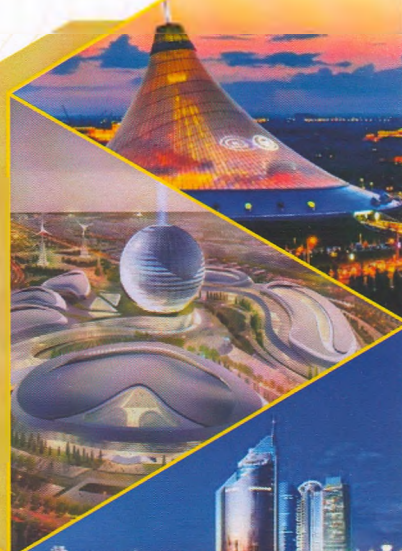




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ЛЕТ НЕЗАВИСИМОСТИ
КАЗАХСТАН



**«III International Book Edition
of the countries of the Commonwealth
of Independent States
«BEST YOUNG SCIENTIST – 2021»**

**«III Международное книжное издание
стран Содружества Независимых Государств
«ЛУЧШИЙ МОЛОДОЙ УЧЕНЫЙ – 2021»**

г. Нур-Султан, Казахстан, 20-21 апреля 2021 г.

**ОБЪЕДИНЕНИЕ ЮРИДИЧЕСКИХ ЛИЦ В ФОРМЕ
АССОЦИАЦИИ
«ОБЩЕНАЦИОНАЛЬНОЕ ДВИЖЕНИЕ «БОБЕК»
КОНГРЕСС УЧЕНЫХ КАЗАХСТАНА**



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**II TOM**

УДК 001  
ББК 70/79  
Ж 33

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### Ж 33

«III Международное книжное издание стран Содружество Независимых Государств / «ЛУЧШИЙ МОЛОДОЙ УЧЕНЫЙ – 2021»: III международная книжная коллекция научных работ молодых ученых – Нур-Султан, 2021 г. – 71 с.

ISBN 978-601-332-991-8

III Международное книжное издание стран Содружества Независимых государств «ЛУЧШИЙ МОЛОДОЙ УЧЕНЫЙ – 2021» («Ученые - СНГ») является уникальным проектом нацеленным на пропаганду науки и личностных успехов молодых ученых всего СНГ и Европы.

Формирование научной базы III Международного книжного издания стран СНГ / «ЛУЧШИЙ МОЛОДОЙ УЧЕНЫЙ – 2021», несомненно, будет способствовать значительному расширению информированности научно-педагогической общественности о развитии науки в странах СНГ и Европы.

В данном проекте приняли участие молодые ученые Республики Казахстан, Российской Федерации, Республики Узбекистан, Республики Таджикистан, Республики Киргизстан, Республики Беларусь и т.п. в рамках международного сотрудничества во благо дальнейшей интеграции науки.

III The international book publication of the countries of the Commonwealth of Independent States "BEST YOUNG SCIENTIST 2021" ("Scientists - CIS") is a unique project aimed at promoting the science and personal success of young scientists from all over the CIS and Europe.

The formation of the scientific base of the III International Book Edition of the CIS countries / "BEST YOUNG SCIENTIST - 2021" will undoubtedly contribute to a significant increase in the awareness of the scientific and pedagogical community about the development of science in the CIS and Europe.

This project was attended by young scientists of the Republic of Kazakhstan, the Russian Federation, the Republic of Uzbekistan, the Republic of Tajikistan, the Republic of Kyrgyzstan, the Republic of Belarus, etc. in the framework of international cooperation for the benefit of further integration of science.

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самоизоляции по профилактике коронавирусной инфекции. Словом, решение проблемы в мире - соблюдать правила карантина, уделять внимание медицинской культуре и не допускать распространения болезни.

**Использованная литература:**

- 1) Руководство по диагностике и лечению болезней системы кровообращения (БСК) в контексте пандемии COVID-19
- 2) t.me: @Koronavirusinfouz, [www.who.int](http://www.who.int)
- 3) facebook.com: **World Healt Organization News**
- 4) Деннис Каспер, Энтони Фаучи «Инфекционные болезни Харрисона, 2-е изд.» США, Mc.Graw-Hill Education, английский язык, 2013 г.
- 5) Пиневиц А.В., Сироткин А.К., Гаврилова О.В., Потехин А.А. Санкт-Петербург: "Вирусология" «Изд-во Санкт-Петербургского университета», 2012. – 432 с.
- 6) Львов Д.К., Заведующий отделением вирусологии: Вирусные инфекции человека и животных. / М- Издательство «МИА», 2013, -1200 с. : ил.-с. 599-624.
- 7) Прозоркина Н.В., Рубашкина П.А. "Основы микробиологии, вирусологии и иммунологии", Москва, 2007.
- 8) С.Д. Эллис, Т. Дженюевин, Д. Рейнберг "Эпигенетика", 2010.

**E-LEARNING SYSTEM AND ITS GREAT DEVELOPMNET IN 2020**

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**Abstract:** *There are given information about E-learning and its benefits to development the education system in this article. E-learning platforms were used to provide this information. You can also see the results and benefits with diagrams and tables.*

**Keywords:** *E-learning, education system, Synchronous learning, asynchronous learning, cohort learning, e-learning platforms, computer, technologies.*

Today, we are living in the century of internet technologies. So, in every direction there is the internet technologies. For example, education, pedagogy, medicine, art, music, transport, engineering etc. And now, we will research information about e-learning.

What is the E-learning? Have you ever learned how to do something from a YouTube or Facebook video? Ever found an answer to a question from Wikipedia, Google or a discussion forum? Any time you learn something from an electronic source, that is e-learning—electronic learning. In a more formal sense, e-learning is any course or structured learning event that uses an electronic medium to meet its objectives. It can have many of the same elements of more traditional learning (text, audio, tests, homework), but a computer is used to meet or enhance the learning objectives. E-learning can be divided into three main types. These types are based on the use of an instructor, timing of the course, and involvement with others. Selecting the appropriate type involves considering the learner's prior knowledge, learning speed, time available, and geographic separation. These are the three main types of e-learning: synchronous learning, asynchronous learning, and cohort learning.



**Synchronous learning** occurs when an instructor and learners are together at the same time—but not necessarily in the same physical place. Traditional classroom learning is a great example of synchronous learning. During a traditional classroom session, learners meet at a set time, have discussions, and are tested together. A synchronous e-learning course uses the same concept. At a set period of time, an instructor and one or more learners participate in an electronic learning event using a platform such as Adobe Connect or GoToMeeting. This format can be called a webcast, webinar, or virtual classroom. This type of training may include the instructor speaking, visuals such as PowerPoint slides or desktop sharing, discussion via chat, poll questions, and even activities via breakout rooms.

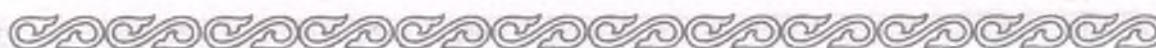
**Asynchronous learning**, or self-paced learning, is the opposite of synchronous learning. It occurs when the instructor and learners do not participate at the same time. Often there is no instructor at all. In the world of traditional education, think of homework as asynchronous learning. If learners are given an activity to complete on their own time by themselves, the learning is asynchronous. In the world of e-learning, a self-paced course that can be accessed at any time and does not require the involvement of an instructor or peers is considered asynchronous.

**Cohort learning** has an instructor, and learners complete activities such as readings, videos, discussions, assignments, and projects. There is a specified beginning and end date, but within the course timeframes, participants learn and communicate on their own time. For example, in a synchronous leadership webinar, all participants log on to their computers at 2 p.m. on Tuesday and participate in the presentation until it is over at 4 p.m. With the cohort model, the learners typically log on at the beginning of the week and could then read the materials, complete the activities, and discuss issues with other classmates at any time during the week. Cohort learning includes an instructor who gives and grades tests and other assignments. This model is popular in higher education using platforms such as Blackboard. In addition to traditional for-credit courses, some universities are now offering this type of course free and open to the public, using platforms such as Coursera, edX, FutureLearn. Often called MOOCs (massive open online course), some of these free and open programs can have 10,000 or even 100,000 learners. Also, **Blended learning** uses two or more learning events in different formats. For example, you may develop asynchronous e-learning modules to present factual information, and then invite learners to participate in classroom instruction where they can have face-to-face discussions or hands-on practice.

One third of the learners that ever registered on a MOOC platform joined in 2020. The pandemic brought many people into online education. MOOC providers, in particular, benefited immensely by attracting many learners with their free online courses from top universities. This is also true for Class Central. Out of all the people who ever used Class Central, 40% did so for the first time this year. Now in its 9th year, the modern MOOC movement has crossed 180 million learners, excluding China<sup>1</sup>. In 2020, providers launched over 2800 courses, 19 online degrees, and 360 microcredentials.

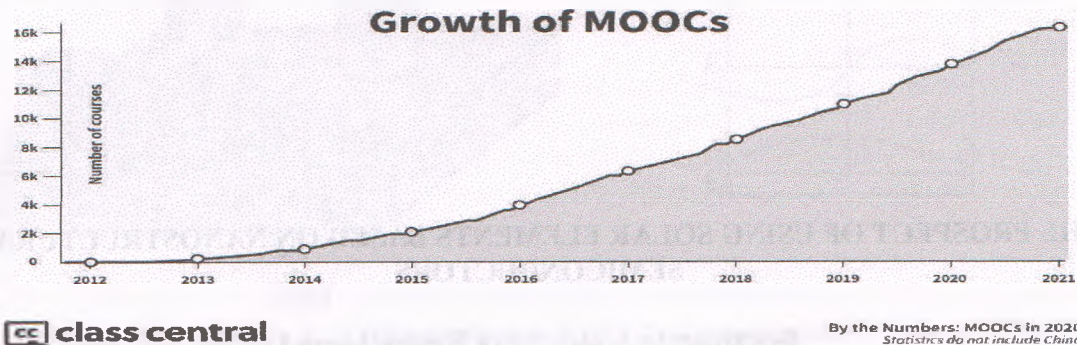
|             | Learners   | Courses            | Microcredentials | Degrees |
|-------------|------------|--------------------|------------------|---------|
| Coursera    | 76 million | 4,600 <sup>3</sup> | 610              | 25      |
| edX         | 35 million | 3,100              | 385              | 13      |
| FutureLearn | 14 million | 1,160              | 86               | 28      |
| Swayam      | 16 million | 1,130              | 0                | 0       |

**Table 1.** Here's how the top MOOC providers look in terms of users and offerings.





**Fig 1.** By the end of 2020, 16.3K MOOCs will be announced or launched by around 950 universities worldwide. In 2020 alone, around 2.8K courses were added.



If we talk about advantage of E-learning, I can provide some facts. For example, learners don't have to travel school, university and such kind of institution. So, they can save their time and energy. They can watch video lessons and complete the assignments at anytime and anywhere. Pause the video lesson and rewatch it thousands of times to get the best out of it.

Particularly, finding a self-paced online learning platform and that too within my budget, within my timeframe and matching my learning style is a difficult and impossible task. Therefore, we at Daily Weblife have researched, reviewed, analyzed and prepared a list of Top Online Learning Platform for 2020.

The 1<sup>st</sup> is **Udemy**. It is an online learning platform for professionals and students. It has more than 40M students enrolled, 130 K courses taught over 60 languages. And that too from 50 K instructors from over 190 countries. Undeniably, Udemy is the biggest course hosting platform in the world. Overall, it has courses on almost all the topics in the world. Udemy's top-rated business and technical courses help organizations, governments and non-profit organizations. Basically, it helps them to develop in-house expertise. So, that they can develop courses form the employee's development and to be future-ready.

The 2<sup>nd</sup> is **Coursera**. It is one the best online learning platform for higher education. It provides online courses partnering with the world's top universities and organizations. Every course on this online learning platform is taught by top professors and instructors of world-class universities and companies.

The 3<sup>rd</sup> is **Khan Academy**. It is a non-profit online education organization. It provides world-class education to anyone and anywhere in the world. Basically, it is based on individual contributions rather than ads or subscriptions. It also provides an online course for preparing for tests like SAT, LSAT, MCAT, IIT JEE, NCLEX-RH and CAHSEE.

The 4<sup>th</sup> is **edX**. It is the one of the best online learning platform for higher education. edX is a non-profit organization and also one of the top Massive Online Open Online Course (MOOC) sites in the world. It was founded by Harvard University and MIT in the year 2012. It is the best online learning platform for higher education because it provides Bachelor's Degree, Master's Degree, Professional certificate and Executive Education. Everyone who is very enthusiastic and researchable learners can use all of them. If you learn something via E-learning platforms, you should learn by heart. Not for certificate or diploma.

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4. "By The Numbers: MOOCs in 2020" <https://www.classcentral.com/report/mooc-stats-2020/>
5. "Best Online Learning Platforms 2020" <https://dailyweblife.com/online-learning-platforms-2020/>

## THE PROSPECT OF USING SOLAR ELEMENTS BASED ON NANOSTRUCTURAL SEMICONDUCTORS

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**Annotation:** *In this article, it is written about the prospect of using solar elements based on nanostructural semiconductors in the production of highly efficient solar elements based on monocrystalline, polycrystalline and amorphous silicon solar elements in modern photoenergetics.*

**Key words:** *Photoenergetics, monocrystalline, polycrystalline, solar elements and nanostructural semiconductors.*

In various scientific centers dealing with the creation of solar elements, on the basis of the application of the latest achievements of nanotechnology in the creation of inexpensive technology of obtaining photoelements for monocrystalline, polycrystalline and amorphous silicon solar cells, scientific research is being carried out on obtaining Silicon-German heteroelectrics to convert solar energy into electricity. In the work of the authors [1], the photoelements created on the basis of monocrystalline thin-layer samples based on Silicon-German heterostructures obtained on the application of nanotechnologies were investigated. Based on the scientific conclusion of these works, it was based on the fact that the application of nanotechnology in the field of photoenergetics is promising. Currently, with the help of diffusion technology, Germany on the basis of silicon is considered as a new material for obtaining heterostructures in dressing introductory atomic clusters and photoenergetics of the obtained materials. Scientific research studies have shown that quantum transport of charge carriers based on the electronic – covalent system allows to obtain a new class of semiconductor materials with prohibited fields of different values by densely combining nanoclusters in the observed semiconductor volume. The use of heterostructures in the creation of photoelements and a decrease in the thickness of working layers by ten nanometers leads to the emergence of quantum dots and quantum fields and a change in the state of conductivity in the surface layer.

