The systemic instructional design of in- school and out-school teaching parameters for Environmental Education via the interdisciplinary approach of Social Marketing Planning and Instructional design[1]

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Abstract

By pursuing not only the use of the teaching process as a process with strategic importance for the interaction between the "micro" and "macro" school environment but also the preparation of students as citizens of tomorrow, a new Instructional Model is emerged through an interdisciplinary approach of "Instructional Design" and "Social Marketing Planning" that is called Systemic Instructional Design. This research examines a student- socio systemic approach to the teaching process as the model of Systemic Instructional Design is implemented in the subject area of Environmental Education. It is based on the findings, which are given by the teacher who got involved in the present research and was responsible for designing 14 lessons of Environmental Education for the 2nd grade of a primary school. The case study was used as the most convenient research method in which her instructional designs were written down and collected. In conclusion, the model of Systemic Instructional Design is an alternative instructional approach that shows the way teachers are able to combine the exploitation of in-school environment strengths and weaknesses and profit from out- school environment opportunities and threats. The model of Systemic Instructional Design identifies a post-modern way of systemic incitement, transformation and upgrading for the in- school and out- school parameters while the focus is on the functional interaction between them in order to fulfill the school's social mission of citizenship. A connection of everyday life with that of school reality is achieved and society emerges as one of the most important generating elements of education.

Introduction

According to Flogaiti (1998: 170-171), the use of the environment, as a term, has changed significantly since the concept of ecological, cultural and social problem has been added. Thus, a new perspective emerged, according to which the environment is redeemed, suffers, sounds the alarm, threatens and it is being threatened, it is destroyed, it is balanced, it is unbalanced, it has functions and dysfunctions. It needs protection, preservation, respect and confrontation (Flogaiti, 1998: 170-171). In other times, aggressive decisions have been made regarding situations and phenomena that are "environmental" or not "environmental", such as environmental concerns, environmental policy, the environmental movement, environmental problems and environmental education, given the transfer of all semantic uncertainties and ambiguities embedded in the concept of the *environment* (Flogaiti, 1998: 170-171).

 In terms of environmental problems, as Tsamboukou-Skanavi (2004) has mentioned, they appear to be by nature transboundary, diachronic, cumulative and interrelated, which breaks down the fragmented approach as a way of investigating them. There is a systemic and global reality that rejects the non-global and entrenched management of the environment because it does not allow the approximation of its interdisciplinary nature and its problems, so it does not support the interrelationship of phenomena and ecosocial processes between them, although it has been established that the separation of man and nature leads to the polarization of natural and man-made environment which seems to be the main cause of environmental problems (Tsaboukou- Skanavi, 2004). The need to address the problems and have a rational management of the environment requires another structure of science and thought, based on interdisciplinary or, more correctly, transdisciplinary bases, in order to reconstitute the fragmented knowledge and the fragmented environment into a single global perception (Tsamboukou - Scana, 2004).

Environmental Education as a promoter of the systemic approach to education

It is obvious that Environmental Education, by definition, is based on the concept of environment (Flogaitis, 1998: 172-174). From its early texts, it proposes the concept of the "overall environment", while encouraging the teachers who work

in it to seek a "holistic starting point" and to design their teaching intervention appropriately (Schiza, 2005: 483).

According to the Interdisciplinary Framework of Study Programs and the Curriculum, it is noted that *the overall aim of Environmental Study is to acquire knowledge and develop skills, values and attitudes that allow the student to observe, describe, interpret and to some extent to provide for the functioning, correlations and interactions of the natural and anthropogenic environment in which human activity takes place in space and time, in a way that leads to awareness of the benefits and the need for sustainable development of the planet. This process aims at creating a global perception of life, which is mainly the development of cognitive interconnections and interactions between different subjects, in which the focus is on treating the student as a researcher* (DEPPS, 2007: 1).

It is therefore imperative to reproduce relevant fundamental knowledge, radical change in social perceptions, attitudes and ways of thinking that contribute to the creation of the environmental crisis and to find solutions that will help to create sustainable living conditions in a constructive and creative way (Scott, 2002). Georgopoulos & Tsaliki (1998), in fact, say that it would help to change the way of assessing environmental problems if it becomes the transition of the human-centered treatment of the world towards a biocentric perspective was achieved. Besides, the conceptual approach of the environment in this subject area is systemic, global and interdisciplinary, as supported in every definition so far (Flogaiti, 1998: 172-174). From this point of view, the promotion of an unwritten and disorganized teaching approach that lacks the exploration of the social, economic, political and ethical factors impacting environmental issues is not praised by the field of Environmental Education. Instead, what is required is a structured teaching approach where the teacher has to become a better observer than usual, and to identify what is implicated in the content of the lesson each time without having a hierarchical relationship between the indirect and direct political, social, economic (and not only) parameters. Besides, the complexity of the environment and its interdependence on the system of society and the economy make it imperative to consider environmental issues as natural, social and political phenomena (Scott, 2002). It is, therefore, called to define the best "synergistic way" that could blend political, social, and economic (and not only) factors for the benefit of the environment. This, in turn, will allow students to adopt a humble attitude towards the environment, since they will be given the opportunity to realize the need for this unity with the planet and not their dominance over it (Georgopoulos and Tsalikis, 1998) . This will ensure the upgrading of the involved factors, including the teacher, through their best interaction, as a "systemic" reflection will arise on a variety of information capable of leading to better decisions (Moschopoulou, 2015: 68). This is adopted in the case of the Student-Socio-Systemic Category of Teaching Designs (S.S.S.C), which

emerged from the interdisciplinary view of Social Marketing's Planning and Instructional Design of Teaching process.

The Student- Socio- Systemic Category of Instructional Design

The concept of "Instructional Design of Teaching process" through social marketing, as an alternative approach, leads to the discovery of new possibilities of expanding its pedagogical and functional value. It contributes to the composition of a new category of "Instructional Design" with an emphasis on the "student-socio-systemic" view of teaching. It is the Student-Socio-Systemic category of Instructional Design (S.S.S.C).

As S.S.S.C. is defined "the systematic process of systemic incitement, transformation and upgrading of the individual parameters of the teaching process, focusing on the functional interaction between them in the design, implementation and evaluation of teaching process by the teacher". This is a functional definition in the attempt to conceptually clarify the resulting "Model of Didactic Designs". It seeks to exploit the "systemicity" of the Social Marketing's Planning combined with the limited degree of complexity of "Instructional Design of Teaching Process". This includes the Model of Systemic Instructional Design (M.S.I.D.).

The Model of Systemic Instructional Design

The M.S.I.D. is structured into six stages, which interact with each other, in a "systemic way". These stages are: **"Background"**, **"Analysis of Existing Situation"**, **"Design"**, **"Development"**, **"Application"** and **"Evaluation"**.

The **"Stage of Background"** is an abstraction approach of the teaching process due to the fact that it focuses on defining the purpose.

The **"Analysis of existing situation"** follows the sequence. It attempts a critical reflection and self- reflection on microenvironmental (e.g., School Textbook, Curriculum in combination with Class Timetable and Teacher's Book, classroom learning environment, Teacher and Students) as well as on macroenvironmental (e.g., Socio-Cultural environment, the Politico-Legal environment, the Economic environment, the Technological environment, the Ecosystem and Family) parameters involved in the teaching process. The abilities of «Swot Analysis» contribute to their assessment.

SWOT Analysis is a strategic planning tool used to approximate the internal and external environment of a structure (Kotler & Lee, 2008). Beginning with the Microenvironment, the collected data are evaluated in order to define the

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characteristics that constitute the strengths or the weaknesses concerning the pursuit of specific student - social- systemic goals. Weaknesses have to be transformed and improved through the use of Strengths. The Macroenvironment is defined as the sum of exogenous "Opportunities" and "Threats". "Opportunities" and "Threats" are located outside the classroom and they are related to the teaching objectives in an encouraging or discouraging way. So the student- social- systemic approach of Systemic Teaching Design is defined as "the use of strengths to improve weaknesses and the benefit from opportunities to address threats."

The stage of "Design" is the process in which the way of organizing teaching process (e.g., goals and targets, teaching methodology, teaching techniques, teaching activities, the place for teaching, the distribution of teaching time, the necessary visual aids, the assessment of possible psychological, spiritual and time costs that the conduct of planning teaching process also includes and the ways of students will be assessed in order to realize the degree of achieving specific teaching objectives) is finalized.

The next stage is **the stage of "Development"** that has to do with the effort of producing appropriate visual materials for the application of Systemic Instructional Design content.

The "Application" is another stage of Systemic Instructional Design. It is nothing other than the application of those decisions which have already been taken in the "Design" stage.

The "Evaluation", then, is the last stage of the describing teaching model. It undertakes to define the degree of achieving the predefined learning objectives.

Research Methodology

Research Purpose

The aim of the research is to describe and explore the functionality of the Systemic Instructional Design model. In particular, we attempt to record and assess the impact of the model on organizing, conducting and evaluating teaching. In any case, the focus is on the cases under consideration and not the generalization of the data.

Research Methodology

A case study has been selected for this research. "Case Study" is a specific research framework designed to outline a general situation (Nisbet & Watt, 1984, in Cohen, Manion & Morrison, 2008). It is an empirical study that deeply explores, according to Yin (2009, 2012), a contemporary phenomenon framed

by real conditions completely inherent, sometimes with the same phenomenon and therefore inconspicuous.

Sources of research data

The teaching processes that teachers have designed according to the Systemic Instructional Design model stand as the investigated cases of this research.

Data Collection Process

In an effort to investigate the functionality of the Systemic Instructional Design model, we collected documents which are completed by 14 teaching processes of 2nd grade Environmental Studies.

Tools of Data Collection

As a data collection tool for this investigation we used the evaluation form that the teacher has to complete. This is supplemented by the participant whenever he/she has completed and implemented his/her planning.

Research questions

The aim of the research is to answer the following research questions in an attempt to investigate the impact of the particular model on the teacher's structured teaching options.

a. What is the stimulus that leads to the differentiation of the teacher's thinking in the teaching of a particular unit of a lesson?
b. What was the strongest change the teacher made in designing the teaching of a particular unit?
c. How does it assess this change?

Research data

The research data comes from the processing of the answers given by the teachers, following authentic teaching processes, carried out under realistic conditions. In particular, teachers' answers highlight the combination of discovering and constructivist theory. The choice of the student-centered teaching model is established, after the application of the presented model, attempting to take student interests into account. Caring for the emotional, mental and psychomotor development of students emerges as one of the basic choices of participating teachers. The model of Systemic Instructional Design

causes differentiation in teachers' way of thinking due to the fact that expresses interest in the student all-round development and it cultivates the teacher's will for self-criticism and self-improvement. It enhances teacher's preparedness and the perception that areas outside the class can contribute decisively to achieving student- social- systemic objectives. It reveals the systematic exploitation of the student cooperation method in small groups, the choice of the playful form of instruction, the implementation of experiential teaching practices and the use of narrative method ensuring active students' listening. It redefines the relationship between teacher and educational environment, because the use of Systemic Instructional Design determines the development of active disposition from the teachers' and students' side on the textbook's content. The enrichment of teaching process is presented through visual materials. It reduces the use of the blackboard from the teacher and it emphasizes the need for adequate preparation in terms of the estimated students' interest in the given teaching subject. Finally, it marks the increase of flexible handling of teaching time and the interest to link the content of teaching process with the school environment.

Conclusions

In conclusion, the student- social- systemic approach promotes the triptych of alternative, functionality and flexibility in the design of teaching process. The Macroenvironment expands the capabilities of the teaching content, its influence and intervention on the student. The model of Systemic Instructional Design enables the teachers to face existing teaching factors as data sourcing. Each parameter carries an important teaching and institutionalized role with the ability to be integrated in a flexible way including a suitable role for planning, implementing and evaluating teaching process. The educational environment brings the ability to be alternatively adaptive to planning by gaining the position of co-assistant for achieving student- social- systemic goals. The design of the teaching process depends on the teacher's choices without the teacher being the exception to investigating the teaching parameters during the "Analysis of existing situation". The changes in the micro-environment and macro-environment are accepted and a basic requirement for teaching content development. The teacher fulfills his/her role adequately, as long as he/ she learns from the student and the other exogenous and endogenous teaching parameters. The teacher can be characterized as a link of co-evolution of the teaching factors. The student is defined as a co-promoter, a co-transformer and a co-producer of teaching process.

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