
Metamorphosis of Religious and Visual Signs in the Context of Climate Change: Education Prospects

Reliģisko un vizuālo zīmju metamorfoze klimata pārmaiņu kontekstā: izglītības aspekti

Dalia Karatajienė, Dr. (Lithuania)

Jolita Kudinoviėnė, Dr. sc. soc. (Lithuania)

Vaidas Matonis, , Dr. habil. sc. soc. (Lithuania)

Jurga Sidabrienė, Ph.D. st. (Lithuania)

The purpose of this article is to evaluate the impact of climate change on visual and religious signs and to discuss the prospects of education. The focus of our discussion is the concepts of religion and artistic education, including art-like phenomena and conceiving these phenomena in the natural environment. The article provides the reflection of human dependence on the effects of climate change throughout the long history of art, where the synthetic contents of religion and art remind of our fragile dependence on the natural reality. The relation of living beings with the environment is viewed systematically, covering all the spheres (atmosphere, hydrosphere, lithosphere, cryosphere and biosphere). Moreover, teachers' and students' value-based orientations towards the major causes of climate change (astronomic, geo-physical, internal climate alterations, atmospheric composition and anthropogenic) were viewed. The possibility of increasing the role of artistic and religious appreciation in the education of environmental awareness is the key aspect of this approach. Theoretical considerations are illustrated by both the pictures of students and the results of empirical research in value-based attitudes of primary school teachers and students of 9-12th classes.

Key words: climate change, environment, visual signs, religious signs, art, art history, education

1. Climate change and changing conceiving of natural environment: instead of introduction

In the course of history humans constantly observed certain effects of weather and climate change. Most climate changes conditioned various natural disasters, which were followed by long periods of famine, epidemics, wars or even migration of the whole nations to other places of living. With the warming of the weather, the quantity of precipitation increases, which enlarges the number and scope of natural disasters. The summer of 2003 was the warmest in the Alps during the last 2.5 thousand years, which may be a sign of considerable change in the future. As the fatal effects of climate change determine human world outlook, a search for new visions of world development is intensified in such moments as well as philosophic, artistic and religious activeness of human soul.

In all times of human beings life the climate change was manifested in different aspects, including their artistic and religion activity, however, contemporary environmental studies have become systematic. There are five main spheres of natural environment which are closely related with life existence. For example, the layer of air, which covers the globe, and its phenomena (clouds, winds, rain, thunder, snow, hail, fog, drizzle, etc.) undergo changes in *the atmosphere*. Oceans, seas, atmospheric waters, rivers, lakes, marshes, underwater, ice (especially ice sheets) and snow suffer from changes in *the hydrosphere*, which was the first place of the appearance of life. Therefore, these changes are examined more and more closely.

Changes occur also in *the lithosphere*, or the solid part of the earth, whose thickness is 50-200 km. The bowels of the earth crust (granites, marbles, rocks and fossils) are exhausted due to the increased human demands for consumption. However, extracting earth resources human beings “dig under themselves” and refuse to think of the possible outcomes.

Substantial and sometimes dangerous changes occur in *the cryosphere*, a sphere of zero or lower temperature, which covers part of atmosphere, hydrosphere and lithosphere. These include glaciers and mountain glaciers, ice covering of water bodies and ice clouds, snow covering and frost as well as permanent and seasonal freezing of the earth. The melting of ice has received considerable discussion recently. It is known that cryosphere also exists on Mars, which is also shifted due to climate change; however, the active impact of human beings on the changes on this planet will be observed probably much later, say, after the settlement of the first colonists of the earth.

Finally, a lot of concern is connected with the changes in the *biosphere*. The totality of ecosystems, which includes all the three layers of the earth surface, is affected by climate change in each of them. The soil, in which microorganisms survive up to 3 km deep, or water, where organisms can be found up to 11 km deep, or, finally, the air, where organisms can be traced in the height of 15 km (bacteria, plant spores) – everything is affected by climate change. All the three layers of the biosphere consist of two kingdoms: the kingdom of crawling, walking, swimming and flying *fauna* and different species of lower (bacteria, algae, fungi, lichen) and higher (a body having a stem, leaves and roots, except moss) *flora*. In spite of innumerable varieties of species within each of these categories, their extinction, which among others is also conditioned by climate change, becomes a subject of frequent discussion.

In order to give rise to environmental interests, enhance environmental awareness and enrich environmental experience of the younger generation, the aesthetic experience (among others) of natural environment changes could be employed. A. Berleant is

absolutely right when he claims: "Sensitivity, not just to the beauties but also to the offenses and injures to environment, is a precondition to recovering the fullness of the world" (1998, 3). The idea of the continuity of environment, which to a large extent manifests itself as its aesthetic fullness, sounds fairly convincingly. In contemporary philosophy of environment the connection between a body and environment leads to the identification of people and nature and is understood just as an imperative of aesthetic bodily engagement with the environment. Since, according to the philosophy of the body, we cannot see the world from any other standpoint but a human one, it is a weighty argument why "a philosophy of environment would both begin and end with the fact of human embodiment." (Berleant, 1998, 97). So, in this context the integration of a human body as a phenomenon of particular form would be a very important sign of the fullness of the natural part of the environment. In other words, environment as an object of aesthetic judgment might be seen at least as natural, built, human and human body environments.

The phenomena of the three-faceted natural environment – images, movements, sounds – often and often are considered as art-like because of their distinctive power: sunsets or pieces of driftwood, bird songs or storm sounds, moving clouds or playing of the young and so on. Although human beings are in constant contact with different elements of the natural environment, these elements are of unequal significance for them, and are rather differently appreciated by them. Furthermore, art-like phenomena in the natural environment are numerous and vary, that is why their aesthetic appreciation and conception is not less complex than that of applied art or even works of pure art. So, the ecological situation which is significantly determined by climate change calls, on the one hand, for an increasing role of environmental education, environmental aesthetic education inclusive, and, on the other hand, for increasing preferences to signs of climate change in the content of artistic and religious education.

Accordingly, the focus of our discussion will be the concepts of religion and artistic education, including art-like phenomena and five spheres of natural environment, along with peculiarities of conceiving of these phenomena. The possibility of increasing the role of artistic and religious appreciation in the education of environmental awareness is the key aspect of this approach.

The theoretical material is illustrated by the results of empirical research, obtained from the investigation of value-based attitudes of primary teachers of art and students of 9-12th classes towards aesthetic and environmental phenomena within the conditions of climate change.

The problem raised in the article is analyzed in two aspects: (1) expression of the natural artlikeness and the effects of climate change in art history and (2) teachers' and students' opinion about possible ominous after-effects of climate change.

2. Expression of natural artlikeness and the effects of climate change in art history

It is known that contemporary societies due to extensive industrialization, do not feel such affinity with nature as they did in the past. Nevertheless, natural environment remains where it is, and, in order to survive, people have to mind it. New philosophies of nature may appear in the future, but in any case the aesthetic facet as an integral part of them will always have a relevant place. Closer relations of the younger generation with the natural objects and phenomena in the age of rapid urbanization are inevitable.

Therefore, education of environmental awareness is to be supported and included into schooling. Inasmuch as natural environment is increasingly appreciated for its aesthetic value, aesthetic environmental education is to be supported as well.

Using of the phenomena of natural art-likeness in the process of education

Art-like phenomena, which are met either in the human environment or in the built or human body environment, are produced mostly for utilitarian purposes. However, alongside with their utility, they could be conceived artistically as well, that is why they are frequently referred to as applied art. Although objects of applied art are mainly understood as physical by their nature (artifacts), non-physical manmade objects or performances (such as a good speech or invented formula or sporting performance) to a great extent share the property of utilitarianism with the physical artifacts and, consequently, might be conceived as the objects of applied art, too.

The concept of art-like phenomena is one of the newest in aesthetics which is not always found satisfactory. Finnish philosopher M. Honkanen has named by the concept of art-likeness such elements of everyday environment which are immediately distinguished from the trite monotony. At the same time he expresses some discontent with it and notes that he has used it "somewhat inaccurately." (1995, 171). Anyway, this concept has become popular enough and is in common use among the majority of modern aestheticians. The proper space of such phenomena that are denoted by the term of art-likeness could be understood as some parts of non-artistic environment, which have the potential to be conceived as artistic values. Such a result could be achieved both due to the distinctive features of the perceived phenomenon and artistic attitudes (or aesthetically intentional activity) of the perceiver. The most typical expressions of such attitudes are not only those that are seen "as art" ("like a painting," "like a sculpture," "the choir of the birds" and the like) but also various comparisons, when, e.g., the artist as such is compared with one or another distinctive natural phenomenon (for instance, a singer "like a nightingale").

The most essential difference between art works and art-like phenomena is found, first of all, in the shift of perspective: the perspective of the creator becoming that of the conceiver. After such postmodern inversion the well-known criteria of artistry, such as professionalism, originality and authenticity began to give way to more apt criteria, reflecting the standpoint of the conceiver, i.e., expressiveness, symbolism and interpretation. Thus, due to the absence of creative mastership as well as usefulness of applied art, the art-like phenomena conceived in natural environment are found to be situated somewhere beyond the fields of pure and applied art.

Today it is far not unusual to say that people have lost former closeness to nature and only some of them are still capable of enjoying aesthetically natural phenomena. The question discussed further is the aesthetic response to art-like phenomena in their integrity. How could the three above mentioned dimensions of environmental experience (visual, auditory and kinesthetic) be effectively exploited in educating younger generation? The first thing is to accept the conception of positive aesthetics of natural beauty, including the natural beauty of the Earth, according to which the Earth, with its original biological diversity, is beautiful. It means that preservation of various kinds of wilderness could support the beauty of our Earth, and that is why biological diversity should be preserved (Arntzen, 1998).

The goals of the contemporary society should include saving the closeness of people of digital culture with nature. In this context, relation of the younger generation with natural objects should be supported as well. Children are the ones who feel the inspiring influence of nature's powers most by perceiving nature as a fairy-tale disclosing itself to them. Art-like manifestation of the surrounding objects is related to various aesthetic properties such as beauty, ugliness, daintiness, sublime, graceful and so forth.

On the other side, perception of the phenomena of natural environment can evoke some spiritual uneasiness and inspire to create pro rata religiously and aesthetically important pieces of art. Lithuanian ethnologist P. Dundulienė (1991) pointed out that in all times peoples' eyes were directed to heaven and therefore for example Lithuanian roads were decorated by different kinds of poles and crosses from the very ancient times.

The more various spheres of knowledge react towards the threat of climate change, the more variegated forms of spirituality are transferred. The capture of human dependence on nature is observed from the early examples of ornamentation until present-day artworks of various genres.

Expression of religious and artistic attitudes towards climate change in the art history and education

Though the origins of visual language and religion are already observed in the severe mists of late Paleolithic age, which lasted from 40 000 B.C. till 10 000 B.C., the mankind needed a lot of time to develop them into religious and visual symbols. Today they are known as the first Neolithic ornaments, which speak of the cyclic nature of climate change and their importance for human existence. At the end of the last Wurm (or Valdai) ice age, around 9 500 B.C. in the Near East there formed a climate, which was suitable for agriculture with rainy and warm winters as well as dry and warm summers. Agriculture, which substituted the practice of hunting and gathering of Paleolithic nomads, tied the inhabitants of Neolith to the land thus making them sedentary. Harvest expectations demanded both the development of new working skills and abilities to follow the changes in the sky in search for suitable signs for sowing and harvesting in the changes of Solar and Lunar phases. Neolithic agricultural cultures, in which there appeared the first larger settlements, such as Hasilara and Jericho saw the rise of ceramics decorated with ornamental rhythms reflecting periodicity and cycles of seasons. Moving towards Europe and developing the types of ornaments, Neolithic agricultural culture created the first calendars and cosmologic conception of the world. The culture of Narva – Nemunas (5-4 c.c. B.C.), which extended from Estonia to North Lithuania, left a unique type of ceramics, decorated with string imprints and herringbone motifs as well as reasoned assumptions about the first ritual feasts. Calendar feasts are guidelines of farmers' life and activity. In the annual circle of nature they marked the most prominent and climactic points. Some of them were related to annual dates, especially solstice, others were linked to labour. Calendar feasts are arranged in accordance with seasons or correspond to the cycles of seasonal agricultural activities. Therefore, feasts arranged peasants' labour and activities in a particular order; the ancestors' spiritual heritage was delivered from generation to generation alongside with the agricultural experience, where feast traditions were regarded as a spiritual guide.

The mention of large settlements or cities is not accidental. According to the father of social anthropology E. Durkheim (1858-1917), religious images of any faith reflect collective reality, the group being at its basis and functioning as an essential condition of the birth of religious images; these images are supported by rituals performed in the groups (Durkheim, 1995). They can be reasonably interpreted as seasonal periodicity, which developed as a result of climate change and is reflected in spatial, temporal and spatio-temporal art forms: in ornaments of household articles or theatricalized feasts arranged following strict calendar regulations. Hence, it is of no surprise that calendar feasts of Neolithic people, which had correspondent visual signs in farmers' ornaments, developed into the World or Life Tree reflecting its cosmogonist system in the creation of many nations. Calendar feasts – winter solstice, spring equinox – were later legalized by ancient states. For instance, winter solstice, celebrated in December, was celebrated as *Dies natalis Solis Invicti* in Rome, whereas following Julius' calendar, January 6 was commemorated as the day of Osiris, god of the sun.

Plant and animal ornaments tressed in art works are often related to cosmic images. In pagan times they signified the relations of the universe, the interaction of heaven and earth, which encouraged the birth, growth and thriving of plants and animals. The image of the interaction between the heaven and earth is closely related to the conception of the Cosmic Tree, which left deep marks in the religious cosmogonist images retained in the arts, folklore, rituals and choreography of most nations. Many researchers observe that Lithuanian myths about the Cosmic Tree have much in common with the Scandinavian myths. Both in Lithuanian and Scandinavian mythology, gods gathered together and judged people under the Ash, the Cosmic Tree. One of the Scandinavian myths tells about the evergreen Ash tree, which spreads three springs of water: the Past, the Present and the Future, which symbolize the unity and eternity of the universe, constant and unchanging transfer of natural power to Mother Earth. The Cosmic Tree was a pole, which usually consisted of three layers and was surrounded by suns, moons, birds, horses, snakes and other signs in Lithuanian and other nations' mythology. The images of the Cosmic Tree are found in the ornamentation of furniture and distaffs as well as in fabrics. The three zones correspond to the dynamism of the universe, active human activity on the land, the conception of his/her life continuity with the marked beginning, development and fadeaway, i.e., a constantly changing and repeated cosmogonist cycle.

The Life Tree is marked by the signs of the sun, the moon and stars in both Lithuanian and other nations' ornamentation. The cyclic nature of the Tree to die in autumn and regenerate in spring meant eternity and immortality of the soul as well as the conception of space and time. Both of them embrace elements of the past, present and future of the heaven, earth and underworld perceived as the periods of human life: ancestors, contemporaries and posterities.

The Life Tree modeled of the rapports of ornaments also reflects the place of the creation of the world, or, as the historian of religion M. Eliade (1907-1986) maintains, the sacral centre, whose symbolism became characteristic not only for the countries, cities, temples and castles, but also for the poorest human houses, such as nomadic hunters' tents, shepherds' yurts or sedentary farmers' homes. Consequently, every religious person locates him/herself in the world centre or at the spring of the absolute reality, i.e. at the "opening", which enables him/her to communicate with gods (Eliade, 1959, 52). The first medieval cathedrals in the West in their symbolical essence meant the center of creation, an equivalent of the heavenly Jerusalem on the earth or the

distant posterity of the Life Tree, chunky and austere in Romanticism and straight, tall and graceful in Gothic times. Such sayings of Christ as “Because the kingdom of God is within you” (Lk. 17: 20-21) or “Where two or three are gathered together in my name, there am I among them” (Mt. 18:20) are indications of the communal nature of Christian faith, maintained by church liturgies and feasts, whose dates frequently coincide with the dates of earlier calendar feasts. For instance, from the 4th century the Latin Christian branch of the Church started officially celebrating Redeemer’s birth on December 25th, choosing the moment of winter solstice, when the day lengthens and the night gets shorter. Due to such a coincidence of feasts, Christians were especially encouraged to worship not the sun, but the One, who created it. Therefore, it is not accidental that the Redeemer’s portrait was often placed on a golden radiant background or accentuated by a bright frame of germs, which encircled the Crucifix on the Bible coverings or sacral liturgy articles, holding the belief that “the divine radiation of light is concentrated on the exceptional objects” (Duby, 2004, 127). The cult of light, considered as a ritual of maintaining God’s image in Gothic times, dating back to the distant Neolithic ornaments signifying the sun, transfused the whole Church: the figures of saints were transferred onto the translucent material – the glass.

Despite the fact that the life of medieval people was less dependent on climate change than that of Neolithic society, medieval Life Tree – the cathedral – like other urban objects underwent a certain influence of climatic and geographical peculiarities. They were manifested both in the form of the cathedral and the language of its décor. For example, the roof slopes of the cathedrals of northern countries were acute and upright protecting the cathedral from the weight of snow. This was insignificant for the protection of the French temples, whose roofs were sloping. The lack of sculpture décor in the exterior of Lithuanian temples was determined by the territory of Lithuania, which escaped from the Valdai ice sheets only in 3 500 B.C., which gave the country solid rock, hardly amenable to plastic treatment: granite and dolomite boulders brought from Scandinavia. The western facades of Gothic cathedrals were ornamented not by stone figures of saints, as in France or Germany, which were awarded by soft sediments like limestone, but by meandering strings of profiled bricks. It has not been proved, but it is reasonably thought that the low height of cathedrals was also connected to climate change. So that the towers of a church “would back the sky”, both Lithuania and English craftsmen did not need to strive for enormous heights: this was conditioned by frequent mists and fogs in these regions. Whatever the truth, H. Taine (1828-1893), a philosopher of arts of social positivism, who interpreted a work of art not as the artist’s spontaneous expression but rather as a product of the environment consisting of three components: *race, milieu, moment* (1989) would be satisfied by this providence. Despite that positivist logics confines the freedom of creation and uniqueness of the artist’s mission to the external factors, it cannot be rejected in examining more general issues of the peculiarities of art stylistics. V. Liutkus, an art critic, claims that “Lithuanian colorism”, “coloristic tradition” and “coloristic school” were magic words of modern Lithuanian painting, which flourished in the first half of the 20th century (2003, 16), coined from the definitions of the works by the nine artists of the “Ars” group in 1932. These were the artists who painted mostly en plain air of all Lithuanian artists of those times. Having in mind the cold Lithuanian winters freezing the paint put on the canvas, it becomes clear why the images of branchy forms and brightly-coloured summers prevail in the landscapes of the “Ars” painters. The national character of the paintings is created by the expressive

motifs of roadside crosses, wooden statues of Pensive Christ (“Rūpintojėlis“), which alongside with pastose and free painting have acquired such power and expression, that it is sometimes difficult to determine what is dominant – nature or the religious figure – in the artwork. It is the suggestion of summer brightness and natural intensity that create the image of Lithuanian art, despite having suffered through the desacralized modern times, as having close ties with both folk art and its religious traditions where pagan agricultural ornaments are entwined with Christian symbols.

Regardless that we are separated from the first Neolithic settlements by both a substantial period of time and unquestionable differences in the world outlook, in 2009 commemorating the millennium of the name of Lithuania the sculpture “The Tree of Unity” by Tadas Gutauskas was raised in Vilnius. It is a nine-meter stone megalith representing an authentic form of the distaff and ornamented following the principles of its décor. A hundred names of famous personalities of the millennium are eternalized in the sun of the huge stone distaff. The idea of creating “The Tree of Unity” was stimulated by the problems of the contemporary society: loss of identity, confrontations and lassitude. It is built in Vingis Park, which for a long time united Lithuanians during the Lithuanian song and dance festivals and “Sąjūdis” meetings. “The Tree of Unity” authoritatively reminds of the synthetic contents of religion and art and its unifying power as well as our fragile dependence on the reality of nature.

Among various images the picture of *Life Tree* as a symbol of the unification of the universe is frequently found in the works of art students (see Figure 1). Its vision is extended by the explanation of the threats of climate change, the development of students’ eye for the changes in nature and encouragement to draw their observations of the environment in art classes.

The phenomena caused by climate change are topical not only in the area of science and mass media. In different levels they appear in curriculums of various teaching subjects including art education. The pictures with the motifs of climate change are often closely combined with aspects of religion and environmental education. The aim of our empirical inquiry was to reveal teachers’ and students’ value orientations to both changing natural phenomena and the reasons that impact climate change. The interpretations of received data are shown below.

3. Teachers’ and students’ opinion about possible ominous after-effects of climate change

The dynamism of the change in recent times is too obvious and in some aspects even dangerous regardless that climate change are currently perceived as a continuous process. Human attempts to organize the environment differently from the way indicated by God to achieve earthly plenitude or heavenly felicity usually lead to the opposite result. Recognition of nature is often encouraged by artificial means. For instance, teachers and students are frequently invited to cognize nature and its phenomena using the latest achievement in technology (interactive boards, television, cinema, glossy magazines, etc.), which usually lead to pollution rather than positive results. On the other hand, while caring for the global phenomena, the care for one’s history, culture and environment is often neglected.



Fig. 1. Gabija Atmanavičiūtė. 11 years.
Tree of life



Fig. 2. Justas Mačiekus. 11 years.
Flood

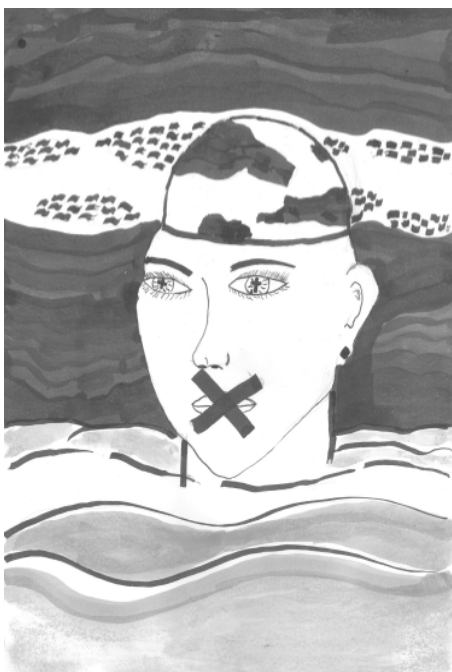


Fig. 3. Edgaras Panusevič. 18 years.
Choose what to believe

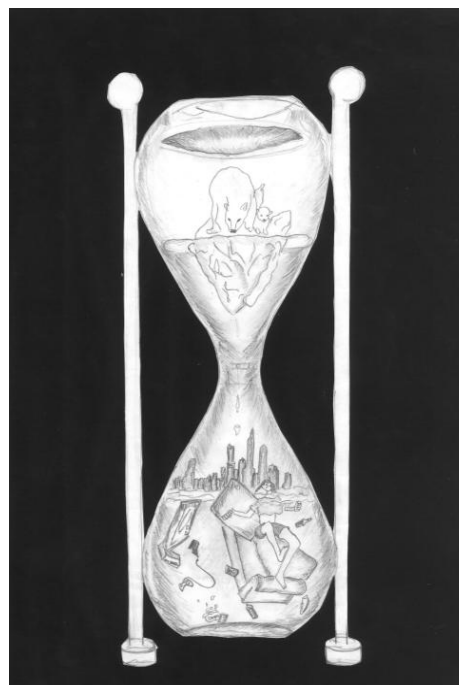


Fig. 4. Jakaterina Kobrina. 17 years.
You can change it

We believe that the effect of climate change on human life should be explored more systematically covering all spheres of nature linked to all living beings if we want to achieve more positive results. Students should be encouraged to search for new projects on the internet and take active participation in them, be able to observe and assess the changes in nature as well as look for the possibilities to clear the surrounding nature. Teacher-student interaction is achievable through the taught subject; therefore, the topic on the environmental issues could be discussed in all subjects as a constituent part of the course starting from the perception of the aesthetic values of nature and

observance of its unique beauty to the search for the ways of stopping the process of nature destruction. This should be done in accordance with the students' free choice based on the insights of environmental self-awareness. Skaidrīte Gūtmane, a Latvian philosopher and educator, states: "Living in a modern secular and democratic state, one should not forget about the dimension of spiritual freedom" (Gūtmane, 2009, 40).

The vision of nature makes a significant impact on children's emotional development and the formation of various abilities. Carrying out the preventive education in climate change, the students should be introduced to the work of non-governmental organizations, international and national projects, including those intended for schools, which are concerned with the discussed issues.

Students' vision is extended by the explanation of the threats of climate change, the development of students' eye for the changes in nature and encouragement to draw their observations of the environment in art classes. The vision of nature makes a significant impact on children's emotional development and the formation of various abilities (*see* Figures 1-4).

Lithuanian teachers and students of 9-12th classes conducted empirical research in the autumn of 2011, which revealed that teachers' (n=43) community was concerned with earlier studies of the effects of climate change. It was determined that teachers express common concern about the unpredictable effects of climate change on the surrounding environment: 74,4% of teachers assessed the formation of students' attitudes during the lesson in a highly positive way. Students (n=37) were less enthusiastic at this point: only 21,6% responded in a highly positive way, 45,9% provided positive responses, whereas 32,4% expressed no opinion.

The teachers and students were asked to evaluate the threat of changes in all the five nature spheres (atmosphere, hydrosphere, lithosphere, cryosphere and biosphere) within the range of five points, where "5" means that the sphere is most likely to be affected, and "1" stands for the sphere that is least likely to be affected. The conducted analysis of value-based attitudes of teachers and students revealed that the atmosphere will be affected by climate change most of all. The possibility of the changes in this sphere received almost four points. Whereas, according to teachers and students, lithosphere (the solid part of the earth surface) will be affected by climate change least of all. Having compared teachers' and students' answers, the teachers express larger concern about all the changes in all the five spheres rather than students. As far as value-based orientation towards the biosphere and cryosphere, the attitudes of teachers and students varied insignificantly; however, the teachers' concern was much bigger than students' in terms of the lithosphere, hydrosphere and especially atmosphere (*see* Figure 5).

There are a lot of reasons of the change of climate, which in its turn influence all the alterations around us. First of all, this includes the impact of external phenomena, namely, astronomic causes (the intensity of solar and galaxy radiation, the form of the Earth's orbit, the bent of the Earth's axis towards the plane of the orbit, the speed of the Earth's twist around its axis) and geo-physical reasons (gravital and magnetic fields of the Earth, vulcanization and geothermal heat). The internal causes of climate shifts, such as the composition of atmospheric gases and the quantity of aerosols, land relief and surface structure, changes in atmosphere and water circulation, also influence climate change. We have to conciliate and adapt to the external and internal causes, which in one or another way affect climate change, as they keep to their own objectivity and are not subject to consider human wishes or their spare possibilities. On the

other hand, a lot of phenomena affected by climate change do not receive people's immediate fear, as major changes occur slowly their development lasts for hundreds or even thousands of years. For instance, melting of glaciers or snow on mountain peaks are not sensed directly in comparison to volcano eruptions, earthquakes or tsunamis; they are mostly perceived by reasoning.

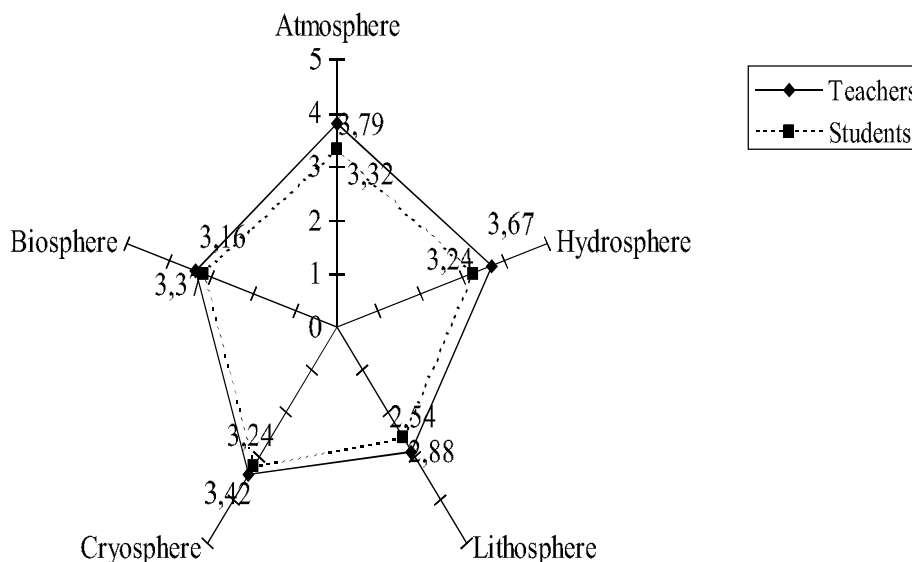


Fig. 5. Value-based orientation of teachers and students in terms of the negative impact of climate change on the spheres of the natural environment

The part of environment, which is affected by human activity, is perceived in a slightly different way. At the first sight, anthropogenic climate change seems insignificant in the context of its determinants; however, the results of this impact are threatening enough. In this respect, human beings become a kind of allies of those dangerous outcomes, which are caused by objective power of global climate change. Human-caused threats of climate change, which endanger the stable forms of life in the biosphere, are usually referred to as global warming and are related to the changes in greenhouse gas concentrations.

The teachers of arts in primary school, who were asked what causes (astronomic, geo-physical, internal climate alterations, atmospheric composition and anthropogenic) produce an especially huge impact on climate change, did not observe any significant changes in nature due to natural factors. 9% of teachers indicated astronomic causes, 14% – geo-physical, 11,6% – internal climate alterations, and 20,9% indicated atmospheric composition and anthropogenic theories. Human activity was referred to as the most serious cause enhancing climate change – by 44,2% of teachers.

Having compared the teachers' and students' value-based orientation towards the major causes of climate change (see Figure 6), the situation is similar as in the comparison of the changes of nature spheres: differently from teachers the students see lesser threats in all respects. The students' greater optimism is most probably a sign of their youthfulness. Besides, the impact of human activity on climate change seems more dangerous than other causes for both the teachers and the students. Perhaps this

sphere is most frequently announced in the media, or it may be the only sphere, which could be controlled. Astronomic, geo-physical or internal climate alterations cannot be controlled by humans, therefore, they are less emphasized.

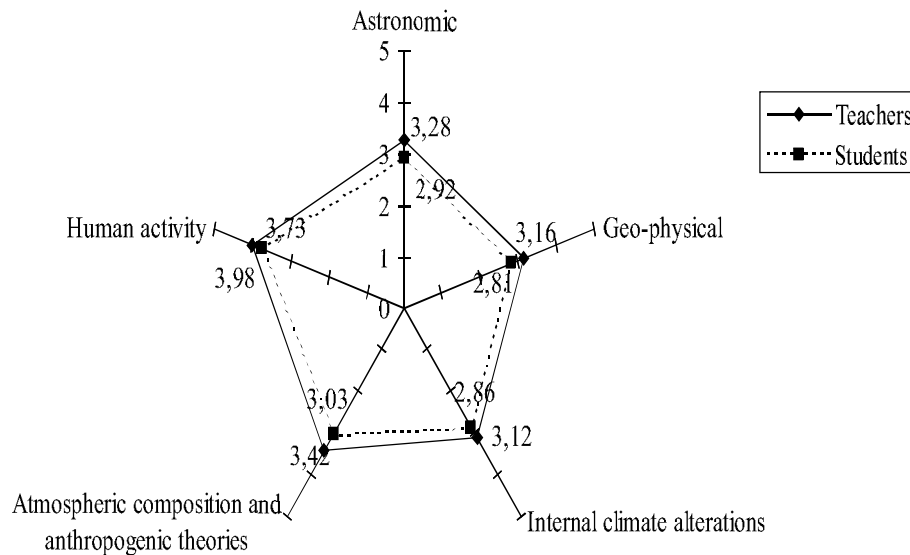


Fig. 6. Value-based orientations of teachers and students in terms of the causes of climate change

It is of interest that the average of neither the teachers' nor the students' evaluations regarding the spheres of the natural environment and the causes of climate change did not exceed four points of the possible five. This shows that the mass psychosis in terms of the negative impact of climate change has affected neither the youth nor the adults. On the other hand, the evaluation of nature spheres and main causes of their alterations did not go beyond three points. The teachers noticed the least changes in the lithosphere (2,88 points), whereas the students' evaluation comprised 2,54 points. Speaking of the causes of climate change, the students' average assessment was below three points in terms of the three causes: geo-physical causes were given 2,81 points, internal climate alterations – 2,86 points and astronomic causes – 2,92 points.

Biological diversity manifests itself in various forms of images, sounds and movements which are able to be aesthetically interiorized. Of course, the process of such interiorization is determined not only by direct perceptual experience of the elements under consideration, but also natural surroundings on the whole. For example, sometimes mentioned Disney World with its enormous multiplicity of gardenlike environments offers a high variety of multisensory activities and experiences and thus provide some educational impact. On the other hand, insofar as education is going to be organized mainly around the computer, multimedia technology could support the possibility not only to observe but also produce images, sounds and movements of all imaginable biological diversity. Such kind of aesthetic conception of environment through an active engagement of the subject in the surrounding world, despite the fact that this world is a result of virtual reality, is much more than *passive* visual or audible pleasure. Positive aesthetic attitude, obtained this way, in the course of time could find

its continuation in a perceptual experience of the aesthetic aspect of real environment. Furthermore, obtained positive attitude could support the development of aesthetic environmental criticism which would enable a child both to distinguish positive and negative aesthetic dimensions and solve various conflicts between aesthetic and economic values. Inasmuch as environmental aesthetics by its nature is coming to be recognized as an interdisciplinary subject and tends to encompass many interests, new integral educational programs, including different areas such as geography, biology, physics, religion, art and even music, ought to be introduced.

Another possibility enriching children's three-dimensional aesthetic experience of environment is employment of the latest achievements in education of multiple intelligences. For example, naturalist intelligence is seen in the way we relate to our surroundings, discloses a person's ability to identify and classify patterns in nature and includes the capacity to recognize flora and fauna (Gardner, 1999). Without any doubt, naturalist intelligence is closely related to three-dimensional environment in which images, sounds and movements characterize very important nuances of biological diversity. By the way, all three elements of natural environment serve as a medium for the development of other three human intellectual competencies, namely, spatial, musical and bodily-kinesthetic intelligences. Ultimately, the development of three-dimensional aesthetic experience of nature might be more effective if the understanding in the environment not only as beautiful or ugly but also as true or false and good or evil were enhanced (Matonis, 2000).

A lot of projects, which have become one of the most popular forms of creative activity, in schools are connected with the environment (including art-like phenomena). When asked if any projects on climate change are carried out in their schools, 79,1% of teachers responded positively. Projects are implemented through the integration of various subjects: natural sciences, history, geography, art, music, theatre, dance, information technologies, etc. The projects combine various means of information and creative expression: lectures, trips to natural parks, photography, film, montage, building nesting-boxes, gathering herbs, clearing the contaminated environment by collecting garbage and batteries, producing feeding boxes and toys from secondary raw materials, arranging concerts (oral productions, singing and dancing), organizing of exhibitions of drawings and posters on the topic of environmental issues. Using such forms of expression encourages the development of students' observation, ability to see, hear and assess, their neatness, prudence, intolerance for nature damaging as well as environmental skills. Children like art lessons, which are intended for the preservation of the environment. To the raised question "What expressive means would you choose to enhance nature protection?", 29,7% of students chose posters, 16,2% indicated sculpture and 8,1% named songs. The teachers indicated posters (27,9%) or integrated form of expression (a drawing, poster, individual verse or a song) (20,9%). Such cooperation of teachers and students strengthens their positive attitudes towards a more harmonious coexistence with nature.

In all times human beings were closely connected to nature and tried to make use of it for their own needs; first of all, using various amulets (pendants, jingles, masks), later they turned to prayers for gods and building poles, finally humans tried to change nature using the power of reason and faith. The educational attitude should be to teach the students to experience the aesthetic features of natural phenomena and human activity by responding to and evaluating their relation with religion, art and by creating art.

4. Conclusions

1. As the threat of climate change in one way or another is manifested in all spheres where there is life, it is expedient that the contents of artistic and religious education should systematically cover all the spheres of the surrounding natural environment: atmosphere, hydrosphere, lithosphere, cryosphere and biosphere, which would form an overall image of the climatically-changing natural world.
2. Human dependence on the capture of nature is observed from the early examples of ornamentation to present-day artworks of various genres, tell of the synthetic contents of religion and art and their unifying power as well as remind of our fragile dependence on the reality of nature.
3. The development of three-dimensional aesthetic experience (visual, auditory and kinesthetic) of nature might be more effectively exploited in educating younger generation if the understanding in the environment not only as beautiful or ugly but also as true or false and good or evil were enhanced.
4. The research of the teachers' and students' value-based attitude towards the effects of climate change revealed that they feel certain dismay about all the five spheres; however, the teachers expressed larger concern in comparison to the students. The teachers' and students' value-based orientation regarding biosphere and cryosphere differs inconsiderable; whereas in terms of lithosphere, hydrosphere and especially atmosphere the teachers' apprehension is much bigger than the students'. The respondents maintain that among the five nature spheres climate change would mostly affect the atmosphere (evaluated by almost four points), whereas the least impact would be on the lithosphere (the solid part of the globe).
5. The impact of human activity on climate change seems more ominous for both the teachers and the students comparing it to other forms of threats. Astronomic, geo-physical and internal climate alterations are less emphasized. The average mean of the students' assessment was below three points in terms of three causes: geo-physical causes were assessed by 2,81 points, internal climate alterations – by 2,86 points and astronomic causes – by 2,92 points. Despite the fact that the negative impact by humans on climate change seems most threatening for the respondents, it is purposeful to maintain a systematic approach of combining religious and artistic attitudes towards all the determinant factors of climate change in the educational process.

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Reliģisko un vizuālo zīmju metamorfoze klimata pārmaiņu kontekstā: izglītības aspekti

Kopsavilkums

Raksta mērķis ir izvērtēt klimata pārmaiņu ietekmi uz vizuālajām un reliģiskajām zīmēm un iztirzāt izglītības iespējas. Diskusijas centrā ir reliģiskās un mākslas izglītības koncepti, ietverot mākslas parādības, un uztverot šīs parādības to dabiskajā vidē. Raksts piedāvā refleksiju par cilvēka atkarību no klimata pārmaiņu radītajām sekām. Aplūkoti piemēri mākslas vēsturē, kur reliģijas un mākslas sintēze atgādina par mūsu trauslo atkarību no dabas. Cilvēka attiecības ar vidi ir aplūkotas sistemātiski, skarot visas jomas (atmosfēru, hidrosfēru, litosfēru, kriosfēru un biosfēru). Tāpat aplūkotas arī skolotāju un skolēnu vērtībās balstītie viedokļi par klimata pārmaiņu galvenajiem iemesliem (astronomiskajiem, ģeofiziskajiem, kā arī iztirzājot atmosfēras sastāvu un antropogēnos faktorus). Galvenais jēdziens šajā tematikā ir mākslinieciskās un reliģiskās uztveres un tās nozīmīguma pieaugošā loma vides izglītībā. Teorētiskos apsvērumus ilustrē skolēnu zīmējumi, gan empīrisko pētījumu rezultāti darbā ar pamatskolas un 9.-12. klašu skolēnu vērtībās balstītajām liecībām.

Atslēgas vārdi: klimata pārmaiņas, vide, vizuālās zīmes, reliģiskās zīmes, mākslas vēsture, izglītība



Dr., assoc. prof. (doc.) **Dalia Karatajienė**

Faculty of Educational Studies, Department of Arts
Education, Lithuanian University of Educational Sciences

Address: Studentų st. 39-236, Vilnius, LT-08106, Lithuania

Phone: +370 (8 5) 275 7096; Fax: +370 (8 5) 275 70 960

E-mail: dkaratajiene@yahoo.com



Dr. sc. soc. (education), assoc. prof. (doc.)

Jolita Kudinoviėnė

Head of the Department of Arts Education at the Faculty of
Educational Studies, Lithuanian University of Educational
Sciences

Address: Studentų st. 39-236, Vilnius, LT-08106, Lithuania

Phone: +370 (8 5) 275 7096; Fax: +370 (8 5) 275 70 960

E-mail: jolita.kudinoviene@vpu.lt



Dr. habil. sc. soc. (education), prof. **Vaidas Matonis**

Vice-Dean of the Faculty of Educational Studies at
Lithuanian University of Educational Sciences

Address: Studentų st. 39, Vilnius, LT-08106, Lithuania

Phone: +370 (8 5) 275 7096; Fax: +370 (8 5) 275 70 960

E-mail: vaidas.matonis@vpu.lt (corresponding author)



Ph.D. student, assist. lect. **Jurga Sidabriėnė**

Ph.D. student of Lithuanian University of Educational
Sciences, Faculty of Educational Studies, Department
of Arts Education

Address: Studentų st. 39-L230, Vilnius, LT-08106, Lithuania

Phone: +370 (8 68) 229 631

E-mail: jurga.sidabriene@vpu.lt