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**Annales
Universitatis
Paedagogicae
Cracoviensis**

**Studia ad Didacticam
Biologiae Pertinentia III**

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ISSN 2083-7267

Journal website:

www.bioannales.up.krakow.pl

Wydawca

Wydawnictwo Naukowe UP

30-084 Kraków, ul. Podchorążych 2

tel./fax (12) 662-63-83, tel. (12) 662-67-56

e-mail: wydawnictwo@up.krakow.pl

Zapraszamy na stronę internetową:

<http://www.wydawnictwoup.pl>

druk i oprawa Zespół Poligraficzny UP, zam. 11/14

Introduction

As the risk society develops, so does the antagonism between those afflicted by risks and those who profit from them. The social and economic importance of knowledge grows similarly, and with it the power over the media to structure knowledge (science and research) and disseminate it (mass media). The risk society in this sense is also the science, media and information society. Thus new antagonisms grow up between those who produce risk definitions and those who consume them¹.

Modern Biology Didactics must face new civilizational challenges. They are, among others, information surplus, necessity of life-long learning, solving problems and making decisions concerning natural environment, health, and implementing the rules of sustainable development. The educational strategies applied so far have proved insufficient, hence the numerous attempts to modify the existing classifications, methods labels and assumptions of their practical realization. The previous volumes of the Annales were devoted to the transformation of Biology Didactics as a pedagogical subdiscipline and an educational subject in the academic tradition of university-based Biological Studies (vol. I), and to seeking paradigms for education in biodiversity protection (vol. II). We are currently facing an important task. Within the scope of scientific literacy, i.e. the knowledge indispensable to every member of the information society, we need to reflect upon the knowledge and skills constituting the 'health literacy'. This is due, among others, to the fact that researchers have observed growing social interest – displayed mainly by young people – in the issues of IVF and other applications of scientific achievements in medicine, life threats in the context of various sexual behaviours, contraception, intoxicants and stimulants abuse, food additives and GMO related health safety. There are other issues that must be touched upon, e.g. the health and life threats to infoholics (information addicts) and compulsive internet users (internet addicts). Such disorders often underlie emotional disorders in children and young people (such as aggression and other behaviours that pose a threat to others).

Biology Didactics as a field seeks methods of delivering teaching contents related to health and attempts to identify the scope of the new knowledge which should be included in the curricula at different levels of education. These aims call for close cooperation with specialists in current human biology issues, extended research in human biology teaching, and discussion among the health education practitioners.

¹ U. Beck, 1992, *Risk Society – Towards a New Modernity*, Sage, London, p. 46.

Modern youth's lifestyle in extended reality often stems from the hyper-reality and from the fact that the media constitute the extension of senses of the modern man. The media, not the school, create most of the opinions and attitudes of young people when it comes to the subject of health, sickness and risk, and disease preventive measures. Therefore the problem the modern school faces is that it does not keep pace with the social needs and does not display an interdisciplinary approach towards e.g. environmental and health issues. When speaking of environmental issues, it is worth contemplating how human interference with the natural environment affects human health.

Graduates from different educational levels lack competence when it comes to social mediation conducted by specialists facing a clash of interests in natural environment exploitation, or in negotiations concerning the interests of patients and their families in conflicts resulting from inadequate communication related to health issues and health problem solving.

We must ask, then, what competences are indispensable for the 21st century people to be able to correctly assess risk and to participate in a dialogue with specialists when it comes to taking the most important decisions concerning their health and life? Thus we pose a question about competences (motives, values, involvement), not only about qualifications confirmed by appropriate certificates and diplomas.

We ask this question today, when school is commonly attacked and criticized. From the perspective of the society, curricula are supposed to reinforce the permanent values and accepted models, or to create a significant breach in the existing habits, to change the existing values of cultural patterns, and to trigger a vital turn towards the pupil's individuality. Thus school faces criticism from the conservative point of view, for the lack of unified curriculum requirements, notions canon and reading lists, and from the liberal point of view, for not providing conditions for the pupil's individual development. Meanwhile, we try to come up to the message included in Federico Mayor's *The World Ahead: Our Future in the Making*, which calls upon us to create educational contexts taking into account new knowledge (chiefly biology), in order to conduct research and control the cognitive process. We make the teacher face the necessity of: filtering the multitude of information; increasing or reducing the influence of external stimuli; providing situations for the pupils to mobilize and activate the new knowledge and to test its efficiency and limitations; providing situations in which the new data is more easily accessed and acquired, when the pupils use the new structure of notions and learn to activate their knowledge.

The articles selected for this volume consider many different aspects of the civilizational risks. Authors of particular chapters are renowned specialists in various fields, sometimes quite diverse (pedagogy, biology: mainly physiology, chemistry, human nutrition, or pharmacology), and they are all involved in the topic of risks posed by the environment. In general, the reflections presented by the Authors create an atmosphere of lively debate, which may become a starting point in developing

educational communication strategies, where civilizational risks constitute the main axis of discussion. The publication contains 12 articles in English. The Authors are academics from Poland and Argentina, France, Germany, Switzerland and India. As the review of this volume states, “the choice of the Authors is by no means accidental, as they are indeed experienced specialists in their fields”.

In the beginning of the volume, we commemorate Professor Jerzy Wołek, whose professional path for several years overlapped with the path of development of Polish Biology Didactics.

Katarzyna Potyrała