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## **EDUCATIONAL INTERNET TECHNOLOGIES AS AN INNOVATIVE STRATEGY IN FURTHER ENHANCEMENT OF A EUROPEAN UNIVERSITY**

**Introduction.** Throughout the last few decades the Internet has changed the way people comprehend the world. It instantly demolished all informational and social boundaries between people all over the world. It takes a man 0.7 seconds in average to find any needed information in Google. According to the latest data almost 2.5 billion people have access to the World Wide Web, compared to 360 million in 2001. The total number of websites in the Internet reaches an astonishing 23 billion!

There are around 200 definitions of the word “Internet”. We would like to point out a conceptual quote by Joi Ito:

*"[The Internet is] a belief system, a philosophy about the effectiveness of decentralized, bottom-up innovation. And it's a philosophy that has begun to change how we think about creativity itself."*

© **Joi Ito** - New York Times essay, In an Open-Source Society, Innovating By the Seat of Our Pants

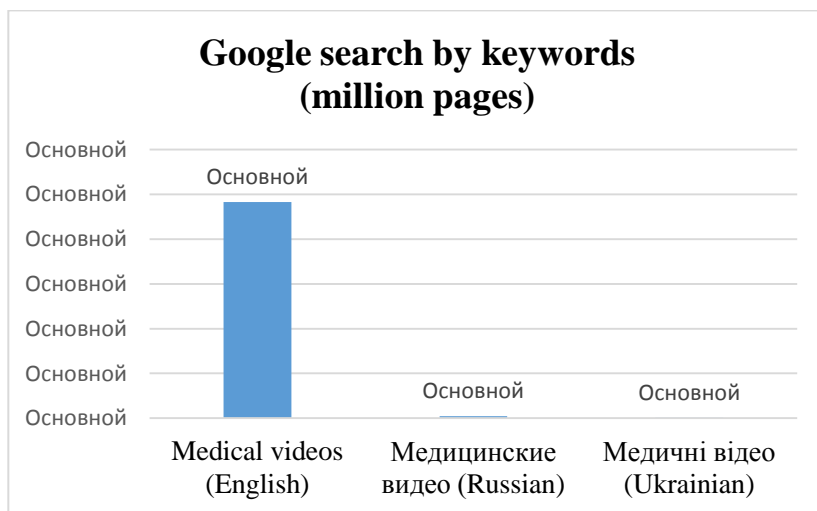
Most European universities are actively implanting modern internet technologies into their educational system. For example, Charles University in Prague and Karolinska Institute in Stockholm are using internet to spread visual medical materials among their students. This enables young people to actively use visual memory in order to comprehend and learn difficult anatomical and physiological material. Video material and 3D atlases not only save precious time, but also has shown to be a very effective way of learning. Researches show, that students using modern technologies while studying are 35% better at writing overall tests than those only using books.

Unfortunately, none of medical universities in Ukraine have such innovative educational programs. This, in fact, proves to be very unfortunate, whereas the era of “practical” medicine in universities is coming to an end.

**Goal.** The goal of my research is to analyze and compare innovative internet technologies in Europe (in the English language) and in Ukraine (in Ukrainian and Russian language) and offer a possible strategy of enhancing internet technology usage for medical students at Uzhhorod National University.

**Materials and methods.** In order to analyze and compare innovative internet technologies in Europe and in Ukraine we used a Google-based search. All further analyses were done with Microsoft Office Excel ©. We have also managed to start a Ukrainian medical video material project. All videos were rendered in Camtasia Visual Studio ©, voices recorded in Sony Sound Forge 10 Pro ©. Anatomy atlas represented in the research is courtesy of BioDigital, Inc.

**Results.** According to our Google-based search, there are 950 times more medical information in English than in Ukrainian.



*Search done on November, 3*

This can be explained by the difference in English and Ukrainian part of the World Wide Web. According to latest data, 55% of the Web is English, 6% is Russian, and less than 1% is Ukrainian. Yet during further analyses of the attained information we have found out that first results of our English search lead us to educational websites, whereas Russian and Ukrainian results lead to medical humor videos or interviews with famous physicians.

In fact, we have also found useful 3D anatomy atlases, which are not featured in Russian and Ukrainian searches. In fact, these atlases are used by most European universities as educational material. One of the most popular is Biodigital Human Body Atlas by BioDigital, Inc.

Furthermore, we have become so concerned about innovations in Ukrainian educational system that we decided to put in some effort in establishing a Ukrainian medical video database. Members of students' scientific society at Uzhhorod National University medical department together with our have created a youtube channel featuring medical video material in Ukrainian language. First off, we have translated some physiology videos on topics hard to comprehend for a medical student, such as hypersensitivity reactions and apoptosis.

Moreover, we are working on an international project called The Surgical Nexus, which aims to create not only a 3D human body atlas, but also to simulate surgeries online with 3D body reconstruction. Similar programs are used in surgical visualization equipment during real surgeries, which costs tens thousands of dollars. Our goal is to bring those programs to your home PC.

**Conclusion.** Ukraine is far behind Europe when it comes to educational internet technologies in the medical field. This can be proven by the results of our Google-based search. Ukrainian higher education needs to be reorganized according to modern needs, which can be

achieved by financial investments into innovative projects. Moreover, Ukrainian educational field lacks young innovative activists and volunteers. We are announcing a creation of a young initiative group and will be glad to include every ingenious person into it!

Our further goals are:

1. Cooperating with students from other universities of the world in order to develop multilingual videos
2. Working together with the administration of our university and accepting any help they can offer
3. Cooperation with the surgical nexus and translating the website into the Ukrainian language

We believe that the equation of a successful physician looks like this for our generation:

*Medical Student + Proper Internet Material = Qualified  
Physician in the Future*