DOI: 10.25768/1646-4974n35-03

Digital communication skills: a five-country study of the attitude to online classes in universities

Denys Lifintsev, Cristina Fleseriu & Wanja Wellbrock

Kyiv National Economic University / University Babes-Bolyai / Heilbronn University of applied sciences

Email: denfcdk@gmail.com / cristinafleseriu@gmail.com / wanja.wellbrock@hs-heilbronn.de

Abstract

Background and Purpose: This study explores the attitude of the university students to online classes as a tool to improve their digital communication skills.

Design/Methodology/Approach: We used an online questionnaire to collect data for our study. The sample consists of 516 university students from five countries: Colombia, Germany, Portugal, Romania and Ukraine representing different regions in Europe and South America. Different statistical tools were used to check the hypotheses.

Results: The results indicate that new generations are interested in the opportunity to upgrade their digital communication skills. And they would like to have some of university classes being conducted online even under normal external conditions in order to achieve this goal. The majority of respondents have stated that they would like to have 21-50% of classes online while only 7.8% of students would prefer to have all classes in a face-to-face form.

Conclusions: The discussion of the findings includes the analysis of opportunities provided by new technologies in the era of digital globalization. Blended education system with some share of classes being held online might help to improve digital skills of the students, make them prepared better for business environment with lots of online activities.

Keywords: online-learning, digitalization, digital skills, digital competences, digital communication, cross-cultural studies.

Introduction

Digitalization has become a megatrend and it has changed significantly a lot of processes in business and in everyday life globally. Since the last decade of the 20th century digital technologies' role in everyday life has increased dramatically, but not everyone has enough digital skills to feel comfortable in a modern world (Allmann & Blank, 2021).

Digitalization is also a very important aspect for universities and schools and discussion about online teaching is found almost everywhere. Especially the current COVID-19 pandemic speed up this digitalization trend on school and university level. It led to an emergency paradigm shift in teaching and learning worldwide. Due to multiple shutdowns and a complete closure of universities for over a year, online teaching becomes more and more the new normal on academic level. Numerous online teaching platforms, study materials, techniques, and technologies exist to ensure that educating the students does not stop (Mahmoud, 2020; Mondol & Mohiuddin, 2020; Pandey et al., 2021; Sarwar et al., 2020; Zia, 2020).

Data de submissão: 2021-10-18. Data de aprovação: 2022-09-28.

Revista Estudos em Comunicação é financiada por Fundos FEDER através do Programa Operacional Factores de Competitividade – COMPETE e por Fundos Nacionais através da FCT – Fundação para a Ciência e a Tecnologia no âmbito do projeto *LabCom – Comunicação e Artes, UIDB/00661/2020.*

Online classes are one of the main methods to teach students without face-to-face contact. This kind of online teaching requires special digital skills and equipment, which is not available for everybody. Therefore, the study results depend from personal, cultural and national aspects, for example net income, digitalization efforts of the specific country and personal attitude to digital solutions (Muthuprasad et al., 2021; Nambiar, 2020).

Due to the COVID-19 pandemic the question is not if additional online classes could be helpful, online teaching is the only way to transfer knowledge to the students. Therefore, the Covid-19 pandemic is an experimental field to test the success of online teaching and to derive recommendations for combing online and face-to-face teaching methods after the ending of shutdowns caused by the COVID-19 pandemic (Mondol & Mohiuddin, 2020).

Main aim of the study

Our study is focused on exploring the attitude of the students to online-classes. Realizing that young people deeply integrated into digital technologies should probably like the idea of studying online, we also admit that they would prefer to spend some time on campus during face-to-face classes. Thus, our study is aimed to find the proportion between online and offline classes that would suit the interests of university students.

Literature review

Digitalization, being defined as "the way many domains of social life are restructured around digital communication and media infrastructures" (Brennen and Kreiss, 2016, p.1), is playing a fundamental role in modern everyday life. This trend is fostered by the ongoing processes of digitization – converting analogue data into digital form (Parviainen et al., 2017). It affects interpersonal interaction and definitely it affects business. Digitalization provides numerous opportunities to companies, but it also motivates managers to adjust corporate strategies to the new digital reality (Kiel et al., 2016; Rachinger et al., 2019).

Among the potential benefits of digitalization and digital transformation for companies are costs savings (e.g., by digitizing some of the manual processes), faster identification and reaction on problems (e.g., by using digital online tools) (Parviainen et al., 2017; Markovitch and Willmott, 2014). These trends stimulated growing role of digital competences for the employees (Vieru et al., 2015; Shahlaei et al., 2017). Considering that digitalization provided lots of business opportunities not only to large international corporations, but also to SMEs (small and medium enterprises) and individuals (Lifintsev & Wellbrock, 2019), such skills and competences are needed by the majority of population of our planet.

Growing impact of digitalization fosters growing demand for the professionals with a high level of what was called IT or ICT (information and communication technologies) and computer literacy (Bawden, 2008). In a broad understanding, "digital competence" or "digital skills" cover numerous issues related to ICT use such as information management, collaboration, communication and sharing, content creation, problem solving and technical operations (Ferrari, 2012), strategic skills (Van Deursen, Helsper, & Eynon, 2016).

It is important to clarify the difference between skills and competences which sometimes might be treated as synonyms. We agree with the researchers explaining skills as more technical aspects of competences (van Deursen, 2010). In the European Qualifications Framework skills are referred to as

"the ability to apply … knowledge", while competence is defined as "the proven ability to use these sets of knowledge and skills for one's personal development" (European Commission, 2008, p.13; Iordache, Mariën & Baelden, 2017, p.8).

Nowadays "digital skills" are named among highly important skills of the 21st century along with collaboration, communication, citizenship, problem solving, critical thinking, creativity and productivity (Voogt & Roblin, 2012). Skills mentioned above are called "21st-century skills" to indicate that they are more related to the current economic and social developments in comparison with those of the past century mainly connected with an industrial mode of production (Van Laar et al., 2017). We also agree with the scholars emphasizing on the high importance of cultural intelligence (CQ) of the professionals (Taras, 2020; Richter et al., 2020) that is needed for effective collaboration within multicultural teams that might achieve better results due to their diversity (Velez-Calle et al., 2020). Among the most important factors leading to cultural intelligence are the number of countries that business practitioners have lived in (for more than six months), their education level, and the number of languages spoken (Alon et al., 2018).

Professionals representing different generations need digital skills to work effectively and reach career goals. They are highly important especially for young workers to get career advancement which influences their psychosocial well-being and self-esteem (Martinovic et al., 2019; López Peláez et al., 2020).

In the 21st century new generations, such as Generation Z and especially Generation Alpha, start achieving digital skills from the very early age (McDougall, 2018). While the Millennials were first generation being named "digital natives" (Prensky, 2001), Gen Z and Alpha were born during digital age that make them even more dependable on digital technologies. This trend has different consequences. For example, many young people today have rather short attention span due to the distractions of technological devices such as mobile phones (McCrindle & Wolfinger, 2009) which have taken an important place in modern society, becoming, probably, the most widespread channel of communication amongst people (Canavilhas et al., 2020).

Generation Z students would prefer to shorten the number of academic textbooks to pass the course, but instead to rely on YouTube as a primary source of self-instruction (Seemiller & Grace, 2016). On the other hand, they are truly "technologically fluent" (Fratričová & Kirchmayer, 2018, p.29), what definitely gives them competitive advantages over previous generations in the field of digital literacy and digital competences. These competences provide diverse opportunities for the young people on the global labour market, and it should be noted that they are open for work in multicultural globalized business environment (Lifintsev, Fleşeriu & Wellbrock, 2019).

Education systems in many world countries have taken into consideration the growing need of achieving digital competences. According to Eurydice Report (European Commission, 2019), digital competences' development is included in different forms in the majority of European countries at all three education levels. Almost half of the European education systems refer to the standard European key competence definitions for digital competence. At the same time, eleven education systems use their own national definition of digital competence and eight other countries (Estonia, France, Cyprus, Lithuania, Malta, Austria, Albania, and Serbia) use both the European definition and a national one. It is also important to note, that in more than half of European education systems, teacher-specific digital competences are recognised in competence frameworks as some of the essential competences for those who are going to teach students.

University online classes provide students with another opportunity to gain digital competences. Nowadays most universities offer blended learning system, combining online and face-to-face classes. Such system has many benefits for students including more flexible schedule, ability to work and spend more time with family and friends. Numerous studies show different efficiency of online classes com-

pared to face-to-face ones and it is almost impossible to see clear advantage of either teaching approach (Kemp, 2020). At the same time, virtual teaching-learning process has its own advantages and difficulties (Ureta et al., 2021).

Attitude to online classes definitely depends on each student's personal characteristics and lifestyle, thus the performance, satisfaction and academic marks of the students choosing online courses differ significantly in different groups, universities (Kemp & Grieve, 2014; Zacharis, 2010) and countries. However, the quality of the instruction and qualification of the teacher are much more important that the form (online or offline) of conducting classes (Kemp, 2020). Besides, in modern interconnected globalized world university students need to acquire digital skills to adapt easily in mostly digitalized economy. This is why higher education institutions should make efforts to foster digital literacy of the students (Anthonysamy et al., 2020).

New digital reality is a serious challenge for teachers mostly representing generations less integrated in ICT from their childhood years comparing to their students. Students often believe that their digital skills are mainly the result of self-education, and looking for advice, they rely firstly on the expertise of their peers, then to parents, while the teachers are last in this hierarchy (Verhoeven et al., 2016). And it must be noted that students' digital skills not always correlate with the skills needed for effective learning (Aesaert et al. 2017; Bergdahl, Nouri & Fors, 2020).

Methodology

The instrument that was used for data collection was the questionnaire. An online questionnaire was disseminated to university students in five countries: Colombia, Germany, Portugal, Romania, and Ukraine between June and October 2020. The questionnaire consisted of closed ended questions regarding the perception on online education. After the socio-demographics questions, students were asked to share their level of agreement with statements regarding online education on a 5-point Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). To compare the level of agreement, scores of 4 and 5 on the Likert scale were considered as agreement while scores of 1 and 2 were considered disagreement.

Sample description

A total of 593 responses were collected. Of these, only students that are part of the Z generation and that have the nationality of the five countries were considered for this study resulting in 516 valid responses.

Most respondents were female (67%) from either Ukraine or Romania (61%) with either intermediate or advanced self-reported level of digital communication competences (84.3%) as presented in Table 1.

Table 1 – Statistical description of the sample

Variable	Values		
Gender	Male	170	32.9
	Female	346	67.1
Nationality	Colombia	60	11.6
	Germany	88	17.1
	Portugal	53	10.3
	Romania	112	21.7
	Ukraine	203	39.3
Level of digital communication competences	Basic	81	15.7
	Intermediate	249	48.3
	Advanced	186	36

When asked if they considered digital communication skills as being essential, 91.4% of respondents agreed while only 4.1% of respondents disagreed with this statement (Figure 1).

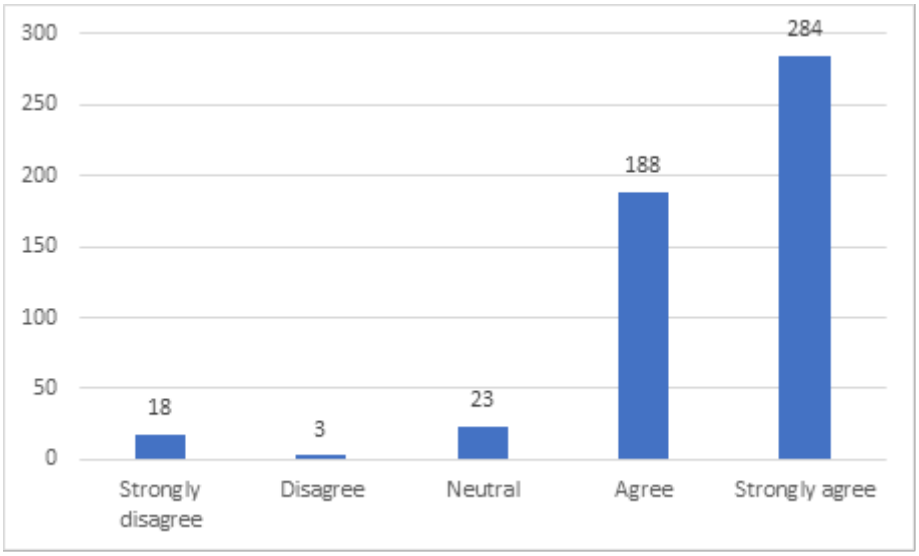

Fig. 1. Frequency of responses for "*Digital communication skills are essential in a modern world*"

The level of agreement was still high (56.5%) when students were asked if some classes should still be held online using digital communication tools (MS Teams, Zoom, Skype, etc.) even under normal external conditions to help students get digital communication competences. Only 22.3% disagreed with this statement while 21.1% chose to remain neutral in this regard (Figure 2).

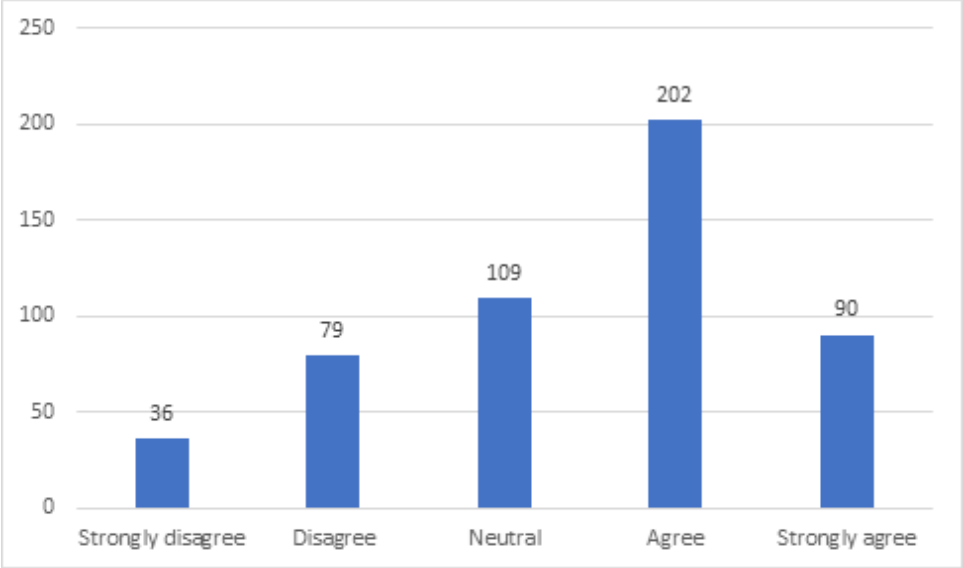

Fig. 2. Frequency of responses for "*Some classes in universities should be held online using digital communication tools (MS Teams, Zoom, Skype etc.) even under normal external conditions to help students get digital communication competences*"

Opinions are mixed regarding the number of classes that should be held online as 44.4% of respondents consider that more than 20% of classes should be held online, while 47.9% think that less than 20% should be held online and 7.8% even consider that no classes should be held online (Figure 3).

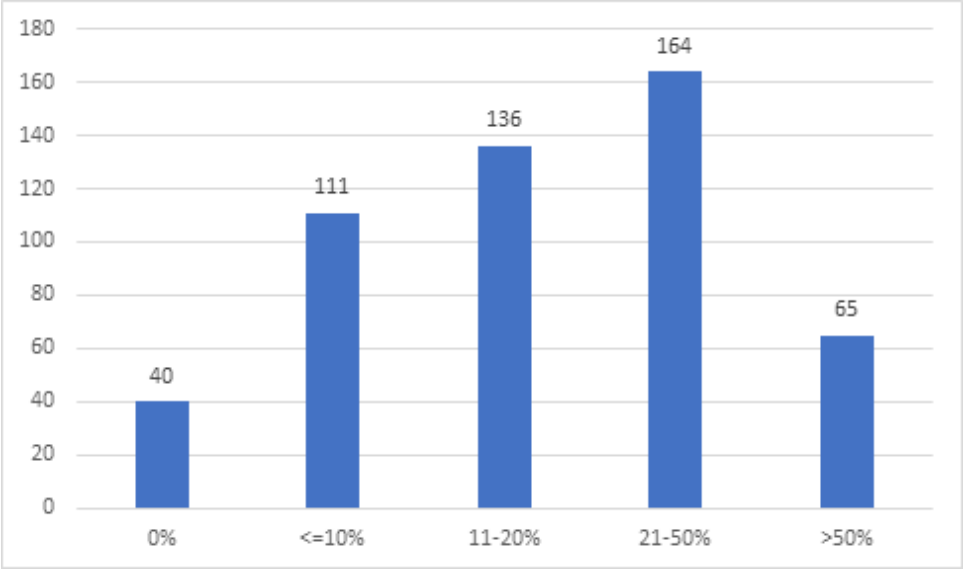

Fig. 3. Frequency of responses for "*What share of university classes should be held online using digital communication tools (MS Teams, Zoom, Skype etc.) under normal external conditions to help students get digital communication competences*"

Most students feel comfortable using digital communication tools during online classes (54.7%) while only 22.3% of students don't feel comfortable using these tools.

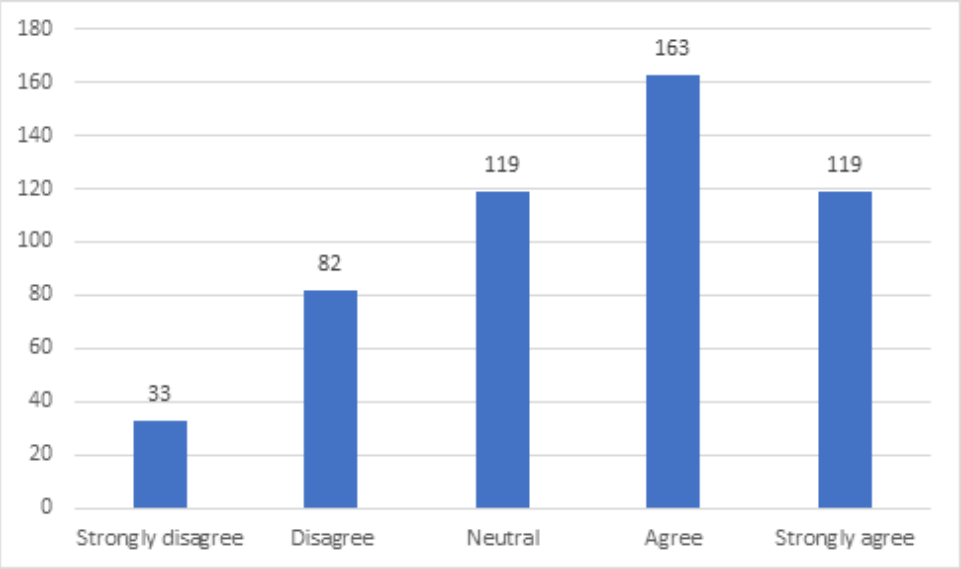

Fig. 4. Frequency of responses for "*I feel comfortable during online classes using digital communication tools (MS Teams, Zoom, Skype etc.)*"

Hypothesis testing

Nationality

H1. Respondents agree that digital communication skills are essential in a modern world regardless of nationality.

H2. Respondents agree that some classes in universities should be held online using digital communication tools (MS Teams, Zoom, Skype, etc.) even under normal external conditions to help students get digital communication competences regardless of nationality.

H3. Respondents agree on the share of classes that should be held online using digital communication tools (MS Teams, Zoom, Skype, etc.) even under normal external conditions to help students get digital communication competences regardless of nationality.

H4. Respondents feel comfortable during online classes using digital communication tools (MS Teams, Zoom, Skype etc.) regardless of nationality.

The Shapiro-Wilk test was used to determine if the variables are normally distributed. None of the tested variables resulted as being normally distributed.

H1. A Kruskal-Wallis test was conducted to determine if there were differences in agreement scores with the statement "Digital communication skills are essential in a modern world" between nationality groups: Colombia (n=60), Germany (n=88), Portugal (n=53), Romania (n=112) and Ukraine (n=203). Distributions of scores were not similar for all groups, as assessed by visual inspection of a boxplot. Agreement scores were statistically significantly different between the different nationality groups, $U(4) = 29.908$, $p < 0.001$. Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post-hoc analysis revealed statistically significant differences in agreement scores between respondents from Ukraine (mean rank = 225.01) and Romania (mean rank = 294.48) ($p < 0.001$) and Ukraine and Colombia (mean rank = 301.97) ($p = 0.001$), but not between any other group combination.

As the unadjusted p-values were significant for some group pairs, the analysis was followed up with Mann-Whitney tests for those groups.

A Mann-Whitney U test was run to determine if there were differences in agreement score between respondents from Germany (n=88) and Ukraine (n=203). Distributions of the agreement scores for respondents from Germany and Ukraine were not similar, as assessed by visual inspection. Agreement score was statistically significantly higher in Germans (mean rank = 164.52) than in Ukrainians (mean rank = 137.97) respondents, U = 7302.5, z = -2.740, p = 0.006.

A Mann-Whitney U test was run to determine if there were differences in agreement score between respondents from Portugal (n=53) and Romania (n=112). Distributions of the agreement scores for respondents from Portugal and Romania were not similar, as assessed by visual inspection. Agreement score was statistically significantly higher in Romanians (mean rank = 88.68) than in Portuguese (mean rank = 71) respondents, U = 2332, z = -2.597, p = 0.009.

A Mann-Whitney U test was run to determine if there were differences in agreement score between respondents from Portugal (n=53) and Colombia (n=60). Distributions of the agreement scores for respondents from Portugal and Colombia were not similar, as assessed by visual inspection. Agreement score was statistically significantly higher in Colombian (mean rank = 63.5) than in Portuguese (mean rank = 49.64) respondents, U = 1200, z = -2.592, p = 0.009.

H2. A Kruskal-Wallis test was conducted to determine if there were differences in agreement scores on if some classes in universities should be held online using digital communication tools (MS Teams, Zoom, Skype etc.) even under normal external conditions to help students get digital communication competences between nationality groups: Colombia (n=60), Germany (n=88), Portugal (n=53), Romania (n=112) and Ukraine (n=203). Distributions of scores were not similar for all groups, as assessed by visual inspection of a boxplot. Agreement scores were not statistically significantly different between the different nationality groups, U(4) = 8.989, p =0.061.

H3. A Kruskal-Wallis test was conducted to determine if there were differences in agreement scores on the share of classes that should be held online using digital communication tools (MS Teams, Zoom, Skype, etc.) even under normal external conditions to help students get digital communication competences between nationality groups: Colombia (n=60), Germany (n=88), Portugal (n=53), Romania (n=112) and Ukraine (n=203). Distributions of scores were not similar for all groups, as assessed by visual inspection of a boxplot. Agreement scores were statistically significantly different between the different nationality groups, U(4) = 10.254, p =0.036. Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Although the post-hoc analysis revealed statistically significant differences in agreement scores between groups, after applying the Bonferroni correction, the differences did not remain statistically significant. As the unadjusted p-values were significant for some group pairs, the analysis was followed up with Mann-Whitney tests for those groups.

A Mann-Whitney U test was run to determine if there were differences in agreement score between respondents from Portugal (n=53) and Romania (n=112). Distributions of the agreement scores for respondents from Portugal and Romania were not similar, as assessed by visual inspection. Agreement score was statistically significantly higher in Romanians (mean rank = 88.01) than in Portuguese (mean rank = 72.41) respondents, U = 2406.5, z = -2.031, p = 0.042.

A Mann-Whitney U test was run to determine if there were differences in agreement score between respondents from Ukraine (n=203) and Romania (n=112). Distributions of the agreement scores for respondents from Ukraine and Romania were not similar, as assessed by visual inspection. Agreement score was statistically significantly higher in Romanians (mean rank = 175.06) than in Portuguese (mean rank = 148.59) respondents, U = 9457, z = -2.551, p = 0.011.

H4. A Kruskal-Wallis test was conducted to determine if there were differences in agreement scores on how comfortable the respondents feel during online classes using digital communication

tools (MS Teams, Zoom, Skype etc.) between nationality groups: Colombia (n=60), Germany (n=88), Portugal (n=53), Romania (n=112) and Ukraine (n=203). Distributions of scores were not similar for all groups, as assessed by visual inspection of a boxplot. Agreement scores were not statistically significantly different between the different nationality groups, U(4) = 8.700, p =0.069.

Sex

H5. Respondents agree that digital communication skills are essential in a modern world regardless of sex.

H6. Respondents agree that some classes in universities should be held online using digital communication tools (MS Teams, Zoom, Skype, etc.) even under normal external conditions to help students get digital communication competences regardless of sex.

H7. Respondents agree on the share of classes that should be held online using digital communication tools (MS Teams, Zoom, Skype, etc.) even under normal external conditions to help students get digital communication competences regardless of sex.

H8. Respondents feel comfortable during online classes using digital communication tools (MS Teams, Zoom, Skype, etc.) regardless of sex.

H5. A Mann-Whitney U test was run to determine if there were differences in agreement score that digital communication skills are essential in a modern world between males (n=170) and females (n=346). Distributions of the agreement scores for male and female respondents were similar, as assessed by visual inspection. Agreement scores was not statistically significantly different between groups, U = 29091.5, z = -0.226, p = 0.821.

H6. A Mann-Whitney U test was run to determine if there were differences in agreement that some classes in universities should be held online using digital communication tools (MS Teams, Zoom, Skype, etc.) even under normal external conditions to help students get digital communication competences between males (n=170) and females (n=346). Distributions of the agreement scores for male and female respondents were similar, as assessed by visual inspection. Agreement scores was not statistically significantly different between groups, U = 26818.5, z = -1.696, p = 0.090.

H7. A Mann-Whitney U test was run to determine if there were differences in agreement on the share of classes that should be held online using digital communication tools (MS Teams, Zoom, Skype, etc.) even under normal external conditions to help students get digital communication competences between males (n=170) and females (n=346). Distributions of the agreement scores for male and female respondents were similar, as assessed by visual inspection. Agreement scores was not statistically significantly different between groups, U = 26788.5, z = --1.701, p = 0.089.

H8. A Mann-Whitney U test was run to determine if there were differences in agreement on how comfortable respondents feel during online classes using digital communication tools (MS Teams, Zoom, Skype, etc.) between males (n=170) and females (n=346). Distributions of the agreement scores for male and female respondents were similar, as assessed by visual inspection. Agreement scores was not statistically significantly different between groups, U = 26888.5, z = -1.634, p = 0.102.

Digital communication competence levels

H9. Respondents agree that digital communication skills are essential in a modern world regardless of digital communication competence levels.

H10. Respondents agree that some classes in universities should be held online using digital communication tools (MS Teams, Zoom, Skype etc.) even under normal external conditions to help students get digital communication competences regardless of digital communication competence levels.

H11. Respondents agree on the share of classes that should be held online using digital communication tools (MS Teams, Zoom, Skype etc.) even under normal external conditions to help students get digital communication competences regardless of digital communication competence levels.

H12. Respondents feel comfortable during online classes using digital communication tools (MS Teams, Zoom, Skype etc.) regardless of digital communication competence levels.

H9. A Kruskal-Wallis test was conducted to determine if there were differences in agreement scores on that digital communication skills are essential in a modern world between digital communication competence level groups: basic (n=81), intermediate (n=249) and advanced (n=186). Distributions of scores were not similar for all groups, as assessed by visual inspection of a boxplot. Agreement scores were statistically significantly different between the different competence level groups, $U(2) = 22.868$, $p < 0.001$. Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post-hoc analysis revealed statistically significant differences in agreement scores between basic (mean rank = 215.19) and advanced (mean rank = 292.51) ($p < 0.001$) users and between intermediate (mean rank = 247.19) ($p = 0.001$) and advanced users, but not between basic and intermediate users ($p=0.175$).

H10. A Kruskal-Wallis test was conducted to determine if there were differences in agreement scores on some classes in universities should be held online using digital communication tools (MS Teams, Zoom, Skype etc.) even under normal external conditions to help students get digital communication competences between digital communication competence level groups: basic (n=81), intermediate (n=249) and advanced (n=186). Distributions of scores were not similar for all groups, as assessed by visual inspection of a boxplot. Agreement scores were statistically significantly different between the different competence level groups, $U(2) = 23.617$, $p < 0.001$. Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post-hoc analysis revealed statistically significant differences in agreement scores between basic (mean rank = 219.61) and advanced (mean rank = 298.01) ($p < 0.001$) users and between intermediate (mean rank = 241.63) ($p < 0.001$) and advanced users, but not between basic and intermediate users ($p=0.687$).

H11. A Kruskal-Wallis test was conducted to determine if there were differences in agreement scores on the share of classes that should be held online using digital communication tools (MS Teams, Zoom, Skype etc.) even under normal external conditions to help students get digital communication competences between digital communication competence level groups: basic (n=81), intermediate (n=249) and advanced (n=186). Distributions of scores were not similar for all groups, as assessed by visual inspection of a boxplot. Agreement scores were statistically significantly different between the different competence level groups, $U(2) = 22.748$, $p < 0.001$. Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post-hoc analysis revealed statistically significant differences in agreement scores between basic (mean rank = 221.44) and advanced (mean rank = 297.84) ($p < 0.001$) users and between intermediate (mean rank = 241.17) ($p < 0.001$) and advanced users, but not between basic and intermediate users ($p=0.856$).

H12. A Kruskal-Wallis test was conducted to determine if there were differences in agreement scores on how comfortable respondents feel during online classes using digital communication tools (MS Teams, Zoom, Skype etc.) between digital communication competence level groups: basic (n=81), intermediate (n=249) and advanced (n=186). Distributions of scores were not similar for all groups, as assessed by visual inspection of a boxplot. Agreement scores were statistically significantly different between the different competence level groups, $U(2) = 34.585$, $p < 0.001$. Subsequently, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post-hoc analysis revealed statistically significant differences in agreement scores between basic (mean rank = 212.41) and advanced (mean rank = 307.02) ($p < 0.001$) users and between intermediate (mean rank = 237.24) ($p = 0.001$) and advanced users, but not between basic and intermediate users ($p=0.538$).

Discussion

More than 91% of the respondents defined "digital skills" as essential in a modern world. It goes totally in line with many other researches on the behaviour of Generation Z and on the approaches to educating them (Hernandez-de-Menendez et al., 2020, Cilliers, 2017). Technologies play an extremely important role in educational process, but they should be used effectively (Tolbert, 2015). With a wide range of existing technological tools and methods to work with the students, universities still need to improve the level of their general digital literacy. Being technically savvy, Generation Z representatives feel not fully comfortable studying online. Some of the skills they need to upgrade in order to improve the effectiveness of online classes are metacognitive (Yu, 2020) - the ability to plan, monitor, and evaluate their learning (Schraw, 1998).

The whole process of education should prepare students to adapt quickly and effectively in the business environment which is going digital further more. Online classes not only on IT related disciplines might help to develop digital competences for students and for teachers as well. The results of our study prove that the majority of the respondents would like to have some classes online even under normal external conditions. Such results illustrate that Generation Z (the majority of the university students represent this generation) are truly "digital natives" who like to spend time (communicate, study and work) online, but at the same time they are young people who want to socialize spending time in university during face-to-face classes and offline meeting with friends, groupmates and teachers.

Of course, new reality of the digital age demands specific digital competences from the teachers, too (Vera et al., 2014). Educators must be able to adapt to the opportunities provided by information and communication technologies (Alarcón et al., 2020) and use them with maximum efficiency. According to the European Framework for the Digital Competence of Educators, teachers should have (among others) the following competences related to digital literacy: information and media literacy, communication, content creation, responsible use, problem solving (Redecker, 2017).

Having a blended system with some percent of classes being held online might help to improve digital skills of the students, make them prepared better for business environment with lots of online activities including meetings and negotiations in MS Teams, Zoom, Skype, and other similar type apps. It might also help to improve digital competences of the teachers and professors which is important due to the further processes of digitalization and globalization leading to the growing number of scientific and educational activities being held virtually.

On the other hand, the majority of the respondents stated that they would like to have from 11% to 50% of classes being held online. We see it as a positive sign meaning that students do not want to have totally online education and face-to-face communication is still an important part of people's life. Offli-

ne communication competences differ significantly from online communication ones and face-to-face classes is a good tool to improve them. At the same time, active interaction with the audience, turning cameras on, good eye-contact, pleasant small talk before the beginning of the lesson or meeting might improve the efficiency of online classes (Molinsky, 2020).

Conclusions

Our study illustrates the attitude of the students representing, primarily, Generation Z to online classes as a tool to achieve and improve their digital competences. The results of the online survey prove that young people would like to have some of the university classes virtually even under normal external conditions. On the other hand, they would like to have some classes face-to-face in the university. We link these results with the nature of the Gen Zers being fairly called "digital natives", but who are also young modern people willing to socialize, meeting each other and their teachers and professors at campus.

It is highly likely that in the nearest future blended education systems will be widespread further more due to different external factors. The results of our study presented in this paper might help university administrations to find the balance between online and face-to-face classes.

Of course, our study has limitations. We conducted the survey only in five countries, though it should be noted that these countries represent culturally, socially, and economically different regions of the world. And the results of the study prove that though being unique and diverse the Gen Zers still share many similarities no matter the region of living and studying.

In future research it would be important to explore the combination of digital and face-to-face communication competences of the Generation Z. Both groups of competences are still needed to be successful in business and in personal life, so it is highly important to develop them in the process of university education.

Acknowledgments

We are sincerely grateful to our friends and colleagues for their help with the online-survey: Andres Velez-Calle, associate professor at the EAFIT University for conducting the survey in Colombia; Nuno André Amaral Jerónimo, assistant professor at the University of Beira Interior, and Samuel de Paiva Pires, associate professor at the University of Lisbon for conducting survey in Portugal.

References

Aesaert, K., Voogt, J., Kuiper, E., & Van Braak, J. (2017). Accuracy and bias of ICT self-efficacy: An empirical study into students' over- and underestimation of their ICT competences. Computers in Human Behavior, 75, 92–102. https://doi.org/10.1016/j.chb.2017.05.010.

Alarcón, R., del Pilar Jiménez, E., & de Vicente-Yagüe, M. I. (2020). Development and validation of the DIGIGLO, a tool for assessing the digital competence of educators. British Journal of Educational Technology, 51(6), 2407-2421.

Allmann, K., & Blank, G. (2021). Rethinking digital skills in the era of compulsory computing: methods, measurement, policy and theory. Information, Communication & Society, 24(5), 633-648.

Alon, I., Boulanger, M., Elston, J. A., Galanaki, E., Martínez de Ibarreta, C., Meyers, J., ... & Vélez-Calle, A. (2018). Business cultural intelligence quotient: A five-country study. Thunderbird International Business Review, 60(3), 237-250.

Anthonysamy, L., Koo, A. C., & Hew, S. H. (2020). Self-regulated learning strategies in higher education: Fostering digital literacy for sustainable lifelong learning. Education and Information Technologies, 25, 2393-2414.

Bawden, D. (2008). Origins and concepts of digital literacy. Digital literacies: Concepts, policies and practices, 30(2008), 17-32.

Bergdahl, N., Nouri, J., & Fors, U. (2020). Disengagement, engagement and digital skills in technology-enhanced learning. Education and information technologies, 25(2), 957-983.

Brennen, J. S., & Kreiss, D. (2016). Digitalization. The international encyclopedia of communication theory and philosophy, 1-11.

Canavilhas, J., Pellanda, E., Piñeiro-Naval, V., & Nunes, A. C. B. (2020). Mobile phones in young people everyday life: case study with Portuguese and Brazilian students. Revista Famecos, 27, e35850-e35850.

Cilliers, E.J. (2017). The challenge of teaching Generation Z. PEOPLE Int. J. Soc. Sci., 3, 188–198.

Ester van Laar; Alexander J.A.M. van Deursen; Jan A.G.M. van Dijk; Jos de Haan (2017). The relation between 21st-century skills and digital skills: A systematic literature review. Computers in Human Behavior, 72, 577-588. https://doi.org/10.1016/j.chb.2017.03.010

European Commission (2008). The european qualifications framework for lifelong learning (EFQ). Luxembourg: Office for Official Publications of the European Communities.

European Commission/EACEA/Eurydice, 2019. Digital Education at School in Europe. Eurydice Report. Luxembourg: Publications Office of the European Union.

Ferrari, A. (2012). Digital competence in practice: An analysis of frameworks. Seville: Joint Research Centre, Institute for Prospective Technological Studies. http:// dx.doi.org/10.2791/82116.

Fratričová, J. & Z. Kirchmayer (2018). Barriers to work motivation of Generation Z. Journal of human resource management, vol. XXI, 2/2018, 28-39.

J. Vera, L. Torres and E. Martínez (2014), Assessment of basic ICT competencies in teachers of higher education in Mexico. PIXEL-BIT Media and Education Journal, 44, 143-155.

Hernandez-de-Menendez, M., Díaz, C. A. E., & Morales-Menendez, R. (2020). Educational experiences with Generation Z. International Journal on Interactive Design and Manufacturing (IJIDeM), 14(3), 847-859.

Iordache, C., Mariën, I., & Baelden, D. (2017). Developing Digital Skills and Competences: A QuickScan Analysis of 13 Digital Literacy Models. Italian Journal of Sociology of Education, 9(1), 6-30. doi: 10.14658/pupj-ijse-2017-1-2

Kiel, D., Arnold, C., Collisi, M., & Voigt, K. I. (2016, May). The impact of the industrial internet of things on established business models. In Proceedings of the 25th international association for management of technology (IAMOT) conference (pp. 673-695).

Kemp, N. (2020). University students' perceived effort and learning in face-to-face and online classes. Journal of Applied Learning and Teaching, 3(1), 69-77.

Kemp, N., & Grieve, R. (2014). Face-to-face or face-to-screen? Undergraduates' opinions and test performance in classroom vs. online learning. Frontiers in Psychology, 5, 1278. doi: 10.3389/fpsyg.2014.01278

Larrondo Ureta, A., Fernandes Teixeira, J., Martins, G. L., Peña Fernández, S., Canavilhas, J., & Zamith, F. (2021). A produção ciberjornalística colaborativa e internacional como experiência de ensino em universidades iberoamericanas. REBEJ. Revista Brasileira de Ensino de Jornalismo 11(28), 3-21.https://doi.org/10.46952/rebej.v11i28.446

Lifintsev, D., Fleşeriu, C., & Wellbrock, W. (2019). A study of the attitude of Generation Z to cross-cultural interaction in business. Informacijos mokslai, 86, 41-55.

Lifintsev, D., & Wellbrock, W. (2019). Cross-cultural communication in the digital age. Estudos em Comunicação, 1(28), 93-104.

López Peláez, A., Erro-Garcés, A., & Gómez-Ciriano, E. J. (2020). Young people, social workers and social work education: the role of digital skills. Social Work Education, 39(6), 825-842.

Mahmood, S. (2021). Instructional strategies for online teaching in COVID-19 pandemic. Human Behavior and Emerging Technologies, 3(1), 199-203.

Markovitch, S. and Willmott, P. (2014). Accelerating the digitization of business processes [Online], White paper, McKinsey & Company. Available: http://www.mckinsey.com/insights/business_technology/accelerating_the_digitization_of_business_processes

Martinovic, D., Freiman, V., Lekule, C. S., & Yang, Y. (2019). The roles of digital literacy in social life of youth. In M. Khosrow-Pour (Ed.), Advanced methodologies and technologies in library science, information management, and scholarly inquiry (pp. 103–117). IGI Global. https://doi.org/10.4018/978-1-5225-7659-4.ch009

McCrindle, M.; Wolfinger, E. The ABC of XYZ: Understanding the Global Generations; University of New South Wales: Sydney, Australia, 2009.

McDougall, J., Readman, M., & Wilkinson, P. (2018). The uses of (digital) literacy. Learning, Media and Technology, 43(3), 263-279.

Molinsky, A. (2020, March). Virtual meetings don't have to be a bore. In Harvard Business Review. https://hbr. org/2020/03/virtual-meetings-dont-have-to-be-a-bore, accessed.

Mondol, M. S., & Mohiuddin, M. G. (2020). Confronting Covid-19 with a paradigm shift in teaching and learning: a study on online classes. International Journal of Social, Political and Economic Research, 7(2), 231-247.

Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID-19 pandemic. Social Sciences & Humanities Open, 3(1), 100101.

Nambiar, D. (2020). The impact of online learning during COVID-19: students' and teachers' perspective. The International Journal of Indian Psychology, 8(2), 783-793.

Pandey, D., Ogunmola, G. A., Enbeyle, W., Abdullahi, M., Pandey, B. K., & Pramanik, S. (2021). COVID-19: A framework for effective delivering of online classes during lockdown. Human Arenas, 1-15.

Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: how to benefit from digitalization in practice. International journal of information systems and project management, 5(1), 63-77.

Prenksy, M. (2001). Digital Natives, Digital Immigrants, Part II. Do they really think differently? On the Horizon, 9(6), 1-6.

Rachinger, M.; Rauter, R.; Müller, C.; Vorraber, W.; Schirgi, E. Digitalization and its influence on business model innovation. J. Manuf. Technol. Manag. 2018.

Redecker, C. (2017). European Framework for the Digital Competence of Educators: DigCompEdu. Punie, Y. (ed). EUR 28775 EN. Luxembourg; Publications Office of the European Union.

Richter, N. F., Schlaegel, C., Bakel, M. V., & Engle, R. L. (2020). The expanded model of cultural intelligence and its explanatory power in the context of expatriation intention. European journal of international management, 14(2), 381-419.

Sarwar, H., Akhtar, H., Naeem, M. M., Khan, J. A., Waraich, K., Shabbir, S., ... & Khurshid, Z. (2020). Self-reported effectiveness of e-Learning classes during COVID-19 pandemic: A nation-wide survey of Pakistani undergraduate dentistry students. European journal of dentistry, 14(S 01), S34-S43.

Schraw, G. (1998). Promoting general metacognitive awareness. Instructional Science, 26, 113-125. doi:10.1023/A:1003044231033.

Seemiller, C., & Grace, M. (2016). Generation Z Goes to College. New York, NY: Jossey-Bass.

Shahlaei, C.; Rangraz, M. & Stenmark, D. (2017). Transformation of competence – the effects of digitalization on communicators' work. Proceedings of the 25th European Conference on Information Systems (ECIS), Guimarães, Portugal, June 5-10. ISBN: 978-989-20-7655-3 Research Papers.

Taras, V. (2020). Conceptualising and measuring cultural intelligence: important unanswered questions. European Journal of International Management, 14(2), 273-292.

Tolbert Jr, E. (2015). The impact of computer-aided instruction on student achievement. Gardner-Webb University.

Van Deursen, A. (2010). Internet skills vital assets in an information society. Enschede: University of Twente [Host].

Van Deursen, A. J., Helsper, E. J., & Eynon, R. (2016). Development and validation of the Internet Skills Scale (ISS). Information, Communication & Society, 19(6), 804-823.

Velez-Calle, A., Mariam, M., Gonzalez-Perez, M., Jimenez, A., Eisenberg, J., & Santamaria-Alvarez, S. (2020). When technological savviness overcomes cultural differences: Millennials in global virtual teams. critical perspectives on international business, 16(3), 279–303. https://doi.org/10.1108/cpoib-01-2018- 0012

Vieru, D. (2015). Towards a multi-dimensional model of digital competence in small-and medium-sized enterprises. In Encyclopedia of Information Science and Technology, Third Edition (pp. 6715-6725). IGI Global.

Verhoeven, J. C., Heerwegh, D., & De Wit, K. (2016). ICT learning experience and research orientation as predictors of ICT skills and the ICT use of university students. Education and Information Technologies, 21(1), 71–103. https://doi.org/10.1007/s10639-014-9310-3.

Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences: Implications for national curriculum policies. Journal of curriculum studies, 44(3), 299-321.

Yu, E. (2020). Student-Inspired Optimal Design of Online Learning for Generation Z. Journal of educators online, 17(1), n1.

Zacharis, N. Z. (2010). The impact of learning styles on student achievement in a web-based versus an equivalent face-to-face course. College Student Journal, 44(3), 591-598.

Zia, A. (2020), Exploring factors influencing online classes due to social distancing in COVID-19 pandemic: a business students perspective, International Journal of Information and Learning Technology, Vol. 37 No. 4, pp. 197-211.