

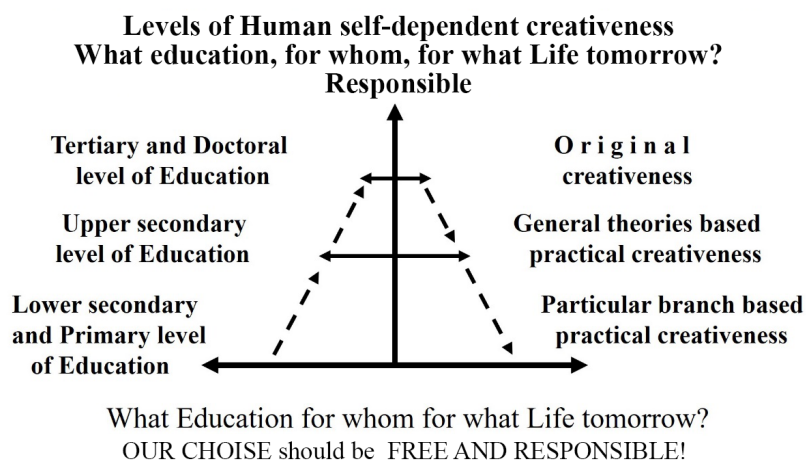
GENERAL REMARKS ON BASIC ACTUALITIES WITHIN OUR LIFE AND EDUCATION DURING FIRST 20 YEARS OF 21ST CENTURY

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Development of Human personal as well as social Life means continuing physical and spiritual (mental) changes all around them and within them. Corresponding changes traditionally reflected by humans as evolution (reformational) or revolution (transformational) processes, that are realizing corresponding quantitative or qualitative steps within the development of people's Life Activities. First 20 years of 21-st Century presented a real start of serious qualitative changes as a process of implementation up to date achievements of modern Science and Technologies. These are transformational changes not only within physical background of our traditional Life, but fast developing of corresponding changes also within our spiritual (or mental) Life (Broks, 2016). The central phenomenon within the mentioned processes above today is the development of overall computerization of physical as well as mental Life Activities of Humans. Global, regional, local explosion of information as an artefact of revolution within Computer Science and Information Technology marks the above mentioned beginning of the 21-st century. So, our life today is becoming more and more complex by means of increasing diversity and speed of corresponding changes. Virus COVID-19 attack has just only accelerated these changes. Global turnover of Biological as well as Computer viruses is part of modern Life today for tomorrow.

Developing changes within our Life mean interconnected changes within our Education. Education as Life experience (knowledge, attitudes and skills) for Life (cognition, consideration, behaviour) is one of the top values to be globally developed today. It seems clear for everybody, but reality demonstrates serious problems. What Education, for what people, and for what Life - such is the basic question for all of us today for tomorrow (Broks, 2014). Particularly, what Natural Science and Technology Education (NSTE) for everybody and what for professional

Figure 1
Hierarchical structure for systemic development of self-dependent creativity within modern systems of Education



fundamental/theoretical and applied/practical further development of Science and Technologies. There are no answers for all concrete situations, but above all it is very important to understand factology (phenomenology) and comprehend causality of the problem. We need to solve this problem for the improvement of Education process to reach a much higher level of self-dependent creativity of our school children and students.

Sorry, but NSTE (STEM, STE, SE etc.) today seems to become not a popular branch of elite Education for tomorrow. We are losing popularity because of the changes within value orientation from more or less self-dependent creative style of living to consumer society values-oriented lifestyle. Gaining money for money and spending it mainly for entertainment has become much more popular than enjoying life within scientific research-based life activities. At the same time, the development of a popular constructivist approach within NSTE today very often demonstrates rather narrow orientation to specific professional details. Professional details today are rapidly changing and therefore we need to pay much more attention to general, principal questions, including the development of corresponding philosophical as well as psychological background ideas and concretization of them within real Life today and especially for tomorrow. This suggestion is not new, but our traditional pedagogical practice is not easy to be changed.

Special attention today for tomorrow should be based on a well-known old truth that development as overall changes has to be sustainable as systemic set of long-time balanced human life activities. It means that it is very important to understand and comprehend the fact that any evolution as well as revolution means anharmonic changes. We observe harmonic changes only as short time changes around a fixed equilibrium state as part within long time anharmonic change of everything. There is no real long-term harmonic development all around us and within us. Using other words, not all changes mean development, real development means only anharmonic changes. This constructive suggestion today should be studied at least at a higher education level. Following a mind map just illustrate this suggestion.

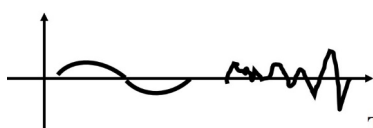
Figure 2

Visualization of any development as an anharmonic change, including also actual for tomorrow sustainable development of our Life and Education

Development of everything means anharmonic changes –
let us develop NSTE for tomorrow by introducing systemic understanding (factology–phenomenology) and comprehension (causality) of complex natural as well as technical phenomena

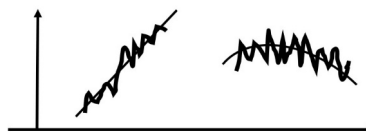
Simple and complex (stochastic)
harmonic changes of everything
NO DEVELOPMENT

State characteristic



Complex (stochastic) linear and nonlinear
anharmonic changes of everything
DEVELOPMENT

State characteristic



Studying a wide spectrum of natural and technical phenomena, we should pay special attention to precise scientific meaning of words, that are used within scientific description of corresponding phenomena as well as within our global communication. Very often there are different words used for the same notion (concept), what makes a lot of misunderstandings. Because of fast computer-based globalization of our communication, many different International English languages have appeared, and it is not clear now what it means “native” or original English. Problem of misunderstanding different scientific terms is top actuality within education of new generation NSTE educators for tomorrow.

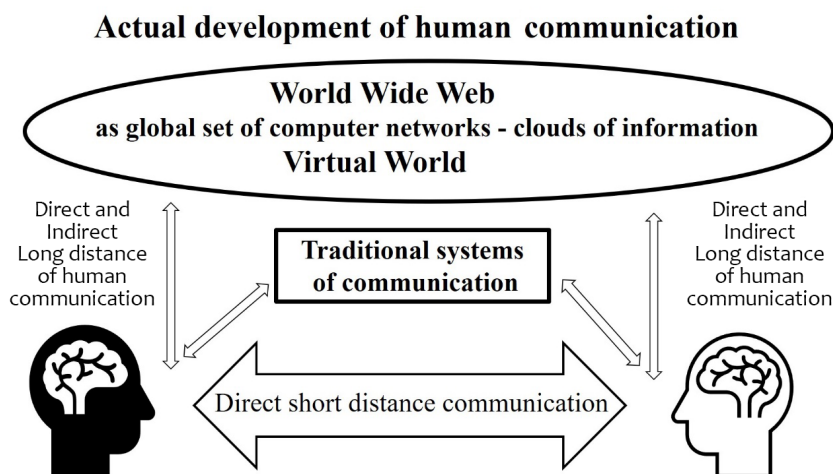
Virus COVID-19 attack has stimulated implementation of modern direct long-distance computer-based communication technologies within rapid development of long-distance education. It also means a serious need for development of corresponding changes within traditional content of education as well as of pedagogical meth-



odologies (strategies). Because of unpredicted fast changes under pressure of virus attack, most schools today are working with lower effectiveness than before. So, modern information turnover technologies are seriously changing our Life and Education, but it is not a very short time process.

Figure 3

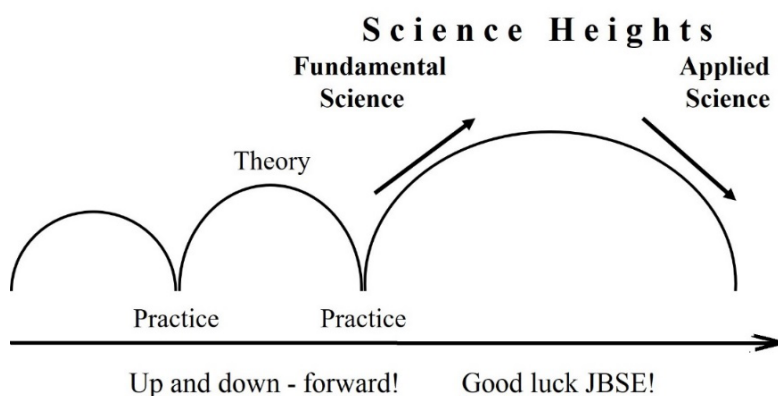
Modern system of integrated direct and indirect (within time) as well as short and long distance (in space) communication for our Life and Education for tomorrow



Finishing this Editorial paper for our Journal of Baltic Science Education (JBSE) Vol.19, 2020, let us hope that current serious changes within our global, regional, local and personal Life and Education will be the next totally positive big step forward. All changes by nature are dialectic - containing white and black parts of the whole. Let us do our best to keep a positive balance between these two parts within our Life and Education development what means possibly total domination of white part (Broks, 2019). Let us continue to develop our Life and Education as "homo sapiens"- mindful humans. Do not support moral crisis what is presenting black part of our Life changes (lie, violence, corruption).

Figure 4

Wishing happy birthday to the JBSE, Vol.1, No. 1, 2002



Finally, let me remember that the reviewed period was very special also for Journal of Baltic Science Education – JBSE. Started 18 years ago (Broks, 2002) our journal now has reached its maturity. Journal has passed this

time successfully, changing from local to global scale journal. Editorial board of journal includes high level professionals from all around the Globe and journal has become popular all around the Globe too. It is very interesting to check again the first edition of JBSE Vol. 1, No. 1, 2002 and to make a conclusion that general guidelines for the development of journal today for tomorrow are the same and further development should follow global changes of our Life and Education. Let us finish with the above presented remarks by repeating original JBSE birthday mind map, that comes from the beginning of the 21-st century and seems to be actual forever!

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Received: September 15, 2020

Accepted: October 05, 2020

Cite as: Broks, A. (2020). General remarks on basic actualities within our life and education during first 20 years of 21-st century. *Journal of Baltic Science Education*, 19(5), 692-695. <https://doi.org/10.33225/jbse/20.19.692>

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