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State of the art of environmental teaching in Hungarian public education

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Összefoglaló: A környezetvédelmi oktatás helyzete a Magyar közoktatásban. A 20. sz. ötvenes éveinek gazdasági növekedése sok országban krízist váltott ki a társadalomban élő ember és természeti környezete között. Ezt követte a modern környezetvédő mozgalmak fellendülése, amelyek kezdetben pesszimista írásokkal próbálták a társadalmat közönyéből felrázni és cselekvésre buzdítani. Addigra ugyanis nyilvánvalóvá vált, hogy az emberiség nem szakadhat el a természeti környezettől, nem szennyezheti és mérgezheti azt felelőtlenül, mert ezzel saját jövőjét teszi kétségessé. A környezet védelme csak akkor lehet sikeres, ha a környezettudományon alapszik, amely interdiszciplináris tudomány és multidiszciplináris elemeket is tartalmaz. Vannak ezen kívül transzdiszciplináris elemei is a környezettudománynak, amelyek lehetővé teszik a felelős emberi beavatkozást és cselekvést. A probléma túlzott leegyszerűsítését jelentené, ha a társadalmat két csoportra osztanánk: azokra az emberekre, akik szennyezik a környezetet és bajt okoznak és a környezetvédőkre, akik elhárítják, vagy csökkentik a másik csoport által okozott problémákat. Jelen tanulmányban megvizsgáljuk, hogyan lehetne az általános- és középiskolákban az ember és környezete közötti kölcsönhatást a történelem tanításán keresztül bevezetni annak szem előtt tartásával, hogy a környezetvédelem tanítása megfeleljen a társadalom elvárásainak.

Introduction

Roots of environmental protection and environmental teaching

In several countries, the economic growth following the fifties of the last century induced and meant crisis between people who live in societies and their natural environment (Jócsik, 1976). Then came the intervention of modern environmentalists who published pessimistic writings at first, which perhaps suggested the senselessness of interference and protection. Rachel Carson published

a book, entitled „Silent Spring" in 1962, and ten years later, Commoner published a writing which was known as „The Closing Circle".

In these works the authors also undertook to draft the way out, because by that time it had been realized that humans are not able to break away from their natural environment and they cannot burden, pollute or poison it irresponsibly, since through these acts they ruin their own future or become the death of themselves directly (Carson, 1962; Commoner, 1972).

Thanks to the realizing and conceding of the facts, which had been written by modern environmentalists, a global and conscious environmental attitude formed, which involves our share and our responsible activity as well. In the spirit of this, the matter of environmental protection became a global question and simultaneously, a local scene of action for everyone. In accordance with the previous facts, we consider environmental protection as a kind of anthropocentric activity, the task of which is to preserve the human's environment; and this preservation is treated and conceded as an order of actions which keeps the conditions of a qualitative human life (Kerényi, 2003).

Environmental protection can be successful only when it bases on the science of environment which is an interdiscipline, and contains multidisciplinar elements as well. Moreover, it has a transdisciplinar effect, which makes conscious human activity and intervention possible (McKeown et al., 1999). We would be on the easy side if societies clearly consisted of people who pollute their environment and cause problems, and the opposing environmentalists who eliminate, stop or merely reduce the problems which are caused by the previous group.

However, people can't be categorized as good or bad ones and the existance of this classification also have to be refused, because people of societies are in interaction with their natural environment and through their economic activities or their most essential consumptional acts they take up substances from their environment, but return wastes and substances which are worthless for them at that moment. Consequently, solution of this question is based on view on the one hand, but on the other hand, it includes concrete actions which are realized on societal level, rest on collective thinking and can be implemented by only those people who think responsibly, respect their natural environment and possess the reqired environmental knowledge (Lakatos et al., 2002).

The thought virtually presents itself that with the help of their sensible behaviour, people of societies have to be able to learn at their own expense and among their actions, prevention and avoidance of contamination need to be in the primary position. That is prevention have to be determinant in their thoughts just before they act. In these days, environmentally sound mentality and environment-friendly operation are frequently used concepts, but in many cases, manifestation of an individual and that of people who work in various economic fields of the society, are not harmonised. So duality forms a part of our personal-

ity since we often have other people do the elementary duties which should be done by ourselves.

There seem to be a true saying according to which environmental protection is not expensive, but contamination of the environment costs a lot. So behaving as sensible people, besides the preservation and the awakening to the conscioussness of it, our main task is to establish the environmental-conscious mentality and activity, especially in case of the coming generation. It is environmental teaching which provides the required knowledge and affords a mine of solutions at the same time (Chapman and Reiss, 1972; Wickenberg et al., 2004).

Circumstances of environmental teaching in Hungary

Act II. of 1976. ordains protection of human's environment as follows: „It has to be ensured that through teaching, education, public education and inquiry, environmental tasks and requirements are recognized by citizens.

Adoption of the international conventions of the United Nations Conference on Environment and Development arranged in Rio in 1992, and enforcement of the World Congress on Sustainable Development arranged in Johannesburg in 2002, and that of programmes and agreements which were written in Plans of Execution, are significant milestones for Hungary (Faragó, 2002).

Act LIII. of 1995. on general rules of environmental protecion, stipulates the governmental tasks of environmental teaching under section 54-55: „According to principles and requirements of common core curriculum, minister of environmental protection participates in professional preparations of curricular demands and educational appliances which are made for institutions of public education."

Environmental teaching instructs in the establishment of environmental-conscious and environmental-harmonic lifestyle. It is a sort of education about the environment, in the environment and for the environment. Environmental teaching is holistic, educates for cooperation and lasts for life. It is the pedagogy of sustainability (Kovács Habi, 2003).

The preceding paragraphs need to be explained in greater detail: „The comprehensive task of environmental teaching is to encourage the establishment of pupil's environmental-conscious attitude and lifestyle in order to carry out the prevention of increasing environmental crisis by the coming generation with that survival of animate nature and sustainability of societies are encouraged as well. Pupils have to become impressionable to the state of their environment.

They have to be able to see and value on basic level the characteristics of environment and qualitative changes of that. Besides recognizing and preserving the natural and man-made environmental values, they have to be able to fulfil their civic obligations in connection with environment and exercise their rights. Encouraging and engaging future prospects must evolve in them which help to

strengthen their positive emotional attitude to the environment and develop the habits and conducts which are necessary for establishing the environmental harmony.

Environmentally sound attitude, which is based on environmental knowledge and personal responsibility, must be a moral principle which determines conducts of pupils both on individual and on communal level. In the course of environmental teaching, pupils need to know the present processes which cause environmental crisis on this Planet. Through concrete Hungarian examples, they also need to realize the positive and negative environmental results which are caused by social and economic modernisation.

Pupils have to take a part in the preservation and the increase of environmental values which are in their immediate sorroundings. Respect of nature, responsibility and efforts on prevention of environmental damages must become determinant in their conducts. They have to get personal experience in cooperation and in common management and solving of environmental conflicts (Kárász et al., 2002)."

Environmental teaching is included in the „new NAT" (the new Hungarian core curriculum) as a curricular requirement. It indites tasks of schools in connection with environmental teaching as common claims, so it considers environmental teaching as an educational method which influences the whole school life.

In this presentation, our aim is to examine the possibilities of how the interaction between humans and their environment can be introduced in the course of teaching history in elementary and high schools, and to consider how integrated teaching of environmental protection (conseqently not different subjects) come up to the social expectations.

Background and forms of environmental teaching

For these days, environmental teaching has become so widely distributed that it appears in all three forms of education i. e. in formal, informal and non-formal educational programmes and in systems of institutions as well. A part of the inorganic formation of counsciousness is the informal education which is the most effective in adult education, but it is also widely used among children and young people.

Among other things, educational institutions, museums, botanical gardens and zoos, national parks and educational centres of environmental protection give good opportunities for extracurricular forms of environmental teaching. Today, in Hungary, aims of environmental teaching have appeared in the activity of those civil organisations, the purpose of which is not especially environmental protection. Cooperation with them is important in terms of making environmental teaching socialized.

Educators of environmental teaching have been learning and developing methods for a long time which improve the environmental responsiveness of adults. It can be observed all over the world that parents are educated by their children who are more conversant in the matter of environment. Children afford a chance to enhance their parents' environmental counsciousness without quarrels in the family or in school.

In Hungary, responsibilities of environmental teaching are divided between authorities of environmental protection and those of cultural affairs. Most of the money which allotted for environmental teaching is derived from sources of the Ministry of Environment and Water. Making the regulational and curricular compasses of the educational system is the competence of Ministry of Education. In connection with environmental education, elaboration of main characteristics is primarily motivated and financed by the Ministry of Environment and Water.

Main types of environmental teaching

In public education, activities of environmental teaching are frequently integrated with several subjects. It must be emphasized how important the tasks of environmental teaching are in case of Biology lessons, especially when species descriptions, food webs and interactions between living organisms and their environment are taught. This lessons also afford possibilities for getting acquainted with ecological elements and for the application of them.

During Chemistry lessons, pupils do material tests and experiments. By the help of these tests they can get acqauinted with air pollutants. In the course of teaching of Geography, awakening to the consciousness of environmental viewpoints can be effectuated through the subject-matter which deals with development of the Earth, changes in the earth's cust and the earth's surface, and natural vegetation of climatic zones.

In literary works, depiction of natural beauties and people's connection with their environment afford possibilities for environmental teaching. In the case of History, interactions of people and their environment or people's nature-forming effects are in the centre of the matter. It also makes possible to get acqauinted with those values of cultural history which have been created by humans for thousand years.

People's connection with their environment

Development of social environment

Individuals of *Homo sapiens* L. possessed well-developed tools like blades or implements made of bone and they invented the boar-spear. They lived in harmony with their environment and in compliance with the changing seasons,

they sometimes gathered plants, sometimes harvested the crops and sometimes hunted animals.

Commencement of food production

Before these times, people had been just clever observers and users of nature but with the beginning of independent initatives, their life became secure. Commencement of productive activity opened up new opportunities and led to sudden growth of the population.

Beginning of food production made the settled lifestyle necessary. Humans built permanent residences which were made of environmentally sound materials like wood or stones but these could be regarded as small points on global scale. They gathered these materials from the biotic or abiotic nature and consequently, this gathering didn't upset the dinamic ballance of the environmental system.

The Ancient Orient

In oriental societies, clannish relations of the ancient society transformed within agriculture which was based on state-organized common properties. Social structure rested on ancient village communities. Communal works (watering, preservation) were organized by the state and needed centralization which led to the creation of self-supporting village communities. In these communities, a human individual played a minor role and formed a part of the community (Nánási, 1999).

Subsistence of the population was ensured by irrigation-based farming. Irrigation began with observation and utilization of the natural outflow of water. The next step was the maintenance of natural ditches and then, on the model of nature, water could be conducted to rainless places as well. Communities didn't need to migrate and villages could be free to develop for a while. They moved down to river valleys only when the area became small for them. But for that time, technology of canalization had been developed which made the protection against floods possible (Gyapay and Ritoók, 1999).

However, besides beneficial results of irrigation, several undesirable side effects emerged. One of the most important side effects was the secondary salinification which led to destruction of ancient civilizations in accordance with some hypothesis. Development of towns was a consequence of the sudden growth of populations. Ancient Orientals were the formers of town planning: Sumerians and Dravidians used bricks which were made from fired clay and Egyptians built mainly from clay as well.

These people rose huge buildings (pyramids, ziggurats) for religious or cultic purpose which have been relics of humanity's cultural history since that time, but mining of the necessary building materials formed the first „artificial scars" on the Earth's surface (Kerényi, 1998).

Among populations of the Middle East, Phoenicians didn't have rich river valleys. From their natural resources they used cedars and oaks to ensure their living. These natural resources were used for shipbuilding and it is not accidental, that clearance of original mediterranean forests occured in that term. The purple cloth was a famous product of Phoenicians and its dyestuff was obtained from purpuras and murexes. About 4-5000 snails were needed to dye one kilogramme of wool (Horváth, 1997).

The appearance of oriental-type societies accelerated the transformation of nature because their inventions like urbanisation and navigation caused increase of population or demographic explosion. For that time enviromental pollution had already appeared although just on local scale. Wastes of metal-working got into the soil and into surface waters, and the environment was also polluted by wastes of those populations which had concetrated during urbanisation (Lakatos and Nyizsnyánszky, 1999).

The Graeco-Roman Age

One of the main forces was behind the development of Greek Civilization that private ownership of lands became general which caused significant change in comparison with ancient oriental-type monarchical households. While individuals of the Ancient Orient were subjects and members of a community, those of Greek Civilization were independent owners (Gyapay és Ritoók, 1999). It contributed to the changing of economically and morally independent Greek people into autonomous personalities (Nánási, 1999). Independence and initative had free scope and later citizens claimed these in public life as well. Spreading and development of the Greek Civilization were helped on a large scale by Greek colonization which had developing effects on industry and commerce of the home-country.

On culmination of the development of Greek city-states, a kind of social harmony formed between the individual and the community (Nánási, 1999). Greeks lived within nature and considered themselves as an integral part of it. They gave prime importance to the predominance of harmony, since ideal of harmony was the main worth in the ancient Greeks' scale of values. Harmony with the universe and harmony of body, spirit and intellect in humans, as Aristotle said: „Nature gives the key to understand the world".

Plato, the master-philosopher of Aristotle put a great gulf between the unchanging, eternal and extrasensory world of ideas and the changing, imperfect and tangible nature, i.e. between spirit and material. This was the beginning of nature's undervaluing (Nánási, 1999). Greek culture respected the nature both in its view and in its scale of values. However, it didn't preclude the possibility to cause permanent damages in nature. Territorial demands of stock breeding and timber demand of commerce had permanent local results on that places as well. Only undemanding animals could be kept on the montainous district which was

varied with limestones. Goats were the Greek's typical domestic animals which contributed to further denudation of limestone range (Nánási, 1999).

The centre of the Roman Empire, the last great empire of ancient times, was Rome, where the first water-system had been already built in the 14th century B.C. The water also made cleannes of streets possible. In the middle of cobbled streets, small ditches were used for draining of rainwater and wastewater. In the imperial period, numerous decrees were born which provided the cleannes of the town and fire-fighting. It was necessary, because in the ancient times, population of Rome reached about one million people.

Urbanisation spread on occupied areas as well. Towns which were built on the model of Rome with cobbled streets, churches and amphitheatres, spread on the whole area of the empire. Raw materials and industrial products of remote lands proceeded to Rome, serving luxury of the Roman élite. Working of mines became intensive, especially exploitation of precious metals, mining of basic materials for streets and buildings and also deforestation, because building of limes, military posts and huts needed huge amounts of wood.

The Middle Ages

At the beginning of the Middle Ages, integration of industry and agriculture was attained on latifundiums. Peasants learnt to apply the highly developed technological inventions e.g. water-mills (Walter, 1987). Utilization of water-power was a new step in economical and social development and became wide-spread in the 10th-14th century. We can consider its effects on the environment rather useful than harmful, because setting into operation of it didn't lead to damages in the environment (Kerényi, 1999).

It was in Southern Europe, on the large patches of roman latifundiums, where a new cultivational method, the two-course rotation developed. Northerly, with deforestation, forming of new culture areas began as well. Grazing-crop rotation spread at first, and from the 19th century, it was gradually followed by three-course rotation.

Invention of heavy plough was a significant stage of technological devel-opment, and by the help of this, lands with hard ground could be under crop. In consequence of this, crop results got better, population got larger and settlers' swarming to unpopulated areas became faster. These were accompanied with significant nature-forming activities: start of deforestations and drainage of marshes followed the settlers' work and further territories became under crop.

Further increase of the European population together with growth of crop lands was hindered by destroying epidemics or wars. The largest regression of the population happened in 1348-1350, in the time of plague epidemic. The population of Europe was 73 million in 1300, but it decreased to 45 million for the end of the century. With decreasing of the population, economic activity

declined as well. Consequently, natural vegetation and animal world gained ground again. Self-regulating mechanisms of nature still worked in that time.

Windmills became known in the time of holy wars and spread in Europe from the 12th century. Use of coal as a new source of energy spread firstly in the Ruhr-region from the 13th century. In the beginning, it was used for lime-burning and later for calefaction of wrought iron and for heating as well. New industrial branches developed from the 14th century. Building industry worked mainly in big cities and used plenty of natural building materials like stones or wood. Metallurgy was also developing and blast- furnaces were constructed for the end of the 15th century (Kerényi, 1999).

During the Middle Ages, people's everyday life was determined by the religious world concept which was represented by the Church. Ideas became generally accepted, which considered nature as if it was created for humans, and considered humans as if they were created to hold domination over nature. Humans' independence from nature became enormously important (Nánási, 1999).

In the time of holy wars, Europeans could be concerned in ancient heritage through cognition of Arabian medicine, mathematics, astronomy and philosophy, but they set these sciences on duty of scholasticism which was a philosophical school of the Church. Drawing a parallel between the ancient philosophy and the religious dogmas led to long-lasting subjection of science to theology.

Unlike the views of life in the Middle Ages, renaissance was an outlook upon life which had effects on the arts, on literature and on sciences as well. Appearance of it was connected with development of civic life in towns when individuals became independent and their interest swung to the human-environment relations instead of the relation between God and the Universe. Renaissance philosophers couldn't emphasize the humanist worth which supported respecting of nature, because these thoughts were suppressed by the Church.

The crisis of the religious world conception became really serious in the 16th century when laws of nature were established, which rested on observation of facts and controlled by experiments, such as Copernician heliocentric world concept or Newton's laws. (Walter, 1987). Discovering of laws of the Nature had a huge effect on French philosophers who thought it necessary to be feudal chaos replaced by regular, legality-directed society, the legalities of which refuse the chaotic feudal conditions. In contradiction to these chaotic conditions, law became significantly important (H. Varró, 1979).

Modern rationalism established the faith in absolute force of cognition. Mind became the highest forum, the criterion of real and precious character of all human acts. This rationalism identified rationality with scientific character of period mathematics and natural sciences (Nánási, 1999).

The Age of Industrial Revolution

Besides revolution of food production and that of town planning, idustrial revolution caused the greatest change in the history of humanity. The beginning of the industrial revolution can be determined (it was about in 1780), in contrast with its end. The main point is that since its outbreak, production of material goods unceasingly increased at a continually accelerated pace. In certain countries phases of it come to end in various times.

In England, where civil properties had been formed before the revolution, capital moved to agriculture. Grazing lands were broken, wetlands were drained and three-course rotation was replaced by crop rotation. They cultivated fodder-plants for stocks and fertilized the fields. As a consequence of this, agriculture of England was able to provision the increasing populations of towns.

There were qualitative changes in the industry. Machines were means of production instead of hand tools therefore machine production became necessary. Steam became the main source of energy. Production of capital equipments and generation of energy needed huge amounts of iron, steel and coal. With revolution of vehicles, cheap and fast transport of finished products and manpower became possible. Railway buildings threw England into a fever.

Aspects of the landscape changed in England and later in other European countries as well. Factories, high smelteries, steam engines and railway systems were built and natural landscapes changed into industrial areas. As Tocqueville, a French politician wrote about Manchaster, the offspring of industrial revolution: „The largest stream of human work poured out of this stink which makes the whole world fruitful. Pure gold flows in this drain. This is the place where mankind rose to the highest pitch and sank to the lowest inhumanity, and where civilization makes miracles happen and civilized man turns into savage." (Závodszky, 1991).

The industrial revolution snatched hundreds of thousands of peolple from their original environment and lifestyle, and as a consequence of this, people became estranged from nature. In case of capitalism, one of the drastic forms of estrangement is that both workers and capitalists become subjectively estranged from nature, although in different ways. On the one side, the proprietary classes become estranged from nature through the special expectations of themselves. On the other side (in case of workers) requirements become simplier and rougher, and the demand of nature become weaker (H. Varró, 1979).

In towns, improvement of hygienic conditions (through drainage of towns and general use of drinking water-mains) led to sudden growth of the population. From the second half of the 19th century, industrial revolution was characterized by the appearance of new scientific discoveries and new industrial branches. The peroid can be called as second industrial revolution, when use of internal combustion engines, electrification and chemical technologies became general. Mining of raw materials continuously increased, heavy industry demanded huge

amounts of coal and iron ore, and the new industrial branches like chemical or petrochemical industry made exploitation of oil necessary.

During the industrial revolution, people's connection with nature could be figuratively characterized by exploitation, the point of which was the extravagant exploitation of several natural values in the interest of huge profit (H. Varró, 1979). Further colonizations became necessary because free competition and concentration of capital led to the formation of monopolies which demanded new markets and a lot of raw materials. Those countries, which lead in industrial revolution, were ahead in the race for colonies. For the end of the 19th century, only a few blank spots remained on the map of the Earth (Závodszki, 1991).

First of all, colonies were considered as sources and suppliers of raw materials and natural values were used irresponsibly, with lack of foresight. However, when monocapitalism formed, extravagant exploitation of natural resources was completed with employment of unskilled labour and with exploitation of human's natural power and through capital exports, the processing of these materials was accomplished by local and cheap manpower (H. Varró, 1979).

The 20th century

After partitioning of the world, the Great Powers, which lived under the spell of imperialism, wanted to continue their expansion to the detriment of each other. This struggle, which was started for repartition of the world, led to the outbreak of the First World War (Salamon, 1999).

In the 20th century, scientific and technical development opened up new possibilities in military engeneeringdefence technology and transport. Battlegas and large numbers of automatic machine-guns and heavy artillery guns were used firstly in the World War I. As new vehicles, motorcars and aircrafts were also tested on the theatres of war.

Industry prospered in the USA, which was one of the victorious powers and got rich in the First World War. On this basis, they advertised capitalist rationalization in production: they increased intensity of work, decreased prime costs and initiated standardization and belt-system of production. This process of prosperity was stopped by the economic crisis, in 1929-1933 (Nánási, 1999). Crowds, which suffered privation owing to worldwide crisis, were susceptible to the reception of extreme policies. Two dictatorial version of them were the Marxist-Leninist and the National Socialist which spread across Europe in that century.

In the Second World War, besides armed force and technique of war, economic potential, industrial preparedness and intellectual forces of the states were also important among those elements which decided the victory. This superiority was supported by nuclear bomb which was made and tested in the USA in 1945.

While wars of the 19th century caused local damages in natural environment, World Wars destroyed huge areas. Considering the damages of the population, World War II. surpassed every war of all times: among its casualties were 35 million wounded, 2 million missing and it left 55 million dead.

In the 20th century, qualitative and quantitative changes occured in the relation between humanity and the environment. Increase of population ran up, since in the first few years of the century the population amounted to 1.5 billion, but it increased to 6 billion for the end of the nineties. Besides numbers and average dimensions of towns, proportion of urban population increased as well. Concrete and reinforced concrete became the most important building materials in case of town architecture. Proportions of built-in spaces increased to such a great extent that surrpassed the increase of all times.

As a result of scientific and technological development, new possibilities occured in the industry, military engeneeringdefence technology and transport. Then came the appearance of nuclear energy, a new source of energy, the application of which needed increased caution. Role of plastics became larger among artifically produced materials. Capacity of transport was multiplied, compared to past historical periods. All of the aformentioned branches were energy intensive in large measure (Kerényi, 1998).

For the last decades of the 20th century, it became obvious for humanity that the Earth was not an inexhaustible „goldmine". This was pointed out by L. Meadows and his team who published a final report, entiteled as „The limits to growth" in 1972. In this report they called the public's attention to those danders which threatened the humanity. These dangers are: overpopulation, insufficient food-supply, rapid decrease of natural resources, and environmental pollution (Meadows and Meadows, 1972).

Summary

Recently in Europe, most of the programmes of environmental science were included in natural sciences and technical education, but new initatives in continuously increasing number, „intruded" into the world of classical subjects and jural or sociologic teaching as well. It is remarkable that how difficult task is to make and establish those programmes which span and shear through the bounds of several subjects and branches. Naturally, this phenomenon leads to general problems in Hungarian public education or higher education, and can be observed especially in case of environmental sciences (Lakatos, 2003).

In connection with cultural fields, a demand on integrated subjects instead of disciplinar subjects arose within school education. Disciplinar subjects were accomplished with the mapping of a certain science, while integrated subjects differ from the systemic classification of disciplines to larger or smaller extent, and they combine the knowledge which are thaught in different subjects. Inte-

gration has several grades. Generally, just a loose link forms between the subjects but it doesn't mean that the subjects themselves are integrated.

Finally, by help of the integrational process, environmental teaching can become an independent subject, and its getting to the periphery as integrated parts of different subjects can be avoided. It is probable, that most of teachers will perceive the teaching of environment-counscious view as another burden and they will try to avoid or attempt to implement it with the smallest drive as long as integration of environmental problems into several subjects do not occurs and integrational process are not effective enough (Lakatos, 2002).

Even in these days, both environmental teaching and environmental protection has closer links with natural sciences, but in this presentation, we surveyed people's relation with their environment, relying on the history books of elementary and secondary schools.

We touched upon the commencement of food production and other economic activities, and their influence on society. Partiality can be established, because harmful envionmental effects of the aforementioned events are not mentioned at all. Only positive effects are mentioned in these books. Through surveying of the Ancient Oriental history, we refer to framing of the first laws, development and determinant role of religion and the use of natural resources.

The appearance of oriental-type societies accelerated the transformation of nature because their inventions like urbanisation and navigation caused increase of population or demographic explosion. For that time environmental pollution had already appeared although just on local scale. Wastes of metal-working got into the soil and living waters, and the environment was also polluted by wastes of those populations which had concentrated during urbanisation.

Greeks lived within nature and considered themselves as an integral part of it. They gave prime importance to the predominance of harmony, since ideal of harmony was the main worth in the ancient Greeks' scale of values. Harmony with the universe and harmony of body, spirit and intellect in humans. As Aristotle said: „Nature gives the key to understand the world." These afford good possibilities to historical establishment of environmental teaching.

In the Roman age, urbanisation spread on occupied areas as well. Towns which were built on the model of Rome with cobbled streets, churches and amphitheatres, spread on the whole area of the Empire, and material remains of them can be observed in some places even in these days. Raw materials and industrial products of remote lands proceeded to Rome, serving luxury of the Roman élite. Working of mines became lively, especially exploitation of precious metals, mining of basic materials for streets and buildings, and also deforestation, because building of limes, military posts and huts needed huge amounts of wood. These events had regional effects on the state of natural environment, but such notes are missing from history books. The role of teachers becomes

determinant in mentioning such evidences in terms of environmental protection during the teaching.

In the Middle Ages, pople's relation with natural environment was determined by the religious world concept. Unfortunatelly, schoolbooks deal only with historic events, and there's no time to present the natural environment-forming effects of the several farming interventions. It is another task for teachers to touch upon these interventions as well, through dealing with this processes directly or giving of readings which deal with this matter. With this, they can ensure the historical background of environmental teaching.

There were qualitative changes in the industry in the age of industrial revolution. Machines were means of production instead of hand tools therefore machine production became necessary. Steam became the main source of energy. Production of capital equipments and generation of energy needed huge amounts of iron, steel and coal. During the industrial revolution, people's connection with nature could be figuratively characterized by exploitation, the point of which was the extravagant exploitation of several natural values in the interest of huge profit.

Further colonizations became necessary because free competition and concentration of capital led to the formation of monopolies which demanded new markets and a lot of raw materials. First of all, colonies were considered as sources and suppliers of raw materials, and natural values were used irresponsibly, with lack of foresight. However, when monocapitalism formed, extravagant exploitation of natural resources was completed with employment of unskilled labour and exploitation of human's natural power, and through capital exports, the processing of these materials was accomplished by local and cheap manpower.

For the last decades of the 20th century, it became obvious for humanity that the Earth was not an inexhaustible „goldmine". We have to pay attention to the dangers which are threatening the humanity. These dangers are: overpopulation, insufficient food supply, rapid decrease of natural resources, and environmental pollution. We have to provide opportunities to deal with the circumstances of environmental protection in these days, and to introduce the concept of sustainable development.

History books discuss knowledge in a linear way, but they provide very few opportunities to evolve the environmental and conservational teaching and to increase the levels of knowledge. We can establish that actual integrated teaching (taught in every single subject) of environmental protection and environmental education are not satisfactory, and teaching of this very important field as a separate subject can not be replaced by them. In the interest of preservation of the Earth for generations of the future and laying the foundation of a more environmental-conscious civil mentality, knowledge dealing with the relationship

between humans and their environment or just simply with environmental protection, should become a part of general knowledge.

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