ANALYSIS OF SOME SCIENTIFIC – EDUCATIONAL CONCEPTS OF ENVIRONMENTAL EDUCATION (Luhmann's theories)

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Abstract

In this article I will try to make the analysis and to exemplify educational as well as teaching theories of the specific and more difficult issues of scientific education concerning ecological aspects. I shall point out similarities, differences as well as different positions in detail.

The Man- Nature, Man- Environment relationship

In Germany, starting from 1979, when KMK[1] has produced the policy document on environment and teaching, the preservation of the man - nature relationship became imperative. In this relation, man shall be responsible for existential problems. Man shall regard environment as something that is endangered by the man itself. These aspects shall be outlined in ecology and criticized. Environment shall be exploited by human thinking because of its resources and shall be regarded as an "array" of possible materials which can be exploited. Therefore, eco-pedagogy shall regard this issue as a field of conflict of man against nature. It acknowledges the danger when nature will be regarded as an object to meet the needs of human survival.

Therefore, the integration of these relations becomes essential.

As part of this ecological study, the relationship between man and nature shall be explained from ecological perspectives.

Ecology must be understood as a complex science covering all the changing relationships between man and environment. This protection of "natural" life leads to "that certain" solution for all problems that is the capacity to change it to such an extent so that we live in an ecological world. Therefore, Dauber defines ecological study as a part of political organization of own environment, as a means to be able to understand each other in our own environment and take the decisions in our own hands.

It is remarkable in the special literature this renunciation, this distance from the industrial community. A new utopia of a "new

[1] The Standing Conference of Ministers of Education and Cultural Affairs (KMK) is a joint coordinating body between Federal States in matters of education and culture (that are regulated by the Federal States). In the German implementation of the Bologna process it is the central body for national policy development.

community" shall be presented. In the process of discovering a new way of living, nature shall be considered in its "natural" state.

The definition of "natural" in man's conception remains open.

In the description of man – nature – environment relationship, we must start from the way each particular man understand nature. Thus, nature appears as a result of a process over years of human influences (according to Haan), that is the result of various historical processes. In the different aspects of life, new concepts on nature shall be discovered, various perspectives in different periods of time.

Nature appears as if it were designed for our form of perception.
This is why, many times, in special literature, the ecological study, the system in which the ideal on nature corresponds to several forms of alternative life, shall be criticized.

If we consider this man – nature – environment relationship from the point of view of professional environmental education, it shall be also analyzed from the aesthetic, symbolic point of view during a certain period of time. The more we find various points of reference in our own field (ego) the easier will be for us to establish the relationship between various components, specializations or environment.
Heid presents a different perspective of relation in which we can find that man possesses, as compared to other living bodies in nature, a certain position; man's position shall be necessary in order to take a decision as far as nature is concerned, especially the ecological and the sociological side of the study.

Sustainability shall be regarded, in scientific education, as a reflection point, as a flexible instrument in the environmental policy. A point of view shall be this strong interdependence between nature, economy, and community. This is why the role of sustainability becomes here a decisive factor in explaining the man – nature – environment relationship.

A debate on general and professional education focuses on making clear the relationship between man and environment. Remarkable in this respect shall be the exemplification of the model (A, B, C) of Nitschke:

A – Organization of professional work

Should we analyze the integrant relation, the various topics, issues, questions concerning the nature of environment in professional education - we shall see that environmental topics shall not be seen as auxiliary to the educational process, but evident, as a prevailing component.

From the point of view of socio-ecological study, we shall encounter a strict rejection of industrial structures. As professional training requires sometimes these structures, the person who makes the study shall take into consideration a great number of requirements which are necessary in the living system and to fight against them accordingly.

The central aim for the reform of professional environmental education shall be that to discover and impose subjective elements in the work which is required for environmental protection.

The three elements: reason, aesthetics and symbolization shall be those by means of which the man shall put into motion the new trends in the field. Through work, man shall automatically make a material exchange with nature. Work shall be regarded as a environment in which the three elements could be found on a regular basis. Therefore, profession becomes, more or less, a good or bad type of work organization - being regarded as an engine for stimulation of work.

This is why a control over this engine is very important in order to decide as far as specialization rhythm and direction are concerned.

As far as A-B-C according to Nitschke is concerned, the key for success shall be the use of traditional methods, of protection of relationships between various specializations, problems, professions, or between man, organizations and environment.

This is why the personality of each particular man becomes and holds a central role in educational system.

Therefore, sustainability becomes necessary in manifestation of current structures, especially those of professional training. Due to the certainty of division in Sustainability Development of living opportunities, the development model, the man – nature, economy – community interdependence, this whole system shall be regarded as a reflection over professional specialization.

It shall bring about the need to change certain aspects such as work, life, consumption, spare time and it shall also bring about adaptation, discoveries regarding the relevant environmental issues.

B – Scientific orientation

Should we refer to the discussion to understand community, in practical terms, in the educational system according to the criterion of Truth, the questions shall be put as follows: what is the significance of science in making clear the ecological questions and which are the consequences of working together with these. The new orientation shall point out that only by means of an exchange between economy and ecology, individual and general, what is necessary and what is required to be used as a basic element of life – as guidelines of environmental education in schools!

As part of the position taken by educational science concerning environmental education we shall notice that the differentiation between the causes and the measures taken in environmental issues plays a major role.

Bolscho's theories (1980) are remarkable in the special literature – it is shown here, on the first level, the need to create some life (living) spaces – the so-called ecological perspectives. Secondly, it is shown the possibility

that results obtained from various disciplines be reunited. Thirdly, environmental education shall research which are the intentions and the results which can define man's position in environment (past, present, future). This interdisciplinary relationship shall be used together with sociological, naturalist knowledge.

On the other hand, we shall come across discussions outlining that environmental education needs globalization as a rational side of human kind, in finding a proper and real solution.

Finding common parts between various subjects shall be relevant at the same time. Instead of trying an absolute domination, man will probably try, in a last giant experiment, a total domination of nature and future (according to Haan 1984).

Building a (high qualified) profession becomes the basis of relevant environmental protections elements.

Ecological study, in opposition to environmental education, may bring about an integrant side – a decisive role in economy, technology and professional training – which can be achieved by means of a conscious policy in the field, in order to reach certain economic interests conscientiously!

This strict neutralization in ecological study shall bring about the removal of dependency in all forms of life created in order to be responsible for our own state of health, to be able to build our home by ourselves, to be able to plant ourselves the necessary amount of green plants …(Dauber 1985)

Within nature and with nature we should cooperate in a natural manner!

Therefore, in the educational system, the new orientation shall focus on the description of scientific subjects and we shall focus more on the practical side of life: man – nature, consumption, clothes, space, dwelling place … The new professional training shall focus on the general and the basic elements as well as on their functioning.

Both the ecological as well as the social study, the role of each individual shall become relevant for the changed occurred in industrial behaviour.

The main critics become also the main problem. It is not only about technical elements but also the fact that natural life must also allow a natural study. If we accept that nature is the outcome of a long-term process of human interventions, this field must be carefully criticized.

In the subsequent cultural concepts of eco-pedagogy we will notice that empirical studies will show that environmental risks depend on scientific (research) study. Men will be those who shall establish the contents, the mode of co-operation with science according to their cultural context.

Therefore, culture is not the idea of something immortal, eternal and general, but described as a phenomenon, within which certain groups of

people impose their way of thinking, what they feel and their orientation in the field.

Economy could not take into account certain privileged situations or a position between past – future in which everything can be understood, everything can be explained.

The way in which the inner part of a culture can be understood, various aspects of science is: emotion, speculations, needs, … Time shall also play an important part.

Time becomes the point of reference both in the cultural, eco-pedagogical side and the settlement of environmental issues.

As far as sustainability is concerned, it brings about new perspectives as compared to the traditional ones. The paradigm to create a long-term environmental education must comprise the following three starting points:

- environmental disturbances, natural disasters and hazards
- equity between the poor and the rich countries
- natural development, prosperity

Therefore, several basic concepts, basic sustainability -based guidelines could be expressed:

- constructivism in scientific orientation;
- analysis of proper tools
- establishing of all basic cultural and economic orientations
- inter-regional equity as cultural maxim
- individualization of cultural processes as trend;
- participation as trend.

C – Possibilities in the field of environment – here we shall analyze what are the existing possibilities in environmental organization, from a theoretical perspective at the least. For environmental education we shall find teaching modes in the whole educational system.

Economic growth and the development of techniques as well as a great differentiation of scientific system shall not be taken into consideration.

Economy and technology shall be regarded as a supplementation of an ecological crisis for the proper use of nature.

Similarly, in the case of integrant side of educational profession, this process shall be regarded as a supplementation in order to be able to react to the existentialist questions of man as far as environmental issues are concerned

From the structural point of view, no change will be required, yet it should be used proper professional training (Ausbildung).

As part of environmental education – as an integrant aspect – there will be little possibilities to react against the ecological side.

The development of community in economy, science, technology as well as the institutionalization of education will be just accepted "external frameworks" in order to establish this system and supplement this curriculum.

In this respect, we could talk about a real catalogue of studies between teaching staff and students. Some teaching methods will become principles in this respect, to which the following shall be added: a clear orientation of negotiations, sorting of experiences, creation of a network of connections….

The bases of educational organization shall remain stable, unchanged.

In the desire to bring about a change in the field and obtain a success requiring that element of participation! – but also the possibility to take part in these changes. Some concepts such as "autonomous study" shall remain further unchanged in the special literature.

Man is not only a recipient of that something from exterior, but it is more about internal contents of the mode of cooperation, collaboration with nature in a given cultural context. Therefore, the behaviour of each individual becomes very important, of the way in which it is accomplished, of the way in which the individual behaves conscientiously on environmental issues.

As part of environmental professional education, besides the basic principles such as: orientation, negotiations, experiences, orientation of the people concerned, as well as the creation of relations – the principle of getting own person involved in the debate of a natural conflict will also be required .. for instance, fight against, cooperation.

The contact with own environment will become very important. This principle shall not act solitarily but in a joint cooperation with other principles.

The possibility to study, to learn through the method of Edu – Kinesiology, that is by means of an internal image in the form of some views of the image of own profession shall bring about a success in the field, it may bring about a balance of needs (internal image) with the external one by means of which study potential will remain strongly motivated.

According to Nitschke, there will be two bivalent sides: on the one hand, traditional line in environmental education is preserved; on the other hand, new, open, discursive methods are proposed which no longer focus on internal, professional structures.

On the other hand, in the polarization of the pedagogical system by Heiden (1992), we shall notice that we can not assert that certain direction, a certain purpose is correct or not as a model.

Therefore, those who are interested shall participate themselves in discourses, to involve themselves politically in order to be able to take ecological decisions and thus obtain, in practice, a recognition from the part of community.

Individualization and participation become, in practice, necessary items for the general teaching methods of educational system.

CONCLUSION – the representatives of environmental education argue the need of conscious, responsible cooperation with nature in the relation man – nature-environment.

Special literature mentions a case of a case of constellation of debates.

The purpose to make the environment become compatible with human world will be not described here.

This idea of an "enclosed autonomy" must disappear, environmental education must be reformed and the starting point will be not a certain professional work but the man itself within his possibilities to cooperate with nature and, at the same time, man's needs and desires as against what is strictly in a professional environment.

It is here where sustainability occurs. Besides the traditional form allowing the observation of the "endangered" environment, a number of supplementations are required in the field. For instance the way to understand the problems in a given period of time, by a certain group, organizations, individuals – which depend most of times on emotional state, speculations.

This is why Haan's view (1996) on environmental education in the field (even though we do not possess much knowledge) is more important than prevarication with no perspectives at all of some trials of this "unawareness". To discuss, to debate, this is the key-element! Each individual must be given equal chances in order to overcome these differences between poor, rich (in various countries) in imposing certain priorities concerning natural disasters, hazards and damages.

The key for development in economy must consist of the following: man must provide himself with an environment which could allow him to develop in a healthy manner to the extent to which man needs it. Economic, ecologic negotiations must be created in this respect in pedagogy; sustainability itself will contain critics concerning the reflection of the relation between man and education. To study, to learn ecologically should bring about the political organization, within its own environment, be tightly connected to the purpose to the goal, proposed where participation, as a rule, should be developed and necessary changes be imposed.

In eco-pedagogy, it was decided that the functioning between education and learning for political work should be argued on an individual basis. Differences between negotiations will be pointed out here.

People shall not be regarded as simple recipients of something external but also of the way to behave with knowledge and science in the cultural context.

ANALYSIS OF LUHMANN'S THEORIES

Generally, Luhmann's theories shall make an important contribution to environmental education, especially in the field of "ecological communication".

As far as the relation man – nature - environment is concerned, he went deeper to debate the issues related to this particular field of study. The argumentation in the field shall start from the perspective of the individual, whose important, even decisive role stands out in the environment, ecosystem and its complexity. The starting point will be also that anthropological point in ecology, to preserve environment as natural as possible for the entire humankind.

This theory requires the support of a social factor for a better understanding of world. Here will be relevant the extent to which the individual will organize and fight against the ecological aspects. The focus, the central point shall be more or less oriented to structures of (sick) community. The question of ecology will become a major issue for the whole community where, according to his opinion, ecological communication shall be very important.

We shall examine here the behaviour of some individuals, people, their needs, the crises, the trend…man is as it is and his need of a community will steadily grow.

Therefore, the theory of social system won't be just a simple object, but the sum of the established and differentiated environmental social systems in their environment.

The multiples branches, social structures for which Luhman showed special concern such as: politics, education, administration, economy, science and intimate relations are remarkable.

In many of these systems operations shall be possible only by means of a network (of relations).

This operation in the great social system of community is based on communication and this communication sets limits to environment and other systems. In order to explain the theory of social system and the ecology which are necessary in the field, it will be necessary to understand environment and clarify environmental issues from the ecological point of view.

We won't focus here on understanding the community whether as a smaller or bigger world, but on the differences of environmental community. Therefore the clarification of perspectives will be made for each individual system.

But the theory of Luhmann will explain that the system is not singular, but a system in environment. A system is built through what it differentiates from the system – surrounding environment within own environment. Luhmannn classifies the environment in various specific systems:

- special community environment, that is people in their psychological and physical existence;
- natural environment of the community functional system, that is: air, water, ground, animals, plants, cosmic space.
- other functional community systems.

For a better differentiation of environmental functioning, it shall be explained by means of the example in economy: economy plays a special role by means of wealth and poverty, money, which is determined by means of a communicative environment = money.

This differentiation makes the economic system a specific one within environment.

This environment could be described by the following:
1 – as the person of those concerned, as a psychic – physical existence,
2 – as natural environment
3 – other important functional systems (e.g., politics, law, education…)

Nature alone cannot be differentiated from its own functional system. Nature is not a system which could be isolated from its environment. Nature is an environment of community. But on the other hand, community cannot be regarded as an environment for nature – because nature is not a distinct system.

The question arises: what would be the consequences of this differentiation between systems and environment, for environment as a system? What would be the consequences and the structure for environment?

First of all we should look at the community!

Only the orientation towards community shows that the existing various functional systems must be interrelated.

Should we take the educational example in schools – we should study this differentiation which exists at various levels: for school children, professors, parents which, according to Luhmann could be regarded as a typically ecological issue!

In relation to the understanding in practice of environmental education, according to the criterion of truth, the following question arises: what role will play it in the clarification of ecological issues and their consequences.

According to Luhmann's theory of social system, an instrument should be created by means of which social world could be studies better.

The importance of social system must be examined starting from a smaller community to a bigger community (the world) and differentiating communities from the environment. The systems themselves would define their own borders. The environment of a certain system won't be a distinct system – some borders stretches out to the horizon – this is why differentiation cannot be described, they cannot be dominated or possessed.

Modern examination of community shows that this functional differentiation is built on several functional social systems. This means that the important parts of a community system will become specific and functional only by themselves. The new orientation shows that these parts of the environmental system cannot compete with each other. Politics cannot replace economics, economics cannot replace law…Other multifunctional institutions shall be created by means of the removed moral standards and in their place we shall find other operational systems specific to each system which makes possible the differentiation from the modern community. Therefore modern community is nothing but that differentiation of functional systems.

In order to assess the extent to which an ecological change in the field could be replaced, it is necessary to make an analysis of various modern environmental systems. e.g., science along economics, politics, law, religion, education.

Science will reveal, show new relations, will be able to differentiate and provide with a political recombination and it shall be, at the same time, accessible for other functional systems.

In science, by means of communicational environment, communication shall become "the truth"! This environment could distinguish between truth and false. The analysis and surveillance of other systems will be absolutely necessary for science. At first, research could not state the extent to which science would operate in other systems, this lack of knowledge will be greater as that respective system of knowledge would be differentiated.

For man, first of all, a greater differentiation means a bigger space which cannot be as defined in absolute terms and it brings about a certain difficulty concerning the possibility to recombine the systems. Therefore we come across a paradox – the more the truth is differentiated the greater the uncertainty.

This is the reason why science must observe each functional system. Therefore science defines the functioning of these differentiated systems for other scientific systems (of knowledge)

Taking into consideration the criterion of moral standards! the following question arises: which is the extent to which we can be held responsible towards nature and which will be the position of the individual?

But here it won't refer to each particular individual, but to the whole social system.

Which is the extent to which the individual will be responsible for the whole social system.

We shall focus on community. Modern analysis of community shows that the functioning of various parts of the system work autonomously, they cannot be interchanged as they are unique in the whole world.

He won't recognize a certain authority or a certain position to be responsible as "super representation" won't be possible here. Each shall have a code with its own way of functioning. A paradox arises: only science can observe the consequences of these differentiations within the environment.

Only this observation can make possible a change of these structures. No institution or moral standards could "move", change science. External moral standards could not bring about a change, only the observation of each particular system could bring about a change.

As far as the organization and possibilities deriving from practice concerning environmental education is concerned, we shall employ the criterion of the utility of their use as well as the possibilities arising from the environment in relation to ecological theories. Considering modern community, we will come across closed functional systems.

For instance, the economic system through its particular item "money" will have a binary code of communication: payment or non-payment as far as the improvement or worsening of reality is concerned! In relation to the fact that prices will be established accordingly, the decision will fall on one pole or anther.

In order to establish the correct price, we will need informational data from various systems with which we should operate. This differentiation will bring about a public one. Only through this technique the system could differentiate itself from its own environment. This exchange with the environment could be found only at the level of how the question is put.

Each functional system will communicate according to its functioning way, its own environment and code, according to a certain program through this exchange with own environment.

In Luhmann's opinion, functional methodology will be important in teaching practice. It won't refer strictly to a simple mechanism between A and B. Certain points will be provided as possibilities, other are presented as unlikely or difficult, other are totally excluded.

Therefore this functional methodology will determine the presentation of some alternatives for the settlement of this issue. Only a comparison will indicate a purpose of these possibilities.

The possibilities which won't be taken into consideration won't be used, but they will still remain as possibilities to be used in a future update. In this respect, what is negative won't be automatically removed, but "put aside" and could be taken into consideration in order to solve other problems.

This theory as solution will become more complex for environment because of the differences through which the individual will have to find a solution for an ever increasing number of "undesired" problems.

Educational system is an automated part of community functional system, in order to help people change to such an extent as to give them the chance to pass easily from one system to another. In this respect, there won't be a certain communicational system in the field. As far as the educational system is concerned there are two alternatives: either to duplicate the various social systems, either to create special environments in this respect.

According to Luhmann, it is impossible for the two of them to exist at the same tine and the existence of the two of them would be meaningless.

As far as the possibility to build a "career" in the educational system is concerned, this will be possible only by means of selection. This is why we have this double coding" we could be good or bad, praised or criticized, transferred or not and eventually, kept or dismissed."

As in the case of career, the individual development of each particular man will be presented here, a combination between what is own and foreign.

For instance, in school teaching will be understood and perceived in a different way by each individual pupil and therefore it shall be processed, ordered, used in a different way… From teachers' perspective, these criteria will be examined in a completely different manner. This evolution, coding, will fascinate the teachers as well as those who study and it brings about a lack of operational functioning of an institutionalized educational system.

As far as the change of man is concerned, which is required in the educational system, we shall take into account the contents of study programs. The contents of programs but also settlement criteria is various institutional systems (e.g., schools, universities) will be remarkable.

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