CURRICULUM ELABORATED IN THE SCHOOL – THE POSSIBILITY OF ADAPTATION OF EDUCATION TO THE LOCAL CONTEXT

CURRICULUM-UL ELABORAT ÎN ŞCOALĂ - POSIBILITATE DE ADAPTARE A OFERTEI EDUCAȚIONALE LA CONTEXTUL LOCAL

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Abstract. *The Curriculum elaborated in the school is a part of the curriculum school boards decision and involve different types of optional courses. Starting from high school profile (Natural resources and environmental protection) and considering the importance of water and its current problems we proposed a draft curriculum for an optional course titled „Water in nature." The optional course aims to study various aspects referring to water: properties, classifications, importance, sources of pollution, types of pollutants, ecological consequences of water pollution, water protection.*
Key words: curriculum elaborated in the school, water resources.

Rezumat. *Curriculum-ul elaborat în şcoală este o parte a curriculum-ului la decizia şcolii şi cuprinde diferite cursuri opționale. Pornind de la profilul liceului (Resurse naturale şi protecția mediului) şi având în vedere importanța apei şi problematica actuala a acesteia am propus un proiect de programa pentru un curs opțional intitulat „Apa în natură". Opționalul îşi propune să studieze diferite aspecte privind apa: proprietăți, clasificare, importanță, surse de poluare, tipuri de poluanți, consecințe ecologice ale poluării apei, protecția apei.*
Cuvinte cheie: curriculum elaborat în şcoală, resurse de apă.

INTRODUCTION

The importance of the community development is incontestable, and people represent the driving force of evolution. In this context, the challenge falls on the growing generation, due to the high degree of receptivity and flexibility, open-mindedness, generation that rejects the conservatism and adopts a constructive position. It is important that the young become aware of the affiliation to community, the necessity to be involved for the common good. According to Weggelaar H. (2007), pupils must be prepared in order to deal with challenges generated by new situations, and schools are to offer them support in this sense. One of the possibilities that school has in training its pupils is to offer an adequate curriculum, adapted in order to satisfy the requirements commanded by the social change, by the multiplication and diversity of information.

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The curriculum elaborated in the school is a part of the curriculum at school decision (CSD) and comprises different optional courses. In order to realise the offer of CSD, schools must take into account a series of references and criteria: the context in which school develops its activity, pupils' needs and interests, community's needs, requirements on the labor market, school's human and material resources and the possibilities to attract other human and material resources (Iliescu et al., 2003; Bennet, 2007).

The most outspread substance on the Terra is water: of the total surface of the Earth, water represents 70.8 % (Pişotă et al., 2010). Water is the sole substance that can occur in nature, depending on temperature and pressure, in all the three aggregation states: liquid (shape that covers 2/3 of the surface of the earth), solid and gaseous. After air, water is the most mobile substance. In nature, it is in a continuous state of movement, concretized through different well-determined circuits. Water is an essential constituent of all the live organisms. Water has favored the occurrence and development of life on our planet and has contributed to the development of the human society; it represents a fundamental natural resource, every field of economy depending on it (Măruță and Chiriac, 1981; Gavrilescu, 2008). According to Mălăcea I., (1969), knowing water pollutants and their effects, the self-purification phenomenon, the role of live organisms in the self-purification contributes to conceiving some techniques of cleaning waters, to the elaboration of the legislation of protection of the aquatic environment.

Multiple rivers, lakes and slops were drained in order to make place for the built areas. A reduced number of rivers and streams that go through towns maintain waters clean downstream; sometimes, due to the high degree of pollution, it presents a risk for human health and affects the aquatic ecosystems. This is the case of the Ganges for several towns in India and of other streams and rivers of Terra (www.sdimedia.com; Gâştescu, 1990).

Based on the above-mentioned data and taking into account the profile of the high school (Natural resources and environmental protection) we have proposed a project of syllabus for an optional course entitled "*Water in the nature*".

MATERIAL AND METHOD

For the elaboration of the syllabus there were taken into account several references and criteria provided in the methodology for the application of the CSD.

The project of the syllabus of the optional discipline "*Water in the nature*" for the 10^{th} grade includes: the argument; specific competences and thematic contents; values and skills; methodological suggestions.

The optional discipline has as main object the study of water and comprises: general data regarding water resources, general properties of water, importance of water, pollution of water and its protection.

RESULTS AND DISCUSSIONS

Argument. The syllabus project - „*Water in the nature*" – has been elaborated by taking into account various aspects: pupils' interest manifested through numerous questions during the class hours; local resources of training (the material base of the

school group; the station of water treatment of Buceccea and Cătămărăşti, the treatment plant of the used water of Răchiți) and the school syllabus for the superior cycle of the high school (where pupils shall study several disciplines referring to the quality of the natural, potable, used and underground water).

In Botosani county there are economic units (with food, commercial, construction profiles etc.) which in 2011 have overflowed the used waters not enough purified in the water courses (www.apeprut.ro). Furthermore, in Botosani county are mentioned 77 localities vulnerable at the pollution with nitrates of agricultural activities (Ordinul 1552 / 743 din 2008 emis de Ministerul Mediului şi Dezvoltării Durabile şi Ministerul Agiculturii şi Dezvoltării Rurale pentru aprobarea listei localităților pe județe unde există surse de nitrați din activități agricole). Several pupils of "Petru Rares" Vocation School of Botosani come from the rural environment, from localities where: there is/there is not a network for the supply with potable water, there is no canalization network; there are families for whom agriculture and animals breeding are the main preoccupations; there is practiced the non-controlled and punctual storage of wastes on the margins of water courses or lakes. The proposed course might become a factor of positive influence and namely to contribute to the increase of the degree of responsibility regarding the protection of waters (through pupils, indirectly on their families).

The course "*Water in the nature*" is studied one hour a week, during a school year and addresses the 10^{th} grade pupils, the inferior cycle of the high school, technological field, training field on the basis: Environmental protection; it is considered a new discipline. The proposed optional course completes the pupils' knowledge in ecology, chemistry and proposes the introduction of some basic concepts referring to the water resources, their pollution, and protection. The list of skills units, which must be built up during the proposed curriculum, has the following structure: key skills units (solving problems); units of general competence (environmental protection, especially water protection). In table 1 are rendered the specific skills and the corresponding thematic contents.

Table 1

Table for the correlation of skills with contents

Specific skills	Thematic competences
C.S.1 Acquiring some knowledge regarding the water resources and their characteristics.	General data regarding the water resources: characteristic definitions, classification; water resources of the globe; water resources of Romania; water circuit in nature.
C.S.2 Differentiation on given criteria of general properties of water.	General properties: physical and organoleptic; chemical; biological and bacteriological.
C.S.3 Establishing the importance of water as environmental factor and for social – economical activities.	Importance of water: - importance as environmental factor (role in the biological, geophysical, and geochemical processes; in the modeling of the relief; influence on the climate); - importance for the social – economical activities (source of potable water, source of food and raw

Specific skills	Thematic competences
	materials, usages in the industry, agriculture and zooculture, roadway, source of energy, recreational activities, tourism and health protection).
C.S. 4 The formation of habits of documentation and communication regarding the pollution of water, through the elaboration and presentation of papers during the project-oriented activities.	Water pollution: - (natural and anthropic) sources of water pollution at global and local levels; - types of pollutants and their effects (classification of pollutants; physical, chemical, biological pollutants and their ecological effects)
C.S.5 Acquaintance with the main modalities of water protection C.S.6 Being aware of the importance of the measures for the protection of waters and for the aquatic ecosystems, human health and planet's health.	Water protection: - water self-purification; - legislative measures; - technological measures (technologies for the purification of used waters, technologies for making water potable); - water protection in Romania.

List of contents:

1. General data regarding the water resources:
   - definitions, characteristics, classification;
   - water resources of the globe;
   - water resources of Romania;
   - water circuit in the nature.
2. General properties of water:
   - physical and organoleptic properties;
   - chemical properties;
   - biological and bacteriological properties.
3. Importance of water:
   - importance of water as environmental factor (role in the biological, geophysical and geochemical processes; in the modeling of the relief, has influence on the climate)
   - importance of water for the social – economical activities (source of potable water, source of food and raw materials, usages in the industry, agriculture and zooculture, roadway, recreation activities, tourism and health protection).
4. Water pollution:
   - natural and anthropic sources of water pollution at global and local levels;
   - types of pollutants and their effects (classification of pollutants; physical, chemical, biological pollutants and their ecological effects).
5. Water protection :
   - water self-purification;
   - legislative measures;

- technological measures (technologies for the purification of used waters, technologies for making water potable);

- water protection in Romania.

Values and attitudes. The curriculum of the optional "*Water in the nature*" for the 10th grade aims the shaping of the following values and attitudes: completing the acquired knowledge at the specialty disciplines in the common core curriculum; the motivation for applying the acquired knowledge in the everyday life; stimulation of pupils' interest for knowledge; acquiring a positive attitude towards study, information and permanent documentation; motivation for the protection of environment, especially for the protection of waters.

Methodological suggestions. The didactic methods that can be approached for teaching, learning and achieving the objectives in the syllabus are the following: the heuristic conversation; learning by discovering; observation; experiment; questioning; study case; brainstorming; project; watching some documentary movies with thematic regarding water pollution; visit at the station of water treatment and to the treatment plant of the used water.

We consider that the recommended methodological suggestions fully satisfy the achievement of the general and specific skills, every teacher having the possibility of bringing his / her personal contribution at the type of approach.

Modalities of evaluation. The evaluation represents the final part of the didactic projecting through which the professor measures the efficiency of the entire instructive-educative process. The evaluation can be:

- *continuous, during the module* – through types of continuous evaluation of the learning results. In this case, there can be used different methods of evaluation to confer the forming character of the pupil: classical methods, but especially alternative, such as the systematic observation of the pupil, investigation, project and pupil's portfolio;
- *final* – achieved through a paper with applicative and integrated character, at the end of the teaching-learning process. This type of evaluation informs about the achievement of criteria of realization of knowledge, skills and attitudes.

The self-evaluation is often used, as pupils can express own opinions and can defend and motivate their proposals. The evaluation and self-evaluation tests can be conceived under the form of observation sheets, self-evaluation sheets, evaluation sheets (tests) comprising objective, semi-objective and subjective items.

The advantages of the proposed optional course – "*Water in the nature*" are the following: extends the occupational horizon of pupils and deepen key skills besides the general and specialized technical skills; contributes at the formation of an open personality, adaptable to innovations; facilitates the transition of pupils from school to the active life through the adaptation of the professional training of the pupils at the needs of the labor market at a local level; contributes at a higher receptivity of the school with regard to the needs of the local community; creates opportunities for the formation of relations between school and local labor market.

CONCLUSIONS

1. The theme of the proposed optional course is of actuality; the optional course completes the pupils' knowledge of ecology and chemistry with fundamental concepts referring to water resources and their pollution and protection.

2. The curriculum proposed for the 10^{th} grade can contribute at: pupils' initiation with specific technical languages; formation of professional knowledge established by standards of professional training; development of the scientific spirit of research; enhancement of the creative capacities; creation of opportunities so that pupils acquire additional skills required by the local labor market; formation of motivation for the environmental protection, especially for water protection.

3. The present curriculum allows the teacher the freedom of choosing selective methods and activities for reaching specific competences for the type of approach of the lesson, and for the type of activities.

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10. www.apeprut.ro

11. www.sdimedia.com