Challenges of COVID-19 Pandemics

for Economics and Business Administration

Conference proceedings of the XII[th] International Conference
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THE CHALLENGES POSED BY EXTERNAL INDEPENDENT EVALUATION AS A NOVELITY IN HIGHER EDUCATION IN UKRAINE - ADVANCED INFORMATION AND COMMUNICATION TECHNOLOGY, TRANSPARENCY, DECISION-MAKING

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ABSTRACT

The aim of this paper is to examine the challenges posed by the external independent evaluation and postgraduate admissions tests for studying a masters degree in universities and institutes in Ukraine. The researchers' starting point is focusing on the necessity of transformation of higher education system of Ukraine due to the COVID-19 pandemic. The authors observe the system of higher education in Ukraine and the situation related to establishing a quality assurance system in it. Ukraine has urgent need for development of educational services market based on modern ICT, while enhancing its competitiveness with the similar markets in Eastern and Central Europe. The main topic of research relates to the modernization of leading components of a higher education system in Ukraine, starting from the guidelines of preparation and implementation of online curricula, suitable to the needs of the labor market, and ending with tools aiming to advance the quality of higher education.

Keywords: External Independent Testing (Evaluation); Educational Services; Information and Communication Technology (ICT); Knowledge Transfer; Quality Assurance System; Universities.

JEL Classification: I2, I23, P4

1. INTRODUCTION, HYPOTHESIS, METHODOLOGICAL BASIS

In the twentieth century, ICT learning services became a particular segment of economic relations in highly developed and developing countries in the world. Any type of service sphere is dependent on ICT sector - a very powerful segment of social relations and economic development of the country, e.g. touristic, medical, educational, etc. (Bejunaru, 2019).

We would like to mention that despite the challenges of higher education reform respecting the European education system and standards, the relevant market for ICT educational services is blooming as a particular segment of Ukrainian economy due to the coronavirus pandemic (European Commission, 2020).

Notwithstanding, according to the Ranking on countries, conducted by *the World Economic Forum's* Global Competitiveness Index 2015-2016, Ukraine was ranked as the 34th out of 144 countries in higher education in 2016 (World Economic Forum, 2015).

In 2019 the Ukraine ICT adoption rank showed 78 out of 141, while the indicators of research and development (incl. quality of education and research (scientific publications), correlation between higher education and industry (R&D expenditures), level of scientific development's input into production (patent application) revealed Ukraine at medium positions (World Economic Forum, 2019).

This paper contains the research data generated in 2019 and in the beginning of 2020.

We seek to find the practical impact of ICT on higher education and vice versa. We want to see how the sphere of ICT education affect assured online knowledge transfer and educational migration movements.

Our first claim is that the number of students in Ukrainian universities decreases each year, and the competition between universities (institutes) within Ukraine and with foreign neighboring countries will increase. Therefore, all these innovations at the same time contribute to accelerating the integration of Ukraine into global and European educational space, updating the content of education and quality of education and are timely and necessary. On the other hand, they can lead to irreversible consequences for the university system in the country in general. Our second claim is that the COVID-19 Coronavirus crises has affected the development and financing of educational sphere, especially it resulted in reducing funds to be spent on quality control system at universities in Ukraine (resulting in lack of funds to buy new PCs for the stuff and students, licensed programs, to renovate devices and cable lines, to upgrade DNS servers, etc.).

Our overall hypothesis is that the remedy in this situation is the quality assessment system establishment in universities and institutes in Ukraine.

The quality of education shows proofs of being the one of current mechanisms of state regulation of the ICT education sector, but it is not just an

aim in state regulation. Primary importance of these processes lies precisely in enhancing competitiveness in the global scale, and this task is extremely difficult for Ukraine.

We seek to verify the above hypothesis in such a way – by means of the analysis of statistic data and empirical research we suppose that the topical issue is that Ukrainian regional universities and institutes become more vulnerable in these competitive conditions and demographic and migration situation in the context of European integration.

2. SUBJECTIVE AND OBJECTIVE SCOPE OF IMPROVING THE QUALITY OF ICT EDUCATION IN UKRAINE

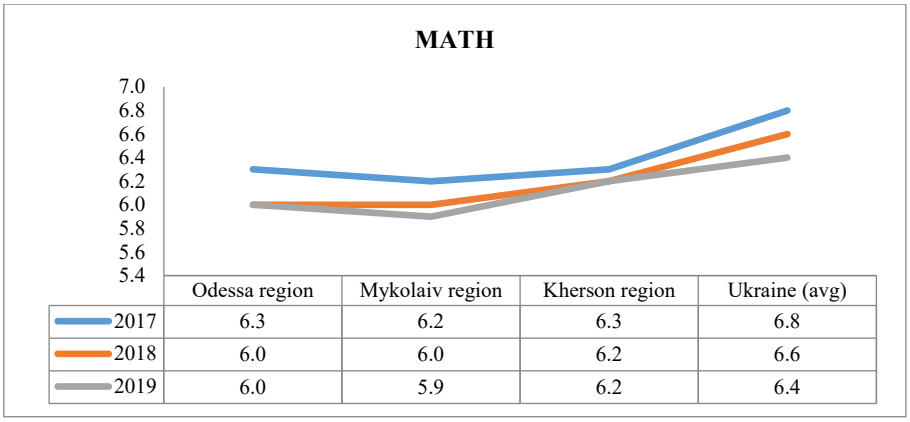
High-quality ICT education in universities (high schools) is impossible without thorough knowledge gained in general education at school. For example, in the period of 2017-2019 the results of the external independent testing in Mathematics and natural sciences show the lowest level of knowledge. This means a low quality of general education in Ukraine and in the South of Ukraine, in particular.

The results of our own research show that declarations differ from the realities of educational life. Unfortunately, academic integrity has not become pervasive in Ukraine's education system, including general and higher education. Responding to the questionnaire, 67% of students answered they first heard about the content of the concept of 'academic integrity' from university teachers, but only 28% of respondents first recognized the importance of fair learning (Bohach, 2019).

Data, provided by one of the main EWS session and presented in the OPENDATA of the Ukrainian Center for Educational Quality Assessment was thoroughly analyzed and we noticed following trend: in general 18.11% of test participants in Ukraine did not overcome the threshold without having passed the Mathematics testing, and in the South of Ukraine these indicators were even lower. In particular, in Mykolaiv region they did not overcome the threshold of 18.66% of the EIT participants, in Odessa - 20.94%, in Kherson - 19.3%. The test results in Physics were worse than the all-Ukrainian indicators; in particular 16.44% of participants in the Odessa region, 18.93% in the Kherson region did not overcome the Physics threshold.

Independently from the question of competitiveness within universities, we examined the quality of studying and the entrants' examination results in different regions in Ukraine and conducted comparative figures – see below.

According to data provided by Ukrainian Center of Quality Assurance in Education (2020), Ukraine's average entrants' score in Mathematics were 6.8, in 2018 it decreased to 6.6, and in 2019 - to 6.4.

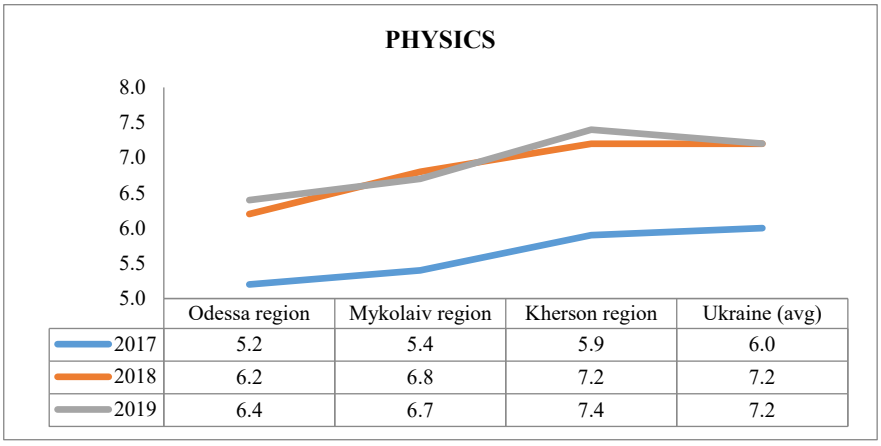


	Odessa region	Mykolaiv region	Kherson region	Ukraine (avg)
2017	6.3	6.2	6.3	6.8
2018	6.0	6.0	6.2	6.6
2019	6.0	5.9	6.2	6.4

Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 1. Ukraine average and regional (Odesa, Mykolaiv, Kherson) university entrants' score in Mathematics

Figure 1 explains that in Southern Ukraine the average score ranges from 5.9 to 6.2 points, depending on the region and on the year. Such results of the EIT give rise to a concern, as the Ukrainian government had announced the development of the ICT industry to be in priority for the next years and it is impossible for any country to succeed in this field without a highly qualified specialists with a high-quality Mathematical training. Furthermore, Engineering Technologies and Economics also require high-quality Mathematical training.



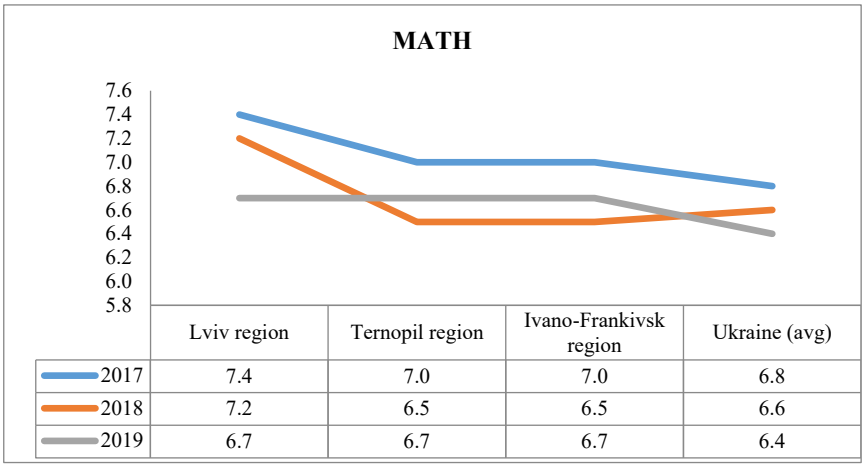
	Odessa region	Mykolaiv region	Kherson region	Ukraine (avg)
2017	5.2	5.4	5.9	6.0
2018	6.2	6.8	7.2	7.2
2019	6.4	6.7	7.4	7.2

Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 2. Ukraine average and regional (Odesa, Mykolaiv, Kherson) university entrants' score in Physics

The quality of natural science studying in secondary school is seen as inacceptable. All over Ukraine, the average Physics exams score (Figure 2) was as such: in 2017 - 6.0; 2018 - 7.2; 2019 - 7.2, indicating a slight advancement in quality of the test results. Monitoring data reveal positive changes in Southern region, in particular in Kherson region, e.g. during the period of 2017-2019 the average Physics exams score increased significantly from 5.9 to 7.4, in Mykolaiv region - from 5.4 to 6.7, in Odesa region - from 5.2 to 6.4. However, the quality of studying Physics in Odesa region in 2019 remains too low in comparison to 0.8 points for Ukraine.

To our mind, in search for effective means of improving the quality of education, it is useful to compare the results of EIT from the above disciplines in the regions of Ukraine, in particular in Western regions. For example, the results of the EIT in Mathematics in 2019 in Ivano-Frankivsk, Lviv and Ternopil regions are higher in comparison to all-Ukrainian. However, the all-Ukrainian quality deterioration trend of Mathematics exams results represent the West of the country. While the Ukraine's average score decreased from 6.8 in 2017, 6.6 in 2018 to 6.4 in 2019, the Western region's average score has also worsened in three years period. The results of EIT in Lviv region demonstrate the highest quality of studying Mathematics (Figure 3).



	Lviv region	Ternopil region	Ivano-Frankivsk region	Ukraine (avg)
2017	7.4	7.0	7.0	6.8
2018	7.2	6.5	6.5	6.6
2019	6.7	6.7	6.7	6.4

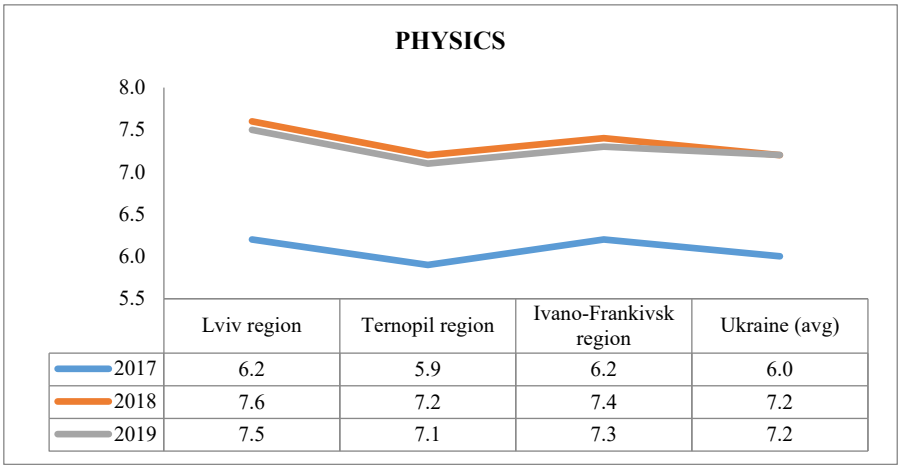
Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 3. Ukraine average and regional (Lviv, Ternopil, Ivano-Frankivsk) university entrants' score in Mathematics

During the three-years period of monitoring the quality of studying Physics in Western Ukraine, we ascertain a stable trend towards improving the results of testing. It had increased from a minimum score of 5.9 points in 2017 (in Ternopil

region) to a maximum score of 7.5 in 2019 (in Lviv region). The latter is higher than the all-Ukrainian result of 7.2 points, as can be seen in Figure 4.

In fact, in search for effective means of improving the quality of education, it is useful to compare the results of EIT from the above disciplines in the regions of Ukraine, in particular in Western regions. For example, the results of the EIT in Mathematics in 2019 in Ivano-Frankivsk, Lviv and Ternopil regions are higher in comparison to all-Ukrainian. However, the all-Ukrainian quality deterioration trend of Mathematics exams results is also supported in the West of the country. While the Ukraine's average score decreased from 6.8 in 2017, 6.6 in 2018 to 6.4 in 2019, the Western region's average score has also worsened in three years period. Seeing such trends, Ukrainian young ICT specialists and researchers actively immigrated to the USA and EU countries

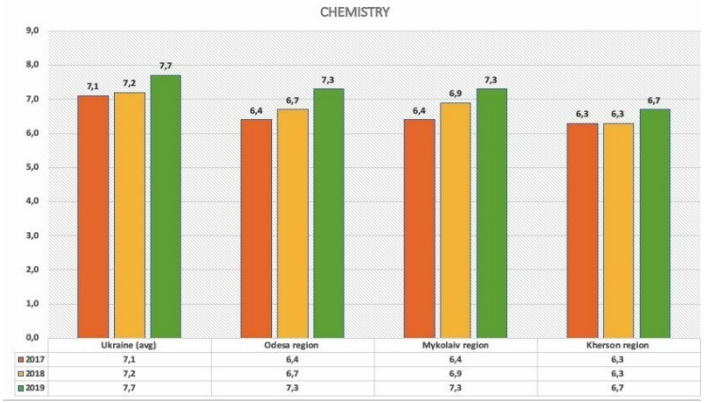


	Lviv region	Ternopil region	Ivano-Frankivsk region	Ukraine (avg)
2017	6.2	5.9	6.2	6.0
2018	7.6	7.2	7.4	7.2
2019	7.5	7.1	7.3	7.2

Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

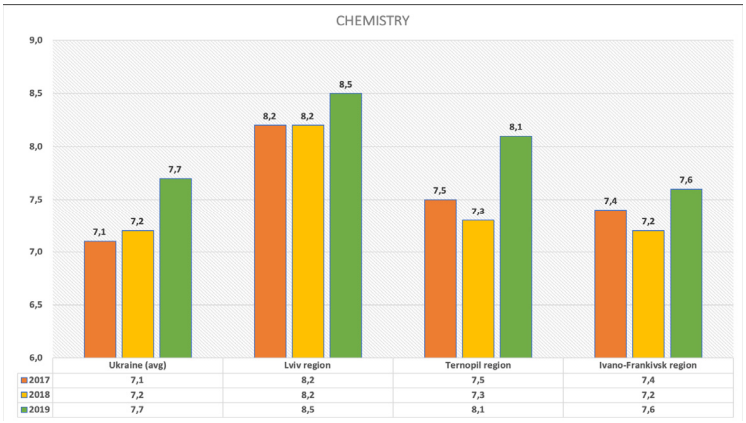
Figure 4. Ukraine average and regional (Lviv, Ternopil, Ivano-Frankivsk) university entrants' score in Physics

Chemistry exams results demonstrate an improving trend (Figures 5 and 6). In Ukraine, the average score increased from 7.1 in 2017 to 7.7 in 2019. Accordingly, the results also advanced in the studied areas: in Odesa and Mykolaiv by 0.9 points (up to 7.3), and in Kherson by 0.4.



Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 5. Ukraine average and regional (Odesa, Mykolaiv, Kherson) university entrants' score in Chemistry



Source: compiled by the authors and based on OPENDATA (Ukrainian Center of Quality Assurance in Education, 2020)

Figure 6. Ukraine average and regional (Lviv, Ternopil, Ivano-Frankivsk) university entrants' score in Chemistry

The administrative requirement for academics to improve the quality of their research has fostered professional relations with foreign scholars. However, the system of financial encouragement for R&D and participation in international scientific projects does not exist in most Ukrainian universities and institutes. Learning and development courses are also essential for improving young ICT specialists' skills (Gerrard, 2020).

Improving higher education budget funding remains a vital issue of higher education reform in Ukraine, which has to be preserved or reduced, according to current trends in migration, demographics, and reform of national education as a whole.

3. CONCLUSIONS AND RECOMMENDATIONS

In the agregated data on how Universities should change to better cope with concurrency in EU markets using ICT technologies, it is easy to observe that at this stage of development, the quality assurance system at Ukrainian universities revealed following needs:

- academic/study overload for students and lecturers;
- lack of online teaching services usage;
- boost of work to be done by supervisory board and representatives who will protect the rights of students / doctoral students;
- strengthening the work with stakeholders (associations of graduates of universities, employers through surveys, questionnaires, interviews);
- need for promoting the social and scientific needs of students.

Unfortunately, the topical issue is that regional Universities have become the most vulnerable in these competitive conditions of demographic and migration changes in Ukraine. To think positively, we admit that all these innovations, on the one hand, contribute to accelerating the process of integration of Ukraine into global and European educational space, updating the content and quality of ICT education, and therefore are timely and necessary, but, on the other hand, lead to irreversible consequences for higher education system in the country.

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