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Environmental Education: Content Analysis of the Primary School World Knowledge Textbooks in Azerbaijan

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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 (Environmental Education: Content Analysis of the Primary School World Knowledge Textbooks in Azerbaijan), is all my own work and does not contain any unacknowledged work.

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Abstract

ENVIRONMENTAL EDUCATION: CONTENT ANALYSIS OF THE PRIMARY SCHOOL
WORLD KNOWLEDGE TEXTBOOKS IN AZERBAIJAN
By
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The protection of the nature and environment is considered as one of the priority issues all around the globe. However, weak public awareness hinders the protection of the nature and environment. To protect both, environmental education is taught at a very young age to bring up responsible citizens not only in the world but also in Azerbaijan. The main purpose of the study was to conduct content analysis on the primary school World Knowledge textbooks' topics on environmental education. The second aim of the study was to explore to what extent the primary school World Knowledge textbooks' topics on environmental education cover Palmer's (1998) education *about*, *in,* and *for* the environment model and reflect Taylor's (2011) environmental ethics and Mark's (1844) human-nature relationship dimensions. Finally, the study aimed to understand stakeholders' (a curriculum expert, a textbook author and a 2nd grade school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education and to what extent their perceptions and experiences coincide with Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions. This study employed qualitative content analysis and qualitative interview approach to explore three stakeholders' (a

curriculum expert, a textbook author and 2nd grade school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education.

The major finding of the content analysis was that the primary school World Knowledge textbooks comprised Palmer's (1998) education *about*, *in*, *for* environment model's first component *about,* which was a basic *knowledge* about environment. The second component *in*, which was raising *awareness,* and the third component *for,* which was *action,* was covered less than *knowledge*. Thus, the primary school World Knowledge textbooks' topics on environmental education did not equally incorporate Taylor's (2011) environmental ethics and Marx's (1844) human nature relationship dimensions in comparison to *knowledge*. Similarly, the primary school World Knowledge textbooks' topics on environmental education did not promote student engagement in activities related to the nature and environment. The significant finding of the interview data analysis was poor communication among three stakeholders (a curriculum expert, a textbook author, and 2nd grade school teacher).

This study suggested that the primary school World Knowledge textbooks' topics on environmental education should be more action-oriented. Besides, they should teach environmental ethics and human nature relationship more deeply.

Keywords: environmental education, environmental ethics, human nature relationship, knowledge, awareness.

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Chapter 1

Introduction

Ecological problems were not considered important some decades ago though Mepham (2005) and Rees (2003) state that human activities have been impacting the Earth's ecosystem. Given the human activities around the world, ecological problems have become crucial and need to be solved (Lakatos et al., 2003). People should be aware of those environmental problems and find solutions to them. Therefore, United Nations Educational, Scientific and Cultural Organization (UNESCO) recommends teaching environmental education from an early age at primary school.

According to UNESCO (1977), Environmental Education (EE) is a life-long process aimed at providing environmental awareness, ecological knowledge, attitudes, commitments to actions, values and ethical responsibility to its target groups through formal or informal education. EE highlights the teaching about environmental issues through interdisciplinary or problem-solving approaches. EE should begin at an early age especially at primary school (UNESCO, 1977).

Research highlights that environmental knowledge construction is important. When a man knows the consequences, she or he becomes more aware and calls more attention to her or his behaviour (Uusitalo, 1993). Consequently, if a man is exposed to positive nature experiences at an early age, his or her nature sensitivity may be developed. Gibertson (1990) and Rynning (1993) note if a man at an early age repeats nature experiences, his or her environmental awareness, attitudes, and conceptions change in a positive way and abiding nature education occurs (Palmberg, 1989).

However, repeated nature experiences were criticized and argued that those activities did not deepen environmental education, and people become not able enough to holistically perceive the concept of environmental phenomena (Van Matre, 1998).

As environmental concerns have reached every corner of today's world, Azerbaijan also faces environmental problems. Although Azerbaijan makes efforts to protect its environment and ecosystem, weak public awareness on environmental changes hinders the progress of environmental protection. To maintain public awareness on environmental issues, Azerbaijan also provides environmental education from the primary school and students are taught environmental education through World Knowledge textbooks' particular topics.

Research highlights that in different countries around the world content analysis of textbooks on environmental education was conducted based on Palmer's (1998) education *about*, *in*, *for* environment model, which includes components of *knowledge*, *awareness* and *action*. According to Palmer (1998), this model can be used for effective teaching of environmental education. Hence, Taylor's (2011) theory emphasizes the importance of ethics and Marx's (1844) theory emphasizes the importance of human nature relationship dimensions in the protection of the nature and environment.

Given the importance of the environmental education, I decided to do qualitative content analysis research. The main purpose of the study was to conduct content analysis of the primary school World Knowledge textbooks' topics on environmental education based on Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics and Marx's (1844) human nature relationship dimensions. In addition, I aimed to explore stakeholders' (a curriculum expert, a textbook author and a 2nd grade teacher) perceptions and experiences related to the textbooks that I was going to analyze.

Research Interest Statement

My primary research interest was environmental education (EE), particularly the topics related to environmental education of the primary school World Knowledge textbooks in Azerbaijan.

As environmental education (EE) is taught for implementing the goals of environmental protection, it is considered a lifelong interdisciplinary field of study. Although EE is not a separate branch of science, it is utilized as an instrument for improving quality of life of people and society (UNESCO, 1977). Therewithal, environmental protection is one of the targets of United Nations (UN) in attaining future that is more sustainable. Both UNESCO and UN consider that environmental protection is important for better future.

My interest in this topic stemmed from my passion for nature and the desire to combine this fascination with my study area. The field I was studying, which is education, plays a key role in the development of society and should be used as an instrument in order to develop this society.

 Problem Statement

According to Voluntary National Review 2019 by UN Sustainable Development Goals Knowledge Platform, Azerbaijan makes efforts to protect its environment and to restore its ecosystems though lack of awareness on environmental changes prevents environmental protection (United Nations, Voluntary National Review, 2019).

As noted by UNESCO (1977), environmental education (EE) should be taught at primary school because EE has a great impact on person's development as a responsible individual and citizen. In regard to lacking environmental awareness of the Azerbaijani people, children should be raised as environmentally responsible individuals so that they can become better citizens in

future. Based on the lacking environmental awareness of the Azerbaijani people, I desired to explore how the primary school World Knowledge textbooks' topics on environmental education assisted young age school children to become aware of environmental problems as a future citizens of Azerbaijan.

Purpose of the Study

The main purpose of the study was to conduct content analysis on the primary school World Knowledge textbooks' topics on environmental education. The second aim of the study was to explore to what extent the primary school World Knowledge textbooks' topics on environmental education cover Palmer's (1998) education *about*, *in* and *for* the environment model and reflect Taylor's (2011) environmental ethics and Mark's (1844) human-nature relationship dimensions. Finally, the study aimed to understand stakeholders' (the curriculum expert, the textbook author and the 2nd grade school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education and to what extent their perceptions and experiences coincide with Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions.

Research Questions

1. To what extent do the primary school World Knowledge textbooks' topics on environmental education cover Palmer's (1998) education *about*, *in*, *for* environment model?

2. To what extent do the primary school World Knowledge textbooks' topics on environmental education reflect Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions?

3. What are stakeholders' (a curriculum expert, a textbook author and a primary school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education?

4. To what extent stakeholders' (a curriculum expert, a textbook author and a primary school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education coincide with Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions?

Chapter 2

Literature Review

Historical Development of Environmental Education

Environmental education (EE) started to evolve from the beginning of the 21st century. Given the importance of EE, Braus (2001) describes how environmental education has progressed and environmental projects have been implemented by international organizations such as the United Nations (UN), United Nations Children's Fund (UNICEF), United Nations Environment Program (UNEP) and World Wild Fund (WWF) over the last 25 years of the 20th century (Braus, 2001).

According to Krzesni (2015), the first major document on environmental education was Stockholm Declaration adopted by the UN in 1972 in the United Nations Conference on the Human Environment. The aim of Stockholm Declaration was to create and maintain a human environment that needed shared goals and principles to inspire and direct the world in which people live.

Consequently, the International Workshop on Environmental Education was held in Belgrade, Yugoslavia (now Serbia) in 1975 and the Belgrade Charter was adopted. The Belgrade Charter was built upon the Stockholm Declaration and established a framework and guiding principles for environmental education.

The framework and guiding principles of the Belgrade Charter were further modified at the Tbilisi Intergovernmental Conference on Environmental Education organized by UNESCO in cooperation with UNEP. The Tbilisi Intergovernmental Conference on Environmental Education was held in 1977 with participation of 70 countries and was the largest conference held on environmental education. At this conference the Environmental Education Act was

adopted as well as the definition and main goals of environmental education were determined. According to the results of the Tbilisi Conference, the environment is a large concept that contains both natural and social concepts, including social and cultural values. The Tbilisi Conference representatives defined five modules of Environmental Education: awareness, knowledge, attitudes, skills and participation.

- Awareness: to help social groups and individuals acquire an awareness of and sensitivity to the total environment and its allied problems.

- Knowledge: to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associate problems.

- Attitudes: to help social groups and individuals acquire a set of values and feelings of concern for the environment, and the motivation for actively participating in environmental improvement and protection.

- Skills: to help social groups and individuals acquire the skills for identifying and solving environ- mental problems.

- Participation: to provide social groups and individuals with an opportunity to be actively involved at all levels working toward resolution of environmental problems (UNESCO, 1977, pp. 26-27).

In the Belgrade Act and Tbilisi Declaration, environmental education is defined as an interdisciplinary approach to human and nature relationship. Accordingly, EE cannot be narrowed down to a single ecological approach (Krzesni, 2015).

European Union Policy and Curriculum on Environmental Education

Stoke et al. (2001) emphasizes that European Union (EU) environmental policy has developed over the last two decades of the 20th century and within that policy the role of

education explicitly defined in the Resolution adopted in 1988 by Council of Ministers. The

Resolution reflected objectives of environmental education that is "to increase the public

awareness of the problems in this field, as well as possible solutions, and to lay the foundations

for a fully informed and active participation of the individual in the protection of the

environment and the prudent and rational use of natural resources" (Stoke et al., 2001, pp. 4-5).

In consequence, the European Parliament supported the Resolution and called the Member States

and the Commission to include social, economic and cultural dimensions of environmental

education at all education levels in 1993. The European Parliament highlighted the fundamental

role of the school and teachers in the development and implementation of environmental policy.

In respect to the Resolution adopted by Council of Ministers, EU countries have added

environmental education to their national curriculum. Some countries have added environmental

education to their curricula as a separate subject while some countries included it as a section in

geography, science and morality subject. Hence, the other countries considered environmental

education as an interdisciplinary area (Stoke et al., 2001).

In fact, the educational systems of the EU countries differ from one another. A study

conducted by Stoke et al. (2001) in 15 member countries showed that different countries had

different curriculum and most EU countries, such as Finland, Germany, and France have

included EE in their general statement of aims at primary schools.

Environmental Education in Finnish, German, and French National Curricula

World countries have had extensive experience in teaching environmental education (EE).

Research on EE has been conducted in Finland, Germany, France and many other EU countries

since the end of the last century. Literature review has concluded that content analysis has been

mainly conducted on various textbooks through which environmental education has been taught.

Besides, those countries are considered as eco-friendly countries that start teaching

environmental education even in pre-school, as there are a number of eco-schools and nature

schools there.

According to Jeranon et al. (2009), a national strategy has been developed to promote

environmental education (EE) and sustainable development education (SDE) in Finland. Some

Finnish environmental educators highlight that ethical issues should be considered more

important than ever before and included into the curriculum. In contrast, environmental

philosophers emphasize that students have to understand their responsibility to nature.

For promoting environmental education in the primary and lower secondary schools in

Finland, the theme "responsibility for the environment, well-being, and sustainable future" as the

objective of basic education is taught (National core curriculum for basic education, 2004, p. 39).

Jeronen et al. (2009) interpreting the theme conclude that it is important to raise environmentally

conscious students at primary and lower secondary schools and develop future-oriented thinking

in them. Consequently, those students may grow into responsible citizens who contribute to

building ecologically, economically, socially, and culturally sustainable future life.

Appropriately, the Standing Conference of the Ministers of Education and Cultural

Affairs (Kultusministerkonferenz) held in Germany in 1980 was a chance to introduce

environmental education to the German education system and curriculum with the same aim as

in the Finnish National Curriculum. Given the similarity of the aims, schools at all levels should

teach environmental education, which is also compulsory for students in primary education.

EE in primary school is taught within the content of natural and social sciences subjects

and through acquiring knowledge based on students' daily experiences and exposure to local

environmental problems. Students' prior knowledge combined with the information gained at

primary school provide them the opportunity to display environmentally friendly behaviours. Being exposed to local environmental problems, students become environmentally responsible humans and learn how to protect the nature and environment.

In brief, environmental education taught at primary and secondary education in Germany aims to teach students to be environmentally sensitive, friendly, and responsible that means to form a personal relationship with the nature and environment (KMK, 2015). Rode (2000) elaborates on such behavior and relates it to culture and education in all subjects and for all age groups.

Likewise, France took significant steps towards environmental education and sustainable development and included environmental education into K-12 school curricula. According to the French National Curriculum, environmental education encompases different topics on the nature and environment including geographical content, which is human nature relationship and the consequences of human actions.

Overall, environmental education taught in K-12 schools in France aims to promote civic responsibility and awareness of human nature relationship based on the values, ethics, attitudes and behaviour (Global Environmental Education Partnership, 2019).

Environmental Education Policy and Curriculum in Azerbaijan

In 2002, a legal act "The Law of the Azerbaijan Republic on environmental education and enlightenment of population" was adopted. The law aims to define the legal, economic and organizational basis of state policy related to important concepts, such as environmental education and enlightenment of population, and makes adjustments for correlation in this area. Accordingly, general education concept (hereinafter referred to as National Curriculum) describes learning outcomes and content standards for general education and for general primary

education. The general primary education aimed at teaching knowledge about nature, people-nature and individual-community relationships and transferring of initial skills for distinguishing of and commenting on items and events by their nature and implementing of economical, environmental and communicative activities. Based on the general and general primary education, since the 2004/2005 academic years, World Knowledge as a subject started to be taught in the primary schools countrywide. As a result of learnt from these textbooks, students observe and respond to natural phenomena with a sensitive and caring approach (Azerbaijan Ministry of Education, 2002).

Theoretical framework

Palmer's education *about, in, for* environment Model / Palmer's Tree Model (1998)

Palmer's education *about, in, for* environment Model / Palmer's Tree Model (1998) was used as a framework for content analysis in this study. The model, which is also known as Palmer's (1998) tree model, has four elements: the empirical element, the synoptic, the aesthetic element, and the ethical element.

The empirical element contains demonstration, measurement, and analysis. This element develops student ability to communicate directly with the environment through observation, measuring, recording, interpreting, and discussing. Hence, the synoptic element raises student awareness of the environment and maintains student understanding of complex environmental issues. As Palmer (1998) states, "The aesthetic elements...can help a pupil to realize that there is no right or wrong answer in absolute terms to aesthetic questions and that the answer to environmental issues is frequently a compromise" (p.142). With the ethical element environmental education introduce students a personal responsibility to the environment. These elements help students make the link between *about, in, for* and they overlap and fuse together

(See Figure 1).
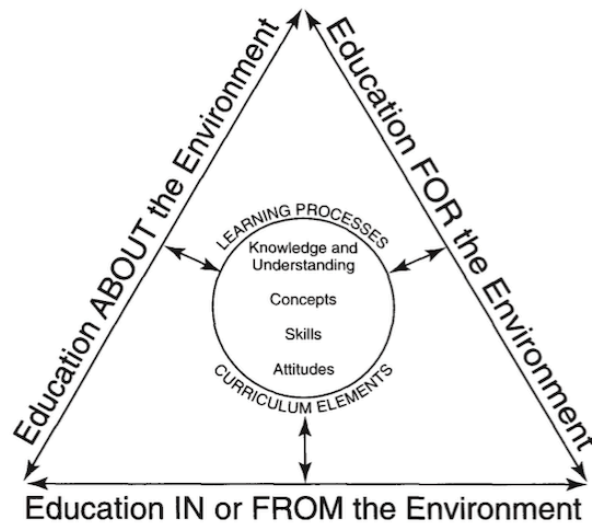
Figure 1. *Inter-related components of Palmer's (1998) Model*

According to Palmer (1998), the components of tree models *about*, *in*, *for* are related to

knowledge, *awareness*, and *action*. When Palmer (1998) states education *about* the environment,

she implies *knowledge*. Education *about* the environment provides students with basic *knowledge*

and supports student understanding of the environment. Palmer (1998) considers *awareness* as

education *in* the environment. Education *in* the environment directs students to think critically, to

find ways for the solutions, and to conduct research on the environment and environmental

problems. Personal experiences *in* the environment play an important role in increasing student

critical sensitivity. When Palmer (1998) states education *for* the environment, she means *action*.

Students take *action* towards the environment to solve its problem. *Knowledge*, *awareness*, and

action are interrelated with each other as a chain. Therefore, if one of these components is less or

absent, this chain is almost broken. Consequently, learning *about* the environment does not give

effective results. Palmer (1998) claims that keeping ecological and political aspects in mind,

environmental education should provide students with the experience of decision making. The

main target is to grow responsible citizens who are able to value the beauties of the Earth for ensuring its sustainability (Palmer, 1998).

Taylor's (2011) Environmental Ethics theory

Environmental ethics is a philosophy of ethics itself. Environmental ethics is associated with the moral relationship between the natural world and human beings. Taylor's (2011) environmental ethics theory has components of *duties*, *responsibilities*, and *obligations* between the human and natural world. The ethical principles govern this connection and define our *duties*, *obligations*, and *responsibilities* for Earth's natural environment, for all fauna and flora, i.e. for the world of living beings.

According to these components, *duties* are related to the saving of natural resources and the beauty of nature, *responsibilities* are related to conservation of nature and endangered animals, *obligations* are related to the protection of nature.

The theory of environmental ethics is on preserving nature, its natural resources, and beauty, and passing it on to future generations. Taylor (2011) considers that leaving a dirty world for future generations is both unethical and unfair. Environmental ethics theory is based on respect for nature, human's relationship with nature, and the preservation of balance in nature. Given Taylor's (2011) explanation of environmental ethics theory, it is an effort by humans to build a rational ground for moral principles through their behavior towards a natural ecosystem. Taylor (2011) highlights that environmental ethics theory has two types: human-centered and life-centered theory of environmental ethics.

In regard to human-centered theory of environmental ethics, our moral duties, which reflect our respect to the nature, come from our duties for one-another as human beings. Simply, we should nature and protect it the same way as we respect and protect human rights. Today's

generation as well as future generations have the right for secure healthy life in the well-protected nature. Therefore, we should try to protect the nature so that future generations can enjoy and benefit from nature and natural resources.

Given the life-centered theory of environmental ethics, Taylor (2011) emphasizes that our *duties* and *responsibilities* with respect to the nature do not come from the duties that we owe to one-another as human beings. The life-centered theory of environmental ethics teaches that our *duties* and *responsibilities* towards the nature generate from the moral relations between the nature and human beings. Consequently, the nature is not for us only to use and benefit (Taylor, 2011).

Marx's (1844) Human Nature Relationship

Influenced by Aristotel's Naturalism, Hegel's objective idealistic view of nature and Feuerbach's humanist view of nature ideologies, the great thinker Marx (1844) systematically discussed his human nature relationship theory in the book "German Ideology and Manuscript of Economics". Marx's (1844) theory emphasizes that the nature existed before humans and the human being depends on the nature. He claims that nature is the human body that maintains his existence and interaction between and the nature and human occurs (Marx, (1844) as cited in Li, 2016).

Environmental Education and Content analysis of Textbooks

Human nature relationship and environmental ethics are closely interwined and reflected in Palmer's *about*, *in*, and *for* environment (1998) model as well. Therefore, some researchers in European countries have conducted textbook content analysis based on ethical, human nature relationship approaches and Palmer's education *about*, *in*, and *for* environment (1998) model.

The content analysis of textbooks on environmental education in different European Union (EU) countries has yielded different results.

Analyzing all Finnish secular ethics and Lutheran religion textbooks, Linnanvuori (2013) found out to what extent those textbooks covered environmental issues from the social and scientific aspects and how well they fitted to Palmer's (1998) education *about*, *in* and *for* environment model. Linnanvuori (2013) concluded that the all the analyzed textbooks did not incorporate environmental education to the full extent. The secular ethics textbook was more about the environment than the Lutheran religion textbook. Nevertheless, both textbooks contained more environmental knowledge than environmental protection (Linnanvuori, 2013).

Besides, Ferreira et al. (2008) analyzed 79 textbooks from 16 EU countries. Those textbooks comprised Biology, Ecology, Geology and Natural Sciences, including one textbook from Finland, 3 textbooks from Germany, and 11 textbooks from France. Ferreira et al. (2008) conducted the content analysis of those course books to test the development of social-economic and ethical dimensions within the theme *pollution*. Students from the first to the last grades were taught via Biology, Ecology, Geology, and Natural Sciences textbooks in 16 EU countries. The results of the content analysis illustrated that socio-economic and ethical dimensions were completely missing in the textbooks of 6 countries out of 16 EU countries. The textbooks used in Western European countries contained both social-economic and ethical dimensions but social-economic dimension was covered more than ethical dimension. Such discrepancy indicated that ethical dimension needed to be equally covered in those textbooks (Ferreira et al., 2008).

Given the knowledge of environment and human relationship with nature, Skujiene et al. (2008) analyzed and compared 22 textbooks from 15 European and African countries, including Germany, France and Finland. The aim of their research was to determine how environment and

environmental education impacted human nature relationship through images and historical

textual information. Four subtopics (uses of resources, pollution, biodiversity, ecosystems and

cycles) were selected and the textbooks were analyzed based on them. The research findings

results revealed that historical, ethical and socio-economical dimensions were poorly covered in

those 22 textbooks from 15 European and African countries including Germany, France and

Finland (Skujiene et al., 2008).

Chapter 3

Research Methodology

Research Design

This study was an exploratory qualitative content analysis of the primary school World Knowledge textbooks' topics on environmental education in Azerbaijan. The main purpose of the study was to conduct content analysis on the primary school World Knowledge textbooks' topics on environmental education. The second aim of the study was to explore to what extent the primary school World Knowledge textbooks' topics on environmental education covered Palmer's (1998) education *about*, *in* and *for* the environment model and reflect Taylor's (2011) environmental ethics and Mark's (1844) human-nature relationship dimensions. Finally, the study aimed to understand stakeholders' (a curriculum expert, a textbook author and a teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education and to what extent their perceptions and experiences coincide with Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions.

Creswell (2012) states that qualitative data is collected according to the knowledge and experiences of a certain group of people. On the other hand, through qualitative method, it is possible to obtain data by analyzing text and themes (Creswell, 2012). Additionally, Stake (2010) emphasizes that perceptions of people in a particular area are studied through qualitative research. Moreover, Yin (2011) highlights the advantage of qualitative research as it certainly helps to do more in-depth investigation. Yin (2011) further asserts that qualitative research reflects real life conditions, the life of people, their perspectives and views.

Research Questions

1. To what extent do the primary school World Knowledge textbooks' topics on environmental education cover Palmer's (1998) education *about*, *in*, *for* environment model?

2. To what extent do the primary school World Knowledge textbooks' topics on environmental education reflect Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions?

3. What are stakeholders' (a curriculum expert, a textbook author, and a primary school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education?

4. To what extent stakeholders' (a curriculum expert, a textbook author, and a primary school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education coincide with Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions?

Data Collection Methods

Document Review

Document review as a qualitative research data collection method was used in this particular research. According to Bowen (2009), document review includes the analysis of written materials containing information about the facts that are target of research studies. It is also a systematic procedure carried out to review and analyze the documents. These documents can be both electronic and printed, but can also consist of text and images. As other qualitative methods, document review requires analysis and interpretation in order to reveal the meaning of

data, obtain understanding and develop empirical knowledge. The analytical procedure requires

finding, selecting and synthesizing the data contained in the document (Bowen, 2009).

Appropriately, the primary school World Knowledge textbooks' topics on environmental

education were analyzed based on Palmer's (1988) education *about*, *in* and *for* environment

model as well as Taylor's (2011) environmental ethics and Marx's (1844) human nature
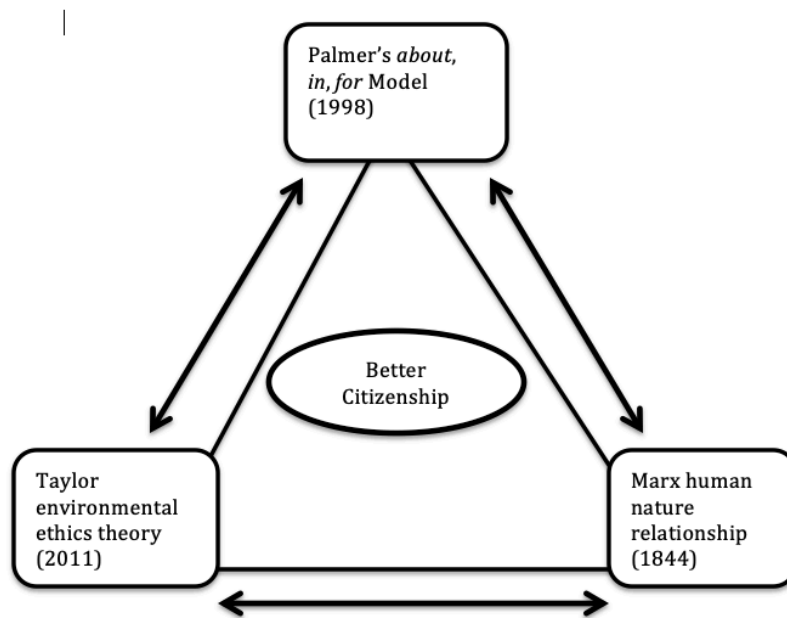
relationship dimensions (See Figure 2).

Interview

    I aimed to use interview as one of the data collection method along with document

analysis. For that to happen, I conducted an online interview with the curriculum expert, the

textbook author, and the 2nd grade school teacher from a public school in Baku. I conducted

interview with these people to explore their perceptions and experiences about the primary

school World Knowledge textbooks' topics on environmental education. Creswell (2012) states

interview as a qualitative data collection method provides researchers with the opportunity to

write down interviewee's voice and ask open-ended questions to one or several people.

Afterwards, the researcher transcribes interviews to analyze interviewee's answers. Creswell (2012) adds that interview is held in several ways, including one-on-one mode. Seidman (2013) emphasizes that interview aims at getting to know experiences and real stories of individuals.

The researcher obtained access to participants by sending them email and informing them about the study because it was participants' right to receive information before the study. Soon afterwards the researcher provided participants with informed consent form and then, the participants decided whether to accept or reject participation in the study. The main purpose of this document was to ensure the confidentiality of the data to be further collected (Orb, 2001).

Participant Sampling and Recruitment

Creswell (2012) states there are several methods for identifying research participants. For this particular study, I selected interview participants through a convenient purposeful sampling. As one of the specialist, a curriculum expert, developed the national curriculum, she was purposefully selected for this study. I sent a formal letter and invited her to participate in the interview. The textbook author who developed the topics on environmental education of the primary school World Knowledge textbooks was also invited to be participant in the study. Besides, the second grade school teacher was randomly selected among the primary school teachers of ADA University pilot schools to be interviewed.

Validity

Yin (2011) states that as in all types of research, validity is also important in qualitative studies. Any study becomes valid when the researcher follows all steps: collects; analyzes; does deep saturation; interprets data that accurately reflects and represents real life. According to Bowen (2009), in order to strengthen validity of research, document analysis is usually used in combination with other qualitative research methods, which is called triangulation. Bowen

(2009) underlines that triangulation is the method used by combining several methods when conducting research on the same phenomenon. In qualitative research, to strehgthen research validity, the researchers use several or at least two sources of evidence, which helps them to determine convergence and corroborate various data sources and methods (Bowen, 2009).

Chapter 4

Data Analysis and Findings

Content Analysis of the primary school World Knowledge textbooks' topics on

environmental education

The main purpose of the study was to conduct content analysis on the primary school

World Knowledge textbooks' topics on environmental education. The second aim of the study

was to explore to what extend the primary school World Knowledge textbooks' topics on

environmental education cover Palmer's (1998) education *about*, *in* and *for* the environment

model and reflect Taylor's (2011) environmental ethics and Mark's (1844) human-nature

relationship dimensions.

Krippendorff (2004) defines content analysis as reading of recorded information, media,

text, and other images or symbols from different perspectives than the original author's while

Cohen et al. (2007) describe it as the process of four "C"s: coding, categorising, comparing, and

concluding. Cohen et al. (2007) further state that the process of content analysis essentially

includes breaking down text into units so that the researcher is able to analyse it. Then, the

researcher undertakes statistical analysis of the units and precisely presents it. However,

Neunendorf' (2002) defines content analysis as a nine-stage process, Integrative Model of

Content Analysis, which includes: theory and rationale; conceptualisations; operationalization

(measures); coding schemes -code book, code form; sampling; training and pilot reliability;

coding; final reliability; tabulation and reporting (pp. 50-51).

Different researchers take various steps while applying content analysis. I utilized

sampling, coding, categorizing, comparing, tabulation and reporting of the content analysis. I

applied relevance sampling and determined the presence of certain themes, phrases, and

sentences within bubble texts or sets of texts related to environmental education leaving out

geographical content. I reduced and simplified the data emphasizing their specific features and

created codes. In addition, I grouped those codes into meaningful categories and labeled them. I

applied comparison to make connections between categories. On the basis of the results of the

content analysis, I applied tabulation to statistically report the data. Once the tables with figures

and matrices were created, I interpreted the findings.

I conducted a content analysis of the primary school World Knowledge textbooks' topics

on environmental education:

The 1st grade World Knowledge textbook – "Məni əhatə edən canlı varlıqlar" ["Living

beings around me"]

The 2nd grade World Knowledge textbook – " Biz təbiətin övladıyıq" ["We are children

of nature"]

The 3rd grade World Knowledge textbook – "Yer kürəsi evimiz" ["The Earth is our

home"]

The 4th grade World Knowledge textbook – "Təbiət və cəmiyyət" ["Nature and Society"]

Content analysis was done based on Palmer's (1998) education *about*, *in*, *for* environment

model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship

dimensions. When using Palmer's (1998) education *about*, *in*, *for* environment model, I applied

coding of topic content of each primary school World Knowledge textbook according to

components of *knowledge, awareness* and *action*. I coded the sentence "İnsan susuz bir neçə gün,

havasız isə cəmi bir neçə dəqiqə yaşaya bilər." ["Man can live a few days without water and only

a few minutes without air."] in the chapter "Günəş, hava, torpaq, su" ["Sun, Air, Earth, Water"]

in the 2nd grade World Knowledge textbook as *knowledge* based on *knowledge* component of

Palmer's (1998) education *about*, *in*, *for* environment model. Given the sentence students gained basic *knowledge* on the importance of water and air. Similarly, the sentence "Uzun illər boyu Yer üzündəki meşələrin yarıdan çoxu məhv edilmiş, yaşıllıq azalmışdır." ["More over the half of the woods on the Earth have been destroyed and the greenery reduced."] of the topic "Yer kürəsi evimiz" ["The Earth is our home"] in the 3rd grade World Knowledge textbook was coded as *awareness* component of Palmer's (1998) education *about*, *in*, *for* environment model. That particular sentence exposed students to the problem of reduction of trees and made them think over the solution of that problem. Yet, the 3rd grade World Knowledge textbook introduced only one solution to the problem, which was to plant a tree "Hərə bir ağac əkərsə yaşıllıq artar." ["Every tree you plant will grow greenery."]. The sentence "Ağac əkməyə gedirik!" ["We are going to plant a tree!"] related to the third component – *action* of Palmer's (1998) education *about*, *in*, *for* environment model and justified that the textbook guieded students to take action and solve a single environmental problem by planting a tree.

Respectively, the sentence "İnsanlar Yer kürəsindəki ehtiyatlardan qənaətlə istifadə etməlidirlər." ["People should use the Earth's resources sparingly"] of the topic "Ekoloji problemlər və yer kürəsi" ["Environmental Problems and the Earth"] in the 4th grade World Knowledge textbook informed students about the importane of using natural resources sparingly. I coded that sentence as an *obligation* component of Taylor's (2011) environmental ethics. I considered the sentence "Mən ətrafımı təmiz saxlamalıyam." ["I must keep my surroundings clean."] of the topic "Məni əhatə edən canlı varlıqlar" ["Living Beings surrounding me"] as a *duty* component of Taylor's (2011) environmental ethics. Apparently, in the 2nd grade World Knowledge textbook, the sentence "Bitki və heyvanlara qayğı göstərmək lazımdır." ["Plants and

animals need to be taken care of."] of the topic "Biz təbiətin övladıyıq" ["We are children of nature"] was related to a *responsibility* component of Taylor's (2011) environmental ethics.

In consequence, I coded the topic titled "Biz təbiətin övladıyıq" ["We are Children of Nature"] related to Marx's (1844) human nature relationship dimensions. Yet, the topic did not explain the relationship between human and nature.

After coding the sentences based on Palmer's (1998) education *about*, *in* and *for* the environment model, Taylor's (2011) environmental ethics and Mark's (1844) human-nature relationship dimensions, I developed a matrix based on the discovered codes.

In the process of content analysis, I counted the pages of topics related to environmental education in each of the primary school World Knowledge textbooks. I compared the number of pages of topics related to environmental education to the frequency of coded sentences emerged in accordance with *knowledge*, *awareness*, and *action* components of Palmer's (1998) education *about*, *in* and *for* the environment model and Taylor's (2011) environmental ethics and Mark's (1844) human-nature relationship dimensions. Based on the analysis of four primary school World Knowledge textbooks, I summed up the frequency of emerging components – *knowledge*, *awareness*, *action*, environmental ethics and human nature relationship and introduced them in the chart below (See Figure 3). The vertical axis in the chart indicates the frequency of emerging components.
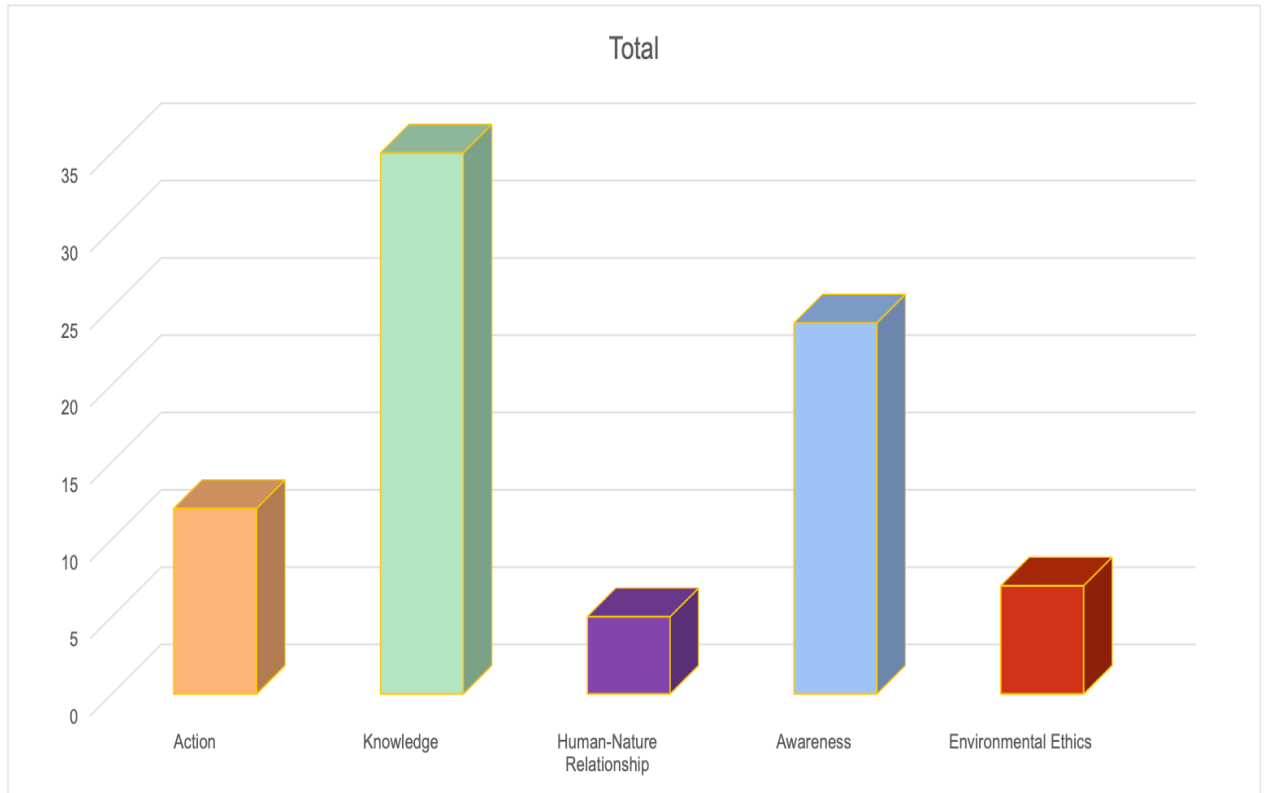
Figure 3. *Frequency of emerging components – knowledge, awareness, and action, environmental ethics and human nature relationship.*

Findings about Content Analysis of the Primary School World Knowledge Textbooks' Topics on Environmental Education

The current study identified that the primary school World Knowledge textbooks' topics on environmental education provided *knowledge*, *awareness*, and *action* as in Palmer's (1998) education *about*, *in* and *for* the environment model. Environmental *knowledge* was mainly imparted in all four textbooks. Nevertheless, Taylor's (2011) environmental ethics theory and Marx's (1844) human nature relationship were embedded in the textbooks relatively low.

Findings about the 1st grade World Knowledge textbook's topics on environmental education

In the 1st grade World Knowledge textbook's topics on environmental education, environmental *knowledge* predominantly highlighted the vitality of different environmental components such as water and the Sun. To raise student *awareness* on environmental problems, the textbook provided texts related to environmental pollution. Ideas were mostly presented on the pictures in the bubbles. In regard to environmental ethics, the 1st grade textbook called students for keeping their immediate and general environment clean.

Examples On Environmental Education in 1st grade World Knowledge textbook.

"Mən suyam mənsiz həyat yoxdur." ["I am water - there is no life without me."] (WK1, p.12-Knowledge)

"Bu su və quru sahələri insan tərəfindən çirkləndirilmişdir." ["These water and land areas are polluted by humans."] (WK1, p.22-Awareness)

"Təmizliyi qoruyaq." ["Let's keep it clean."] (WK1, p.23-Environmental ethics)

Findings about the 2nd grade World Knowledge textbook's topics on environmental education

The 2nd grade World Knowledge textbook's topics on environmental education provided a more detailed *knowledge* on environmental components such as water and air. The textbook went beyond the topic of water and discussed other topics such as living things, trees and animals. Besides, the textbook laid further emphasis on the relationship between human and nature. In terms of environmental ethics, students were called to care for living things, trees and animals.

Examples On Environmental Education in 2nd grade World Knowledge textbook.

"Həyatı bitkilərsiz təsəvvür etmək olmaz. Çünki yaşıl bitkilər havanı oksigenlə

zənginləşdirir." ["It is impossible to imagine life without plants. Because green plants

enrich the air with oxygen."] (WK2, p. 34-Knowledge)

"Ətraf mühit korlananda yalnız insanlar deyil, bitki və heyvanat aləmi də ziyan çəkir.

Bəzi bitkilərin və heyvanların nəsli kəsilir." ["When the environment is damaged, not

only people, flora and fauna are also damaged. Some plants and animals become

extinct."] (WK2, p.38-Awareness)

"Biz təbiətin övladıyıq. Çünki təbiətdə olan bütün canlılar ətraf mühitlə daim

əlaqədədir." ["We are the children of nature. Because all creatures in nature are

constantly in contact with the environment."] WK2, p.38-Human Nature

relationship)

"Bitki və heyvanlara qayğı göstərmək, onlarla ehtiyatla davranmaq lazımdır."

["Plants and animals need to be cared for and treated."] (WK2, p.36-Environmental

ethics)

Findings about the 3rd grade World Knowledge textbook's topics on environmental

education

In comparison to the 1st and 2nd grade textbooks, the 3rd grade World Knowledge

textbook's topics on environmental education encouraged students to take *action* for improving

the environment. For instance, it raised *awareness* on the importance of planting trees. Going

deeper, the textbook taught the ways of planting trees, which may have been considered as an

action towards environment.

Examples On Environmental Education in 3rd grade World Knowledge textbook.

"Böyük fabrik və zavodlarda istehsal prosesində havaya zərərli qazlar, toz və digər

maddələr atılır." ["Large factories and plants emit harmful gases, dust and other substances into the air during the production process."] (WK3, p.33-Knowledge)

"Uzun illər boyu Yer üzündəki meşələrin yarıdan çoxu məhv edilmiş, yaşıllıq azalmışdır." ["More than half of the world's forests have been destroyed, greenery decreased over the years."] (WK3, p. 47-Awareness)

"Ağac əkməyə gedirik!" ["We are going to plant a tree!"] (WK3, p.49-Action)

Findings about the 4th grade World Knowledge textbook's topics on environmental education

The main distinctive part of the 4th grade World Knowledge textbook's topics on environmental education was to introduce the term "recycling" and its role in the environmental protection, which related to Taylor's (2011) environmental ethics dimension. Environmental *knowledge* took main part of the textbook too. The textbook asked questions about human-nature relationship though it did not provide any knowledge on that.

Examples On Environmental Education in 4th World Knowledge textbook.

"Ekologiya» yunan sözü olub, «yaşayış yeri» və «elm» sözlərinin birləşməsindən yaranmışdır." ["Ecology is a Greek word derived from a combination of the words "habitat" and "science."] (WK4, p. 93-Knowledge)

"Şirin suyun əsas mənbəyi olan çaylar və göllər çirkləndikcə içməli su azalır." ["As rivers and lakes, the main source of fresh water, become polluted, drinking water decreases."] (WK4, p. 93-Awareness)

"Siz məhəlləni gəzib qeydlər götürə bilərsiniz. Qeydlər əsasında «Məhəl- ləmizdə ətraf mühitin vəziyyəti» adlı mətn tərtib edə bilərsiniz." ["You can walk around and take notes. You can compile a text with a title "The state of the environment in our

neighborhood" based on the notes."] (WK4, p.95-Action)

"Cansız təbiət-Canlı təbiət, Heyvanlar-Bitkilər, İnsan-Təbiət." ["Inanimate nature-Animate nature, Animals-Plants, Human Nature."] (WK4, p. 23 Human Nature relationship)

"Köhnəlmiş məhsulları (texnika, geyim, əşya) təkrar emal edərək onlardan yenilərini hazırlamalıdırlar." ["Obsolete products (equipment, clothing, items) should be recycled and new ones should be made from them."] (WK4, p.94-Environmental ethics)

Interview Data Analysis

Brinkman (2012) and Merriam and Tisdell (2016) emphasize that interviews are the most common form of the qualitative data collection. In regard to interviews, Maccoby and Maccoby (1954) state that the researcher attempts to receive information about an interviewee's perceptions and experiences, which is to collect gainful information about the research participants' lived experiences and their meanings (Brinkmann, 2012). I used semi-structured interviews (Remler & Ryzin, 2015; Merriam & Tisdell, 2016) to explore the curriculum expert's, the textbook author', and the 2nd grade school teacher' perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education as well as to what extent their perceptions and experiences coincided with Palmer's (1998) education *about*, *in* and *for* the environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions.

Brinkmann (2012) notes that semi-structured interviews assist in taking control over the direction of the conversation with research participants, which helps the researcher identify and develop important focus the research participants offer. As semi-structured interviews allow the

researcher to ask question to receive much deeper explanation, such probing opportunity added

flexibility on the matters and resulted in generating a better understanding of the nature of the

curriculum expert's, the textbook author', and the 2nd grade school teacher' perceptions about the

primary school World Knowledge textbooks' topics on environmental education (Remler and

Ryzin, 2015).

As I chose semi-structured interviews, I developed three interview protocols in both the

Azerbaijani and English languages for the curriculum expert, the textbook author and the 2nd

grade school teacher, which guided me through the emerging themes in the interview process

(See Appendices B, C, D).

Three interview protocols consisted of the questions that helped me to generate

information about the curriculum expert' the textbook author' and the 2nd grade school teacher'

perceptions and experiences of the primary school World Knowledge textbooks' topics on

environmental education. All three-interview protocols included the questions that facilitated an

in-depth discussion of the research topic. Before starting data collection, I conducted one 45-

minute pilot interview to validate the protocols.

I first listened to the interview recordings and transcribed them. To "identify salient

themes, recurring ideas or language, and patterns of belief that link people and settings together"

(Marshall & Rossman, 1995, p. 114), I used coding techniques, which enabled me to discover

and mark the underlying meanings, insights, and ideas in the data and then to group them by

categories. Saldaña (2013) defined a code as " a word or short phrase that symbolically assigns a

summative, salient, essence-capturing, and/ or evocative attribute for a portion of language-based

or visual data" (p. 3). Once the categories were grouped, I labelled the categories (Charmaz,

2006; Miles & Huberman, 1994; Strauss and Corbin, 1998) and applied information check for similarity.

Accordingly, I associated the ideas and themes that differed (Rubin & Rubin, 1995) and applied saturation. Once I reached the point in coding when new codes did not emerge (Urquhart, 2013) or the further information did not originate a new theme (Birks & Mills, 2015), I stopped data analysis.

I also displayed the findings from content and interview data analysis in a table and matrix so that I could generalize conclusions across both sources. Then, I applied triangulation to distil my findings (Berkowitz 1997; Miles & Huberman, 1994) (See Table 1 and Table 2). To build overarching themes in the analysed data and finding adequate explanations for the research findings, I started to do interpretation.

Data analysis of interviews with the curriculum expert, textbook author and the 2nd grade primary school teacher indicated the dominance of *knowledge* and *awareness* components in the primary school World Knowledge textbooks' topics on environmental education.

Although there was not any single task for *action* in the 2nd grade World Knowledge textbooks' topics on environmental education, the 2nd grade school teacher expressed that she had planted flowers in the pots with the students in class.

In regard to the environmental ethics, the interview with a curriculum expert, a textbook author, and 2nd grade primary school teacher revealed that all three participants considered the importance of nature and environmental protection, which was to keep nature and environment clean and instill in children a sense of responsibility for both.

In relation to human nature dimension, it was found that only the curriculum expert acknowledged the importance of human nature relationship since none of the four textbooks comprised sufficient information about it.

According to the participants, the overall structure and content of the primary school World Knowledge textbooks' topics on environmental education (1ˢᵗ - 4ᵗʰ grades) started from basic *knowledge* and consequently transitioned to complex *knowledge*. Given the structure and content of all four textbooks, in the 1ˢᵗ and 2ⁿᵈ grades, students were first familiarized with the nature. Then, students explained what was happening in their environment. The gained *knowledge* gradually grew and widened in the 3ʳᵈ and 4ᵗʰ grades.

The significant finding of the interview data analysis was poor communication among three stakeholders (a curriculum expert, a textbook author, and 2ⁿᵈ grade school teacher). The result of interview analysis also disclosed that the curriculum expert's, textbook author's and 2ⁿᵈ grade school teacher's opinions did not always coincide. The 2ⁿᵈ grade school teacher's views differed from other two participants' as the curriculum expert and the textbook's author stated that due to the children's young age, they were given basic knowledge on the nature and environment in 1ˢᵗ and 2ⁿᵈ grades. In fact, the students first acquired basic knowledge in the 1ˢᵗ and 2ⁿᵈ grades and became familiarized with the nature and environment. Then, in the 3ʳᵈ and 4ᵗʰ grades, they started to do research and to make presentations about the nature and environment. However, in the 2ⁿᵈ grade school teacher noted that giving basic knowledge to students was not enough in the 2ⁿᵈ grade. She involved students in *action* towards the nature and environment in class. According to her observations, this *action* led to both students' contact with the nature and increase in awareness.

The comparison of the content analysis of the primary school World Knowledge textbooks'

topics on environmental education with the findings of interview data analysis

The content analysis of the primary school World Knowledge textbooks' topics on

environmental education revealed that all four were designed to provide basic *knowledge* on the

environment. Moreover, the coverage given to *awareness*, *action*, *environmental ethics* and

human nature relations was limited. In comparison, the answers of the interview participants

showed that *awareness* component was prioritized along with *knowledge* component. The

curriculum expert stated:

> "Şagird biliyi alır və təbiətə, ətraf mühitə həssas və qayğıkeş yanaşmaqla təbiət
>
> hadisələri üzərində müşahidə aparır."
>
> ["Students acquire knowledge and observe natural phenomena with a sensitive
>
> and caring approach to the nature and environment."]

Given the shared comment, "təbiətə və ətraf mühitə həssas və qayğıkeş yanaşma"

sensitive and caring approach to the nature and environment may have been defined as

awareness. Likewise, the curriculum expert added:

> "Həssas olanda insan qayğıkeş olur insan həssas olmasa qayğıkeş ola bilməz."
>
> ["People are sensitive when they are caring, whereas people cannot be caring if
>
> they are not sensitive."]

According to curriculum expert, caring attitude towards nature stemmed from sensitivity.

The curriculum expert further highlighted that *awareness* of the nature and environment

motivated students to be more attentive and caring towards them. Alternatively, the textbook

author stressed that a sensitive and caring approach to the nature and environment made students

change their attitudes towards the nature and environment in a positive way and they grew to conscious citizens.

The primary school World Knowledge textbooks' topics on environmental education provided *knowledge* on the environment: air, water, and plants. The primary school World Knowledge textbooks' topics on environmental education presented students extensive *knowledge* about the nature and environment. Although all three participants considered *awareness* as a sensitive and caring approach to the nature and environment, the primary school World Knowledge textbooks' topics on environmental education did not imply the same meaning. Both the curriculum expert and textbook author noted that students should conduct research starting from the 3rd and 4th grades. The textbook author mentioned:

> "Təbiətlə araşdırma xüsusiyyəti tərbiyə edir." ["Investigating contributes to appropriate skill development, and students acquire the habits of a good experimenter."]

However, the curriculum expert was certain that investigating helped students to exchange ideas with one another. The participants insights overlapped with Palmer's (1998) second component *awareness* though the primary school World Knowledge textbooks' topics on environmental education did not fully reflect those thoughts.

Given the environmental ethics perspective, the primary school World Knowledge textbooks' topics on environmental education reflected nature and its natural resources protection as well as environmental protection. Similarly, the participants emphasized the importance of protecting natural resources and keeping environment clean. The 2nd grade school teacher particularly focused on water and stated:

> "Su həyatdır su qorumaq sudan istifadə edəndə qənaətlə istifadə etməlisən."

["Water is life, to protect water, you must use water sparingly."]

She underlined students should know how to prevent misuse of water while the textbook author believed that the primary school World Knowledge textbooks' topics on environmental education provided information about the importance of vegetation in protecting the environment. Also, speaking about nature protection in general, she expressed:

> "Təbiəti gözümüz kimi qorumalıyıq bu uşaqlarda kiçik yaşlardan tərbiyə olunmalıdır." ["We must protect nature and this notion must be intsilled in children from an early age."]

In general, to protect the nature and environment, water and plants was reflected in the primary school World Knowledge textbooks' topics on environmental education as well as the participants shared similar thoughts.

Another significant finding was that the Marx's human nature relationship dimension failed to be reflected in the primary school World Knowledge textbooks' topics on environmental education. Likewise, the participants did not share enough information on human nature relationship. Only the curriculum expert firmly stated, "Təbiət bizim anamızdır." ["Nature is our mother."] associating sensitivity with care for nature. Although the primary school World Knowledge textbooks' topics on environmental education included the headline "Biz təbiətin övladıyıq" ["We are the Children of Nature"], students were not informed that nature did not depend on man; man could not live without nature (Marx, 1844).

Chapter 5

Discussion and Implications

Summary of Major Findings

Given to the environmental education, the World Knowledge subject was taught starting from primary school. Although the Republic of Azerbaijan made efforts to protect its environment and ecosystem, the United Nations Voluntary National Review (2019) reported that the lack of awareness of the environmental issues prevented those efforts.

The overall result of the content analysis illustrated that the primary school World Knowledge textbooks' topics on environmental education transmitted basic *knowledge* about the nature and environment rather than *awareness* to the students. In contrast, interview participants highlighted the importance of raising *awareness* on environmental issues along with providing *knowledge* about them. At the same time, the notion of *action* had limited coverage both in textbooks and participants' answers to positively change students' attitudes toward the environment. Furthermore, the textbooks lacked adequate information on environmental ethics and human-nature relations, which was considered by Taylor (2011), and Marx (1844) as significant elements in protecting environment.

Discussion in Relationship to the Literature

According to Palmer's (1998) education *about*, *in*, *for* environment model, the first component *about* was a basic *knowledge* that students were provided to understand the environment. The second component *in* was about *awareness,* which made students sensitive to the environment. Being sensitive to the environment encouraged students to critically think about environmental problems and did some research to solve problems. The third component *for* was about *action* that directed students to positive actions and attitudes towards the environment. The

study results revealed that the primary school World Knowledge textbooks comprised all three

components of Palmer's (1998) education *about, in, for* environment model.

Based on the content analysis, *knowledge* held a dominant position in the primary school

World Knowledge textbooks' topics on environmental education, followed by *awareness* and

action. However, the participants' answers emphasized the dominance of *knowledge* and

awareness in the all four textbooks. In regard to *action*, both content analysis and the

participants' answers disclosed limited coverage of the third component, which was to positively

change students' attitudes toward the environment.

Considering content analysis of the primary school World Knowledge textbooks' topics

on environmental education and two participants' answers (the curriculum expert and textbook

author), there was not any single task to guide students to take action on the nature and

environment in the 1st and 2nd grades. Yet in the 3rd and 4th grades, students were directed to

action through tasks such as "we go to plant a tree" and "area plan". According to three

participants, accomplishing tasks related to the nature and environment, students learned how to

plant trees, do research and presentation, and through observations developed their observation

skills. Those tasks encouraged students to come into close contact with nature. Being in close

contact with nature influenced students' attitude towards it and made them responsible.

Another unexpected valuable finding was that even though the 2nd grade World

Knowledge textbook's topics on environmental education did not embed any task on *action*, the

teacher planted flower in the pot with the students in class. She believed that students

experienced positive attitudes towards the nature and took a responsibility to care of that flower.

According to the teacher's observation, the students became worried when the flower started to

fade. The students asked their parents for help and looked for the other ways to solve the sick

flower's problem. The aforementioned case proved that a little action taken by students towards the nature created a sense of concern and responsibility for the flower in the pot. Such a simple task demonstrated that student *awareness* increased and they together were looking for a solution of that particular problem. Solving the flower's problem resulted in *action*. In regard to Palmer's (1998) education *about, in, for* environment model both planting a flower and solving the sick flower's problem may have been considered an *action*.

Having a deeper look at Palmer's *knowledge*, *awareness* and *action* components separately, it was concluded that through *knowledge*, students recognized the processes taking place in the environment and learned the impact of human activities on the environment, pollution, local environmental problems and the impact of past human activities on the present environmental issues. The participants' thought about *knowledge* overlapped with Palmer's (1998) first component *knowledge.* Although the curriculum and the primary school World Knowledge textbooks' topics on environmental education were not designed on Palmer's (1998) education *about, in, for* environment model, content analysis and three participants' answers justified that students acquired knowledge and observed natural phenomena by being sensitive and caring for the nature and environment and learned the reasons behind environmental pollution.

However, content analysis and three participants' answers did not justify that Palmer's (1998) second component *awareness* adequately embedded in the textbooks. Lack of *awareness* may have resulted in students not thinking critically about environmental problems and looking for solutions of those problems.

In fact, Palmer's (1998) third component *action* intended students to take *action* towards the environment and solve its problems. As there was not any *action* task in the 1st and 2nd grade textbooks, it failed students to receive complete and effective environmental education.

The Palmer's (1998) *about*, *in*, *for* environment model's two components *awareness* and *action* are closely interrelated. When students are aware of environmental problems, they find solutions to them and take action. The content analysis revealed that there was not any single *action* task in the 1st and 2nd grade textbooks because of that students were not able to turn solution into *action*. As both textbooks did not have any action tasks, they failed to teach complete learning which resulted in students lacking important skills related to the nature and environment protection. Given the interconnectedness of *knowledge*, *awareness*, and *action* components of Palmer's (1998) *about*, *in*, *for* environment model, the primary school World Knowledge textbooks' topics on environmental education did not include balanced content of three.

Furthermore, curriculum expert and textbook author claimed that because of young age of students, the 1st and 2nd grade textbooks included basic *knowledge* on the nature and environment. However, in many countries, such as Finland and Denmark, environmental education started to be taught at pre-school. The teacher's aforementioned case proved opposite of other two research participants' claims. *Awareness* in students may also have been developed at a very young age, and young students may have been involved in *actions* to protect the nature and environment.

In summary, content analysis and interview results indicated that the primary school World Knowledge textbooks' topics on environmental education cover Palmer's (1998) education *about, in, for* environment model components. The results of findings of this study

overlapped with the analysis of Finnish secular ethics and Lutheran religion textbooks by Linnanvuori (2013). Linnanvuori's study (2013) also found that Finnish secular ethics and Lutheran religion textbooks did not fully reflect environmental education, and both textbooks focused on knowledge more than the other components of Palmer's (1998) education *about*, *in*, *for* environment model.

In regard to Taylor's (2011) environmental ethics, which had components of *duties, responsibilities* and *obligations*, the results of content and interview analysis illustrated that the primary school World Knowledge textbooks' topics on environmental education partially covered three components of environmental ethics. In particular, students acquired knowledge about water, soil, and birds and became sensitive. Afterwards, students started caring about nature and they were able to identify factors contributed to environmental pollution.

Taylor (2011) stated that we could create a physically healthy life for future generations by preserving natural resources, the beauty of nature and the environment. As he underlined, it was unethical to exploit the world's resources and leave polluted nature and environment behind. Given Taylor's (2011) environmental ethics, students learned it through the primary school World Knowledge textbooks' topics on environmental education though partially. Thus, textbooks failed to discuss the essence of environmental ethics and may have impeded student growth as a responsible individual and become better citizen.

Similarly, Ferreira et al. (2008) analyzed 79 biology textbooks from 16 EU countries, including one textbook from Finland, 3 textbooks from Germany and 11 textbooks from France regarding social-economic and ethical dimensions to environmental pollution. Their research concluded that 79 biology textbooks discussed social-economic dimension more than ethical.

The study presented that the Marx's (1844) human nature relationship dimension failed to be embedded in the primary school World Knowledge textbooks' topics on environmental education. Likewise, the participants did not share enough information on human nature relationship. Only the curriculum expert acknowledged the importance of human nature relationship since none of the four textbooks comprised sufficient information about it. When the curriculum expert stated "Təbiət bizim anamızdır." ["Nature is our mother."], she may have associated sensitivity with care for nature. Although the primary school World Knowledge textbooks' topics on environmental education included the headline "Biz təbiətin övladıyıq" ["We are the Children of Nature"] students were not informed that nature did not depend on man; man could not live without nature (Marx, 1844).

Limitations and Gaps in the Research

The generalisibility of this results was subject to certain limitations. The major limitation of this study was the small sample size of the interviewees. I was able to interview only a 2nd grade primary school teacher. However, I did not have the opportunity to receive the 1st, 3rd and 4th grade primary school teachers' perceptions and experiences. Therefore, the opinions may have been somewhat subjective. The results would have been much more rounded if other primary school World Knowledge teachers had been involved to the study and interviewed. When involved, they would have provided their own perspectives, which would enable me to conduct more sufficient research.

The data collection language was an important feature and also limitation of this qualitative data because data were collected in Azerbaijani. The language of locally produced 1st, 2nd, 3rd, 4th grade World Knowledge textbooks was Azerbaijani. Similarly, three interviewees were native Azerbaijani languages speakers. Therefore, before starting to code, I transcribed the

data in the Azerbaijani language. To avoid misinterpretation and the loss of data, the coding was done on the original transcripts in Azerbaijani. Then the coded units were translated into English. I requested a peer-reviewer, who was fluent in both Azerbaijani and English, review the codes and checked the accuracy of the translated data units that were quoted in the presentation of the findings. The whole process required extra time and efforts from me as a researcher and added some pressure.

One of the major limitations of the study was related with the interview data collection process. Initially, I planned to conduct face to face interviews with curriculum expert, textbook author, and 2nd grade school teacher. Due to the COVID-19 lockdown countrywide, I had to change the mode of interview process and transitioned to an online format. The interviews were carried out via WhatsApp and Skype video calls.

Another limitation was that the researcher was not an environmental education expert. Therefore, the researcher's subject knowledge, viewpoints and interpretations of the study findings may be subjective and somewhat unfair.

Significance of the Research

As mentioned above, the purpose of this study was to conduct content analysis on the primary school World Knowledge textbooks' topics on environmental education, with special reference to their role in increasing awareness of environmental issues in Azerbaijan. Given the paucity of the research in the environmental education in Azerbaijan, the findings of the study may be used as a guide for future research. Concurrently, textbook authors may use the findings of this study when redesign the primary school World Knowledge textbooks' topics on environmental education in the future.

Conclusion Summary and Recommendations

The main purpose of the study was to conduct content analysis on the primary school World Knowledge textbooks' topics on environmental education. The second aim of the study was to explore to what extent the primary school World Knowledge textbooks' topics on environmental education cover Palmer's (1998) education *about*, *in* and *for* the environment model and reflect Taylor's (2011) environmental ethics and Mark's (1844) human-nature relationship dimensions. Finally, the study aimed to understand stakeholders' (a curriculum expert, a textbook author, and 2nd grade school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education and to what extent their perceptions and experiences coincide with Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions. It was found that the primary school World Knowledge textbooks' topics on environmental education textbooks mainly focused on giving *knowledge* to students.

After analyzing the primary school World Knowledge textbooks' topics on environmental education through Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics theory and Marx's (1844) human nature relationship, I identified that the three components (*knowledge*, *awareness*, *action*) that form the basis of Palmer's (1998) education *about*, *in*, *for* environment model were not fully reflected in the textbooks. There was substantial coverage of *knowledge* but relatively limited provision of information on *awareness* and *action*.

Meanwhile, the study showed that the primary school World Knowledge textbooks' topics on environmental education did not adequately reflect Taylor's (1998) environmental ethics and Marx's (1844) human nature relationship dimensions. However, the research

participants shared more opinions related to Palmer's (1998) education *about, in, for* environment model, particularly *knowledge* and *awareness* components were mentioned. Taylor's (2011) environmental ethics and Marx's (1844) human nature relationship dimensions were less pronounced in the participants' thoughts.

Recommendation

Teaching environmental education can be more effective if realized through more action, especially in the 1st and 2nd grades. The students' awareness may increase even more, in case they do activities to protect the nature and environment themselves. Students' learning through direct experience with nature may increase love to nature. The increased love to nature may enable students do useful work in protecting the nature and environment, which may also have a positive impact on their healthy growth.

Environmental education can be realized not only inside the classrooms but also outside the classroom. Outdoor classes may encourage students to directly contact with nature and do activities that may increase their awareness, and they may become more nature sensitive and build relationship with the nature and environment around.

The special theories and models, prepared for teaching environmental education, may be referred to during the design of the environmental education part of the curriculum and the primary school World Knowledge textbooks' topics.

In future, while compiling new or modifying existing World Knowledge textbooks' topics on environmental education, three important stakeholders (curriculum experts, textbook authors, and school teachers) should collaborate closely so that they can effectively communicate and eliminate discrepancy in content.

The children may be taught environmental education starting from the pre-school, which may influence their growth as a responsible citizen towards the nature and environment.

APPENDIX A

Sample Informed Consent Form

Hörmətli tədqiqat iştirakçısı,

Mən Əhmədzadə Elnurə, ADA Universitetinin magistr tələbəsi sizə tədqiqat işimdə iştirak etməyiniz üçün müraciət edirəm. Mən ekoloji təhsil mövzusunda tədqiqat aparıram və bu tədqiqat Azərbaycanda tədris olunan ibtidai sinif "Həyat Bilgisi" dərsliyinin məzmununun (content) analizi ilə bağlıdır. Bu məqsədlə tədqiqat üçün seçilən iştirakçılardan müsahibə alıb, onların dərsliyin məzmunu (content) ilə bağlı təcrübələrini, fikir və düşüncələrini öyrənmək istəyirəm.

Tədqiqat işinin məqsədi bunlardır:

1. Ibtidai sinif "Həyat Bilgisi" dərsliyinin ətraf mühit və təbiətlə bağlı hissəsinin məzmun (content) analizini etmək
2. Ibtidai sinif "Həyat Bilgisi" dərsliyinin ətraf mühit və təbiətlə bağlı hissəsinin məzmununun (content) Palmerin (1998) *about*, *in* and *for* modelini, Taylorun (2011) ətraf mühit etikası və Marksın (1844) təbiət-insan münasibətləri nəzəriyyələrini nə dərəcədə əks etdirdiyini öyrənmək
3. Kurikulum mütəxəssisi, ibtidai sinif "Həyat Bilgisi" dərsliyinin müəllifi və dərsliyi tədris edən müəllimin dərslik haqda düşüncə və təcrübələrini öyrənmək
4. Kurikulum mütəxəssisi, ibtidai sinif "Həyat Bilgisi" dərsliyinin müəllifi və dərsliyi tədris edən müəllimin düşüncə və təcrübələrinin Palmerin (1998) *about*, *in* and *for* modeli, Taylorun (2011) ətraf mühit etikası və Marksın (1844) təbiət-insan münasibətləri nəzəriyyəsini vasitəsilə analiz etmək

Əgər bu tədqiqatda iştirak etməyə razısınızsa, bu sizin qırx beş dəqiqə vaxtınızı alacaq. Sizin seçiminizə və rahatlığınıza uyğun olaraq vaxt və yer təyin ediləcək. Siz təkbətək müsahibədə iştirak edərək öz təcrübənizi, fikirlərinizi və düşüncələrinizi tədqiqatçı ilə bölüşə biləcəksiniz.

Sizin bu tədqiqatda iştirakınız könüllüdür və sizdən əldə edilən məlumatların məxfiliyi qorunacaq. Məxfiliyi təmin etmək üçün sizin adınız dəyişdirilib kodlaşdırılacaq. Müsahibə müddətində sizin səsiniz qeydə alınıb mənim şəxsi komputerimdə xüsusi şifrə ilə etibarlı şəkildə qorunaraq saxlanılacaq.

Müsahibədən sonra sizinlə bəzi suallar və ya dəqiqləşdirmə etmək üçün telefon və ya elektron poçt vasitəsilə əlaqə saxlamağa ehtiyac duya bilərəm. Bu əlaqə 10 dəqiqədən çox vaxtınızı almayacaq.

Əgər tədqiqatla bağlı hərhansı sualınız yaranarsa Elnura Ahmadzada ilə elekton poçt vasitəsilə əlaqə saxlaya bilərsiniz. (eahmadzada6631@ada.edu.az)

İştirakçının razılığı:
Mən bu tədqiqatla bağlı yuxarıda qeyd edilən məlumatları oxudum və könüllü olaraq bu tədqiqatda iştirakımı təsdiq edirəm.

İştirakçının adı və soyadı   İştirakçının imzası

Tədqiqatçının imzası   Tarix _____

Sample Informed Consent Form

Dear participant,

I, Elnura Ahmadzada, a master student from ADA University kindly request your participation in a research study. I am conducting a study titled "Environmental Education: Content Analysis of the primary school "World Knowledge" textbook in Azerbaijan". I am interviewing participants who can share their perception of the primary school "World Knowledge" textbook's content based on their own experience.

The objectives of study include:

1. to conduct content analysis on the primary school World Knowledge textbooks' topics on environmental education.
2. to explore to what extent the primary school World Knowledge textbooks' topics on environmental education cover Palmer's (1998) education *about*, *in* and *for* the environment model and reflect Taylor's (2011) environmental ethics and Mark's (1844) human-nature relationship dimensions.
3. to understand stakeholders' (a curriculum expert, a textbook author and 2nd grade school teacher) perceptions and experiences about the primary school World Knowledge textbooks' topics on environmental education
4. to understand to what extent stakeholders' perceptions and experience coincide with Palmer's (1998) education *about*, *in*, *for* environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions.

If you decide and agree to participate in this study, the interview will take about forty-five minutes of your time. The time and location of the interview will be based on your preference and convenience. You will be participating in one-on-one interview to share information about your experiences, perceptions, and interactions.

Your participation is voluntary; I will keep all information strictly confidential. I will not record your name or include it in the study. I will use a pseudonym in place of your name. With your permission, your interview will be audio recorded to ensure accuracy. I will store all recordings in my locked and secure computer. At the conclusion of the study, I will destroy all recordings.

After your interview I may contact you via e-mail or telephone with follow up questions or for clarification. It would last no more than 10 minutes.

If you have questions about the research, please feel free to contact Elnura Ahmadzada by e-mail (eahmadzada6631@ada.edu.az).

Subject's/ Participant's Agreement:
I have read the information provided above and voluntarily agree to participate in this research study. I further understand that I will be given a copy of consent form.

_____   _____

Name of Participant   Signature of Participant

_____

Signature of Researcher   Date _____

APPENDIX B

Kurikulum Mütəxəsisinin Protokolu

Salam, məşğul olmanıza baxmayaraq vaxt ayırdığınız üçün təşəkkür edirəm. Mənim adım Elnurə Əhmədzadədir. Mən ADA Universiteti, Təhsildə İdarəetmə fakultəsində magistr təhsili alıram. Mən Ekoloji Təhsil: Azərbaycanda ibtidai sinif Həyat Bilgisi dərsliklərini məzmun analizi mövzusunda tədqiqat işi aparıram. Sizin ibtidai sinif Həyat Bilgisi dərsliklərinin ekoloji təhsil hissəsi ilə bağlı fikirləriniz bu tədqiqat işi üçün önəmlidir buna görə də sizi müsahibədə iştirak etməyə dəvət edirəm. Müsahibə 45 dəqiqə olacaq və bu müddətdə səsiniz qeydə alınacaq. Müsahibəni istədiyiniz vaxt tərk etmək hüququna maliksiniz.

Azərbaycan və İngilis dilində olan razılıq məktubu müsahibədən öncə imzalanıb, skanlanıb göndərilmişdir.

1. Zəhmət olmasa özünüzü təqdim edərdiniz?
2. Təhsiliniz və ixtisasınız haqda məlumat verə bilərsinizmi?
3. Sizin fikrinizcə ekoloji təhsil nədir?
4. Milli kurikulumun ibtidai sinif "Həyat Bilgisi" fənninin ekoloji təhsil ilə bağlı hissəsi hazırlanarkən hansı əsas konsepsiyalar və ya nəzəriyyələrdən istifadə edilib?
   ✓ Bu konsepsiyalardan və ya nəzəriyyələrdən bir neçə misal gətirə bilərsinizmi?
5. Sizin fikrinizcə milli kurikulumun ibtidai sinif "Həyat Bilgisi" fənninin ekoloji təhsillə bağlı hissəsinin əsas məqsədi şagirdlərdə hansı bilik və bacarıqları formalaşdırmaqdır?
   ✓ Bu bilik və bacarıqlara aid bir neçə nümunə göstərə bilərsinizmi?
6. Sizcə kurikulumun ekoloji təhsillə bağlı hissəsi müəllimə sinif daxilində hansı gerçək həyat təcrübəsinə əsaslanan fəaliyyətlər həyata keçirməyə imkan verir?
   ✓ Mümkünsə bu fəaliyyətlərdən bir neçəsini qeyd edə bilərsinizmi?
   ✓ Bu fəaliyyətlərdən hansı və ya hansılar onların ilkin bacarıqlarını formalaşdırır?
   ✓ Bu formalalaşmış ilkin bacarıqlar onların təbiətə qarşı münasibətlərini müsbət mənada dəyişməyə nə dərəcədə kömək edə bilər?
7. Milli kurikulumda ətraf mühitə (ekologiyaya) həssas və qayğıkeş yanaşma dedikdə nəyi nəzərdə tutmusunuz?
8. Sizin fikrinizcə bu fənnin ekoloji təhsillə bağlı hissəsi şagirdlərin təbiətə, ətraf mühitə (ekologiyaya) həssas və qayğıkeş yanaşmasına necə təsir edə bilər?

9. Necə düşünürsünüz, hansı yanaşma və ya yanaşmalar vasitəsilə bu fənn ibtidai sinifdən başlayaraq təbiətə qarşı məsuliyyətli şagirdlər yetişdirə bilər?

   ✓ Bu yanaşma və ya yanaşmalardan bir neçə nümunə gətirə bilərsinizmi?

10. Son olaraq mənə sualınız və ya əlavə etmək istədiyiniz fikriniz varmı?

Curriculum Expert's Protocol

Hello. Thank you for taking time out of your busy schedule. My name is Elnura Ahmadzada. I am studying for a master degree in Educational Management (MAEM) at ADA

University. I am conducting a research on Environmental Education: Content analysis of primary school World Knowledge textbooks in Azerbaijan. You were selected as a participant for this interview, as your perceptions about the environmental education part of the primary school World Knowledge textbooks are important for this research. The interview will last 45 minutes and your voice will be audio recorded. You have the right to leave the interview at any time.

A consent letter in Azerbaijani and English was signed, scanned and sent to you before the interview.

1. Could you please introduce yourself.

2. Could you please give information about your education and speciality?

3. What do you think Environmental Education is?

4. What are the key concepts or theories used during preparation of environmental education part of the World Knowledge subject for the primary school in the national curriculum?

✓ Could you give some examples for such kind of concepts or theories?

5. To your mind, formation of what kind of knowledge and skills will be mainly focused by environmental education part of the World Knowledge subject for the primary school in the national curriculum?

✓ Could you give some examples for such kind of knowledge and skills?

6. To your mind, which activities based on real-life practices are allowed to be realized by the teachers in the classrooms due to environmental education chapter of the national curriculum?
✓ If possible, could you please illustrate some of these activities?
✓ Which activity (activities) out of these forms their initial skills?
✓ To what extent will such kind of initial skills positively change their attitude towards the nature?

7. To your mind, what does sensitive and careful approach to the environment (ecology) imply in the national curriculum?"

8. To your mind, how can the environmental education part of this subject affect the students' sensitive and careful approach to the nature and environment (ecology)
9. How do you think, through which approach or approaches can this subject prepare the students responsible for the nature starting from the primary school?

✓ Could you give some examples for such kind of approach or approaches?

10. Finally, do you have any question or an idea which you would like to add?

APPENDIX C

Dərslik Müəllifinin Protokolu

Salam, məşğul olmanıza baxmayaraq vaxt ayırdığınız üçün təşəkkür edirəm. Mənim adım Elnurə Əhmədzadədir. Mən ADA Universiteti, Təhsildə İdarəetmə fakultəsində magistr təhsili alıram. Mən Ekoloji Təhsil: Azərbaycanda ibtidai sinif Həyat Bilgisi dərsliklərini məzmun analizi mövzusunda tədqiqat işi aparıram. Sizin ibtidai sinif Həyat Bilgisi dərsliklərinin ekoloji təhsil hissəsi ilə bağlı fikirləriniz bu tədqiqat işi üçün önəmlidir buna görə də sizi müsahibədə iştirak etməyə dəvət edirəm. Müsahibə 45 dəqiqə olacaq və bu müddətdə səsiniz qeydə alınacaq. Müsahibəni istədiyiniz vaxt tərk etmək hüququna maliksiniz.

Azərbaycan və İngilis dilində olan razılıq məktubu müsahibədən öncə imzalanıb, skanlanıb göndərilmişdir.

1. Zəhmət olmasa özünüzü təqdim edərdiniz?

2. Təhsiliniz və ixtisasınız haqda məlumat verərdiniz?

3. Sizin fikrinizcə Ekoloji təhsil nə deməkdir?

4. 1-4-cü siniflər üçün nəzərdə tutulmuş "Həyat Bilgisi" dərsliyini tərtib edərkən ekoloji təhsil ilə bağlı hansı əsas konsepsiyalar və ya nəzəriyyələrdən istifadə etmisiniz?

✓ Bu konsepsiyalardan və ya nəzəriyyələrdən bir neçə misal gətirə bilərsinizmi?

5. Bu dərsliyin təbiətlə bağlı hissəsinin əsas məqsədi şagirdlərə hansı bilik və bacarıqları ötürməkdir?

✓ Bu bilik və bacarıqlara aid bir neçə nümunə göstərə bilərsinizmi?

6. Sizcə "Həyat Bilgisi" dərsliyinin ekoloji təhsillə bağlı hissəsi müəllimə sinif daxilində hansı gerçək həyat təcrübəsinə əsaslanan fəaliyyətlər həyata keçirməyə imkan verir?

✓ Mümkünsə bu fəaliyyətlərdən bir neçəsini qeyd edə bilərsinizmi?
✓ Bu fəaliyyətlərdən hansı və ya hansılar onların ilkin bacarıqlarını formalaşdırır?
✓ Bu formalalaşmış ilkin bacarıqlar onların təbiətə qarşı münasibətlərini müsbət mənada dəyişməyə nə dərəcədə kömək edə bilər?

7. Sizin fikrinizcə milli kurikulumda ətraf mühitə (ekologiyaya) həssas və qayğıkeş yanaşma dedikdə sizcə nə nəzərdə tutulur?

✓ 1-4-cü sinif Həyat Bilgisi dərsliyinin təbiətlə bağlı olan mövzulari hazırlanarkən milli kurikulumun ətraf mühitə (ekologiyaya) həssas və qayğıkeş yanaşma hissəsinə uyğun olaraq hansı mövzular və ya fəaliyyətlər daxil edilib?

8. Sizin fikrinizcə 1-4 siniflərin "Həyat Bilgisi" dərsliyinin ekoloji təhsillə bağlı hissəsi şagirdlərin təbiətə qarşı həssaslığının artmasına və təbiətə qayğıkeş yanaşmasına necə təsir edə bilər?

9. Necə düşünürsünüz, hansı yanaşma və ya yanaşmalar vasitəsilə bu dərslik ibtidai sinifdən təbiətə qarşı məsuliyyətli şagirdlər yetişdirməyə kifayət edə bilər?

✓ Bu yanaşma və ya yanaşmalardan bir neçə nümunə gətirə bilərsinizmi?

10. Son olaraq mənə sualınız və ya əlavə etmək istədiyiniz fikriniz varmı?

The texbook author's Protocol

Hello. Thank you for taking time out of your busy schedule. My name is Elnura Ahmadzada. I am studying for a master degree in Educational Management (MAEM) at ADA University. I am conducting a research on Environmental Education: Content analysis of primary school World Knowledge textbooks in Azerbaijan. You were selected as a participant for this interview, as your perceptions about the environmental education part of the primary school World Knowledge textbooks are important for this research. The interview will last 45 minutes and your voice will be audio recorded. You have the right to leave the interview at any time.

A consent letter in Azerbaijani and English was signed, scanned and sent to you before the interview.

1. Could you please introduce yourself?

2. Could you please give information about your education and speciality?

3. What do you think Environmental Education is?

4. Which basic concepts or theories on "environmental education" have you used during elaboration of "World Knowledge" textbook for the 1st - 4th classes?

✓ Could you give some examples for such kind of concepts or theories?

5. Which knowledge and skills do the environmental education topics of this textbook mainly aim at providing the students with?

✓ Could you give some examples for such kind of knowledge and skills?

6. To your mind, which activities based on real-life practices are allowed to be realized by the teachers in the classrooms due to the "environmental education" chapter of the "World Knowledge" textbook?

✓ If possible, could you please illustrate some of these activities?
✓ Which activity (activities) out of these forms their initial skills?

✓ To what extent will such kind of initial skills positively change their attitude towards the nature?

7. To your mind, what does sensitive and careful approach to the environment (ecology) imply in the national curriculum?

✓ Which topics or activities have been included during elaboration of environmental education chapter topics of World Knowledge textbook for the 1st - 4th classes based on sensitive and careful approach of the national curriculum to the environment (ecology)?

8. How do you think, how can the environmental education topics of World Knowledge textbooks for the 1st - 4th classes increase the students' sensitivity and carefulness to the nature?

9. How do you think, through which approach or approaches can this subject prepare the students responsible for the nature starting from the primary school?

✓ Could you give some examples for such kind of approach or approaches?

10. Finally, do you have any question or an idea which you want to add?

APPENDIX D

2-ci Sinif Müəllimin Protokolu

Hello. Thank you for taking time out of your busy schedule. My name is Elnura Ahmadzada. I am studying for a master degree in Educational Management (MAEM) at ADA University. I am conducting a research on Environmental Education: Content analysis of primary school World Knowledge textbooks in Azerbaijan. You were selected as a participant for this interview, as your perceptions about the environmental education part of the primary school World Knowledge textbooks are important for this research. The interview will last 45 minutes and your voice will be audio recorded. You have the right to leave the interview at any time.

A consent letter in Azerbaijani and English was signed, scanned and sent to you before the interview.

1. Zəhmət olmasa özünüzü təqdim edərdiniz?

2. Təhsiliniz və ixtisasınız haqda məlumat verərdiniz?

3. Sizin fikrinizcə Ekoloji təhsil nə deməkdir?

4. Sizcə bu dərsliyin təbiətlə bağlı hissəsinin əsas məqsədi şagirdlərə hansı bilik və bacarıqları ötürməkdir?

✓ Bu bilik və bacarıqlara aid bir neçə nümunə göstərə bilərsinizmi?

5. Milli kurikulumda ətraf mühitə (ekologiyaya) həssas və qayğıkeş yanaşma dedikdə sizcə nə nəzərdə tutulur?

6. Sizin fikrinizcə bu dərsliyin təbiətlə bağlı hissəsi şagirdlərin təbiətə qarşı həssaslığının artmasına və təbiətə qayğıkeş yanaşmasına necə təsir edir?

7. 1-4-cü sinif Həyat Bilgisi dərsliyinin təbiətlə bağlı olan mövzularini tədris edərkən sinif daxilində hansı gerçək həyat təcrübəsinə əsaslanan fəaliyyətlər edilir?

✓ Bu fəaliyyətlərdən bir neçə misal gətirə bilərsinizmi?
✓ Bu fəaliyyətlərdən hansı və ya hansılar onların ilkin bacarıqlarını formalaşdırır?
✓ Bu formalalaşmış ilkin bacarıqlar onların təbiətə qarşı münasibətlərini müsbət mənada dəyişməyə nə dərəcədə kömək edir?

8. Şagirdlərin təbiətə qarşı münasibətində dəyişikliklər müşahidə etmisinizmi və bu dəyişikliklərə aid bir neçə nümunə gətirə bilərsinizmi?

9. Sizcə müşahidə etdiyiniz bu dəyişikliklər şagirdlərin davranışlarında özünü necə göstərir?

✓ Bu davranışlara bir neçə nümunə göstərə bilərsinizmi?

10. Dərsi tədris edən müəllim olaraq necə düşünürsünüz, hansı yanaşma və ya yanaşmalar vasitəsilə bu dərsliklər ibtidai sinifdən təbiətə qarşı məsuliyyətli şagirdlər yetişdirməyə kifayət edə bilər?

11. Son olaraq mənə sualınız və ya əlavə etmək istədiyiniz fikriniz varmı?

<center>The 2nd Grade School Teacher's Protocol</center>

Hello. Thank you for taking time out of your busy schedule. My name is Elnura Ahmadzada. I am studying for a master degree in Educational Management (MAEM) at ADA University. I am conducting a research on Environmental Education: Content analysis of primary school World Knowledge textbooks in Azerbaijan. You were selected as a participant for this interview, as your perceptions about the environmental education part of the primary school World Knowledge textbooks are important for this research. The interview will last 45 minutes and your voice will be audio recorded. You have the right to leave the interview at any time.

A consent letter in Azerbaijani and English was signed, scanned and sent to you before the interview.

1. Could you please introduce yourself?

2. Could you please give information about your education and speciality?

3. What do you think Environmental Education is?

4. To your mind, which knowledge and skills do the environmental education topics of 2nd grade textbook mainly aim at providing the students with?

✓ Could you give some examples for such kind of knowledge and skills?

5. To your mind, what does sensitive and careful approach to the environment (ecology) imply in the national curriculum?

6. How do you think, how can the environmental education topic of this textbook increase the students' sensitivity and carefulness to the nature?

7. To your mind, which activities based on real-life practices are allowed to be realized in the classrooms during teaching the environmental education topics of World Knowledge textbook for the 2nd grade?

✓ Could you give some examples for such kind of activities?
✓ Which activity (activities) out of these forms their initial skills?
✓ To what extent will such kind of initial skills positively change their attitude towards the nature?

8. Have you seen any changes in the students' attitude towards the nature, and can you give some examples for such changes?

9. How do these changes affect the behaviour of the students?

✓ Could you give some examples for such kind of behaviour?

10. How do you think, through which approach or approaches can this subject prepare the students responsible for the nature starting from the primary school?

11. Finally, do you have any question or an idea which you want to add?

References

Alley, R., Marotzke, J., Nordhaus, W., Overpeck, J., Peteet, D., Pielke, R., . . . Wallace, J. (2003). Abrupt Climate Change. *Science, 299*(5615), 2005-2010. Retrieved from http://www.jstor.org.ada.idm.oclc.org/stable/3833703

Azerbaijan Ministry of Education. (2002). The Law of the Azerbaijan Republic on environmental education and enlightenment of population, Retrieved from: https://edu.gov.az/en/page/122/2356

Berkowitz, AD (1997). From Reactive to Proactive Prevention: Promoting an Ecology of Health on Campus. Chapter 6 in P.C. Rivers and E. Shore (Eds.): A Handbook on Substance Abuse for College and University Personnel, Westport, CT: Greenwood Press.

Birks, M., & Mills, J. (2015). *Grounded theory: A practical guide* (2nd ed.). Los Angeles, CA: Sage

Bowen, G, A, (2009). Document Analysis as a Qualitative Research Method, Western Carolina University, *Qualitative Research Journal*

Braus, J. (1995). Environmental Education. *Oxford University Press*,

Brinkman, S. (2012) Qualitative Inquiry in Everyday Life: Working with everyday life materials. London: Sage.

Caravita, Silvia, Valente and et al, (2008) Construction and Validation of Textbook Analysis Grids for Ecology and Environmental Education, *Science Education International*.

Charmaz, K. (2006). Constructing Grounded Theory: A Practical Guide through Qualitative Analysis. London: Sage Publications.

Clément, P, Carvalho G.S. (2008) Biology, Health and Environmental Education for better

      Citizenship: teachers' conceptions and textbook analysis in 19 countries, *Université Lyon*

      1, EA 4148, LEPS, 38 bd Niels Bohr, F-69622, Villeurbanne, France.

Cohen, L., Manion, L., & Morrison, K. (2007). Research Methods in Education (6th ed.).

      London and New York, NY: Routledge Falmer.

Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative*

      and qualitative research. Upper Saddle River, N.J: Merrill.

Ferreira C, Tracana R, B, Ferreira M, E, Carvalho, G. (2008). Socio-Economic And Ethical

      Issues In Pollution: Individual Or Social Responsibility? Analysis Of Textbooks From 16

      Countries *Universidade do Minho, Portugal 2. Escola Superior de Educação da Guarda,*

      Portugal

Gilbertson, K.L. (1990). Environmental Literacy: Outdoor Education training and its Effect on

      knowl- edge and Attitude toward the Environment. *University Microfilms International*,

      237. USA, Michigan: Ann Arbor.

Global Environmental Education Partnership (2019). Retrieved from:

https://thegeep.org/learn/countries/france

Jeronen, E, Jeranon, J, Raustia, H (2009). Environmental Education in Finland – A Case Study

      of Environmental Education in Nature Schools, *International Journal of Environmental*

      & Science Education

KMK. (2015). The Education System in the Federal Republic of Germany 2013/2014. Bonn:

      Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs.

Kothari, C, R, (2004). Research Methodology: Methods and Techniques, *New Age International*

      Publishers, New Delhi.

Krippendorff, K. (2004). Content Analysis: An Introduction to Its Methodology (2nd ed.). Thousand Oaks, CA: Sage.

Krzesni, David. (2015) "Environmental Education." *Counterpoints*, vol. 503, 2015, pp. 9–18. *JSTOR*, www.jstor.org/stable/45136517.

Lakatos, G., Nyizsnyánszky, F. & Szabó, J. (2003). A New Approach To Environmental Science And Ecological Principles In The Higher Education. Journal Of Teacher Education And Training, 3, 35-43.

Li, S. (2016). Research On Marx's Theory Of Relationship Between Human And Nature, School of Marxism, *China University of Political Science and Law*, Beijing, China.

Linnanvuori, E.A. (2013). Environmental Issues in Finnish School Textbooks on Religious Education and Ethics, *Nordidactica – Journal Of Humanities And Social Science Education*

Neuendorf, K. A. (2002). The Content Analysis Guidebook. Thousand Oaks, CA: Sage Publications.

Marshall, C., & Rossman, G. B. (1995). Designing Qualitative Research. London: Sage Publications.

Mepham, B. (2005). Bioethics: An Introduction For The Biosciences. Oxford: Oxford University Press.

Merriam, S. B., & Tisdell, E. J. (2016). Qualitative Research: A Guide to Design and Implementation (4th ed.). San Francisco, CA: Jossey Bass.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Sage Publications, Inc.

Orb, A, Eisenhauer, L, Wynaden, D, (2004), Ethics in Qualitative Research, *Journal Of Nursing Scholarship.*

Palmberg, I. (1989). Lägerskolan i grundskolans biologi/geografiundervisning. Stoff och arbetssättmed tonvikt på lägersskolan i Äkäslompolo. *Rapporter från Pedagogiska Fakulteten*, 54–60. Åbo Akademi, Åbo.

Palmer, J. A. (1998). Environmental education in the 21st century: Theory, practice, progress, and promise. New York: Routledge.

Remler, D. K. and Van Ryzin, G. G. (2015). Research Methods in Practice: Strategies for Description and Causation (2nd Edition). London: Sage.

Rees, M. (2003). Our Final Century. London: Heinemann.

Rubin, H.J. and Rubin, I.S. (1995) Qualitative Interviewing: The Art of Hearing Data. 2nd Edition, Sage Publications, London.

Rynning, M. (1993). Asenteiden muuttumisen edellytykset ja lainalaisuudet (Changing attitudes, Environmental Education.) In A. Kajanto (Ed.), *Ympäristökasvatus* (pp. 69–80). Helsinki: Kirjastopalvelu.

Saldaña, J., 2013, The coding manual for qualitative researchers, 2nd edn., Sage, London

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York: Teachers College Press.

Seidman, I. (2013). *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences* (4th ed.). New York, NY: Teachers College Press.

Stake R, E, (2010), *Qualitative Research, Studying How Things Work*, New York, London: Guilford Press

Stokes, E, Edge, A, West, A. (2001). Environmental Education in the Educational Systems of the European Union. *Centre for Educational Research London School of Economics and Political Science.*

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Sage Publications, Inc.

Sustainable Development Goals Knowledge Platform (2019). Voluntarily National Review, Retrieved from: https://sustainabledevelopment.un.org/memberstates/azerbaijan

Taylor, P. W. (1986). *Respect for nature: A theory of environmental ethics*. Princeton, N.J: Princeton University Press.

UNESCO - UNEP International Environmental Education Programme (1992), Environmental Education Activities For Primary Schools: suggestions for making and using low cost equipment, *International Centre for Conservation Education for UNESCO-UNEP International Environmental Education Programme (IEEP)*

UNESCO, (1977). Report of Intergovernmental Conference on Environmental Education Conference, Tbilisi.

United Nations, (2011). Environmental Performance Reviews Azerbaijan, New York and Geneva.

Urquhart, C. (2013). Grounded theory for qualitative research: A practical guide. Los Angeles, CA: Sage. Retrieved from https://goo.gl/KQSA52

Uusitalo, L. (1993). Asenteiden ja käyttäytymisen ristiriita – Haaste ympäristökasvatukselle. (Conflict between attitudes and behaviour.) In A. Kajanto (Ed.), *Ympäristökasvatus* (pp. 62–63). Helsinki: Kirjastopalvelu.

Van Matre, S. (1998). *Maakasvatus. Uusi alku.* (Earth Education.) Jyväskylä: Gummerus

    Kirjapaino.

Weiss, D. J., & Dawis, R. V. (1960). An objective validation of factual interview data. *Journal of*

    Applied Psychology, 44(6), 381–385. https://doi.org/10.1037/h0040863

Yin, R, K, (2011). *Qualitative Research From Start To Finish*, New York: Guilford Press

Table 1

Matrix of Findings and Sources for Data Triangulation

	Sources of Data	
Major Findings	**D**	**I**
Theme 1: Knowledge	X	X
Theme 2: Awareness	X	X
Theme 3: Action	X	X
Theme 4: Environmental ethics	X	X
Theme 5: Human nature relationship	X	

Note. I = Interview, D = Document

Table 2

Code Mapping: Three Iterations of Analysis (to be read from the bottom up)

Code mapping for content analysis of the primary school world knowledge textbooks' topics on environmental education and interview data

(Research Questions 1, 2, 3 and 4)

RQ#1: the textbooks cover Palmer's (1998) education *about, in, for* environment model?	RQ#2: The textbooks reflect Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions?	RQ#3: Stakeholders' perceptions about textbooks	RQ#4: Stakeholders' perceptions about textbooks coincide with Palmer's (1998) education *about, in, for* environment model, Taylor's (2011) environmental ethics, and Marx's (1844) human nature relationship dimensions?

(THIRD ITERATION: APPLICATION TO DATA SET)

Palmer's Model: Knowledge, Awareness, Action

Taylor's theory: Environmental ethics

Marx's theory: Human nature relationship

(SECOND ITERATION: PATTERN VARIABLES)

1A. Gets knowledge about the importance of factors polluting the atmosphere, water, plants and oxygen	2A. The impact of human activities on the atmosphere, the importance of water and vegetation	3A. We are going to plant a tree, area plan project	4A. The usage natural resources sparingly, keeping the environment clean	5A. Us being nature children
1B. Gets knowledge about sources that pollute the environment, water, soil, plants, birds	2B. To instill in children a desire for a sensitive, caring and attentive approach to nature, the impact of human activities on nature, importance of water and plants	3B. Idea expression, discussion, listening, presentation, differentiation, interview, appeal, tree planting skills	4B. Ecology and keeping nature clean, its protection	Nature is our mother

(FIRST ITERATION: INITIAL CODES/SURFACE CONTENT ANALYSIS)

1A. Atmosphere polluting factors 1A. Water is life 1A. Plants, water and oxygen 1A. Importance of water and plants	2A. The impact of human activities on the atmosphere 2A. Importance of water and vegetation	3A. We are going to plant a tree 3A. Block plan project	4A. Economical usage of natural resources 4A. Keep the environment clean	5A. We are children of nature
1B. Sources that pollute the environment 1B. Earth, water, land areas, migratory birds 1B. Water is life	2B. Care + sensitiveness = love 2B. Sensitive and attentive attitude to nature 2B. To create a passion for nature in children 2B. The impact of human activities on nature	3B. Presentations 3B. Projects 3B. Ways of tree planting	4B. Ecological cleanliness 4B. To protect the nature 4B. Protect the environment	5B. Nature is our mother

DATA	DATA	DATA	DATA