

UDC378.14

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## OPEN EDUCATIONAL RESOURCES DEVELOPMENT: THREATS AND OPPORTUNITIES

**Abstract.** Systems of education are being simultaneously changed by both internal and external factors, with their modeling being far back than real-time challenges. Such a contradiction could be smoothed by making use of e-Environment to balance old-fashioned techniques and methods against crucial standards for knowledge and skills to be obtained and transformed into competences. Considering the blurred boundaries between traditional education and e-learning, it is essential that both threats and opportunities should be analyzed to find the most efficient ways for high educational performance with quality education possible. Thus, a strategic planning for refining the most efficient and productive models of teaching, learning, tutoring, coaching and mentoring is a vital part of future success. Quality education is ensured under e-Environment with freedom of choice and an egalitarian access to unlimited diversified open resources, for it facilitates personal and personality development when making a choice is the only factor that matters. The paper studies the advantages and disadvantages, threats and opportunities of OER development. The study analyses quality education ensured by open educational resources development, since OER are connected with an egalitarian access to unlimited information, which can benefit to the process of personality formation through realization of abilities, capabilities, wants and needs and sharing diversified experience to make this educational personality transformation the most efficient. Open educational resources provide with the ability to interpret the diversity which is literally the creation of personal realization of the variability of the modern world.

**Keywords:** “open educational resources”, “quality education”, “sustainable development”

**Introduction.** The urgent global call for sustainable development (Sustainable Development Goal Target 17.9 of the 2030 Agenda for Sustainable Development) is bringing into the objectives connected with capacity-building, whereas it is crucial for the developing countries or those that are under transition periods to be involved into the enhancement of support for their national plans “to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation (sustainabledevelopment.un.org)”. Accomplishing the goals mentioned above should be facilitated by the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 (sustainabledevelopment.un.org)”. As the world is increasingly becoming more complex, interconnected and interdependent, the access to open resources is supposed to lead to a synergic effect which, in its turn, could precondition the creation of technological “lifts” for less developed countries to catch up with the global tendencies.

Not an issue nowadays might require the lack of literacy in the context of “not only traditionally literate, but adept in a new, systemic literacy”, which requires an understanding of different kinds of feedback systems, exponential processes, the unintended consequences inherent in evolving social systems, et cetera (The Carnegie Foundation for the Advancement of Teaching, 2008). Moreover, these are the changing patterns of lifestyle that have been shaping some new forms and methods of education to meet the requirements of the society that has already adapted and learnt how to exist in the hybrid reality by mixing its real and virtual parts whenever it is more efficient.

Education for all has always been an integral part of the sustainable development agenda. The World Summit on Sustainable Development (WSSD) in 2002 adopted the Johannesburg Plan of Implementation (JPOI) which in its Section X, reaffirmed both the Millennium Development Goal 2 in achieving universal primary education by 2015 and the goal of the Dakar Framework for Action on Education for All to eliminate gender disparity in primary and secondary education by 2005 and at all levels of education by 2015. The JPOI addressed the need to integrate sustainable development into formal education at all levels, as well as through informal and non-formal education opportunities. The United Nations Decade of Education for Sustainable Development (2005-2014) (DESD) aimed at integrating the principles and practices of sustainable development into all aspects of education and learning, to encourage changes in knowledge, values and attitudes with the vision of enabling a more sustainable and just society for all ([sustainabledevelopment.un.org](http://sustainabledevelopment.un.org)).

Systems of education are being simultaneously changed by both internal and external factors, with their modeling being far back than the real-time challenges. Such a contradiction could be smoothed by making use of e-Environment to balance old-fashioned techniques and methods against the crucial standards for knowledge and skills to be obtained and transformed into competences. Considering the blurred boundaries between traditional education and e-learning, it is essential that both threats and opportunities should be analyzed to find the most efficient ways for high educational performance with quality education possible. In case HEI management and administration clearly comprehend that both formal and informal learning belong to education of individuals for them to become the personalities they would like to be in order to enjoy high standards of living, academic resistance to new possibilities will be turned into powerful support for innovations and more adequate transformations.

Nevertheless, it is not disputable now that there should be ongoing reconsideration and redefinition of the correlation between the inputs and outputs of education as a production and service industry – it produces qualified specialists with certain competences meeting particular demand, as well as it provides its agents with educational services to satisfy their wants and needs. Thus, a strategic planning for refining the most efficient and productive models of teaching, learning, tutoring, coaching and mentoring is a vital part of future success.

**The purpose of the study is** to determine the threats and opportunities of implementing changes based on open educational resources development under e-Environment.

**The objectives of the article are:**

- to study the advantages and disadvantages of the transformation of educational processes that occur while switching from recognition of formal learning to the blended one;
- to analyze quality education regarding open educational resources;
- to determine the threats and opportunities that emerge while blurring the boundaries between formal and informal learning.

**The methods applied are** comparative, analyses, systematization, logics and other general research methods.

**Theoretical and methodological grounds.** The world is becoming digital, its inhabitants must possess digital technologies and use them efficiently in a variety of sectors, including education, science, and business. Under such circumstances, the key points are an egalitarian access to knowledge, functioning in different environments in any place and at any time, skills to interact with this knowledge, to use it to find solutions to various problems. These points can be attributed to the necessary conditions for the development of education, innovation and entrepreneurship (Morze et al., 2014; Kommers et al., 2014).

***The advantages of the transformation of educational processes that occur while switching from recognition of formal learning to the blended one.*** A timely report for the European Commission entitled “Transferability of Skills across Economic Sectors” (released in September 2011) showed that concerns about improving competitiveness and generating higher added value to human resources had been justified. Therefore, new shifts and redirections in strategic management of HEI should be done to meet the requirements of sustainable development under increased mobility enhanced by environment and e-Environment (the United Nations, 2011). Hybrid education, which is framed with the ICT, requires brand new strategic approaches that can enhance acquiring transferrable skills, facilitating knowledge transfer and promoting computability in order to deal with new challenges that appear almost every second more efficiently. Since these are the capabilities to deal with changing environment and content and to manage innovative methods and techniques that will determine future players on the market of educational services and scientific activities, there should be clear understanding of the advantages and disadvantages of the transformation of educational process recognizing the blended learning.

To begin with, the strong points of this process are connected with ensuring the diversification of the sources of information which has always been limited by some certain procedures and scarcity of resources. Educating has always been about developing individual skills and capabilities, which has always been restricted by certain social patterns. Thus, open educational resources diversify the content of curricula and give all educational agents an opportunity to make their own choices on what to use to satisfy their educational wants and needs. Consequently, agents of education are able to customize their social and cultural personal values and to form their own practical overview that will reflect their professional activities with the accepted values of various social communities and structures the fullest. The process of globalization offers the choice to be mobile and to find cross-cultural realization of individual variable sets of values, beliefs and traditions. Those who do not belong to certain social patterns might easily find their ways to those social communities that might accept them with their individual sets of wants, needs, expectations and beliefs. The diversity of the global society could provide the agents with the sufficient number of open educational resources for them to benefit from choosing their own ways and enjoying life patterns they prefer. Open educational resources widen the outlook; the perspectives the agents use to percept various phenomena, as well as let them tolerate controversial approaches and ways of living.

***The disadvantages of the transformation of educational processes under e-Environment.*** Firstly, open educational resources are created and supported with the help of technology. Therefore, lack of any resources that are allocated to maintain OER and the access to them limits the potential disclosure of capacities of the agents of education. Moreover, as education ensures more freedom in societies, there are some restrictive frameworks produced by those who would like to benefit from their top hierarchical position. This leads to the constant contradiction between authority and freedom of choice of the agents of education.

Secondly, as there have been absolutely new changes that could lead to unpredictable results and impacts of various transformation processes at different levels, the recommendations and procedures that are being determined by the global community cannot forecast possible instable fluctuations as they are based on the data of the current, but not future, events, situations and processes. There also have been so many urgent issues to be decided by the mankind to survive that it is almost impossible to predict which one should be prioritized number one.

Dealing with open educational resources requires certain skills that are being obtained while the amount of such open educational resources is increasing with every second. It urges

to work out some standards and indicators to design verification and validation frameworks for agents of education to know how to efficiently deal with time-consuming deepening into information. We have already faced the fact that social networks can be accepted as more reliable than official media. There are lots of untrue messages the validity of which cannot be checked by agents of education. Imitating knowledge transfer or deliberate transfer of specific knowledge and skills to ensure manipulation is harmful, for it could trigger instability on the global level within a short period of time.

Thirdly, it is possible to create an illusion of the access to open educational resources when the agents might be restricted from their diversity to ensure the illusion of democracy, freedom and choice under actual totalitarian social mechanisms. Hybrid wars of nowadays are based on such a strategy and tactics when even nations of big countries are living under the illusion of having an egalitarian access to information.

**Regarding open educational resources, quality education** is ensured under e-Environment with the freedom of choice and egalitarian access to unlimited diversified open resources, for it facilitates personal and personality development when making a choice is the only factor that matters. Yet, it also brings uncertainty and risks – the two factors that have already become the constituent parts of everyday life. Freedom and creativity as axiological dominating factors of education demand to understand quality education as the educational process of personality formation that allow agents of education to choose their own value evaluation and assessment, whereas their experience should be based on and justified by their personally selected system of axiological coordination. Quality education is characterized by the external and internal attributes of educational systems. Furthermore, these are OER that enhance a possibility to individually choose what personalities want and need with further subjective determination of their goals and aims for their life to get satisfaction and to enjoy their lives and lifestyles the most, as well as the responsibility they should take for themselves as members of societies. OER development ensures an egalitarian access to unlimited information, which can benefit the process of personality formation through realization of abilities, capabilities, wants and needs and sharing diversified experience to make this educational personality transformation the most efficient. Open educational resources provide with the ability to interpret the diversity which is literally the creation of personal realization of the variability of the modern world.

**The threats of the transformation of educational processes.** Among *the threats*, hybrid education could encounter are the following ones:

- 1) the lack of resources might be discouraging and provoking the resistance of the agents of education, since it could create a deeper gap between the developed affluent societies and less developed ones;
- 2) scarcity of resources might impact the availability of open educational resources;
- 3) the time-consuming issue might be upsetting and, thus, does not facilitate and promote using open educational resources the fullest;
- 4) technology and innovation are costly that is why there is a huge difference in the way how the access to open information has been used, which violates the right for an egalitarian access to quality education and supports stratification in societies;
- 5) inefficient management and administration could lead to poor performance in both formal and informal education, which might worsen the situation for the educational agents that mostly have access to formal education;
- 6) e-Waste, its recycling and utilization. According to the UN, 200 million computers and 500 million mobile phones reached their end of life in 2008 alone. As newly industrialized countries such as China and India become increasingly equipped in electrical and electronic products, the generation of e-waste is likely to increase. This is particularly of concern as the majority of e-waste is sent to landfill being little

recycled and even less reused. In 2009, just 13% of the 50 million tons produced e-Waste was recycled. This industry is characterized by short lifecycles and rapid obsolescence resulting in waste being generated at a rapid rate, much of which ends up in a landfill. Furthermore, poor design of equipment means upgrading is often difficult and costly making working equipment replacement a more viable option. This is particularly pertinent due to the high material and energy cost in the production of equipment. As a result, the adequate treatment of unwanted equipment makes sense from both an environmental and economic perspective. The loss of valuable materials contained within computers is a wasted opportunity. For example, a typical PC includes rare and valuable materials such as gold and platinum. Likewise the dumping e-Waste has environmental and health ramifications as many of the materials used to produce a computer are toxic, such as lead. Other materials such as barium and PVC also have a variety of health impacts. e-Waste can be seen as one of the greatest challenges facing the IT industry due to its impacts on the environment and human health as well as the sheer scale of the problem, which is exacerbated by the difficulty of upgrading equipment. The need to reduce, reuse and recycle is becoming an ever apparent issue ([www.computeraid.org](http://www.computeraid.org)).

***The opportunities of the transformation of educational processes.*** Any threat could be transformed into a brand new *opportunity* that may give a solution to any problem. Open educational resources have already been providing educational systems and processes with the following possibilities:

- 1) it is e-Environment that can be used by less developed societies as the core platform for sharing knowledge and experience. The more cases are analyzed and studied and the more diversified solutions are presented to different problems, the easier it is to analyze the outcomes of different actions, to investigate data and findings and to combine the methods and techniques;
- 2) open educational resources that are dependent from scarce resources might contribute to developing sustainable resources, which meets the goals of sustainable development;
- 3) dealing with data and unlimited open educational resources works out the list of transferable skills that increase competitiveness among different economic sectors, specifies particular requirements for human resources to be transferrable and, thus, make them more flexible, ready to adapt to new environment (both real and virtual), easy to learn and acquire necessary skills and knowledge lifelong, better accustomed to surviving while keeping satisfactory or high social and living standards;
- 4) different opportunities and capabilities developed are reflected in individual patterns of dealing with various situations that could be used as the basic level for capacity-building with further accumulating and sharing experience on the national and international levels, cooperation and collaboration being the core issues of such processes;
- 5) brand new managerial and administrative practices could bring in refreshed understanding and undiscovered potential for dealing with the challenges and problems created by the established managerial and administrative patterns.
- 6) new e-Waste recycling solutions could help solve other technology recycling and utilization issues in order to enhance sustainable development.

**Conclusion.** Systems of education are being simultaneously changed by both internal and external factors, with their modeling being far back than real-time challenges. Such a contradiction could be smoothed by making use of e-Environment to balance old-fashioned techniques and methods against crucial standards for knowledge and skills to be obtained and transformed into competences. Considering the blurred boundaries between traditional

education and e-learning, it is essential that both threats and opportunities should be analyzed to find the most efficient ways for high educational performance with quality education possible. Thus, a strategic planning for refining the most efficient and productive models of teaching, learning, tutoring, coaching and mentoring is a vital part of future success. Quality education is ensured under e-Environment with freedom of choice and an egalitarian access to unlimited diversified open resources, for it facilitates personal and personality development when making a choice is the only factor that matters. Yet, it also brings uncertainty and risks. Open educational resources are created and supported with the help of technology. Therefore, lack of any resources that are allocated to maintain OER and the access to them limits the potential disclosure of capacities of the agents of education. Dealing with open educational resources requires certain skills that are being obtained while the amount of such open educational resources is increasing with every second. It urges to work out some commonly accepted standards and indicators to design verification and validation frameworks for agents of education to know how to efficiently deal with time-consuming deepening into information. These are OER that enhance a possibility to individually choose what personalities want and need with further subjective determination of their goals and aims for their life to get satisfaction and to enjoy their lives and lifestyles the most, as well as the responsibility they should take for themselves as members of societies. OER development ensures an egalitarian access to unlimited information, which can benefit the process of personality formation through realization of abilities, capabilities, wants and needs and sharing diversified experience to make this educational personality transformation the most efficient. Open educational resources provide with the ability to interpret the diversity which is literally the creation of personal realization of the variability of the modern world.

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## РОЗВИТОК ВІДКРИТИХ ОСВІТНІХ РЕСУРСІВ: ЗАГРОЗИ І МОЖЛИВОСТІ

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**Анотація.** Системи освіти одночасно змінюються під впливом внутрішніх і зовнішніх чинників, у той час як процес їх моделювання відстає від реальних викликів сьогодення. Така суперечність може бути подолана через використання е-середовища з метою віднайти баланс між застарілими практиками і методами та необхідними стандартами щодо знань і навичок, які необхідно трансформувати у відповідні компетенції. Враховуючи розмиті межі між традиційним навчанням і навчанням із використанням ІКТ, необхідно проаналізувати загрози і можливості, для того щоб визначити найефективніші шляхи для забезпечення якості вищої освіти. Отже, стратегічне планування для вдосконалення ефективних і продуктивних моделей навчання є життєво необхідним для майбутнього успіху. За умов е-середовища, яке надає можливість реалізувати право вільного вибору і надає егалітарний доступ до необмеженої кількості різноманітних відкритих ресурсів, забезпечення якості освіти відбувається завдяки індивідуальному розвитку особистості, де можливість вибору є єдиним чинником, який має значення. У статті досліджуються переваги, недоліки, загрози і можливості розвитку відкритих освітніх ресурсів, аналізується забезпечення якості освіти у процесі розвитку відкритих освітніх ресурсів, який є передумовою надання егалітарного доступу до необмеженої інформації, що сприяє процесу розвитку особистості через реалізацію індивідуальних можливостей і потреб, а також набуттю унікального індивідуального досвіду, який максимально сприяє такому розвитку в освітній діяльності. Відкриті освітні ресурси надають можливість інтерпретувати різноманітність, що відповідає індивідуальній реалізації особистості у сучасному світі.

**Key words:** «відкриті освітні ресурси»; «якість освіти»; «сталий розвиток»