

The Trends of Education after COVID-19

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Abstract: *The trends of education are an open question that intrigued an enormous part of the people, parents, experts, and educators. Good and proper education is the guarantee of the existence and sustainable development of humanity. In the last decades in front of the world civilization emanated many significant challenges, such as climate change with its severe consequences, huge natural disasters, species extinction, economic and political crisis, followed by rising aggression, world war conflicts, migrations, and insecurity for the big part of children and young. Nevertheless, the implementation of innovations has not stopped, even more; the strong, negative influence boosts the proper answers and efforts for survival. Nowadays, digitalization conquers all aspects of human life. Digital remote learning became common. New strategies, new approaches, and new ways of thinking support everyday life. The goals of the review paper are a rough draft of the trends of education that is the most important part of the human to become person, and for humanity to stay sustainable and merciful.*

Keywords: e-learning, education, remote learning, digitalization.

1. Introduction

In the last decades, ICT applications took place in higher institutions, for teaching, learning, and administrative activities and speeded its development because of pandemic (Fahd et al., 2022; Oprea, 2021; OECD, 2022). For the future, L&D team suggested a need to transform learning in an effective and sustainable way, with digital, distanced, and flexible learning context (Palmer & Blake, 2018). The adaptation of education reflects the quick digitization that has not been mentioned before COVID-19 (Kihara, 2021; Manzoor et al., 2021), so in the near future, in-request skills will be different as well as the manner of teaching (Bernard, 2022).

The Great Reshuffle began with the hybrid offices, digitization, remote learning and working, accelerated by the COVID-19 pandemic. According to LinkedIn 150 million new jobs will appear the next five years most of them remotely (Bernard, 2022), and even now the current of such advertisements exist.

The Organisation for Economic Co-operation and Development (OECD) published manual, future trends of education that starts with the question “Did you ever wonder what the impact of climate change will be on our educational institutions in the next decade?”. In front of our civilization, grasping to have more at any cost, stays not only that but many other similar questions. According to the manual, COVID-19 pandemic appears as the cardinal change point that pushes economic, political, social, and technological drifts which influence education (OECD, 2022).

The article aims to reveal the trends of education for the future generation, due to the alterations that took place from advanced digitalization as a consequence of the pandemic lockdown.

2. Changes in education after the pandemic of COVID-19

In Trakia University during the pandemic of COVID-19 all academic staff made e-learning materials available online. Students start to prefer online exams and distant forms of education that allow them to be more flexible and to study at their own pace from different places. The administration adopted virtual coordination and collaboration, which gives the opportunity quickly to organize and manage the process of education, to announce the schedule of curriculum, exams, meetings, and conferences, check and correct errors, and spread to the people of concern. Even before the pandemic, there was an increase in digitalization as shown in fig.1, the pandemic just speeded up the trend of education.

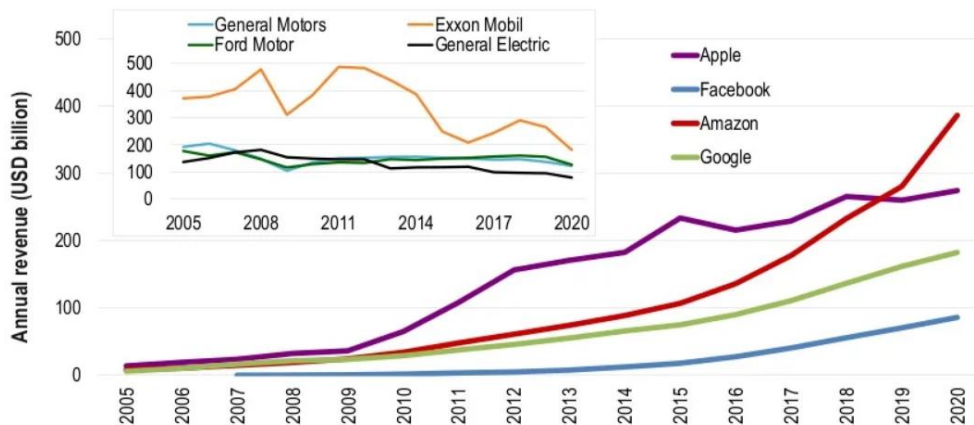


Figure 1. Increasing the role of online platform in the digital transformation (OECD 2019)

The respect that in the future the learning will be highly supported by ITC is widely accepted (Richards, 2007), before the global crisis caused by COVID-19. After pandemic lockdown is mentioned tendency for growing the desire of working

distantly (Endresen, 2020; Lund et al., 2022), and put more responsibilities onto machines, providing feedback and coaching remotely (Ancona et al., 2019). COVID-19 has unlocked many more opportunities for membership and cross-institutional collaboration calling for an extra exploration of multi-teamwork (Ancona et al., 2019; Endresen, 2020). According to Josep (2022), e-learning took an important place in education during the pandemic and will remain and expand for the future generation.

2.1. E-Learning after the Pandemic

E-Learning has many advantages proven from the experience; one is that e-learning supports individual learning styles and needs - visual; auditory; *reading & writing*; and *kinaesthetic* (Hurley, 2022). People learn in a different manner, some of them prefer and learn better when information is produced graphically or they are so-called visual learners; auditory learners favour listening to information; reading & writing learners emphasis better on the written word, and kinaesthetic learners engage all their senses (Flavin, 2021; Hurley, 2022). Nevertheless, taking into account the disadvantages of social isolation, perhaps the best solution and the trend of education development will be hybrid **learning**. According to Burlacu (2021), hybrid education starts to be a **new normal** with lessons and assessments synchronous online and practical training in the labs.

2.2. Hybrid Learning

According to Snelling (2022) the high institutions will never return to the pre-COVID traditional learning programs and methods, which is not realistic or desirable. The changes that took place during the global world pandemic will remain, and perhaps **blended or hybrid higher education** that integrates digital elements into teaching will predominate. In the post-pandemic world, the role and place of digital educational platforms is likely to increase (Valeeva & Kalimullin, 2021). In the post-COVID future there exists an opportunity to take advantage of digitalization and make higher education more effective and more attractive than in the past (Snelling, 2022).

2.3. Microlearning (Or Bite-Sized Learning)

The average student's attention span is between 10 and 15 minutes (Thuy, 2022). According to Microsoft the pandemic and digitalization shrink human's attention span to **less than eight seconds** (Ranieri & Co, 2020; Bernard, 2022; Debétaz, 2022; Adam, 2022). According to Halcom (2018), the reduction of the attention span means that people focus and absorb information immediately (Halcom, 2018). Usually, a short attention span is a brief response to extra stress, post-traumatic stress, or excess stimulation, but if it lasts, it may be a sign of an attention disorder (Brennan, 2021). The pandemic has accelerated shifting attention spans (Oliver, 2022), so microlearning must be recognized as a convenient and necessary way of developing education in the future (fig. 2).



Figure 2. The benefits of microlearning (Trang, 2018)

On Figure 2 are giving the main benefits of microlearning, but as with all methods, it has its negatives, for example, it cannot be a good choice for complicated tasks, where much more knowledge and abilities are need it (Trang, 2018), so can be accepted just as an additional resource for full-length taught courses.

Microlearning is only a tool and can be effective, if it is within the context of a wider learning strategy (Udalova, 2022).

2.4. Learning through Online Recruitment

Additionally, the tendency for a closer relationship between business and study programs in high universities can be revealed, after COVID-19. Remote study and working from home became normal practice. According to Ordonez the changes during the pandemic gave new opportunities for building long-term skills that turn into a career or a business (Ordonez, 2022). People start to work from home as virtual assistants, translators, data entry professionals, customer service representatives and sales people (Ordonez, 2022). Examples of remote online jobs are listed below:

Online Tutor – that is in practice, personalised learning, online or in-person, can work and teach kids and people from all over the world. The known online platforms are Tutor.com (<https://www.tutor.com/>) and Wyzant (<https://www.wyzant.com/>);

Search Engine Evaluator - an actual human who provides feedback and ratings about what comes up;

Social Media Manager - develop strategies to increase followers, creating social campaigns, producing content, reviewing analytics, and communicating with key stakeholders in a company. It can take hours to come up with engaging content and to post every day on multiple platforms;

Freelance Writer - produce whatever written text is needed by their clients, either working from home or in a rented office space;

Resume Writer - responsible for creating resumes that highlight the skills, experience and accomplishments of their clients;

Transcriptionist - a great way to earn a steady income with flexible hours. If you're an experienced typist with strong grammar skills, this may be a rewarding career for you;

Freelance Web Designer - the process of designing and deploying a professionally built website could take between five and six months, and can do web design without coding;

Micro-Freelancing At Fiverr - Micro jobs—commonly referred to as "gigs", allow to earn extra money as a side income or gain experience and skills as you work on building your resume or beginning your own business;

Virtual Recruiter - a remotely hiring process, without meeting the candidates face to face. Recruiters rely on technology to host video interviews, virtual events, surveys, and assessments to evaluate their applicants remotely;

Online Influencer - to influence the behaviour of their followers, to affect others' purchasing because of their authority, knowledge, position, or relationship with their audience;

Data entry professionals - data entry clerk can be a good job for people who have an eye for details, high school diploma and no need of advanced educational degrees.

Many companies are searching for online workers: Adobe; Aetna; Amazon; Alight Solutions; Citizens Bank; CrowdStrike; CVS Health; GoDaddy; Great Assistant; Dell; GitHub; HubSpot; iMPact Business Group; Kaplan; Kforce; HealthlineMedia; ModSquad; ICF; Lincoln Financial Group; Philips; Salesforce; NerdWallet; Pearson; Red Hat; Slack; Stitch Fix; Tanium; Thermo Fisher Scientific; Toast, Inc.; Twilio; Upwork; Pegasystems; Okta; LanguageLine Solutions; UnitedHealth Group; Vista; Vituity (Howington, 2022; Ordonez, 2022).

Companies and policymakers should facilitate workforce transitions and to support additional training and education programs for workers (Lund et al., 2022).

3. Post-pandemic period and trends in education

Blended and hybrid learning seem to be the future of higher education (Singh et al., 2021). Students prefer in-person and synchronous online learning over asynchronous and find them more effective, because of social-emotional

reasoning (Gillis & Krull, 2020; Nguyen et al., 2021). Therefore, students favour video-based courses with a high number of practice tests, considered as the most effective form of learning (Szabó, Bálint et al., 2022). The L&D team discovered a switch from the Netflix model of learning to YouTube and transformation of lecturers from Subject Matter Experts into facilitators, with a preference for virtual learning as those strategic changes are linked to the pandemic. Virtual learning facilitation requires a number of distinct skills, emphasis on the micro-session design, virtual interaction, managing the engagement, safe spaces, and keeping sessions balanced for different virtual learner types. Also, it was discovered that the direct conversion of in-person training into a webinar or virtual learning session is not a good model and didn't work (Palmer & Blake, 2018). Hence, education in a post-pandemic should combine the advantages of e-learning with important pedagogical goals allied with in-person teaching (Manzoor et al., 2021).

According to the L&D team, future education should be focuses on (Palmer & Blake, 2018):

- Virtual-first learning design;
- Collaboration and social learning strategies;
- Integration of coaching and performance-focused learning;
- Empathy in learning design;
- Tapping into emotion, imagination, and energy of your learners;
- Prioritisation of measurement in learning.

The main trends for the development of education according to Thuy (2022) in the near future are: Online learning; Mobile learning; Distance learning; Personalise learning; Blended learning; Project-based learning; Social-emotional learning; Gamification; Home-schooling; Bite-sized Learning (Microlearning). The similar trends of educational technology applying during and after pandemic according Maddie (2022) are: virtual reality (VR), augmented reality (AR), gamification, big data, flexibility (asynchronous learning; student autonomy; online communities), artificial intelligence, e-Learning (Maddie, 2022). According to Manzoor et al. (2021) the smartphone and software companies should develop technologies that can facilitate learner retention during the post-pandemic state.

The fragile points of further digital education, according to Singh et al. (2021) are the digitalization itself, the growing dependence on the internet, digital devices, Wi-Fi, innovative technology and software, and additionally social isolation.

4. Trends of development in the research after COVID-19 - data set, and collaboration

In the global turmoil, cloud computing became a response for many organizations, and adoption as a response to future crises and post-crisis transition. It was declared the growth of digital repositories and systems providing access to research results, citation, data sharing, and monitoring of research results, this is

the cloud of open science and such resources are ORCID, Scopus, Mendeley, etc. (fig. 3) (Drach et al., 2022).



Figure 3. Digital cloud data set for spreading the science information (Drach et al., 2022)

In the future the research and collaboration will be with implementation and utilization of cloud computing (Theby, 2022).

5. Conclusion

The innovations, speeding of technology and all society styles of life drastically take place in all fields, particularly in the learning process and education. Therefore, the traditional old methods of knowledge acquisition cannot be rejected, just can be advanced with the new trends that come across. With the rise of migration, climate changes, poverty, and social conflicts all over the world the best way to keep education is a clear combination of all appropriate methods that mankind knew. Perhaps, the rising question is, whether humanity is becoming more unwise or cleverer, but for sure it is important, not to lose our identity and the habit to read and calculate alone without the “help” of AI assistants in the near future.

Training and education are unseparated parts of economic development, business, and sustainable development. Hence, should be prepared for the new tendencies, accept and adopt their benefits, and diminish the worst effect of unpleasant changes. The technology, learning culture, and learners’ requirements are altering all the time and that requires not being fearful to make experiments and to try new strategies for business and education in order to adapt and be competitive.

References

- Ancona, D., H. Bresman, M. Mortensen (2019). Shifting Team Research after COVID-19: Evolutionary and Revolutionary Change. *Journal of Management Studies*, 2021, Jan; 58(1), 289–293. Doi: 10.1111/joms.12651.
- Bernard, M. (2022). *The 2 Biggest Future Trends in Education*. <https://www.forbes.com/sites/bernardmarr/2022/01/21/the-2-biggest-future-trends-in-education/?sh=53da85cc2d6f>.
- Brennan, D. (2021). *What to Know About Short Attention Spans*. <https://www.webmd.com/add-adhd/short-attention-spans>.
- Burlacu, N. (2021). Digitalization of University Courses in the Focus of Educational Management. *Proceedings of the 16th International Conference on Virtual Learning ICVL 2021*, pp. 23-32.
- Debétaz, E. (2022). *5 Trends in Education that continue in 2022*. <https://hospitalityinsights.ehl.edu/education-trends-2022>.
- Drach, I. I., S. H. Lytvynova, O. M. Slobodianiuk (2022). Experience of implementing institutional policies on open science in European universities. *Information technologies and teaching aids*, 90(4). ISSN: 2076-8184. 2022. DOI: 10.33407/itlt.v90i4.4945.
- Endresen, J. (2020). *COVID-19's impact on work, workers, and the workplace of the future*. <https://business.cornell.edu/hub/2020/09/25/covid-19s-impact-work-workers-workplace-future/>.
- Fahd, K., Venkatraman S., Miah S.J., Khandakar A. (2022). Application of machine learning in higher education to assess student academic performance, at-risk, and attrition: A meta-analysis of literature. *Education and Information Technologies*, 27, 3743–3775. <https://doi.org/10.1007/s10639-021-10741-7>.
- Flavin, B. (2021). *Different Types of Learners: What College Students Should Know*. <https://www.rasmussen.edu/student-experience/college-life/most-common-types-of-learners/>.
- Gillis, A., L. M. Krull (2020). COVID-19 remote learning transition in spring 2020: class structures, student perceptions, and inequality in college courses. *Teach. Sociol.* 48, 283–299. doi: 10.1177/0092055X20954263.
- Halcom (2018). *How do today's shorter attention spans affect learning?* <https://www.totaralearning.com/en/blog/how-do-todays-shorter-attention-spans-affect-learning>.
- Hayes, A. (2022). *The Human Attention Span*. <https://www.wyzowl.com/human-attention-span/>.

Howington J. (2022). *25 Companies Hiring for Remote, Work-From-Home Jobs Right Now*. <https://www.flexjobs.com/blog/post/companies-hiring-remote-work-from-home-job/>.

Hurley, L. (2022). *Benefits of eLearning*. <https://learnopoly.com/benefits-of-elearning/>.

Josep, G. (2022). *5 Reasons Why Online Learning is the Future of Education in 2022*. <https://www.educations.com/articles-and-advice/5-reasons-online-learning-is-future-of-education-17146>.

Lund, S., A. Madgavkar, J. Manyika, S. Smit, K. Ellingrud, O. Robinson (2022). *The future of work after COVID-19*. <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19>.

Maddie, M. (2022). *How will Edtech evolve and change in 2022 and beyond, and what Edtech trends do you need to be aware of? Find out here*. <https://www.thinkific.com/blog/educational-technology-trends/>.

Manzoor, Sh. R., Wan-Noorshahida Mohd-Isa, Kh. Sh. Dollmat (2021). *Post-pandemic e-learning: a pre-protocol to assess the integration of mobile VR and its effect on VARK learning styles*. DOI: 10.12688/f1000research.73311.1.

Nguyen, T., C. L. M. Netto, Jon F. Wilkins, P. Bröker, E. E. Vargas, C. D. Sealfon, P. Puthipiroj, K. S. Li, J. E. Bowler, H. R. Hinson, M. Pujar and G. M. Stein (2021). *Insights into Students' Experiences and Perceptions of Remote Learning Methods: From the COVID-19 Pandemic to Best Practice for the Future*. <https://doi.org/10.3389/feduc.2021.647986>.

OECD (2019). *An introduction to online platforms and their role in the digital transformation*. <http://doi.org/10.1787/53e5f593-en>.

OECD (2022). *Trends Shaping Education 2022*. <https://www.oecd.org/education/trends-shaping-education-22187049.htm>.

Oliver, D. (2022). *Has COVID destroyed our attention spans?* <https://eu.usatoday.com/story/life/health-wellness/2021/12/22/covid-attention-span-exhaustion/8926439002/>.

Oprea, M. (2021). Artificial Intelligence Based Approaches for Higher Education Applications. *Proceedings of the 16th International Conference on Virtual Learning ICVL 2021*, pp. 15-22.

Ordonez, N. (2022). *10 Online Jobs for Students that You Can Turn into a Career or a Business from Home*. <https://www.uopeople.edu/blog/top-10-online-jobs-students-can-turn-career-business-home/>.

Palmer, K., Blake D. (2018). How to Help Your Employees Learn From Each Other. *Harvard Business Review*, <https://cdn.sanity.io/files/nosafynr/leo-production/3112acbc7e797e362716dc982a5656df338d30e1.pdf>.

Ranieri & Co (2020). *Changing Attention Span and What it Means for Content*. <https://www.ranieriandco.com/post/changing-attention-span-and-what-it-means-for-content-in-2021>.

Richards, C. (2007). Towards an integrated framework for designing effective ICT-supported learning environments: the challenge to better link technology and pedagogy. *Technology, Pedagogy and Education*, 15(2), 239-255. (18/2/2007).

Singh J., K. Steele, L. Singh (2021). Combining the Best of Online and Face-to-Face Learning: Hybrid and Blended Learning Approach for COVID-19, Post Vaccine, & Post-Pandemic World. *Journal of Educational Technology Systems*. 50(2), 140-171. <https://doi.org/10.1177/00472395211047865>.

Snelling C. (2022). *Lessons from the pandemic: making the most of technologies in teaching*. <https://www.universitiesuk.ac.uk/what-we-do/policyandresearch/publications/lessons-pandemic-making-most>.

Szabó B., J. Ollé, S. László, V. Harmat, B. Vaszkun, S. Tóvölgyi (2022). Pilot study on applying various research methodologies to investigate the effectiveness of e-learning materials. *Információs Társadalom XXII*, no. 2 (2022): 93–116. <https://dx.doi.org/10.22503/inftars.XXII.2022.2.6>.

Theby M. (2022). Public Sector Cloud Computing Adoption and Utilization during COVID-19: An Agenda for Research and Practice (March 7, 2022). *International Journal of Managing Public Sector Information and Communication Technologies (IJMP ICT)*, 13(1), March 2022, SSRN: <https://ssrn.com/abstract=4072035> or <http://dx.doi.org/10.2139/ssrn.4072035>.

Thuy, P. (2022). *10 Popular Trends in Education (2022–2025)*. <https://atomisystems.com/elearning/10-popular-trends-in-education/>.

Udalova, K. (2022). *Traditional eLearning vs. Microlearning vs. Nano learning*. <https://www.digitallearninginstitute.com/blog/traditional-elearning-vs-microlearning-vs-nano-learning/>. August 1, 2022.

Valeeva, R., A. Kalimullin (2021). Adapting or Changing: The COVID-19 Pandemic and Teacher Education in Russia. *Educ. Sci.* 2021, 11(8), 408; <https://doi.org/10.3390/educsci11080408>.