

New Challenges Imposed by the Pandemic on a Ukrainian University

Olga Matvienko

Department of Psychology, Pedagogy and Physical Education
Kyiv National Linguistic University, Ukraine

A Corresponding Member of the National Academy of Pedagogical Sciences of Ukraine

Svitlana Kuzmina

Department of Foreign Languages
Vinnytsia State Mykhailo Kotsiubynskyi Pedagogical University, Ukraine
Corresponding Author: svitlanakuzmina@gmail.com

Tamara Yamchynska

Department of Foreign Languages
Vinnytsia State Mykhailo Kotsiubynskyi Pedagogical University, Ukraine

Yevhenyi Kuzmin

Department of Computer Science
Vinnytsia National Technical University, Ukraine

Tamara Glazunova

Department of Foreign Languages
Vinnytsia State Mykhailo Kotsiubynskyi Pedagogical University, Ukraine

Received: 3/7/2021

Accepted: 4/7/2021

Published: 4/26/2021

Abstract

The article's main aim is to highlight the challenges English language education faced in Ukraine after the outbreak of the pandemic. Since Ukrainian education had traditionally been face-to-face before the crisis, and technology integration was slow, the lack of online infrastructure and distance learning methodologies in Ukrainian universities aggravated uncertainty and anxiety regarding learning quality. The authors show how the Vinnytsia State Mykhailo Kotsiubynskyi Pedagogical University (VSPU) withstands the challenge of reflecting on the experience, which might be typical of higher education institutions. The research engages 321 future teachers of English and applies mixed methods. The significance lies in consolidated effort and capacity to modernize that yield positive outcomes, despite insufficient experience and funding. It also states that student opinions count.

Keywords: English language education, online instruction, pandemic challenge, quality of learning, Ukrainian university

Cite as: Matvienko, O., Kuzmina, S., Yamchynska, T., Kuzmin, Y., & Glazunova, T. (2021). New Challenges Imposed by the Pandemic on a Ukrainian University. *Arab World English Journal (AWEJ) Special Issue on Covid 19 Challenges* (1) 136-146. DOI: <https://dx.doi.org/10.24093/awej/covid.10>

Introduction

The COVID 19 outbreak, in the beginning, did not seem to become a global challenge. Starting in China, a country remote from Europe, it was not expected to become as internationally penetrating and aggressive as it happened to be. According to Lederer (2020), the 75th session of the United Nations General Assembly on September 23, 2020, defined the pandemic as the “make-or-break moment for humankind” that could lead to “a global disfunction,” “a script of an apocalyptic blockbuster, not the reality.” The governments had to respond by undertaking rigorous measures to limit the contacts minimizing the danger of contracting the virus. In this case, technological progress became a blessing (Matvienko et al., 2021, p. 20). Education that implied much of face-to-face communication and collaboration became an area of serious concern even in well-developed countries where distance learning had appeared years before the pandemic. Yet even universities and schools with time-tested distance teaching experience and professionally developed online infrastructure were apprehensive of the system viability because of the immense load it faced. No wonder traditional education and technology insufficiency made Ukraine especially vulnerable (Matvienko et al., 2020; Matvienko et al., 2021; Sakalo, 2020; Shevtsova & Kozubai, 2020; Volkov, 2020). Similarly, the official statistics did not keep much of a promise to withstand the pandemic challenges. According to the surveys, only 44.5% of professors of higher educational institutions utilized distance learning methodologies and technologies regularly in teaching. 27% of teachers had an acute need in consultations about teaching with technologies. 24,1% of university lecturers had never had the professional development training to improve technology literacy. 38% of university students didn't have stable access to the Internet at homes and 25% of them did not have necessary technology. 41% of university professors experienced technological unsustainability of the educational process in their universities. What is more, only 45% of Ukrainian universities considered distance learning and informational technologies a priority in higher education. In 53,5% of Ukrainians, digital literacy was below average (Kucheriv, 2020; Sakalo, 2020; Volkov, 2020). According to Finance. UA. (2019), the number of Ukrainian universities is 652, and only about 20 universities had practiced distance teaching before the COVID 19 crisis. (Sakalo, 2020). Thus, the authors would not be mistaken to state that, practically, all universities lacked the experience to create online infrastructure, curricula, and system management (Matvienko et al., 2020, p. 465). Ukrainian educators faced such a crash course immersion in online learning that there were serious doubts regarding a successful completion of the school year.

Literature Review

The literature review provides coverage of the opinions and feedback on the forceful integration of online instruction (Amin, 2020; Asmara, 2020; Cheung, 2021; Kucheriv, 2020; Lesnichenko et al., 2020; Matvienko et al., 2020; Matvienko et al., 2021; Shevtsova & Kozubai, 2020; Sakalo, 2020; Zmievskaia et al., 2020). Distance learning is not a cutting-edge experience in many European, American, and Asian universities anymore. It is an integral part of teaching. Besides, online instruction is considered a reliable alternative to tradition and a tool to democratize educational practices (Powell et al., 2014; Powell et al., 2015; Powell et al., 2016). Having a well-developed online infrastructure and the experts capable of developing, and maintaining LMS, the university bulk of the academic load is divided into offline and online learning (Mastafa & Bali, 2020; Matvienko et al., 2021; Volkov, 2020; Sakalo, 2020). In our understanding, this leads to a more transparent academic environment, flexible working schedules, various formats of communication, a better quality of education. As it occurred, such

a structure protects from situations similar to COVID 19 (Matvienko et al., 2020; Schroeder, 2001).

English language education has become a big concern in Ukraine and many non-English speaking countries. The teachers had to transfer to online instruction adapting the technologies and means they had at hand (Amin, 2020; Asmara, 2020; Cheung, 2021; Egbert, 2020; Naqvi & Zehra, 2020; Okmawati, 2020). Though English language education in Ukraine had utilized technologies in teaching phonetics, grammar, speaking before the Covid 19 crisis, teachers adhered to working in the actual classroom. Therefore, online methodologies were understudied and underestimated. The pandemic shook the very fabric of Ukrainian language education and revealed the condition of distance learning in Ukrainian education in general (Kucheriv, 2020; Matvienko et al., 2020; Matvienko et al., 2021; Sakalo, 2020; Shevtsova & Kozubai, 2020; Volkov, 2020)

Methodology

The purpose of the research is to consider the actual condition of online education in Ukraine and relate it to the experience of online learning integration into English language education at Vinnytsia State Mykhailo Kotsiubynskyi Pedagogical University (VSPU). *The participants* are 206 full-time and 115 prospective part-time teachers of English at the department of foreign languages. The analysis techniques provide an objective picture of how one Ukrainian university copes with language education issues arising from the pandemic challenges. Since a big part of the study is empirical, the authors apply the mixed methods that encompass the quantitative and qualitative approaches. *The procedures* included a literature review from Internet sources, the survey conducted by the administration of VSPU. The findings of the research show the adapted technologies, and platforms for language education. They also outline organizational issues for further studies, and analysis to improve the quality of language education in VSPU and other language educational institutions.

Results

The literature reviews provide an insight into the language teachers' online experience. The authors would like to admit that there is not a country unaffected by the crisis (Amin, 2020; Asmara, 2020; Egbert, 2020; Cheung, 2021; Lesnichenko et al., 2020; Naqvi & Zehra, 2020; Okmawati, 2020; Shevtsova & Kozubai, 2020).

Concerning the experience at VSPU, the opinions are not homogeneous: some say distance learning is a successful endeavor and has brought benefits to future teachers, especially in terms of language education. Instant access to multimedia resources, listening to and watching videos with native speakers is beneficial. Opportunities for self-education, lifelong learning, self-organization, and self-discipline are unlimited (Matvienko et al., 2020, p. 467). Yet, others have not seen it as a viable alternative to traditional education. The most alarming issue is isolation from peers. What makes it worse, students are getting used to self-isolation, which negatively impacts communication and quality of life. The long hours before the computer cause health impairment, the quality of language education is going down, and academic integrity issues get more topicality.

VSPU students were offered a questionnaire at the end of the spring semester of 2020. The focus was on teaching quality, online methodologies and forms of instruction, and instructors’ accessibility. Students of the part-time (115 students) and full-time study (206 students) majoring in Secondary Education 014.021, 014.022, 014.025 and English Philology 035.043 (Ministry of Education and Science of Ukraine, 2019), including undergraduate and graduate students, participated in the survey. The survey contained questions that helped identify learning quality, and probable challenges. In particular, the questionnaire comprised questions about the satisfaction with quality of teaching, methodologies, and forms of instruction. Students had to consider advantages, and disadvantages of distance learning, and to reflect on the platforms they adopted for learning online. According to the feedback, in percentage terms, full-time and part-time students are almost like-minded, judging by the responses they provide.

The feedback reveals that 78% of full-time students are satisfied with online learning and 14% - do not like it at all. Only 5% of students state they would like to return to face-to-face study, but because of the pandemic, they understand the necessity to learn remotely. However, 2% of respondents say it depends on the teacher and subject; the others – either evaded the direct answer or left the answer area blank. (Figure 1.) The ratio of the students who choose a “50/50,” “ambiguous question,” “depending on the subject,” “in some cases,” “more or less disadvantages,” or “not exactly” answer is minimal. Many students supplemented their responses with some additional commentaries, which proves that the respondents hope their feedback counts.

The part-time students’ feedback engages more appreciation of the teacher effort since the part-time education has always implied more independence from the teacher. 76% of respondents liked online learning; 16% - did not; 8% of students gave answers varying from: not precisely, in some cases, has its advantages, it depends on the subject, not all methodologies fit the remote mode of instruction (Figure 2).

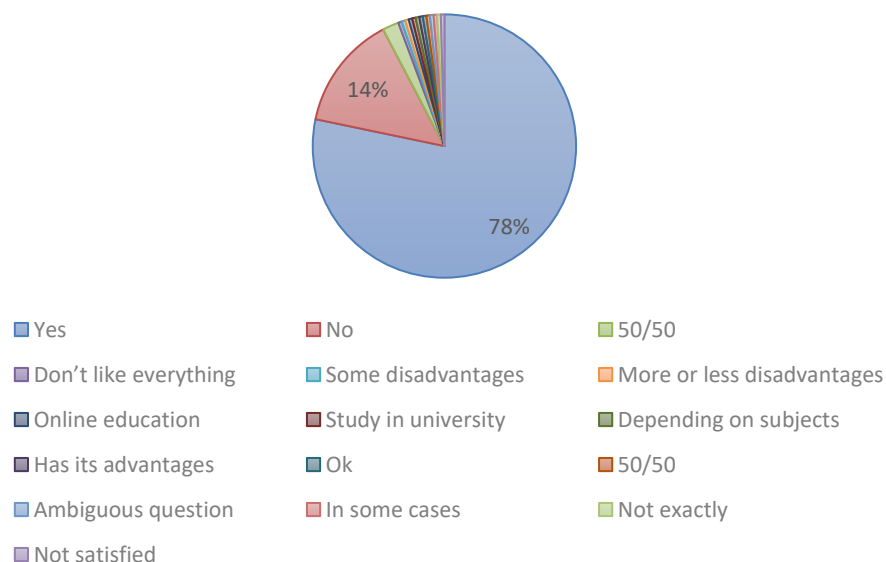


Figure 1. Satisfaction, full-time education (206 responses)

The appreciative feedback included:

- teachers try to do their best;
- it is not easy for them too;
- they find exciting resources;
- I respect teacher’s effort;
- teachers are dedicated and good at technology;
- the teacher is helpful to find the resources;
- the teacher assesses objectively.

The similar commentaries of full-time and part-time students reflect they miss the habitual classroom practices:

- would like to return to the university classroom, but I understand the situation;
- it is OK to study online, but I miss communication with peers and teachers;
- would like to receive instant feedback about my work as it was in the university;
- I am tired of talking on my computer.

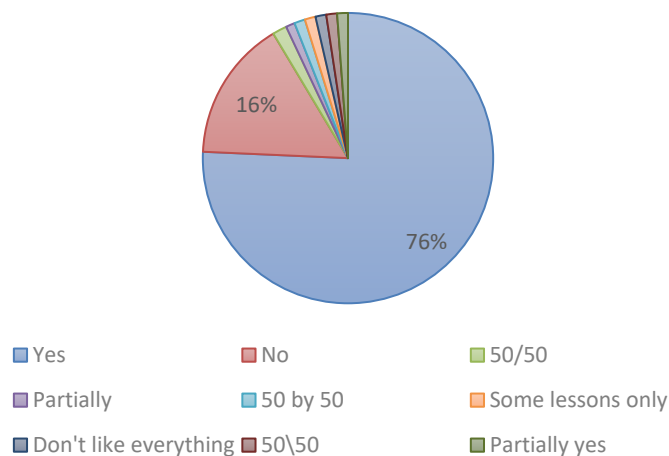


Figure 2. Satisfaction, part-time education (115 responses)

All the respondents admitted that the new format required to self-educate and self-discipline more. It is evident, learning more platforms and apps boost awareness of technologies for foreign languages. Considering that traditional language learning did not prioritize technology application as intensively as during the crisis (Matvienko et al., 2021, p.17), the advances made are significant here (Figure 3., Figure 4).

Looking at Figure 3 and Figure 4, it becomes apparent that Zoom, Meet, Google Meet, Classroom have won more student acclaim than the other mentioned platforms. These data allow the authors to refer the more intensive engagement with professors and students to the quality and accessibility of the services.

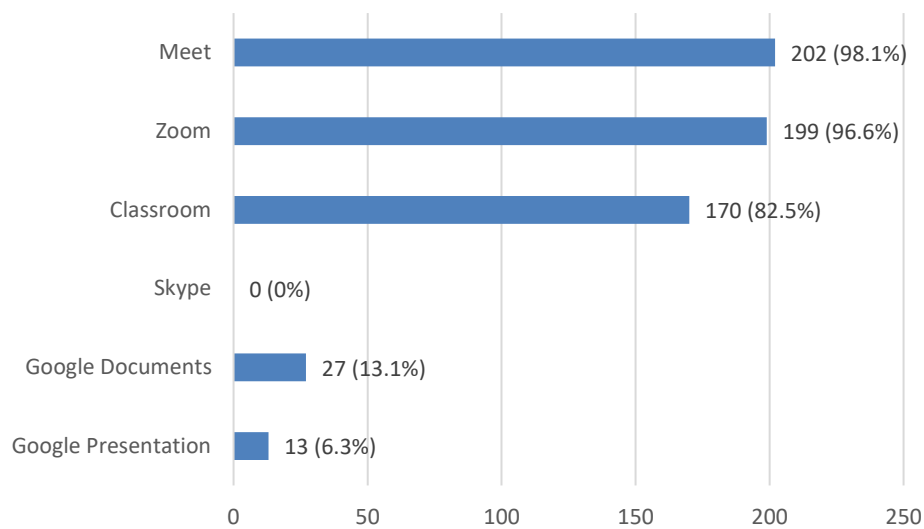


Figure 3. Use of Platforms, full-time education (206 responses)

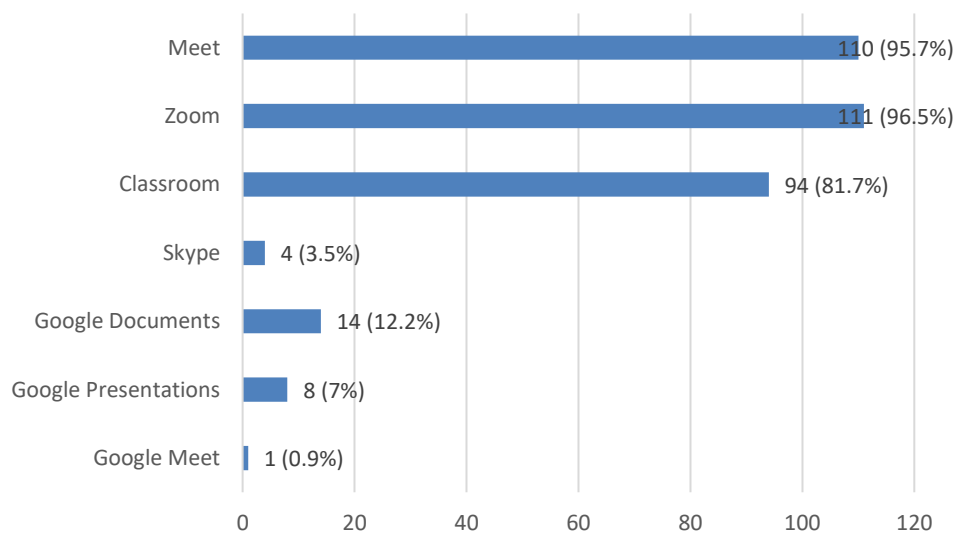


Figure 4. Use of Platforms, part-time education (115 responses)

The identified advantages and disadvantages of the full-time and part-time students have much in common. Flexibility, safety, and protection from the virus, improved awareness of technologies are positive features. However, lousy connectivity and weak signal made joining the class frustrating. As the university did not have its platform in spring, students followed the teachers to the facility available with that particular teacher, which brought uncertainty with the organization. The absence of clear-cut and rigorous schedules added to the anxiety (Lisnichenko et al., 2020, p. 6685). Trying to compensate for the lack of face-to-face control, teachers unintentionally overloaded students with extra-tasks. Many of them were in writing, which required more work. Besides, students complain about bad reciprocity and delayed feedback on student performance. Some respondents confess it is hard for them to answer before the computer, not before a real teacher and peers. Focusing more on language education, the students regret that computers distort the sound and image, which hinders correcting mistakes instantly.

Discussion

By 2019, the Vinnytsia State Mykhailo Kotsiubynskyi Pedagogical University had become well-reputed, had had adequate student enrollment, and had advanced in the internationalization of campus. Supporting partnerships, motivating students and teachers to participate in cross-cultural exchanges, it had gained more credentials than some other teacher training universities of Ukraine. Although VSPU was one of the first universities in Ukraine that initiated web-blended learning (Powell et al., 2014, p.45), it had not managed to create the online infrastructure before the crisis due to many reasons common of Ukrainian universities. Therefore, with the pandemic outbreak and the imposed quarantine in March 2020, the university students and professors faced a challenge they had never had before. Figuratively speaking, the university had to become an online institution overnight (Matvienko et al., 2021, p. 16). Surprisingly, the university began to teach on the first day of the lockdown and did not cease working till the end of the semester. Despite many concerns, fears, anxiety issues (Lesnichenko et al., 2020, p. 6688), the students and teachers persevered in language education. Hence, the VSPU students completed the spring semester of the school year 2019-2020 in its due time. The state student certification was carried out in full compliance with academic programs.

Furthermore, the student performance, ongoing and final assessment did not differ much from face-to-face learning. The authors would like to attribute this to the teacher leadership, self-education, and lifelong learning skills of Ukrainian educators (Matvienko et al., 2020, p.464; Shah, 2017, p.243). What was disturbing during that time was the lack of “know-how” and one common space for teaching quality language skills, posting assignments, and for assessment to make the educational process more orderly. As the student surveys demonstrated, the number of the unsatisfied with the quality of language instruction was not high. But the surveys also revealed that not all prospective teachers felt comfortable and confident in a new environment.

To meet the needs of students better, the university reconsidered the teaching facilities in use and took steps to develop its online infrastructure during the summer of 2020. As a result, the university moved its practices to the platform “Collaborator” and adopted G SUITE as a learning facility. The created university email accounts [vspu.edu.ua] improved organization and accessibility. G Suite system integrating Gmail, Calendar, Google Classroom, Google Meet, and Zoom conferences, created the unified space for conducting the classes, exerting control, and student assessment. Professors disconnected students from personal email, VIBER, SKYPE, WHATSAPP, TELEGRAM accounts which they utilized for teaching when the university did not have the unified learning facilities. Accordingly, the university platform eased communication and collaboration with university colleagues and administration.

Ukrainian language education had determined priorities regarding teaching foreign languages before the crisis. The interactive methods, live communication, individual approach to language instruction were well-experienced and appreciated both by students and faculty. In this respect, G Suite has become a solution since the platform invigorated engagement and collaboration, improved access to the learning resources, content delivery, and student assessment. The authors believe it facilitated language learning opportunities, reciprocity, and feedback, helping achieve academic goals “on any device from any location” (Appling, 2016; Cooper, 2018). G Suite assisted in reaching out to students, making the learning space more friendly and available for future teachers to benefit. Keeping in mind that to maximize the time

of active speaking in the class is important, teachers and students at VSPU explored the opportunities of the created infrastructure with enthusiasm. What they found out brought satisfaction. Skillfully used, technology served to make the discrepancy between traditional education on campus and online education narrower. Moreover, the integrated technologies became efficient in making online education focused more on student learning but, simultaneously, required of teachers to self-educate vigorously. The “breakout groups” and “share screen” functions enable group conversations, discussions, and pair work. The functions enliven the class procedure and increase student engagement. The recording function ensures timely reflection and feedback. Lastly, the authors are unanimous that the created platform enhances English language education at VSPU, making it more orderly and effective.

Conclusion

The COVID19 crisis has taught us an important lesson that we should not take life today for granted and rely on prior knowledge only. The study underscores the importance of lifelong learning and self-education, and a consolidated effort for language learning. Although the pandemic threatens humankind and tests survival skills, it has revealed the potential of education. Despite many drawbacks in Ukrainian education and society: insufficient funding, low digital literacy, slow technology integration, the authors conclude that much depends on a desire to become agents of change. One university’s survival history proves that it is worth struggling for quality learning. Each university experience matters if it contributes to student professional training, teaching to withstand the pandemic, and thinking of a better tomorrow.

About the Authors:

Olga Matvienko is Doctor of Pedagogical Sciences, Full Professor, Chair of Psychology, Pedagogy and Physical Training Department at Kyiv National Linguistic University. Dr. Matvienko is a Corresponding Member of the National Academy of Pedagogical Sciences of Ukraine. The specific field of research is Comparative Pedagogy, interdisciplinarity. She is an author of many scientific publications. <https://orcid.org/0000-0002-7306-7594>

Svitlana Kuzmina – a Fulbright scholar. She served as Fulbrighter in Southeast Missouri State University. Now she is an Assistant Professor at the department of foreign languages of Vinnytsia State Pedagogical University. She teaches Advanced Skills of Conversational English and Methodologies of Teaching English to the undergraduate and graduate students.

<https://orcid.org/0000-0002-3794-3139>

Tamara Yamchynska is Dean of Foreign Languages Department at Vinnytsia State Pedagogical University. Due to the efficacy in university leadership, she has been serving as the dean the third term this year. She has got a doctoral degree in Philology. The field of the research is English Philology and Leadership in Higher Education.

<https://orcid.org/0000-0002-4121-5062>

Yevheniy Kuzmin has got a doctoral degree in Computer Science. The subject of his dissertation is “Modelling of Local Human-Machine Systems of Collective Interaction”. He teaches Multimedia Systems, Software Construction, Software Design in Vinnytsia National Technical University. He is a creator of software for the web-blended education international project. <https://orcid.org/0000-0001-6230-1413>

Tamara Glazunova is an Associate Professor at the department of foreign languages in Vinnytsia State Pedagogical University. She has got a doctoral degree in Pedagogy. The specific interest of the research is innovative methodologies of teaching English in preparation of an English teacher of a new generation. She is an active participant of New Generation School Teacher project. <https://orcid.org/0000-0003-0765-9417>

References

- Amin, E.A. (2020). A review of research into Google Apps in the process of English language learning and teaching. *Arab World English Journal*, 11(1), 339-418. DOI: <https://dx.doi.org/10.24093/awej/vol11no1.27>
- Appling, J. (2016). What is G Suite? Retrieved from <https://www.lynda.com/Google-Apps-tutorials/What-G-Suite/532188/572177-4.html>
- Asmara, R. (2020). Teaching English in a virtual classroom using WHATSAPP during COVID-19 pandemic. *Language and Education Journal*, 5(1), 16-27. Retrieved from <http://ejournal.uniski.ac.id/index.php/LEJ/article/view/152/138>
- Cheung, A. (2021). Language Teaching during a Pandemic: A Case study of Zoom Use by Secondary ESL Teacher in Hong Kong. Sage Publication. DOI: <https://doi.org/10.1177/0033688220981784> Retrieved from <https://journals.sagepub.com/doi/abs/10.1177/0033688220981784>
- Cooper, B. (2018). Building Future for Youth with G Suite. Retrieved from <https://blog.systoolsgroup.com/g-suite-for-education-2018/>
- Egbert, J. (2020). The new normal?: A pandemic of task engagement in language learning. *Foreign Language Annals*, 53(2), 314-319. DOI: <https://doi.org/10.1111/flan.12452> Retrieved from <https://onlinelibrary.wiley.com/doi/full/10.1111/flan.12452>
- Finance.UA. (2019). V Ukraine skorotylas kilkist vyshiv i studentiv [In Ukraine the number of universities and students decreased]. Retrieved from <https://news.finance.ua/ru/news/-/441316/v-ukraine-sokratilos-kolichestvo-vuzov-i-studentov-infografika>
- Kucheriv, I. (2020). Education and the Pandemic: The Attitude of Ukrainians towards Distance Learning and External Independent Testing. Democratic Initiatives Foundation. Retrieved from <https://dif.org.ua/en/article/education-and-the-pandemic-the-attitudes-of-ukrainians-towards-distance-learning-and-external-independent-testing>
- Lederer, E.M. (2020). World Leaders Criticize Haphazard Response to Pandemic. The Washington Post. National Security. Retrieved from https://www.washingtonpost.com/world/national-security/world-leaders-criticize-haphazard-response-to-pandemic/2020/09/23/a404317a-fdfd-11ea-b0e4-350e4e60cc91_story.html
- Lesnichenko, A., Dovhaliuk, T., Khamska, N., Glazunova, T. (2020). Foreign language anxiety: Classroom vs distance learning. *Universal Journal of Education Research*, 8(12), 6684-6691. DOI:10.13189/ujer.2020.081233
- Mastafa, H., & Bali, M. (2020). Reduce Workloads to Ease Students' Stress: Faculty insight. Covering Education, Research, and Culture. Retrieved from <https://www.al-fanarmedia.org/2020/12/reduce-workloads-to-ease-students-stress-insights-from-auc-faculty/>
- Matvienko, O., Kuzmina, S., Yamchynska, T., Glazunova, T. (2020). Ukrainian universities under the pressure of pandemic: The effect of pandemic on teacher leadership, self-education,

- and lifelong learning. *Proceedings of 6th ICLEL Conference 2020*, 463- 473. Retrieved from https://faf348ef-5904-4b29-9cf9-98b675786628.filesusr.com/ugd/d546b1_7384fbc4f9a4c6981f56c0d6431fff2.pdf
- Matvienko, O, Kuzmina, S., Glazunova, T., Yamchynska, T., Starlin, C., Foo, S. (2021). The legacy of a pandemic: Lessons learned and ... being learned. *Journal of Interdisciplinary Education*, 17(1), 14-29. Retrieved from https://d2f86f9c-f8f6-443ab7e950de5e30a368.filesusr.com/ugd/2ea8ac_f4015466bf4d4668a080c2085c3e5421.pdf
- Ministry of Education and Science of Ukraine. (2019). Zatverdzhennya standartiv vyshchoyi osvity [Higher education standards]. Retrieved from [035-filologiya-bakalavr.pdf](https://mon.gov.ua/035-filologiya-bakalavr.pdf) (mon.gov.ua)
- Naqvi, S., & Zehra, I. (2020). Online EFL emergency remote teaching during COVID19, challenges and innovative practices: A case of Oman. *Arab World English Journal (AWEJ)*. *Proceedings of 2nd MEC TESOL Conference 2020*, 17-35. DOI: <https://dx.doi.org/10.24093/awej/MEC2.2> Retrieved from https://www.academia.edu/45342077/Online_EFL_Emergency_Remote_Teaching_during_COVID_19_Challenges_and_Innovative_Practices_A_Case_of_Oman?email_work_card=thumbnail
- Okmawati, M. (2020). The use of Google Classroom during the pandemic. *Journal of English Teaching*, 9(2), 438-443. DOI: <https://doi.org/10.24036/jelt.v9i2.109293> Retrieved from <http://ejournal.unp.ac.id/index.php/jelt/article/view/109293>
- Powell, D., Kuzmina, S., Kuzmin, Y., Yamchynska, T. & Shestopalyuk, O. (2014). Using web-blended learning in Ukraine to facilitate engagement and globalize horizons: A pilot study. *TOJDEL: The Online Journal of Distance Education and e-Learning*, 2(2), 44-51. Retrieved from http://docshare.tips/tojdel-volume02-i02_5850b313b6d87fd2bb8b56f9.html
- Powell, D., Kuzmina, S., Cwick, S., Khalid, T., Sofu, S. (2016). Democratization of education in emerging countries. *Journal of Interdisciplinary Education*, 15(1), ISSN: 1092-7069. *North American Chapter*. Retrieved from https://www.researchgate.net/publication/304836394_Democratization_of_Education_in_Emerging_Countries
- Powell, D., Kuzmina, S., Kuzmin, Y., Yamchynska, T. & Shestopaliuk, O. (2015). Educational technologies for maturing democratic approaches to educational practices in Ukraine. *Procedia -Social and Behavioral Sciences*, 176, 378-385. DOI:10. 1016/j. Sbspro. 2015. 01. 485. Retrieved from <https://www.sciencedirect.com/science/article/pii/S1877042815005224>
- Sakalo, Y. (2020). Vyzov, kotoryy nelzya ne prinyat [The challenge we can't but accept]. Retrieved from https://zn.ua/EDUCATION/vyzov-kotoryy-nelzya-ne-prinyat-354446_.html

- Schroeder, R. (2001). Institutional support infrastructure for online classes. Metropolitan Universities: *An International Forum*, 12(12), 35-40. Retrieved June 23, 2020, from <https://eric.ed.gov/?id=EJ628217>
- Shah, S. R. (2017). The significance of teacher leadership in TESOL: A theoretical perspective. *Arab World English Journal*, 8(4), 240-258.
DOI: <https://dx.doi.org/10.24093/awej/vol8no4.16> Retrieved from https://www.academia.edu/35530637/The_Significance_of_Teacher_Leadership_in_TESOL_ATheoretical_Perspective?email_work_card=thumbnail
- Shevtsova, P., & Kozubai, I. (2020). Distance foreign language learning during the pandemic as a challenge for education system. *Development of Society and Science in the Condition of Digital Transformation*. 4(13), 56-59. Retrieved from https://scholar.google.com.ua/scholar?q=language+education+during+pandemic&hl=en&as_sdt=0&as_vis=1&oi=scholar#d=gs_qabs&u=%23p%3DxOKRtPBbl6AJ
- Volkov, I. (2020). Universitet v smartfone [University in smartphone]. Retrieved from https://zn.ua/EDUCATION/universitet-v-smartfone-358367_.html
- Zmievskaia, O.O., Dovgaliuk, T., A, Glazunova, T., V, Kuzmina, S., A, & Lesnichenko, A., P. (2020). *Pidgotovka shkilnogo vchitelya novogo pokolinnya: Teoretychni ta praktychni aspekty* [Preparation of the New Generation School Teacher: Theoretical and Practical Aspects]. (2020). Collective Monograph. Ministry of Education and Science of Ukraine. Vinnytsia State Mykhailo Kotsiubynskyi Pedagogical University.