ЕВРАЗИЙСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ ИМЕНИ Л.Н.ГУМИЛЕВА

Филологический факультет
Кафедра иностранных языков

СБОРНИК МАТЕРИАЛОВ

международного семинара

«STRENGTHENING FOREIGN LANGUAGES TEACHING: CHALLENGES, APPROACHES AND TECHNOLOGIES»

27-29 марта 2018 года

Астана, Республика Казахстан

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Сборник содержит статьи участников международного семинара «Strengthening Foreign Languages Teaching: Challenges, Approaches and Technologies». В сборнике рассмотрены актуальные вопросы касательно основных тенденций и особенностей развития современной методики преподавания иностранных языков в средней и высшей школе в условиях полиязычия, проанализирован опыт по реализации инновационных технологий в языковом образовании, рассмотрены вопросы преподавания предметов на иностранном языке, представлены исследования результатов независимого и интегрированного подходов с особым упором на креативность и критическое мышление, необходимых для академического письма в учебной деятельности магистрантов.

Издание адресовано ученым-методистам, докторантам, магистрантам и педагогам-практикам в области обучения языкам, а также широкому кругу читателей.

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ОГЛАВЛЕНИЕ

I hope that in our country will pay much attention to solving the problem of infertility with the help of in vitro fertilization. To do this, increase the total number of IVF programs, which is due to the increase in the number of infertile marriages. I believe that in the future the population in Kazakhstan will grow and the country's demography will rise.

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3D PRINTING HUMAN TISSUE: WHERE BIOTECHNOLOGY MEETS ENGINEERING

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Every day countless people are suffering and dying from several diseases. One of the reasons is because life-saving drugs often fail to get to market. In fact, 90% of new drugs that show promise in the lab or on animals, but, unfortunately, fail in humans and never end up making it to your pharmacy. Sometimes these drug failures are tragic, in one case, in the UK a drug company "TeGenero Immuno Therapeutics" came upon a novel treatment for the devastating diseases, such as leukemia, rheumatoid arthritis and multiple sclerosis [1].

Imagine a treatment that can cure any one of these debilitating diseases; the drug was shown to be safe and effective in animals, so the drug company was given the green light to begin human trials: eight volunteers entered this trial and just to be safe each volunteer was given a dose 500 times lower than the dose that was shown to be safe in mice and monkeys, soon after being given the drug, six of the eight volunteers rapidly developed multiorgan failure. A 20-year-old male suffered heart,

liver and kidney failure, his toes were amputated, although all the volunteers survived the devastating effects on their minds, bodies and immune systems remain unknown. These individuals may never live normal lives. Clearly, this was not supposed to happen but it did. So, what is going here? What is the main problem? While developing a safe and effective drug is risky, time-consuming and expensive process. Did you know that it takes on average 12 years and 2.6 billion dollars to develop just one single drug that works in humans? [2]

If we look at the process, first, drugs are tested on cells in a petri dish and on animals, drugs that make it through this process enter human trials and only one out of ten drugs is successful, not only is failure extremely common, it is really expensive. If we were to double the success rate in human trials from 1 in 10 to just 2 in 10 we would save hundreds of millions of dollars. Imagine how much cheaper drugs would be for you, but even more importantly imagine how many more lives we can save and improve; even when a drug demonstrates that it can cure human diseases, it may not work for everyone. A drug that will cure the one person might cause detrimental side effects in other person. As we can see from this, drugs can cause serious injury, even death and major damage to the organ obviously [3].

As science grows, it is focusing on the other "beneficial ways" to treat people more effectively. Actually, science has developed life-saving technologies over the last few decades, where we do not need the body to go into "panic mode"; we just need to go into "regenerate mode". We could reduce that injury down to nothing more than the size of paper cut or at least trick the body into thinking it's no more than a paper cut, the body should be able to regenerate the damage. In fact, dr. Anthony Atala (Director of the Institute for Regenerative Medicine Wake Forest, Professor of the Department of Advanced Cell Technologies of the Institute of Regenerative Medicine) showed that you could paint cells onto a three-dimensional canvas implant that in the body and it's actually nothing more than paper cut. His goal was not just to help manage disease but to really improve the lives by creating tissues and organs in the laboratory and make it available for the needs of patients. As dr. Anthony Atala said, "every 30 seconds a patient dies from diseases that could be treated with tissue replacement". This is indeed what is the main source of problems [4].

Actually, our body has the amazing ability to regenerate, we just have to give it some help. But if we started thinking about more complex organs, for example, if we are thinking about trying to build kidneys, looking at the vascular system or the blood vessels inside a kidney, it is extreme the complex. So we have to come up with other ways to be able to deliver cells and deliver the materials to be able to make an organ, that is where the combination of engineering with biotechnology comes into play. By combining different disciplines and collaborating, we can tackle the world's pressing issues, so 3D-bioprinting may be the most exciting one. Aspects of biotechnology are considered the most perspective for today. These include gene and cell therapy and tissue engineering. A human tissue engineering is the exactly 3D-bioprinting. In fact, it is the same 3D printing, only as "ink" in bioprinting are used live human cells, most often the stem cells because from them it is possible to make

cells for any tissue by a consecutive differentiation. 3D printing is really amazing because it can take the wonderful ideas in our head and actually put them down on paper or create a three-dimensional representation of what we want. It is becoming the rage today and we should be able to print organs, so bioprinting is the way that we can do this. The basic idea behind that is we could scan the wound, to be able to figure out what would be the three-dimensional shape we need to fill it with the right cells, the right materials at the right depth literally to print a new organ [5].

Today 3D-bioprinting allows us to create objects from living tissues, introducing in them additional non-biological components. For example, in the course of experiments it was possible to obtain a bionic ear from living cells with an inductive antenna built into it. While this is only a prototype, but it is not so far from practice [6].

The main area of 3D-bioprinting application is organ transplantation. According to the statistics, in the world about a quarter of people who need a transplant die without "waiting for the donor". The possibility of receiving a needed organ is sometimes a dream that is never achieved. 3D-bioprinting will solve this problem, as well as significantly reduce the cost of transplantation. Pharmacology is another medical field of application of this technology. Already, pharmaceutical companies use printed organs and tissues for drug testing. It really allows us to test tissues before human trials and we can more accurately determine if a drug is safe and effective before human testing. We can reduce the number of animals suffering and eventually dying because of drug testing. Bioprinted tissues can also replace volunteers in drug testing laboratories. In this way, 3D-bioprinting seems safer and more practical way in drug testing facilities and it gives a privilege that no animal or no volunteer ever suffers again [7].

The goal of using 3D-bioprinting is to develop an entire replacement organ that could replace a diseased organ, what we can do today - we just could print smaller parts of organs and use these tissues to test drugs and test the diseases that we suffer from and develop drugs and cures for these diseases. It is actually only one application and it is the today's science level, but in the near future, my vision for 3D-bioprinting is that we could create entire replacement organs.

Researchers promised that in the next 15 years they will establish the production and sell out such bioprinters. In their opinion, by this time it will be possible to print out other organs: kidneys and liver. Thus, two problems will be solved immediately: a shortage of organs for transplantation and a high cost of the procedure. Moreover, this will be the most serious step in the field of transplantology in its entire history [8].

Yes, 3D-bioprinting is the technology of the future, even though it has seen the most growth and innovation in recent years. It is still in its beginning stage, of course, printing human organs is not an easy task, but in the future, it will definitely show its results. If we want to make a difference together, 3D bioprinting has many advantages that will bring life-changing breakthroughs.

As a future biotechnologist, I believe that by combining biotechnology and engineering, we can look at the world's problems in a much simpler way and solve the most complex ones of them.

Imagine our life in 2050. People have learned to grow human organs in special incubators. Humanity is no longer afraid of diseases - after all, any organ can be created artificially and transplanted ... A few years ago, such a story could only be found in science fiction. Now thanks to 3D-bioprinting technology, it is almost a reality.

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THE ROLE OF AN INDIVIDUAL DICTIONARY OF THE NATIVE SPEAKER IN TEXT PERCEPTION AND COMPREHENSION

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