DOI: 10.22616/j.landarchart.2021.19.14

Blended learning in lifelong adult education in the aspects of covid-19 epidemical restriction

Lilita Ābele, Dina Barute, Lāsma Ulmane-Ozoliņa, Baiba Rivža
Liepaja University, Latvia
Latvia University of Life Sciences and Technologies, Latvia

Abstract. Digital skills are one of the most important skills that were highlighted in the times of COVID-19, including areas like landscape architecture. COVID-19 pandemic raised possibilities for blended-learning in adult education that were not used much before the pandemic. Data shows that Latvia's inhabitants digital skills compared to the EU average is much lower and there is a need for innovative ways to attract lifelong learners to participate in skills' advancement courses. At the end of 2020, a survey was conducted with the aim of the survey to find out the society's self-assessment of digital skills and the need to improve them for remote working. Results showed that a high number of respondents are willing to participate in blended learning courses and are eager to develop their digital skills.

Keywords: blended learning, digital skills, human capital, COVID-19, landscape architecture

Introduction

The World Economic Forum in a statement said that by 2025, about half of the workforce would need to retrain [17]. It is noted there that most of the professions of the future do not currently exist (65 % – 2030) and a large part of the current professions will be automated (47 % – 2030). In order to realize the set goal, the people of Latvia will need to improve or acquire digital skills. For many professions digital skills emphasized as compulsory skill. For example, Landscape architects must have the ability *to use information technologies* [10] (Regulations on the Classifier of Professions, basic tasks corresponding to the profession and basic qualification requirements). It is the same for almost every profession. That is why it is important to make effort on national level.

One of the ways to implement it is to organize courses for the unemployed and professional development. National employment services have become co-responsible not only for providing social support mechanisms, but also for developing the necessary skills of the workforce.

COVID-19 pandemic brought large changes in society and had a high impact on education. James & Thériault (2020) [8] in their research on COVID - 19 impact on adult education writes that pandemic lightened out inequalities that had a high impact on access and participation of learners in lifelong learning. On the other hand, Latvia's case showed that pandemic opened new possibilities for adult learners to participate in lifelong learning. There was very high activity from people to participate in lifelong learning courses co-financed by the state. If to compare - in 2017 there were 5565 people willing to participate in courses, but in 2020 there were 19 893 people (see Figure1, data from https://www.macibaspieaugusajiem.lv/). In addition, if in 2017 there were most of the courses face-to-face then in 2020 all courses offered online or in blended mode because of COVID-19.

In 2019, 7.4 % of the population aged 25–64 in Latvia were involved in lifelong learning, compared to 20.2 % in Estonia and 7 % in Lithuania. Latvia ranks 18th in the EU according to this indicator (EUROSTAT, 2016).

The aim of the research was to find out reasons and possible solutions for learners to motivate their participation in lifelong learning and to analyse blended-learning possibilities in COVID-19 restrictions.

COVID-19 blended-learning in adult education

Blended learning is defined as planned, pedagogically meaningful integration of face-to-face and e-learning [12]. Blended learning not only enriches the learning process but it gives possibilities for learners for more active participation in the learning process [5]. Blended learning gives new learning experience for learners as well as new teaching experience for teachers [13]. Meaningful integration of e-learning tools gives opportunity for learners for personal development, as well as to develop such cognitive skills as critical thinking and conversation leading [5; 15]. Blended learning experience enriches learners' learning as well as teachers' teaching praxis.

COVID-19 brought a new meaning of blended-learning where offline learning is blended with online learning (not face-to-face with e-learning). There is a lot of difference if every online learning happens using videoconference tools as a replacement for face-to-face sessions. Many

Fig. 1. Number of participants in the state co-financed lifelong learning courses in Latvia [created by authors]

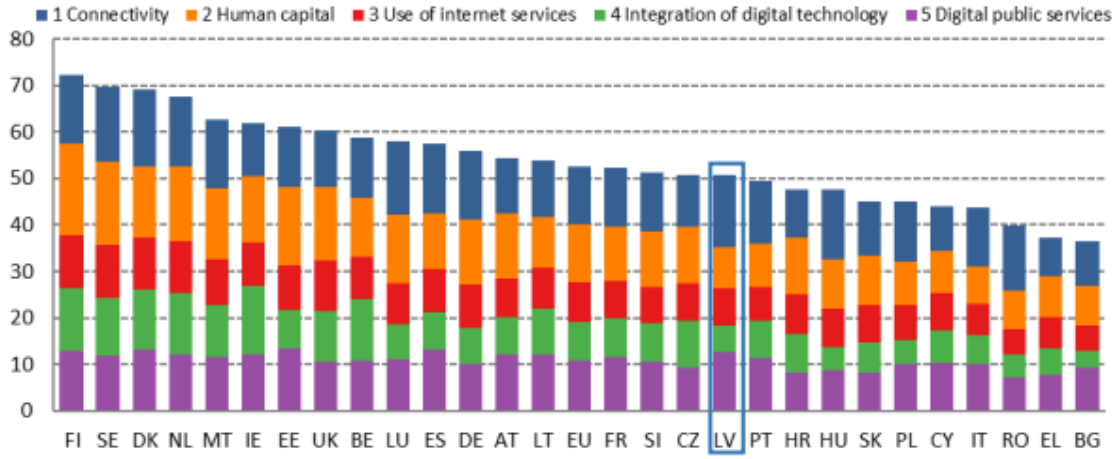

Fig. 2. Digital Economy and Society Index, 2020 [DESI 2020, European Commission]

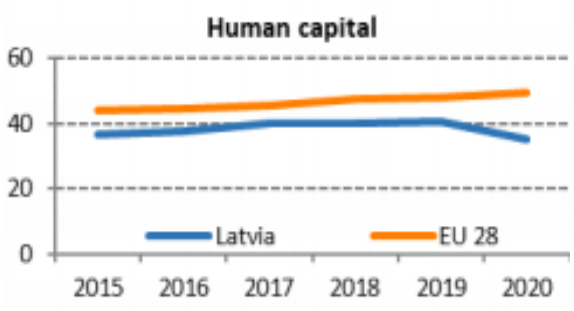

Fig. 3. Comparison of human capital Latvia and EU average, 2020 [created by authors]

teachers do not know what is "blended learning" [1] that makes the learning process ineffective. If face-to-face settings allows learners to make relationships with other learners and teachers that is seen as a vital part of learning [8], then the pandemic situation's solution - online video conference - cannot replace it. Teachers are experiencing disorientation, questioning previously held assumptions and seeking adequate pedagogical responses to meet new learning needs [4] in lifelong learning. Teachers need to develop their teaching skills to adapt and work in new adult education types. For a lot of teachers who participated in lifelong learning teaching in online mode (using ZOOM, MsTeams or other video conference tools) started as "talking heads".

COVID-19 also highlighted issues related to digital skills. The poor digital competence can lead to unsuccessful blended learning/ online learning experience as well as impact outcomes of the learning. To use technological tools effectively learners and teachers have to know them and have to know how they work [6; 3; 16; 17]. Usage of different technological tools depends on users' skills and historical body [14] – it means that users use technological tools as they used to use. So, as a more advanced IT user learner is, it is easier for them to use it for learning (in this case, for blended and online learning), because learners can pay their attention more on the content not on the technology itself [11]. However, pandemic pushes develop not only digital skills of learners but teachers as well.

Digital skills of learners

The digital skills of European citizens needed for further education assessed using the Digital Economy and Society Index (DESI) [2]. DESI is a composite index published every year by the European Commission since 2014 and tracks the progress of EU countries in their digital competitiveness. The DESI is composed of five principal policy areas, which regroup 34 indicators overall. Five principal policy areas are as follows:

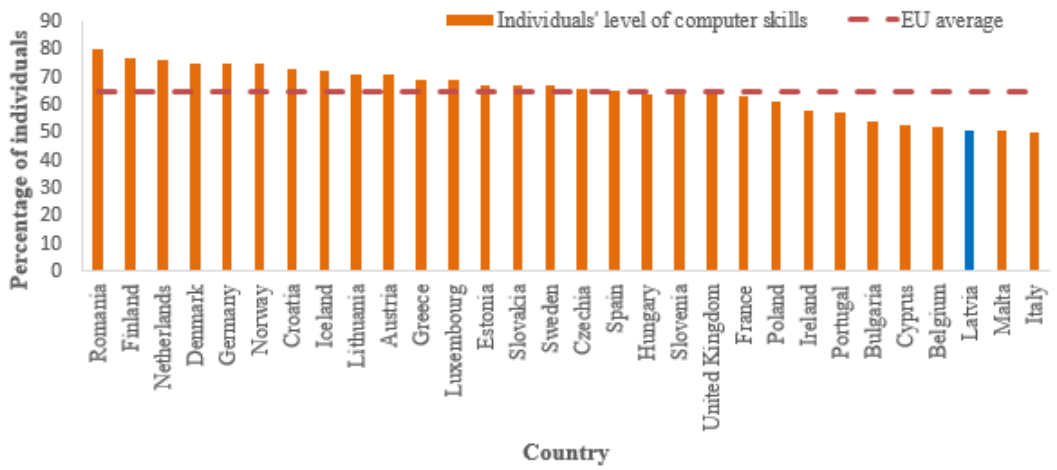

Fig. 4. Comparison of Human Capital with all 28 EU countries, 2020 [created by authors]

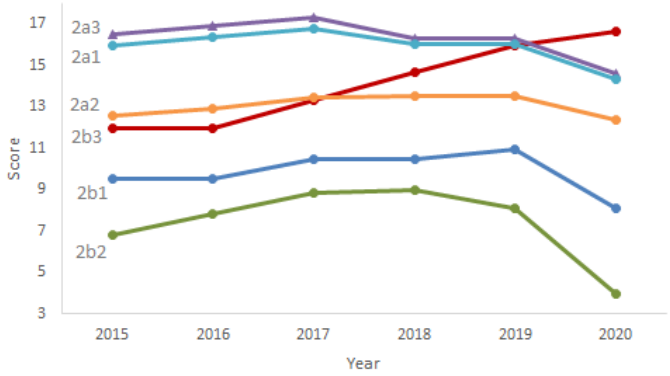

Fig. 5. Latvia's indicators of the Human Capital sub-dimension [created by authors]

1. Connectivity;
2. Human capital;
3. Use of internet;
4. Integration of digital technology;
5. Digital public services [2].

Comparing 28 EU countries according to the DESI index, Latvia ranks 18th-19th in the period from 2014 to 2018. In 2019, the DESI calculation methodology was slightly changed, but the result remained unchanged both in this year and in 2020, Latvia is still in the 18th place (see Figure 2).

In some principal policy areas, like Connectivity, Latvia ranks one of the leading places in the EU (4th place). The main problem in Latvia is a poorly developed Human capital area (24th place), which consists of two equally important sub-dimensions (Internet User Skills and Advanced Skills and Development) and six individual indicators of sub-dimensions.

Internet user skills includes at least Basic Digital Skills, Above basic digital skills, At least basic software skills, but Advanced Skills and Development includes ICT (Information and Computing Technology) Specialists, Female ICT specialists and ICT graduates.

Comparing these four groups between Latvia and the EU average, it is Human capital that has been the biggest problem for a long time and this sub-dimension has been continuing to decline since 2017 (see Figure 3).

Latvia compared with the other EU countries by 2020, shows that it holds one of the lowest positions and the gap continues to grow (see Figure 4).

Looking in more detail at the Latvia' individual indicators of the sub-dimension Human Capital:

2a Internet User Skills: 2a1 At least basic digital skills; 2a2 Above basic digital skills;

2a3 At least basic software skills;

2b Advanced Skills and Development: 2b1 ICT Specialists; 2b2 Female ICT specialists;

2b3 ICT graduates.

The figure 5 shows a significant increase in only 2b3 ICT graduates (increase – 0,7 scores) but other indicators are declining.

According to the trends shown in the figure 5, Latvia should pay special attention to the development of Above basic digital skills (2a2, decrease – 1.2 scores). At least basic digital skills (2a1, decrease – 1.7 scores), At least basic software skills (2a3, decrease – 1.7 scores), ICT Specialists (2b1. decrease – 2.9 scores). Female ICT specialists (2b2, decrease – 4.1 scores), that can be achieved, firstly, by organizing lifelong learning courses as well as possible, and secondly, involving as many people as possible. Analysing data from lifelong learning participants who

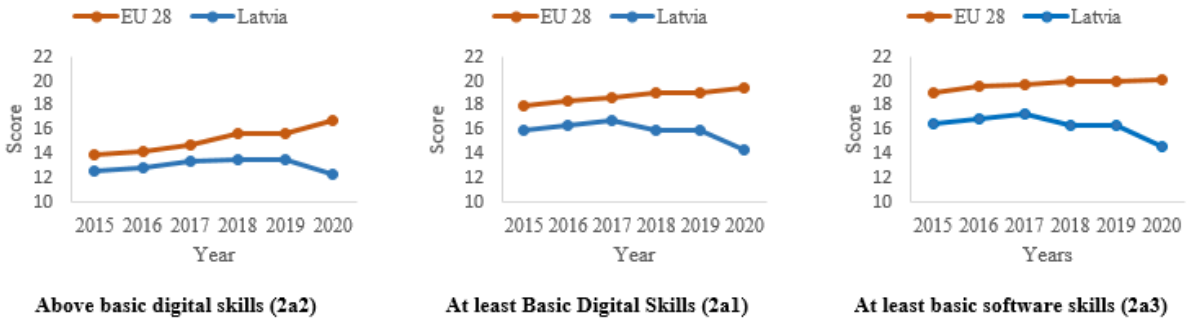

Fig. 6. Internet User Skills (2a) [data from European Commission, Digital Scoreboard, 2020]

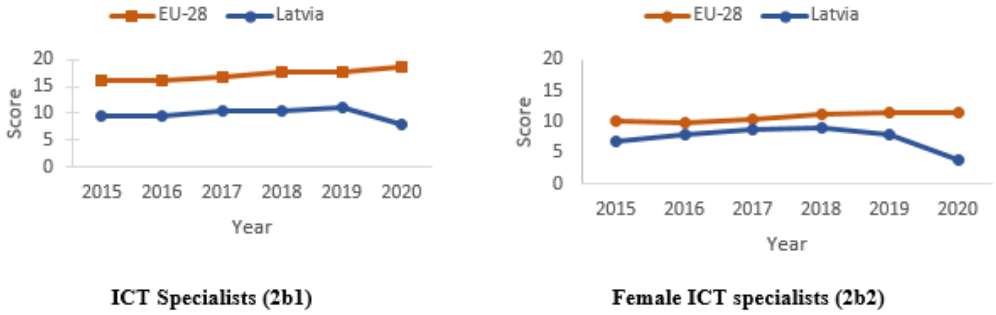

Fig. 7. Advanced Skills and Development (2b)
[data from European Commission, Digital Scoreboard, 2020]

participate in the state co-financed courses, around 40 % of learners participate in courses related to digital skills (information from the Ministry of Education and Science of Latvia, 2021).

Comparing the average Internet User Skills (2a) on Above basic digital skills and At least basic software skills field of Latvia and the EU in detail, it shows that Latvia lags behind in all positions (see Figure 6).

The most decreased is Above basic digital skills (2a2) compared to EU level decrease in 2019 is 2.21 scores but 2020 is 4.48 scores. At least basic digital skills (2a1) compared to EU level in 2019 difference is 3.04 scores but 2020 is 5.12 scores. The same situation is about At least basic software skills (2a3) field where compared to EU level difference in 2019 is 3.7 scores but 2020 is 5.56 scores. Those are the most important topics that lifelong learning' system can react more quickly and need to do proactive steps, for example, offer wide range of courses, prepare MOOCs (Massive Open Online Courses), collaborate with IT companies and educational institutions in the field of IT.

ICT Specialists' (2b1) situation compared to EU level shows that differences in scores are – in 2019 are 6.67 scores but in 2020 are 10.48 scores. Female ICT specialists (2b2) scores are in 2019 scores are 3.44 but 2020 is 7.57 that pushes Latvia's lifelong learning institutions as well as other informal educational institutions to react more quickly, for example, there is initiative in Latvia TechGirls that tries to correspond this issue and organize free of charge IT courses for women. However, such initiatives must come also from lifelong learning institutions as the main players in the professional development field (see Figure 7). Some educational institutions make effort on development of digital skills. For example, Ogres tehnikums provides an opportunity to acquire digital skills in four professional development education programs in 2021 - "Landscape Architecture, Spatial Planning", "Garden Landscape Planning", "Video Development - Basics of Filming and Editing" and "Working with InDesign CC in the field of printing and media technologies" in the framework of European Union funds project no. 8.4.1.0/16/I/001 Implementation of the 6th round "Improvement of Professional Competence of Employed Persons".

Results and Discussion

According to statistical data analysis, research questionnaire was conducted.

In order to establish a lifelong learning course contribution to tackling the problem the survey has been conducted. The aim of the survey was to find out the society's self-assessment of digital skills and the need to improve them for remote working. The main motivators for further supplementing knowledge and skills in lifelong learning courses were also identified.

The survey was conducted in November and December 2020, distributing it electronically. Respondents were mainly those who attended some lifelong learning courses in Riga remotely, but also from regional universities.

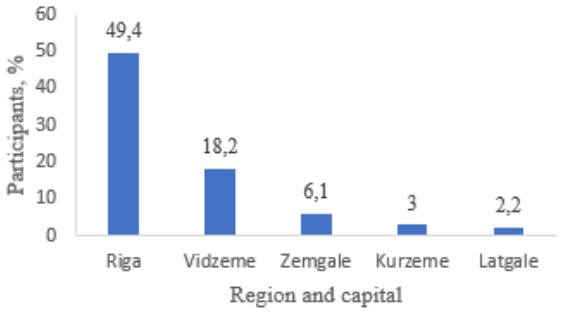

Fig. 8. Respondents from Latvia's regions [created by authors]

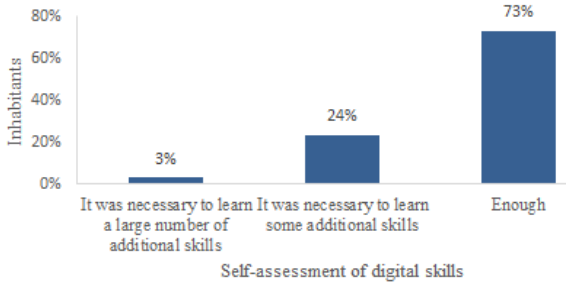

Fig. 9. Self-assessment of digital skills in Latvia as a whole [created by authors]

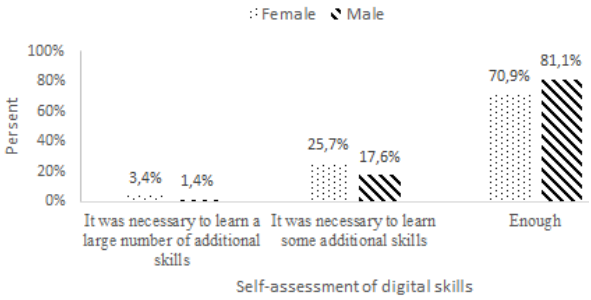

Fig. 10. Self-assessment of digital skills in Latvia by gender [created by authors]

The survey involved 525 respondents, 12 questionnaires were not correctly filled in, and so the analysis was aided by only 503 questionnaires.

Means (M), standard deviation (SD), absolute and relative frequencies were calculated for descriptive statistical analysis. A total number of respondents were 503; aged 24 to 60 were interviewed. The average age of the respondent is 37.8 years (SD = 8.7). In this sample 375 females (74.6 %), with average age 37.7 (SD=8.7) and 121 male (24.1 %), with average age 37.6 (SD=42.7). 6 respondents (1.4%) did not want to indicate their gender (M = 42.7, SD = 6.8). 81.2% of respondents had higher education (BA – 38.6 %, MA - 39.4 %, PhD – 3.2 %). On the question "How do you rate your digital skills in the time of remote working?", respondents gave a self-assessment of their digital skills. 415 participants assessed their skills. 303 respondents (73.0 %) acknowledged that their digital skills were sufficient, 100 employees (24.1 %) needed to acquire some additional skills, but only

TABLE 1
Advantages and disadvantages of re-attending the courses [created by authors]

Positive aspects	1. New knowledge - changes the point of view, broadens the horizons 2. Opportunity to improve oneself both professionally (increase skills and abilities) and personally (for self-growth, also hobbies) 3. Desire to develop 4. I like to study 5. Increasing competitiveness in the labour market 6. Useful for work 7. Good content 8. Good performance (motivated, professional teachers) 9. Payment (State aid) 10. Opportunity to learn remotely 11. Willingness to change occupation 12. Content - teaches what you really need 13. Possibility to combine with work 14. Remotely - wider choice for those livingoutside Riga
Negative aspects	1. Dissatisfaction with existing courses 2. Did not live up the expectations 3. Too wide course topics 4. Too high course intensity 5. I don't like that courses take place online 6. Insufficient supply (topic) 7. It is difficult to combine children and distance learning in the evenings 8. Large number of hours (160h) 9. Too much time is spent learning a substance that they can learn on their own.

12 respondents (2.9%) needed to acquire a large number of additional skills. This self-assessment of digital skills differs from that seen in EU statistics (see Figure 5). In general, the self-assessment of digital skills in Latvia is high, 73 %. Only about 3 % of respondents agree that digital skills need to be significantly improved.

To the question, "Would you take professional development courses again?" 358 respondents answered. 256 respondents (71.5 %) are convinced that they will repeatedly be involved in professional development courses. 88 respondents (24.6 %) are partially sure that they will participate, 8 (2.2 %) have not decided and 6 (1.7 %) have answered with no. Rather convincing or convincing in Zemgale, Latgale and Kurzeme – 100 %, Riga – 96 %, Vidzeme – 95 %. The main advantages and disadvantages of re-attending the courses are shown in Table.

Conclusions

Research showed that several indicators of digital skills describe Latvia's situation as critical (in EU context), around 40% of inhabitants between years 2017 and 2020 were willing to develop their digital skills by participating in the state co-financed lifelong learning courses. Reasons not to participate

can be different - lack of information, lack of time, problems of combining family, work and learning, bad experience in courses.

Research showed that even learners are willing to participate in lifelong adult education; there are negative aspects they see, especially in the frame of remote learning. Learners see an opportunity to learn remotely as positive and as a negative aspect at the same time. Future research must be done on reasons that brought negative experiences to learners. One suggestion is that there is a need to teach adult education teachers on remote learning methodology and develop their digital skills to make learning more meaningful and goal-oriented.

Particular attention should be paid to innovative methods of engagement to increase the number of people attending lifelong learning courses, for example:

- to create a more flexible educational offer that meets the needs and opportunities of adults;
- note a lower minimum number of learners to start group training;
- tax incentives for companies and individuals;
- grant for companies and individuals;
- training leave;
- organize courses with the state co-financing.

One more suggestion is to use the advantage of blended learning as remote learning increases people's involvement in courses, but some also want online meetings. Involvement in lifelong learning courses in the national education strategy should be a priority, because according to the data shown above; Latvia is rapidly lagging behind the EU average and, starting from 2017, is reducing its performance.

Acknowledgements

The article was written with the financial support of the project VPP-COVID-2020/1-0010 / *Ekonomiskais, politiskais un juridiskais ietvars Latvijas tautsaimniecības potenciāla saglabāšanai un konkurētspējas pieauguma veicināšanai pēc pandēmijas izraisītas krīzes* (reCOVery-LV).

References

1. **Bruggeman, B., Tondeur, J., Struyven, K., Pynoo, B., Garone, A., & Vanslambrouck, S.** Experts speaking: Crucial teacher attributes for implementing blended learning in higher education. [online] *The Internet and Higher Education,* 2021. 48, 100772 [cited 29.09.2021]. https://www.sciencedirect.com/science/article/pii/S1096751620300488?casa_token=gYXOjgxu6jMAAAAA:o2Rmv8wBIhX8UawREmSXuZnEpAF4q4rqEIR0o1KdsgkDvi8rxoDpZm7oB0a16ZNWK428MFJA
2. *Digital Economy and Society Index: Indicators.* [Online]. [cited 12.03.2021.] https://digital-agenda-data.eu/datasets/desi/indicators.
3. **Dohn, N. B.** *Web 2.0: Inherent tensions and evident challenges for education. [online] International journal of computer-supported collaborative learning,* 2009. 4(3), 343–363. [cited 12.04.2021] https://link.springer.com/article/10.1007/s11412-009-9066-8
4. **Eschenbacher, S., Fleming, T.** Transformative dimensions of lifelong learning: Mezirow, Rorty and COVID-19. [online] *Int Rev Educ* 66, 657–672 (2020). [cited 3.09.2021.] https://doi.org/10.1007/s11159-020-09859-6
5. **Garrison, D. R., Vaughan, N. D.** Blended learning in higher education: Framework, principles, and guidelines. John Wiley & Sons, 2008
6. **Hubackova, S., Semradova, I.** Evaluation of blended learning. [online] *Procedia-Social and Behavioural Sciences*, 2016. *217*, 551–557. [cited 15.04.2021.] https://www.sciencedirect.com/science/article/pii/S1877042816000690
7. **James N, Thériault V.** Adult education in times of the COVID-19 pandemic: Inequalities, changes, and resilience [online] *Studies in the Education of Adults*. 2020 Jul 2;52(2):129-33. [cited 19.09.2021]. https://www.tandfonline.com/doi/full/10.1080/02660830.2020.1811474
8. **James, T., Seary, K.** *Why aren't they attending class like they are supposed to? A review into students' perception of the value of class attendance.* [online] Student Success, 2019. 10(1), 115–130. [cited 20.09.2021.] https://go.gale.com/ps/i.do?id=GALE%7CA581622979&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=22050795&p=AONE&sw=w&userGroupName=anon%7E8bfa4e90
9. **Jūrmalietis, R., Ābele, L., Benders, J.** *Ecotechnological approach for sustainable development education: Liepaja University Case*. [online] International Multidisciplinary Conference on Social Sciences and Arts – SGEM 2015, Book 1, Volume II, ISBN 978-619-7105-45-2, p 317–325. [cited 25.08.2021.] https://www.elibrary.ru/item.asp?id=43046778&pf=1
10. Ministru kabineta 2017. gada 23. maija noteikumi Nr. 264 "Noteikumi par Profesiju klasifikatoru, profesijai atbilstošiem pamatuzdevumiem un kvalifikācijas pamatprasībām".https://likumi.lv/ta/id/291004
11. **Ozsariyildiz, S., Beheshti, R.** Effects of teaching environments and digital media: the case of a parametric design systems course. Bringing ITC Knowledge to Work, 2007. 763–768.
12. **Picciano, A.** *Blending with purpose: The multimodal model.* [online] Journal of the Research Center for Educational Technology, 2009, 5(1), 4–14 [cited 02.09.2021]. http://rcetj.org/index.php/rcetj/article/viewArticle/11
13. **Powell, A., Watson, J., Staley, P., Patrick, S., Horn, M., Fetzer, L., Verma, S.** *Blending Learning: The Evolution of Online and Face-to-Face Education from 2008–2015.* [online] Promising Practices in Blended and Online Learning Series. *International association for K-12 online learning* [cited 25.08.2021]. https://eric.ed.gov/?id=ED560788
14. **Scollon, S. W.** *Nexus analysis: Discourse and the emerging internet*. Routledge, 2014.

15. **Somekh, B.** Pedagogy and learning with ICT: Researching the art of innovation. Routledge. 2007
16. **Viederyte, R., Anne, O., Paulauskiene, T., Abele, L.** *Diversity of eco-innovations towards sustainable development: investments planning performance*. [online] 19th International Multidisciplinary Scientific GeoConference and EXPO S G E M 2 0 1 9 [cited 25.08.2021.] http://toc.proceedings.com/49682webtoc.pdf
17. World Economic Forum [online]. *The Future of Jobs Report 2020*. [cited 20.09.2021.]. https://www.weforum.org/reports/the-future-of-jobs-report-2020

AUTHORS:
Lilita Ābele, PhD candidate, Mg.sc.env., Head of Circular economy center, Director of Master study programme Ecotehnologies, lecturer at Faculty of Science and Engineering Liepaja University, E–mail: lilita.abele@liepu.lv
Dina Barute, Mg.sc.educ., lecturer at Faculty of Science and Engineering, Liepaja University. E–mail: dina.barute@liepu.lv
Lāsma Ulmane-Ozoliņa, PhD in Pedagogy, a researcher at Liepaja University Institute of Educational Sciences, lecturer at Faculty of Science and Engineering, Liepaja University. E–mail: lasma.ulmane-ozolina@liepu.lv
Baiba Rivža, Professor, Dr. habil. oec., full member of the Latvian Academy of Sciences;
Vice President of the Latvian Academy of Sciences, Professor Latvia Univesity of Life Science and Technologies, Faculty of Economics and Social Sciences, Latvia. E–mail: rivzab@llu.lv

Kopsavilkums. Digitālās prasmes ir vienas no svarīgākajām prasmēm, kas tika izceltas COVID–19 laikā, tostarp tādās jomās kā ainavu arhitektūra. COVID–19 pandēmija palielināja jauktās izglītības iespējas pieaugušo izglītībā, kas pirms pandēmijas netika daudz izmantotas. Dati liecina, ka Latvijas iedzīvotāju digitālās prasmes salīdzinājumā ar ES vidējo līmeni ir daudz zemākas un ir nepieciešami inovatīvi veidi, kā piesaistīt studentus mūžizglītības kursos prasmju pilnveidei. 2020. gada nogalē tika veikta aptauja, kuras mērķis bija noskaidrot sabiedrības pašvērtējumu par digitālajām prasmēm un nepieciešamību tās pilnveidot saistībā ar attālināto darbu. Rezultāti parādīja, ka liels skaits respondentu vēlas piedalīties jauktās izglītības kursos un vēlas attīstīt savas digitālās prasmes.