

Education Standards and Standards Education (ESSE) Process in National Education Cycle for Global Public Health Sustainability

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In order to establish and maintain national, regional and international public health towards global sustainability, the education in general and education standards in a national education cycle (NEC) in particular seem vital and fundamental needs. The World Health Organization (WHO) each year issues an outstanding document on the “World Health Statistics” with an annual data compilation for its 194 Member States, the last of which was published in 2017 with a theme on monitoring health for sustainable development goals (SDG) [1]. In fact, in the SDGs framework, a large number of health targets have been assigned in series of SDGs such as hunger, food security, improved nutrition, promote sustainable agriculture; availability and sustainable management of water and sanitation for all; ensure access to affordable, reliable, sustainable and modern energy for all; promote inclusive and sustainable economic growth; full and productive employment and decent work for all; make cities and human settlements inclusive, safe, resilient and sustainable; ensure sustainable consumption and production patterns; take urgent action to combat climate change and its impacts; promote peaceful and inclusive societies for sustainable development; and provide access to justice for all and build effective, accountable and inclusive institutions at all levels. In fact, from the 17 SDGs, the Goal 4 has focused on “ensuring inclusive and quality

education for all and promote lifelong learning” stressing that “obtaining a quality education is the foundation to improving people’s lives and sustainable development”. In addition, the WHO has itemized “wider access to education” and “protection of the environment” in the list of health-related themes.

From the statistical facts and figures issued by the WHO [1], large number of countries still suffer from lacking the basic public health protection for example by having no effective mechanisms for adequate basic education and training towards environmental protection, health care, disease prevention, etc. The health targets set by the WHO are vital to be met with a sufficient quality in order to establish national, regional and international public health towards global sustainability. However, such goals with the high quality required cannot be met by implementation on an ad-hoc basis and fragmented. Meeting such goals without a standardized education and training program if not impossible is extremely difficult and inefficient even if implemented over a very long decades of time.

While education standards exist in most developed countries in one form or another, it is lacking in most developing countries. Even in developed countries, the education level at different stages of the life span is quite different and fragmented which leads to countries at different stages of national sustainable development. Even the university education levels are broad with quite different competencies of graduates from the schooling systems of a country to another. For example even in the European countries, the university education systems have quite different quality levels which required having a more harmonized approach. In this context, the “Bologna Process” with a series of ministerial meetings and agreements was established in order to ensure the comparability in the education standards and quality of higher-education qualifications with participation of 57 parties: 49 higher education systems in 48 countries that are signatories of the European Cultural Convention [2]. The European countries similarly make efforts on vocational training, for example by creating a European Centre for the

Development of Vocational Training (CEDEFOP), and at other stages of education and training human development [3]. However, such efforts do not seem to exist in most of the other regions in the world and in particular at educational and training levels other than university education such as at the levels of nursery, kindergarten, pre-school, primary school, high school, vocational and public training, etc. In fact, many countries even lack the basic health and hygiene culture to prevent many communicable and non-communicable diseases. A broad cultural development on basic health and hygiene in many parts of the world is lacking and is somehow a disaster in particular in many developing countries.

The lack of education and training and education and training standards in many countries in particular in developing countries is believed to be the main cause of a country's lacking behind in terms of economy, health care, adequate social welfares and quality of life [4,5]. The author believes that in order to meet the global sustainability in particular in public health, a "broad audience from cradle to grave" should be considered in order to be educated and trained at different stages of life in particular on development of the basic health and hygiene culture. The author also believes that in order to meet such goals, a quality system on education and training nationally, regionally and internationally should be developed. In this context, the author has recently proposed a hypothesis on "Education Standards and Standards Education (ESSE) Process in National Education Cycle (NEC)" or in short the "ESSE Process in the NEC" [4,5] so that it can be developed, approved, and implemented by

each nation towards national, regional and international goals for moving towards global sustainability. The "broad audience" means the audience at different stages of the "NEC" such as parents for fetus and newborn care, nursery, kindergarten, pre-school, primary school, mid-school, high school, university, vocational schools, general public schools, and return to the parents again.

While the developed countries have promulgated and mostly implemented different laws and regulations on different aspects of the health promotion and care, the efforts seem to be ad-hoc with no continuity at different stages in the "NEC" in developing countries. In fact observations are made that even some relatively advanced countries suffer from the lack of quality public health and medical care systems which lead to public health issues such as overweight, mental disorders, skin diseases, communicable and non-communicable diseases, etc. As regards to the education standards, the efforts are usually ad-hoc and fragmented with no continuity at the higher education level in general and at different stages of the "NEC" in particular.

Figure 1 shows the Logo of the "ESSE Process in the NEC" which includes different stages of the national education cycle. The "ESSE Process in the NEC" was initiated recently by this author at a "Working Group on Quality and Standards" of the Engineering Science Group of the Academy of Sciences of IR Iran to establish the culture and grounds for developing the necessary steps in cooperation with other relevant national



Figure 1: The Logo of the "ESSE Process in the NEC" [4,5].

ministries, organizations, universities, etc. In this regard, the “1st Conference on Education Standards and Standards Education Process in National Education Cycle” was organized at the Academy of Sciences of Iran in which the representatives of the United Nations Educational, Scientific and Cultural Organization (UNESCO), ministries, educational institutions, universities, and other relevant institutions conducting different levels of education and training in the country participated [4]. The outcome of the conference amongst others was the need to establish the “ESSE Process in the NEC” in the country with a vision, strategy, program and effective national implementation towards national, regional and international development for global sustainability.

In fact, the word “standards” in many countries in particular in developing countries seem to be a general term usually applied to standardizing equipment and instrumentation. The “education standards” in particular the ‘ESSE Process in the NEC’ even to the eyes of the education and training organizations and even scientific communities in many countries seem strange terms not being recognized as a need to better educate and train their students at different stages of the “NEC” in particular the public at large as well as to better manage expanding education institutions to advance quality of life. Even the international organizations such as the International Standards Organization (ISO) while fulfilling well the international standards required related to its mission, in the areas of education and training standards, extensive efforts are still required to be fulfilled. It seems that the national standard organizations and societies in many developing countries have not made any efforts on education standards and some have even no clue on “education standards and standards education”.

The “ESSE Process in the NEC” fits well to different stages of education and training in the life span in which the public at large regardless of the age and gender, the workers in different applications, and patients as well as the environment can benefit from. In fact, the author having developed the hypothesis and organized the conference as well as from his “lessons learned and experiences gained” lifetime in the education and training systems in many developed and developing countries and in particular through implementing professional standardized post-graduate and task-specific training at the International Atomic Energy Agency (IAEA) has come to conclusions that the “ESSE process in the NEC” can be developed and applied at national, regional and international levels thematically but with a harmonized inter-organizational, inter-regional and in particular international approach for building global education standard infrastructures [4,5]. By an international approach, the author also means that the international organizations such as the ISO, for example, develop a document on “International Basic Education Standards” (IBES) and its relevant “ESSE” packages to include the basic requirements and fundamentals for preparation and implementation of the standards needed at all levels in the “ESSE Process in the NEC” system in a country. Accordingly, the UNESCO might develop a standard document

on the “International Basic Education Standards Culture” (IBESC), or the WHO might develop a standard document on “International Standardized Health Care Education System” (USHCES) to develop the “ESSE Process in the NEC” in the areas of public health and hygiene, etc. in cooperation with other international organizations. Such “International Basic Education Standards” can serve as templates or blue prints to be used by different countries to develop their “National Basic Education Standards” documents and relevant standardized packages in order to fulfill the national needs towards meeting the national, regional and international needs and in turn global sustainability.

A “success story” on similar kind of international standard development comes from the outstanding development made at the IAEA on protection of workers, patients, public and the environment against the biological effects of ionizing radiation. The “success story” is on the “International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources” which was successfully established and implemented in most of the IAEA Member States [6]. The efforts were in fact very intensive by also developing a “Standardized Syllabus on Postgraduate Educational Course in Radiation Protection and Safety of Radiation Sources” used as a template based on which many Member States developed education programs and manpower in radiation protection through regional training centers in 5 IAEA languages; Arabic, English, French, Russian, and Spanish [7]. In parallel major efforts have also been made on standardized thematic or task-specific training packages on different aspects of radiation protection of workers, patients, public and environment as well as on safety and security of radiation sources. These task-specific training packages were successfully served as templates and blue prints to develop extensive man power for establishing national radiation protection infrastructures as well as awareness makings at high official levels of the governments. The above stated standards have been adopted and implemented in national and in particular in regional radiation protection model projects through which more than 100 Member States were assisted to develop or strengthen infrastructures and manpower, some of which started from scratch. In fact this author had the honor and was in charge in developing and/or implementing the mentioned standards as a regional manager and/or an International IAEA Expert. Therefore, the “lessons learned and experiences gained” by the efforts made above by the IAEA can be highly instrumental in establishing “ESSE Process in the NEC” through projects and programs at national, regional, and international levels in particular on public health and hygiene with the efforts of each individual country with possible support of international organizations. In line with such public health issues, the author has also recently introduced a “Universal Radiation Protection System Hypothesis” with a new philosophy, concepts and procedures to standardize radiation protection worldwide to protect workers, patients, public and the environment [8], for epidemiology

of radiation workers [9-11] and dose fractionation effects in radiation protection in order to set standardized risk/dose limits [12], towards global standardization and in particular global sustainability. According to the “URPS Hypothesis, for example any radiation worker in the world will have the same risk based on standardized risk/dose limits.

Having introduced the “ESSE Process in the NEC”, the author believes this “hypothesis” can be considered to be implemented with no fractionation of efforts through an integrated approach nationally, regionally and internationally towards global sustainability in particular in public health. In this context, the author invites feedback on this “hypothesis” by the distinguished editorial board members who are all academicians in advanced universities and in education and research institutions worldwide as well as other academicians, researchers and educational professionals, education and training managers, etc. in the world so that global standardized education and training issues in general and in public health and hygiene in particular can be tackled with an integrated national, regional and international approaches. In fact, the journal might envisage to promote one “Special Issue on ESSE Process in the NEC” so that the distinguished editorial board members and others are invited to contribute their “lessons learned and experiences gained” in life at different stages of education and training at national, regional and international goals towards global sustainability.

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