

Tsymbal, L., & Uninets, I. (2024). The digitalization era as a framework for the development of the global education market. *Actual Issues of Modern Science. European Scientific e-Journal*, 34, 20–28. Ostrava.

DOI: 10.47451/ecn2024-06-02

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The Digitalisation Era as a Framework for the Development of the Global Education Market

Abstract:

The global educational market is being transformed under the influence of the above factors and the factors of generalised development. Digital technologies radically change the educational services market, opening up new opportunities for students and educational institutions, like posing new challenges. Digital technologies have significantly impacted the education market, changing both the ways of learning and the structure of the education market itself. By this, the study aims to identify the key features of the global market development for educational services in the era of digitalisation of economic activity. The study object is the global market for educational services; following the purpose and object of the study, the key tasks are to identify the features of the development of the global market for educational services, analyse them, and characterise them in detail. Modern scholars studying the global market of educational services represent various fields of knowledge, including economics, sociology, pedagogy, and information technology. Iryna Kaleniuk, Larysa Antoniuk, Denys Ilnytskyi, Nataliia Ushenko, Simon Marginson, Hans de Wit, Philip Altbach, Robert Fisher, Anne-Marie Nohlén study the structure, dynamics, and peculiarities of the development of national and global markets for educational services. However, the constant transformation of both the global and educational services markets and the development of technologies actualise this issue at the present stage of developing the world economic system.

Keywords: digitalisation, online education, global education services market, digital technologies.

Abbreviations:

ARPU is average revenue per user,

CAGR is compound annual growth rate,

EdTech is educational technology,

GCU is Grand Canyon University,

IPEDS is Integrated Postsecondary Education Data System,

SNHU is Southern New Hampshire University,
VC is venture capitalists,
WGU is Western Governors University.

Introduction

The global market of educational services is undergoing profound transformational changes at the current stage of world order formation. The COVID-19 pandemic has brought changes to key teaching methods and technologies, the war in Ukraine has redrawn the flow of students and academic staff, and technological developments have led to the need to change the technological basis of the learning process. In the global context, educational services are becoming increasingly significant, driven primarily by the transformation of the labour market. In turn, it is being transformed under the influence of both the above factors and the factors of generalised development. Digital technologies radically change the educational services market, opening up new opportunities for students and educational institutions, like posing new challenges. Digital technologies have significantly impacted the education market, changing both the ways of learning and the structure of the education market itself.

The object of the study is the global market for educational services.

By this, the study aims to identify the key features of the global market development for educational services in the era of digitalisation of economic activity.

Following the purpose and object of the study, the key tasks are to identify the features of the development of the global market for educational services, analyse them, and characterise them in detail.

Modern scholars studying the global market of educational services represent various fields of knowledge, including economics, sociology, pedagogy, and information technology. Iryna Kaleniuk (*Tymbal & Kalenyuk, 2023*), Larysa Antoniuk, Denys Ilnytskyi, Nataliia Ushenko (2023), Simon Marginson (*Cantwell et al., 2018*), Hans de Wit (2013), Philip Altbach (*Global perspectives..., 2011*), Robert Fisher, Anne-Marie Nohlén study the structure, dynamics, and peculiarities of the development of national and global markets for educational services. However, the constant transformation of both the global market and the educational services market and the development of technologies actualise this issue at the present stage of the development of the world economic system.

Results

The transformation of the labour market is quite active. At the present stage, under the influence of the paradigm shift in general civilisation development, it has acquired a new characteristic—turbulence. In this context, knowledge is becoming one of the most significant assets. The key trends in the development of the educational services market are manifested through increasing demand for online education, increasing demand for technical and information education, increasing competition, increasing international mobility, the growing popularity of short-term courses and certificates, increasing requirements for the quality of education; social transformation; universities as a driving force for local development; public activity of universities; long-life education; ed-tech partnership; data age; digital skills; internationalisation policy (*Figure 1*).

As a result of the COVID-19 pandemic, most educational institutions were forced to switch to distance learning, which led to a significant increase in demand for online education. This trend will likely continue in the future, as most people are interested in the opportunity to study at a convenient time and place. In 2021, the number of requests to digital platforms increased by 98%. Thus, according to experts, Ukrainians began to attend online courses three times more often in 2021 and became one of the top three European countries where they buy online education. The most significant demand is in the capital. Kharkiv, Odesa, Lviv, and Dnipro are also among the leaders. The most popular courses are English, modern business, IT programming, and training courses for schoolchildren (*There is a growing...*, 2022).

However, it is worth noting that Ukraine has only just entered global trends, as the online services market is growing significantly (*Figure 2*).

In 2023, online education revenue is expected to reach USD 166.60 billion, with a CAGR of 9.37%, leading to a projected market size of USD 238.40 billion by 2027. The largest market segment is online university education, with a projected market size of USD 103.80 billion in 2023. In a global comparison, the United States will generate the most significant revenue (USD 74,800.00 million in 2023), with an ARPU in online education of USD 0.21 thousand in 2023. Additionally, there is a growing trend towards personalised and adaptive learning, with online education platforms incorporating artificial intelligence and machine learning technologies to offer personalised learning experiences. The implications of these trends can be seen in the numbers: the global online education market is expected to reach USD 325 billion by 2025, growing at a CAGR of approximately 7%. In addition, the COVID-19 pandemic has accelerated the adoption of online education, as the number of students enrolled in online courses has increased significantly over the past year. The online education segment is expected to continue its growth trajectory, driven by increasing demand for distance and flexible learning options, like technological advances, allowing for personalised learning. Nevertheless, the industry may also face challenges such as ensuring the quality and accreditation of online courses, like addressing the digital divide and unequal access to technology and internet connectivity. However, the overall outlook for the online education segment remains positive, with strong growth potential in the coming years. Between 2011 and 2021, the number of students enrolled in massive open online courses (MOOCs) increased from 300,000 to 220 million (*Shah, 2021*). Between 2012 and 2019, the number of students enrolled in blended and distance learning at traditional universities grew by 36 per cent, while the circumstances of the COVID-19 pandemic in 2020 rapidly accelerated this growth by another 92 per cent (*Diaz-Infante et al., 2022*).

A recent analysis of total student enrolment data from the IPEDS found that while the overall market for degree programs decreased by about 3 per cent from 2019 to 2020, four of the largest providers of open-access online education—SNHU, Liberty University, WGU, and GCU—increased their total enrolment by an average of 11 per cent.

At the present stage, a significant area of the educational services market development is the development of EdTech, which is all digital tools that help development and learning (*What is EdTech...*, 2022). Numerous start-ups in digital education are disrupting the space, driven by the growth of venture capital funding. Between 2017 and 2021, venture capital funding for US EdTech increased from \$1 billion to \$8 billion. In 2021, the demand for these investments was evident in the successful IPOs of several EdTech companies, including Coursera (valued at over

\$4 billion). Investments in EdTech can be much higher, as the current stage of global market development, the possibility of a pandemic, and wars contribute to the demand for digital tools, increasing competition in the EdTech market (*Table 1*).

In 2021, VCs invested \$20.8 billion in the electronics sector, more than 40 times the amount they invested in 2010.

In June 2021, 2U announced the acquisition of edX, a Harvard and MIT non-profit organisation, for \$800 million. This acquisition gives 2U access to a strong customer brand, approximately 40 million registered users, and hundreds of university partners. These assets provide 2U with a significant presence in growing markets outside the United States and can help reduce CAC as it develops a free degree model (*Sanghvi & Westhoff, 2022*).

Online learning companies are expanding and focusing on their corporate offerings to meet the demand for upskilling and retraining. Of the 15 adult learning companies that received the most funding in 2021, only one offered corporate programs (*Figure 3*). Companies such as Coursera initially focused on consumers, but have recently significantly increased their revenue from corporate clients (*Sanghvi & Westhoff, 2022*).

Such an active development of the financial sector requires the attraction of additional financial resources, which contributes to the development of venture capital financing as an element of the educational services market, which has grown significantly due to the pandemic (*Figure 4*).

It is worth noting that the Indian market has become much more active as regulatory restrictions have been significantly tightened in China. Thus, in 2020, the Chinese market covered 63% of the financing of educational technologies; in 2021, this figure dropped to 13%, while India increased from \$0.2 billion in 2017 to \$3.8 billion in 2021, which was 18% of global investment. There has also been an increase in the activity of Indian companies in the global market, as Indian Emeritus has reached a billion-dollar capitalisation and is actively entering the US market through the purchase of American companies. Accordingly, the quality standards of online education are increasing, and the distinction between classical and non-formal education is blurring, forming a new structure for educational competitors. For example, in partnership with Coursera, Google's Grow with Google program offers courses in user experience design and data analytics that can provide potential applicants with cost-effective educational options. At the same time, traditional digital education providers focus on obtaining diplomas. However, even so, there is an opportunity to supplement their programmes with non-formal options and strengthen their competitiveness. At the current stage, applicants are becoming more demanding of classical education, creating demand for individual programs and considering the possibility of obtaining additional knowledge in the informal sector to gain specific knowledge and skills that may be more significant than the program or brand of the institution.

The next trend is the increasing demand for technical education, as a growing number of jobs require technical and information literacy, leading to an increase in demand for training in these areas. The nature of work and the technologies that support it are changing. Ongoing and comprehensive digitalisation has changed the work of even teachers, who now need programming knowledge, among other things. A growing number of educational institutions and online platforms provide students with more learning options, creating a new competitive environment. This forces educational institutions to compete for students by offering more

innovative and effective teaching methods. As a result, the number of online education lovers and users is growing rapidly (*Figure 5*).

The increase in the number of higher education institutions and online platforms offering courses leads to more competition in the market. This can lead to lower tuition prices and improved quality of education. Short-term courses and certificates are becoming increasingly popular among people who want to improve their skills or gain new knowledge. This may lead to a decrease in demand for full-fledged degree programs and an increase in the popularity of alternative forms of education. Short-term courses are more mobile and flexible and respond more quickly to the needs of the labour market, employers' requirements, and consumer demands. In the context of global turbulence, they lead to the demand for a workforce with specific skills. New competitors in the education market are affecting traditional educational institutions and changing how they deliver educational programs (*Figure 6*).

New competitors offer flexible learning models that allow students to study at their own time and pace. Short-term courses are often cheaper than traditional university programs, making them more attractive to a broader audience. Many new programs focus on specific professional skills in demand in the labour market, ensuring that graduates are quickly employed. New competitors are changing the landscape of educational services, forcing traditional institutions to adapt to new realities and innovate their strategies and programmes.

The liberalisation of migration policy and the war have increased international mobility, with students increasingly travelling abroad to study and gain additional experience. This trend leads to increased demand for international education and opportunities for educational institutions to attract students from other countries. Economies, markets, and technologies are developing rapidly, and skilled workers need training to keep up with new developments, discoveries, and trends. The learning and development sector is growing significantly as people, like companies, constantly strive to improve themselves and their employees. In particular, in recent years, learning and development have become increasingly digital, with a significant increase in the use of technology-based learning. Increasing requirements for the quality of education from employers and graduates, changing the structure of education and its dynamisation. Old learning technologies are ineffective in the modern world, and comprehensive digitalisation leads to a decrease in concentration, with knowledge becoming both more superficial and more concentrated. However, it is worth noting that there is a separate segment of consumers who, realising the value of high-quality education for the modern labour market, create demand for high-quality educational services, creating demand for concentrated knowledge that meets these high standards (*Figure 7*).

The second group of trends in the development of the global education market reflects the qualitative plane of transformation, which becomes the basis for universities' transformational leadership. These trends include social transformation, internationalisation policy, public engagement of universities, and expanding their role as a driving force for local development.

Universities have always played a driving force for change, but this is only realised if universities are closely involved in the work of local governments, self-governance, or processes. The internationalisation policy in modern conditions finds a dual manifestation, as universities are looking for a balance between the needs of the local level and the role of driving

transformational changes at the local level and the challenges of globalisation, the need to attract students from other countries (*A new global...*, 2022).

Discussions on the internationalisation of higher education are moving in two opposite directions. The first is associated with the rise of nationalist and protectionist sentiments and denies the myth of unlimited growth. The second points to the continuous growth of student and programme mobility as evidence of the unstoppable momentum of internationalisation (*A new global...*, 2022).

Technology and the digital age provide new opportunities, including for the service sector, and digital content development has changed the educational services market development (*Wit*, 2013). Higher education is not immune to these trends, and the pandemic has forced the market to adapt to digital technologies quickly. In contrast, the trends only indicate an increase in the technologicalisation and digitalisation of the global education market development.

Conclusion

Universities play a significant role in the digital age, where technology is becoming increasingly significant. The key trends in the global education market in the digitalisation era include the education and training of students to work in the digital economy, as students are preparing to work in the digital economy, where competencies in technology and information systems are becoming increasingly significant, including through the education system, development, and implementation of new technologies used in various spheres of life. They help to introduce new technologies in various fields, including education, medicine, science, and business. A relatively new trend is open learning and online courses, which are helping to increase the accessibility of learning and learning resources and allowing students to study from anywhere and at any time. At the present stage, digital libraries and research centres are being created, allowing students and researchers to collect and analyse information from anywhere in the world. Partnerships are being formed with businesses and other institutions to develop digital content. Digitalisation remains a significant aspect of the development of the global education market.

Conflict of Interest

The author declares that there is no conflict of interest.

References:

- A new global university ranking with an ethical mission. (2022, June 1). *University World News*.
<https://www.universityworldnews.com/post.php?story=20220529092158508>
- Cantwell, B., Marginson, S., & Smolentseva, A. (2018). *High participation systems of higher education*. Oxford: Oxford University Press.
- Diaz-Infante, N. et al. (2022, July 20). *Demand for online education is growing. Are providers ready?*. McKinsey & Company. <https://www.mckinsey.com/industries/education/our-insights/demand-for-online-education-is-growing-are-providers-ready>
- Global perspectives on Higher Education. (2011, October 19). *Springer*.
<https://www.springer.com/series/10137>
- Online Education — Worldwide. (2022, May 30). *Statista*.
<https://www.statista.com/outlook/dmo/eservices/online-education/worldwide#revenue>

- Sanghvi, S., & Westhoff, M. (2022, November 14). Five trends to watch in the edtech industry. *McKinsey & Company*. <https://www.mckinsey.com/industries/education/our-insights/five-trends-to-watch-in-the-edtech-industry>
- Shah, D. (2021, December 28). A Decade of MOOCs: A Review of Stats and Trends for Large-Scale Online Courses in 2021. *EdSurge*. <https://www.edsurge.com/news/2021-12-28-a-decade-of-moocs-a-review-of-stats-and-trends-for-large-scale-online-courses-in-2021>
- There is a growing demand for online education in the world: What the most popular courses are among Ukrainians. (2022, August 11). Channel 24. (In Ukr.). [У світі зростає попит на онлайн-освіту: які курси найпопулярніші серед українців. 24 Канал. 11 серпня 2022 р.]. https://24tv.ua/education/sviti-zrostaye-popit-onlayn-osvitu-yaki-kursi-ukrayina-novini_n1850985
- Tsymbal, L., & Kalenyuk, I. (2023). Digital transformation of the global education market. *Baltic Journal of Economic Studies*, 9(5), 266–274. <https://doi.org/10.30525/2256-0742/2023-9-5-266-274>
- Ushenko, N. V. (2023). Socio-economic conditions for ensuring the development of knowledge transfer in the field of higher education in the context of digital transformation. *Problemi Sučasnih Transformacij. Serija: Ekonomika Ta Upravlinna*, 10. (In Ukr.). [Ушенко, Н. В. (2023). Соціально-економічні умови забезпечення розвитку трансферу знань у сфері вищої освіти в контексті цифрової трансформації]. <https://doi.org/10.54929/2786-5738-2023-10-03-03>
- What is EdTech and why it is a promising area for the IT business? (2022, August 28). Channel 24. (In Ukr.). [Що таке EdTech і чому він є перспективним напрямком для IT-бізнесу. 24 Канал. 28 серпня 2022 р.]. https://24tv.ua/business/shho-take-edtech-chomu-vin-ye-perspektivnim-napryamkom-dlya-it_n1800632
- Wit, de H. (Ed.). (2013). *An introduction to higher education internationalization*. Milan: Vita e Pensiero. <https://research.hva.nl/en/publications/an-introduction-to-higher-education-internationalisation>
- Workplace training: spending per employee 2022. (2024, April 9). *Statista*. <https://www.statista.com/statistics/738399/size-of-the-global-workplace-training-market/?locale=en>

Appendix

Quantitative

- Increasing demand for online education
- Increased demand for technical and information education
- Increased competition
- Increased international mobility
- Growing popularity of short-term courses and certificates
- Increasing requirements for the quality of education
- Ed-tech partnerships

Quality.

- Social transformation
- Universities as a driving force for local development
- Public activity of universities
- Long-life education
- The age of data
- Digital skills
- Internationalization policy

Figure 1. Key trends in the development of the educational services market

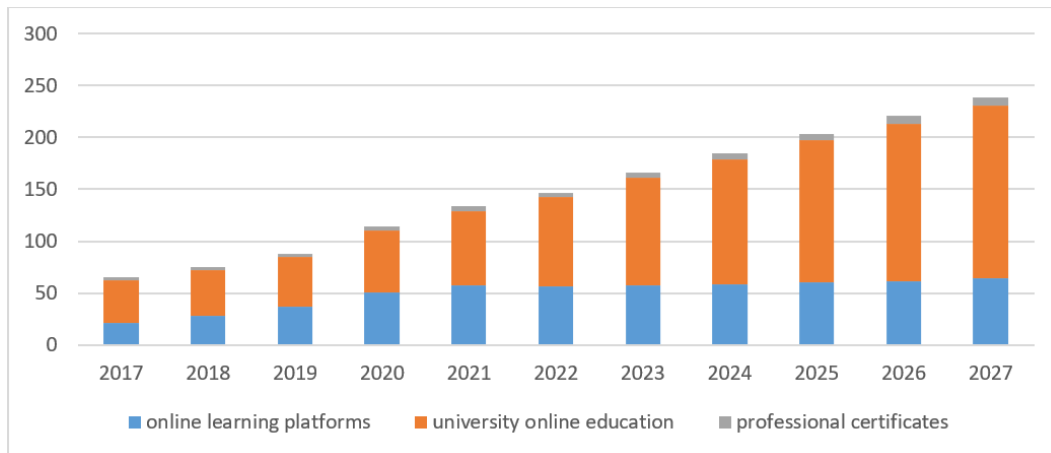


Figure 2. Expected profitability of the online education market, USD million (*Online Education – Worldwide, 2022*)

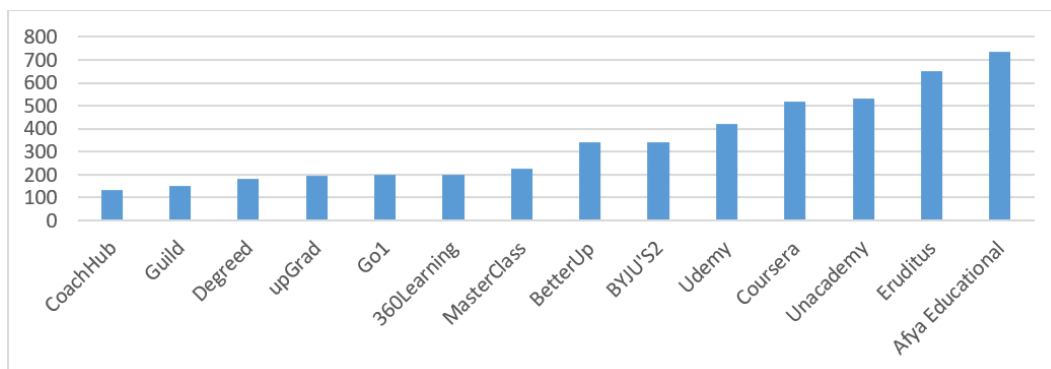


Figure 3. Largest global edtech deals in 2021, USD million (adult sector) (*Sanghvi & Westhoff, 2022*)

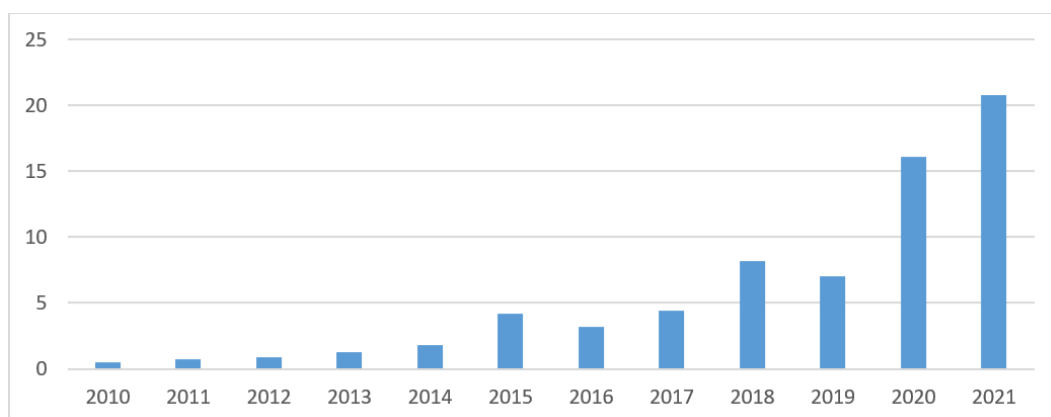


Figure 4. Global venture capital funding for educational projects (*Sanghvi & Westhoff, 2022*)

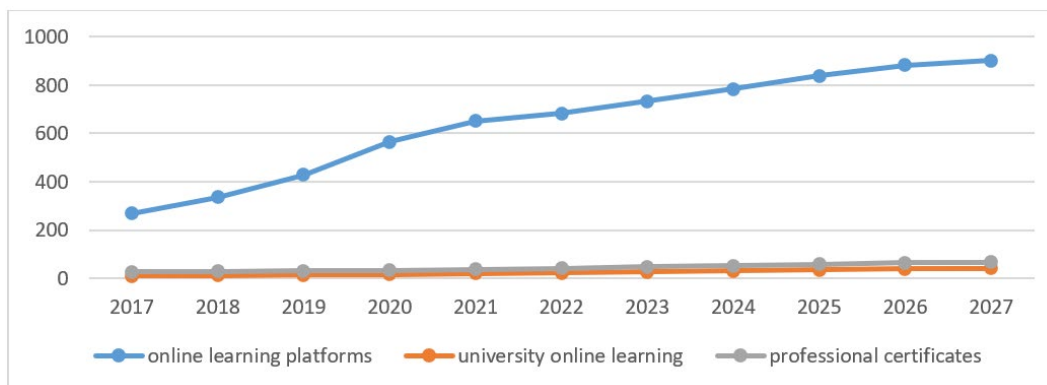


Figure 5. Number of users, million people (*Online Education – Worldwide, 2022*)

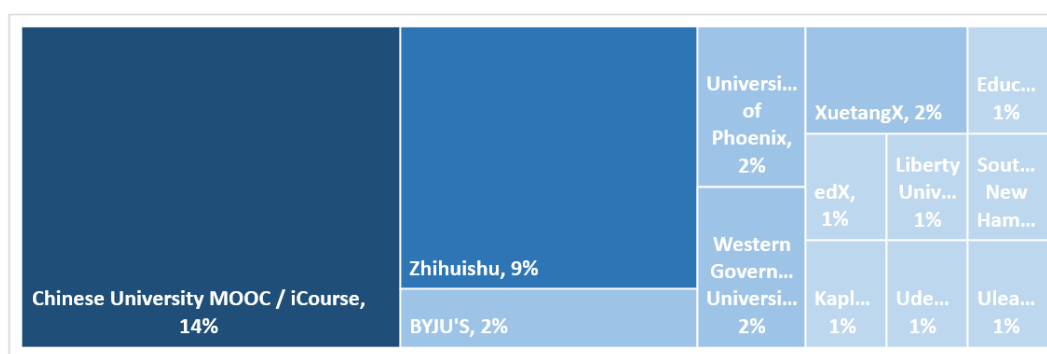


Figure 6. Market share of educational services, % (*Online Education – Worldwide, 2022*)

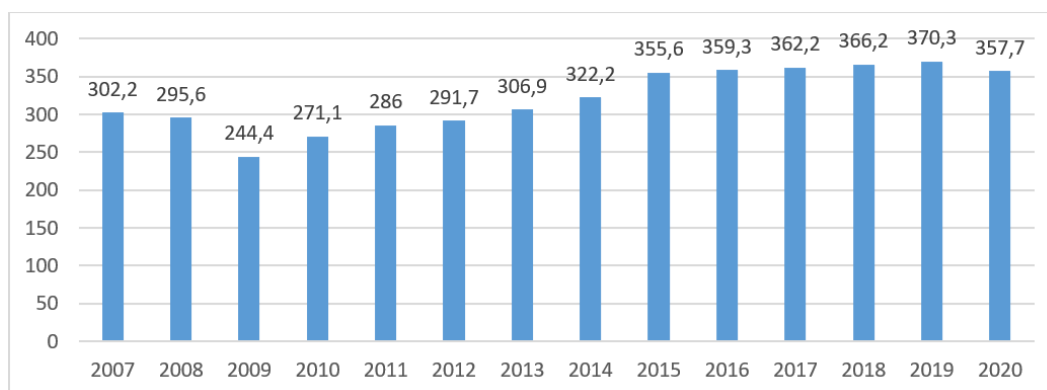


Figure 7. Market size of the global workplace learning industry from 2007 to 2020 (in billions of US dollars) (*There is a growing..., 2022*)

Table 1. Key players in the online education market, revenue, USD billion, 2017-2021 (*Online Education – Worldwide, 2022*)

Company	2017	2018	2019	2020	2021
2U, Inc.	0,29	0,41	0,57	0,77	0,95
Coursera, Inc.			0,18	0,29	0,42
New Oriental Education & Technology Group, Inc.	2,45	3,10	3,61	4,28	
Tal Education Group	1,72	2,57	3,28	4,51	
Udemy, Inc.			0,28	0,34	