behavior relationship and their implications for future environmental education research. *Environmental Education Research*, 25(4), 459–471. <https://doi.org/10.1080/13504622.2019.1634237>
- Ma'ruf, M., Surya, S., & Apriliany, P. D. (2021). Knowledge, attitudes, and behavior of university students towards environmental issues in Indonesia. *Sains Humanika*, 8(1-2). <https://doi.org/10.11113/sainshumanika.v8n1-2.271>
- McBride, B., Brewer, A., Berkowitz, A., & Borrie, W. (2013). Environmental literacy, ecological literacy, and ecoliteracy: What do we mean and how did we get here? *Ecosphere*, 4(5), 67-20. <https://doi.org/10.1890/ES13-00075.1>
- Neal, P., & Palmer, J. (1990). *Environmental education in the primary school*. Prentice Hall.

- Nguyen, T. N., Lobo, A., & Nguyen, B. K. (2018). Young consumers' green purchase behaviour in an emerging market. *Journal of Strategic Marketing*, *26*(7), 583–600. <https://doi.org/10.1080/0965254X.2017.1318946>
- NAAEE. (2004). *Excellence in environmental education: Guidelines for learning (K–12)*. Washington, DC.
- North American Association for Environmental Education (NAAEE). (2010). *Excellence in Environmental Education: Guidelines for Learning (K-12)*. Retrieved June 17, 2012, from <http://eelinked.naaee.net/n/guidelines/posts/Excellence-in-EnvironmentalEducationGuidelines-for-Learning-K-12>.
- O'Brien, S. R. M. (2007). Indications of environmental literacy: Using a new survey instrument to measure awareness, knowledge, and attitudes of university-aged students. Dissertation, Iowa State University. Proquest UMI Dissertations Publishing.
- OECD. (2007). PISA 2006: Science competencies for tomorrow's world. Organisation for Economic Co-operation and Development. <https://www.oecd.org/pisa/pisaproducts/pisa2006>
- Polit, D. F., & Beck, C. T. (2012). *Nursing research: Generating and assessing evidence for nursing practice* (9th ed.). Wolters Kluwer/Lippincott Williams & Wilkins.
- Project Learning Tree. (n.d.). *Top ten benefits of environmental education*. Project Learning Tree. <https://www.plt.org/educator-tips/top-ten-benefits-environmental-education/>
- Saldaña, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). SAGE Publications.
- Shen, D. (2015). Environmental sustainability and economic development: A world view. *Journal of Economics and Sustainable Development*, *6*(6), 51–59.

- Sutoris, P. (2021). The climate crisis requires a new culture and politics, not just new tech. *The Guardian*. <https://www.theguardian.com/commentisfree/2021/may/24/climate-change-crisis-culture-politics-technology>
- Şeker, M. A study on how environmental issues are discussed in social studies textbooks. *Environ Dev Sustain* **26**, 21325–21352 (2024). <https://doi.org/10.1007/s10668-023-03532-2>
- UNESCO. (2019). UNESCO Framework for Climate Change Education. *United Nations Educational, Scientific and Cultural Organization*. <https://en.unesco.org/themes/education-sustainable-development/climate-change>
- United Nations Economic Commission for Europe (UNECE). (2011). *Environmental performance reviews: Azerbaijan (2nd review)*. United Nations. <https://unece.org/environment-policy/environmental-performance-reviews/azerbaijan>
- United Nations Conference on Environment and Development (UNCED). (1992). *Agenda 21: Program of action for sustainable development*. United Nations. <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>
- Yoon, T. K., & Ahn, S. (2020). Clustering Koreans' environmental awareness and attitudes into seven groups: Environmentalists, dissatisfieds, inactivators, bystanders, honeybees, optimists, and moderates. *Sustainability*, *12*(20), 8370. <https://doi.org/10.3390/su12208370>
- Yin, L., & Foy, P. (2021). Constructing the TIMSS 2019 environmental awareness scales. In I. V. S. Mullis, M. von Davier, & M. O. Martin (Eds.), *Methods and procedures: TIMSS 2019 technical report* (pp. 18.1–18.30). TIMSS & PIRLS International Study Center, Boston College. <https://timssandpirls.bc.edu/timss2019/methods/chapter-18.htm>

- Yale Center for Environmental Law & Policy (YCELP). (2024). *Environmental Performance Index*. Yale University. <https://epi.yale.edu/>
- Prasetyo, P., Irawati Al Muhdhara, M. H., Ibrohim, & Saptasari, M. (2024). Promoting students' environmental literacy through PBIB learning model. *Journal of Biological Education Indonesia*, *10*(2), 383–391.
- Rosa, E. A., & Thomas, W. L. (2010). *Human footprints on the global environment: Threats to sustainability*. MIT Press. <https://doi.org/10.7551/mitpress/8305.001.0001>
- Roczen, N., Kaiser, F. G., & Bogner, F. X. (2013). A competence model for environmental education. *Environment and Behavior*, *46*(8), 972–992. <https://doi.org/10.1177/0013916513492416>
- Sapanova, N., Balta, N., & Huseynova, R. (2024). Kazakhstani high school students' environmental knowledge, attitudes, awareness, and concern. *International Research in Geographical and Environmental Education*, *33*(1). <https://doi.org/10.1080/10382046.2023.2282032>
- Stevenson, R. B. (2007). Schooling and environmental education: Contradiction in purpose and practice. *Environmental Education Research*, *13*(2), 139-153. <http://dx.doi.org/10.1080/13504620701295726>
- Stapp, W. B., et al. (1969). The concept of environmental education. *Journal of Environmental Education*, *1*(1), 30–31.
- Si, W., Jiang, C., & Meng, L. (2022). The relationship between environmental awareness, habitat quality, and community residents' pro-environmental behavior: Mediated effects model

- analysis based on social capital. *International Journal of Environmental Research and Public Health*, 19(20), 13253. <https://doi.org/10.3390/ijerph192013253>
- Tilbury, D. (1995). Environmental education for sustainability: Defining the new focus of environmental education in the 1990s. *Environmental Education Research*, 1(2), 195-212. <https://doi.org/10.1080/1350462950010206>
- UNESCO. (1978). *Towards a methodology for projecting rates of literacy and educational attainment* (Current Surveys and Research in Statistics, No. 28). UNESCO, Paris.
- UNESCO-UNEP. (1978). The Tbilisi declaration. *Connect*, 3(1), 1–8.
- Yadav, R., & Pathak, G. S. (2017). Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. *Ecological Economics*, 134, 114–122. <https://doi.org/10.1016/j.ecolecon.2016.12.019>
- Yessenamanova, M., Tlepbergenova, A., Yessenamanova, Zh., & Gilmanov, E. (2020). Analysis of studying ecological education in Kazakhstan. *Journal of Physics: Conference Series*, 1691, 012036. <https://doi.org/10.1088/1742-6596/1691/1/012036>
- Wu, Y., Wan, J., & Yu, W. (2023). Impact of environmental education on environmental quality under the background of low-carbon economy. *Frontiers in Public Health*, 11, 1128791. <https://doi.org/10.3389/fpubh.2023.1128791>
- van de Wetering, J., Leijten, P., Spitzer, J., & Thomaes, S. (2022). Does environmental education benefit environmental outcomes in children and adolescents? A meta-analysis. *Journal of Environmental Psychology*, 81, 101782. <https://doi.org/10.1016/j.jenvp.2022.101782>

## **Appendices**

### **Appendix A**

#### **Consent Form**

##### **Assessing Environmental Awareness Among First-Year Undergraduate Students in Azerbaijan**

**Dear Participant,**

You are invited to participate in an interview as part of a research study aimed at exploring the environmental awareness of first-year undergraduate students in Azerbaijan. Your participation in this study is highly valuable and will contribute to a deeper understanding of how students engage with environmental issues, the sources shaping their knowledge, and the role of educational institutions in fostering environmental consciousness.

This research, titled "**Assessing Environmental Awareness Among First-Year Undergraduate Students in Azerbaijan,**" is conducted by **Nigar Karimli** under the supervision of **Dr. Jeyran Aghayeva**. The purpose of this study is to examine students' perceptions of environmental challenges and to assess the effectiveness of educational and social influences in promoting environmental awareness.

The interview will take approximately 45-60 minutes, depending on the length of your responses. In addition to the interview, you may be asked to share any relevant experiences or examples related to environmental education.

Your participation in this study is entirely voluntary. You have the right to decline to answer any question or respond only to those you feel comfortable discussing. You have the right to decline to answer any question or choose to respond only to those questions with which you are comfortable. Any information that could directly identify you, such as your name and workplace, will be removed from the data during analysis.

Only reviewers who agree to the terms of confidentiality will have access to the data as they review the analysis and codes. They will not have access to direct identification information or your name, your responses will be compiled into themes and used in the dissertation research study. Rest assured that your identity will be kept private to the fullest extent permitted by law.

Only reviewers who agree to the terms of confidentiality will have access to the data as they review the analysis and codes. They will not have access to direct identification information or your name. Your responses will be compiled into themes and used in the dissertation research study. Rest assured that your identity will be kept private to the fullest extent permitted by law.

A final copy of the study will not include your identification information and your name. Although every attempt will be made to protect participant confidentiality, some distinguishing answers may reveal participant identity. Your responses or decision whether or not to answer some questions will not affect your status as a faculty member. At any point, you may withdraw as a participant from the study.

If you have any questions about this study, please feel free to contact: Nigar Karimli  
**Email:** [nkarimli19062@ada.edu.az](mailto:nkarimli19062@ada.edu.az) **Phone:** 0706052523

If you have any additional questions or concerns regarding your rights as a study participant or if you are dissatisfied at any time with any aspect of this study, you may contact, anonymously if you wish, the ADA University at :

**Phone:** (+994 12) 437 32 35

**Email:** [info@ada.edu.az](mailto:info@ada.edu.az)

Thank you for participating

I agree to voluntarily participate in this interview; I allow my responses to be audio-recorded for research purposes.

**Name (Printed):** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## **Appendix B**

### **Interview protocol**

#### **Introduction:**

The researcher will begin the conversation by greeting the participant warmly and introducing themselves as a graduate student conducting research for a Master of Arts in Educational Management at ADA University. To build rapport, the researcher will briefly share their academic background and interest in environmental awareness.

#### **Purpose:**

The researcher will explain that the purpose of this study is to explore how first-year undergraduate students in Azerbaijan perceive environmental awareness, the sources that shape their environmental knowledge, and the role of educational institutions in fostering environmental consciousness.

#### **Procedures:**

The researcher will inform the participant that open-ended questions will be asked to encourage detailed and thoughtful responses. The interview will last approximately 45–60 minutes and will be audio-recorded with the participant's permission. The researcher will explain that all data collected will be anonymized by replacing participants' names with pseudonyms, ensuring

privacy and confidentiality. The analyzed data will be used in the researcher's final thesis and shared with participants upon request.

### **Consent:**

The researcher will emphasize that participation is entirely voluntary, and the participant can choose to skip any question or withdraw from the study at any time without consequences. Participants will be asked to sign a consent form before the interview and verbally confirm their willingness to participate. The researcher will encourage participants to share only what they feel comfortable discussing. Participants will have the option to choose their pseudonyms; if they do not, the researcher will assign them one.

## **Appendix C**

### **Interview questions with students**

1. Could you share a bit about your academic background?
2. What does the term "environmental awareness" mean to you?
3. What challenges come to your mind when we are talking about environment?
4. When did you first become aware of these issues?
5. What role do you think your school played in shaping your knowledge in this concept?
6. How effectively did school textbooks cover environmental topics?
7. Can you give examples of what you found impactful in raising your awareness in this topic at school?
8. Can you give examples of what you found insufficient in the learning process?
9. What are the specific courses, discussions, or projects that influenced your understanding?

10. Can you share how you typically learn about environmental issues today?
11. What role do you think your university plays in promoting your environmental awareness?
12. How effectively does your university cover environmental topics, and can you give examples of what you found impactful or insufficient?
13. Can you describe any experiences in your university that have contributed to your understanding of environmental issues?
14. What factors motivate you to care about environmental issues?
15. What barriers prevent you from engaging more actively?
16. How do social media or digital platforms influence how you understand environmental issues?
17. Which do you feel has had the biggest impact on your understanding of environmental issues school, university, or social media? Can you explain why?
18. In what ways do you think environmental education could be enhanced for first-year undergraduate students? What specific improvements would you suggest?
19. Is there anything else you would like to share about your experiences or opinions regarding environmental awareness?

## **Appendix D**

### **Interview questions with Environmental Science expert**

1. Could you talk about your academic background and the course you are teaching?

2. How do you integrate the importance of environmental education in addressing environmental challenges in your classes?
3. How prepared are the students you teach to engage with environmental issues when they begin your course?
4. How do students in your Introduction to Environmental Sciences course demonstrate awareness of environmental issues by the end of the semester?
5. Which parts of your course content seem to resonate most with students and improve their environmental awareness?
6. What topics or skills do you think could be added to your current course to help students better understand environmental issues?
7. How do you incorporate practical/hands-on experiences into your teaching to help students connect with environmental concepts?
8. Based on your interactions with students, what are the most common misconceptions they have about environmental issues?
9. How do you assess the impact of your teaching on students' attitudes and behaviors toward the environment?
10. What teaching strategies or activities have you found most effective in engaging students with environmental topics?
11. What challenges do you face in helping your students engage with environmental awareness at your university?

12. How do your students' social or cultural perspectives influence their engagement with environmental topics?
13. What role do you see media playing in how your students understand environmental issues?
14. How do your students respond to environmental content in the media?
15. How could partnerships with NGOs or policymakers support environmental education in your university??
16. Would you like to add anything else?

## **Appendix E**

### **Interview questions with Media expert**

1. Could you talk about your academic background and your course?
2. In your opinion, what role does media play in shaping public perceptions of environmental issues?
3. How do you think media platforms influence young people's understanding and engagement with environmental challenges?
4. What media campaigns or initiatives in Azerbaijan have you encountered that aim to promote environmental awareness? How effective do you think they have been?
5. How do social media platforms compare to traditional media in terms of engaging youth with environmental topics?
6. What types of content or messaging do you think link most with young audiences when discussing environmental issues?

7. Can you provide examples of how media has helped Azerbaijani youth to participate in environmental actions or campaigns?
8. What challenges do you see in using media to effectively promote environmental awareness in Azerbaijani society?
9. How do you think misinformation or lack of critical media literacy affects young people's perceptions of environmental issues?
10. What opportunities exist for influencing media to improve environmental education and awareness among youth in Azerbaijan?
11. How do you incorporate environmental topics into the courses you teach, such as Media and Communication or Public Speaking?
12. In your experience, how well-prepared are students to critically analyze environmental messaging in the media?
13. Do you think there is a need for more media literacy training to help students engage critically with environmental information? How well do you think students are prepared to critically engage with environmental information in the media? What role, if any, do you think media literacy plays in this process?
14. What role do you think universities/schools can play in fostering collaboration between media professionals and environmental educators?
15. How could media professionals and educators work together to create impactful campaigns for environmental awareness?
16. Would you like to add anything else?

## **Appendix F**

### **Interview questions with NGO expert**

1. Could you talk about yourself and your actions as a country coordinator of one of the non-governmental organization working with young people?
2. Can you share specific projects or initiatives led by your organization that focus on environmental awareness?
3. How does your role in the organization contribute to promoting environmental awareness among youth in Azerbaijan?
4. Based on your work with young people, how would you describe their current level of awareness about environmental issues?
5. What challenges has your organization faced when trying to engage young people in environmental campaigns?
6. In your experience, what motivates young people in Azerbaijan to participate in environmental initiatives?
7. How have you observed environmental awareness among Azerbaijani youth change through your organization's work?
8. What strategies have been most effective in encouraging youth to take an active role in addressing environmental challenges?

9. How has your organization collaborated with educational institutions or social enterprises to promote environmental awareness among young people?
10. What approaches worked best to promote environmental awareness among young people?
11. How well do you think environmental education supports the youth you work with?
12. How does promoting environmental awareness encourage youth to get involved in environmental solutions?
13. Can you share an example where awareness campaigns led to meaningful youth engagement?
14. What improvements do you think would help them engage more in the processes?
15. Would you like to add anything else?