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Introduction

The rapid increase in science knowledge entails the update of educational programs, data transfer and creation of new knowledge structures needed in everyday life. In this volume of annals we present issues related to human physiology in the context of health, as well as the naturalists' view on the role of definitions in shaping science knowledge.

Education for sustainable development remains a big challenge for teachers. At the same time, it fits into the idea of promoting future competences and all actions related to saving our planet. We still need to promote good practices in this area and cross-sectoral cooperation. Social participation, shaping responsibility, skillful leadership and entrepreneurship are some of the educational challenges that should pay off in the future by changing society's attitudes towards the natural environment. Programs implemented in cooperation with non-governmental organizations contribute to the development of key competences corresponding to the needs of the labor market, economy and society.

Contrary to popular opinion, digital technologies can largely 1) promote peer relationships, 2) facilitate teacher-student communication methods through the development of new communication channels in an atmosphere of trust and openness to change, 3) facilitate the literacy acquisition by these participants' involvement. Education of the future using the latest technologies should take into account the following trends: 1) from cognition to metacognition, 2) from diagnosis to prevention, 3) from individualism to community, 4) from knowledge to attitudes (according to Potyrała, 2017). Preparing teachers to apply new strategies and learning methods is a priority. Pedagogical theory and practice must go hand in hand to strengthen the development of a knowledge-based society.

In the chapter on the relationship between culture, art and education in the contexts of alternative education, we offer readers two articles that relate to: 1) soroban – an old Japanese abacus for performing mathematical operations. It is a subject combining old Japanese culture with modern education. It is an effective tool to popularize not only mathematical knowledge and it develops mathematical and other skills, strengthens and builds nerve connections between the hemispheres, develops dexterity and hand-eye coordination, teaches self-discipline and concentration, motivates to learn, and is also a therapeutic tool; 2) a burlesque science fiction essay as a tool to convey artistic thought and direct the viewer towards asking questions. Cinema, as the author Katarzyna Lipińska writes, as an art using a variety of artistic means at its disposal, can describe phenomena invisible to the human

eye. An example of this property of capturing the world of senses is the art of Bruno Dumont. Bruno Dumont's television essay also presents the gendarmes' attitude towards refugees as a fear of what is unknown to us, creates space for expressing our own thoughts and criticizes our attitude towards other people. We suggest adding to the teacher's competence profile skills related to creating a learning environment in informal situations.

Selected issues from the methodology of pedagogical research focus on a qualitative research approach, new tools of neurodidactics and ecological approach in pedagogical research. The quality of the data and its proper interpretation are the basis for the reliability of the results and the conclusions based on them.

I hope that this volume will allow readers to see new educational perspectives and inspire them to undertake interdisciplinary educational research.

Katarzyna Potyrała