

According to some research, that took place in different periods, students proved that multilingual system of education is very effective and beneficial. They passed exams with flying colors to enter European universities. These results demonstrate that multilingual system of education can be more successful if it is applied properly. The outcomes, that students have, do not depend on such factors as social status, backgrounds, cultural or religious views. This pattern of education is unique, because multilingual approach can be effectively implemented within the whole period of school education. Linguistic requirements have to be high and demanding enough to provide students with a chance to get higher education in any European country. It is not a luxury to speak three languages in Luxembourg, but a necessity to study at university and move forward to the future career goals.

Multilingual systems of education provide Europeans with one language as a mother tongue, another as a language of communication and English as a lingua franca. English has become a language of science, education, business, space exploration and is widely used in all other fields of human lifetime.

Bilingual and multilingual systems of education provide students with skills of cross-cultural communication, promoting their social and cultural integration in European community. It helps students with necessary cognitive skills to master the second or the third language. The main goal of European systems of education is to teach students to respect national minorities, ethnic differences, overcome stereotypes and prejudices.

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CHALLENGES FOR CHEMISTRY IN UKRAINE AFTER THE WAR

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The lasting Russian invasion has created significant challenges for Ukrainian science and industry. In the given article, I try to discuss actions necessary to support and reconstruct Ukrainian science and educational systems. The proposed

actions take into account past Ukrainian scientific achievements including developments in organic and inorganic chemistry.

On February 24, 2022, Russia started a full-scale invasion of Ukraine, threatening to occupy the country and destroy everything that Ukrainians had created during Ukraine's 30 y of independence and before. Seven months later, while Ukraine is still in the fight, suffering numerous casualties and great destruction, future steps for the postwar recovery of Ukraine are already being discussed. Along with the recovery of its infrastructure and economy, Ukrainian science will also need support and investments. This will in turn benefit many international projects that heavily rely on Ukrainian products.

One of the exceptions to the general picture of Ukrainian scientific stagnation is the field of organic chemistry, in which Ukraine is a high-quality player. Enamine Ltd., a Ukrainian chemical supplier and contract research organization that became the heart of Ukrainian organic chemistry, has played a particularly important role in this field.

Enamine was founded in 1991 by scientists who initially focused on producing screening compounds for agrochemical and drug discovery research and then became the world's largest provider of chemical building blocks and advanced reagents (1). Over the years, the company has accumulated the world's largest commercial compound collection, building blocks that represent more than 50% of the world's stock offer, and created a unique product—the REAL Space, a tractable chemical space of billions of compounds with over 80% synthetic accessibility

All these achievements became possible because Enamine has always been a science-driven company. To compete in the growing markets of fine organic compounds and chemical outsourcing, it is necessary to be both creative and inventive. This challenge encourages the company to systematically invest in research (both internally and in collaboration with academic partners) and chemical education. Such activities start at the school level and include a) special grants for Ukrainian chemistry teachers all over the country, b) sponsoring the Ukrainian Chemistry Olympiads and supporting the Ukrainian team at the International Chemistry Olympiad, c) support for pupils and students who are interested in chemistry by organizing workshops and training sessions, d) help in setting up chemical practicums, and e) funding Ukrainian chemistry textbook publication, among many other activities.

The company engages in both scientific and educational collaboration with major Ukrainian universities. Many of Enamine's employees and scientific advisors divide their time between the company and academic institutions, and vice versa. Enamine's scientific collaboration activities with Ukrainian universities, institutes, and research centers range from scientific consulting to providing access to company instruments and establishing joint research projects. At the educational level, many students specializing in organic chemistry and other areas are engaged in collaborative projects and obtain secondments allowing them

to conduct research for their bachelor's and master's theses using Enamine's laboratories and facilities.

In conclusion, Enamine is just one example of an important Ukrainian research and business institution, whose development became threatened due to Russian aggression, but whose scientists continue to withstand the war despite enormous difficulties. Many other scientific research groups in Ukrainian universities and institutions successfully work and make a significant contribution to modern science. Prioritizing those research areas where Ukrainian scientists already have had remarkable achievements might facilitate the country's fast and efficient renewal. Although this article is centered on Ukrainian chemistry, we believe the above suggestions can be applied to other areas. Ukraine is definitely not a "failed state for science," and systematic international support for Ukrainian education and science is essential to make significant progress in rebuilding Ukraine that may have a long-lasting positive effect on the entire world.

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HISTORY OF COMPUTER SCIENCE DEVELOPMENT

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The emergence of computers in the 1950s created the hardware support necessary for the formation of computer science, which was needed to store and process information. But, of course, people have been working with information long before computers appeared. Starting with the outdated abacus, which has survived to this day in the form of office accounts, devices for processing numerical information were created. Mechanical devices such as arithmetic calculators, electric key machines, counting and analytical equipment, and many other devices were aimed at solving the same tasks that computers have begun to fully implement.

In addition to numerical information, specialists have always been aware of symbolic information, which is represented by well-known texts in natural language: from adventure stories to reports on work performed, certificates from institutions, letters, etc. Various devices and tools were likewise invented and