

BOOSTING LIFELONG LEARNING FOR GENERAL SECONDARY SCHOOLTEACHERS: DIGITAL COMPETENCE DEVELOPMENT AMID BLENDED LEARNING

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Abstract. *The research is targeted at examining general secondary schoolteachers' strategies for assessing, self-assessing and improving their digital competence. The authors also define the scope of the most effective strategies for developing schoolteachers' digital competence amid blended learning caused by the Covid-19 pandemic. The main aim of research is to clarify the most effective ways of improving schoolteachers' digital competence amid blended learning caused by the Covid-19 pandemic. The research activities have been organized and realized taking into account the undisputable fact that digital competence is the key one for lifelong learning. The research methodology for generalizing theoretical material and empirical data collecting implies combining theoretical (analysis and synthesis) and empirical (a web-based questionnaire, individual interviews, conversations with respondents and analysis of reflexive texts) methods of investigation. The research sample consists of 1284 general secondary schoolteachers from different regions of Ukraine. The authors examine information obtained by using the mentioned combination of empirical methods of investigation. As a result of research some certain strategies for developing schoolteachers' digital competence are found out, described and recommended for being implied into both the system of general secondary school education and the system of general secondary schoolteachers' postgraduate education. It is also proved that the process of developing general secondary schoolteachers' digital competence amid blended learning organized effectively is the basis for boosting their further lifelong learning.*

Keywords: *blended learning, Covid-19 pandemic, digital competence, general secondary schoolteachers, lifelong learning tasks.*

Introduction

The Covid-19 pandemic has completely changed teachers' and students' perceptions of educational process in general and organizing effective delivery of

instruction by means of various digital technologies in particular. And to deliver quality education remotely or to develop digital educational materials teachers have to be great at digital technologies. In this regard, we fully share the idea put forward by Sysoieva (2021). The researcher believes that due to the outbreak of coronavirus disease “the attention of scientists and practitioners today is focused on the problems of digitalization of education, the educational process, the organization of professional training in the digital environment” (Sysoieva, 2021, p. 15).

Recent two years show that to deliver quality education amid remote and blended learning caused by the Covid-19 pandemic, present-day teachers have to constantly update their professional expertise, lifelong learning skills and competences. To be competitive at the labor market and to be able to meet the challenges of the millennium and the digital society we live in, teachers as any other specialists have to possess “the right set of skills and competences ...” (2018, p. 1). Thus, according to the Council Recommendations of 22 May 2018 on key competences for lifelong learning (2018), people who work in different spheres should be able to enjoy the right for developing a broad range of key competences for lifelong learning. It means that the development of these competences should last throughout their lives. Thus, along with literacy competence, multilingual competence, mathematical competence and competence in science, technology and engineering, personal, social and learning to learn competence, citizenship competence, entrepreneurship competence, cultural awareness and expression competence, a significant role is given to digital competence.

Even before the Covid-19 pandemic many scientists raised the questions concerning the need to develop digital competence among university lecturers and general secondary schoolteachers (Dzhurylo & Shparyk, 2019; Lund, Furberg, Bakken, & Engelién, 2014; Malykhin, Aristova, Kovalchuk, Opaliuk, & Yarmolchuk, 2020; Røkenes, & Krumsvik, 2014). Their explanations were rather logical. Digital era makes new demands to education and teachers. To be on the same page with present-day students teachers have to know how to use Internet, educational software, game-based learning platforms and open educational resources to enrich their lessons and sparkle students’ cognitive interest taking into account their individual abilities and needs. In their research some scholars explain that applying various digital technologies in the teaching process teachers are able to change both their roles and the roles of their students, to diversify classes using online resources and, what is more important, to deliver instruction in a completely different way (Maksimović & Dimić, 2016).

After the first shift to distance teaching and learning in March 2020, various papers started to appear in the scientific press concerning university lecturers’ and schoolteachers’ readiness to deliver instruction remotely, opinions on their digital skills, challenges they had to face with and lessons they learned from this

experience (Garzón-Artacho, Sola-Martínez, Romero-Rodríguez, & Gómez-García, 2021; Portillo, Garay, Tejada, & Bilbao, 2020). But nevertheless, the scientific press lacks large-scale studies aimed at demonstrating the progress made by general secondary schoolteachers in developing their professional competences including digital one. In this regard the problem on Ukrainian general secondary schoolteachers' digital competence development amid blended learning needs to be addressed.

Methodology

Along with theoretical methods of investigation including analysis and synthesis of relevant papers, reports and regulatory documents, the researchers used empirical ones which included a web-based questionnaire, individual interviews, conversations with respondents and analysis of reflexive texts. The whole research, which lasted for 4 months, was conducted in two stages and was aimed at reaching a large target audience. The first stage which included individual interviews and conversations with general secondary schoolteachers via telephone calls and face-to-face meeting and analysis of reflexive texts written by general secondary schoolteachers and sent back via email started in September 2021. It lasted till the end of October 2021. During the second stage researchers conducted a web-based survey. It started in November 2021 immediately after the new Covid-19 wave in Ukraine and lasted till the end of December 2021.

During the first stage, the researchers recruited participants by means of convenience sampling techniques. Since the researchers had been conducting research and cooperating with several general secondary schools in Kyiv and other cities in Ukraine (regarded in this research as experimental cites), they were able to reach 673 respondents personally and 598 of them gave their consent to answer the questions that interested researchers. During the second stage, the participants were recruited by means of voluntary response sampling technique. Taking into account the fact that the researchers had been taking part in round-table discussions, seminars, conferences and qualification upgrading programmes in different cities and towns all over Ukraine, they established and maintained contacts with representatives of different general secondary schools, colleges and lycées. So, during the second stage they were sent a link with a request to take part in a web-based survey and to share it among their colleagues. As a result, we received 686 completed questionnaires. Altogether the research sample comprised 1284 general secondary schoolteachers from different regions of Ukraine. The advantage of this research was that its participants represented all levels of school education (namely, primary school (48%), middle school (29%) and high school (23%).

In this study the researchers wanted to get answers to the following questions:

Before the outbreak of the Covid-19 pandemic

(1) Could you call yourself digitally competent and how good you were at finding necessary educational information on the Internet?

(2) How good were you at preparing presentations using various digital tools? Please, list software programs you used.

(3) How good were you at storing, sharing and retrieving educational information, educational material, presentations (in different formats)?

(4) How good were you at using various digital technologies for interacting with colleagues, parents and schoolchildren?

(5) How good were you at using digital tools and technologies for constructing and creating (co-constructing and co-creating) data, resources and knowledge?

(6) How good were you at recognizing where your digital competence needed to be improved and what the most appropriate ways were to improve it before?

After nearly two years into the pandemic

(1) Can you call yourself digitally competent and how good are you at finding educational information on the Internet?

(2) How good are you at preparing presentations using various digital tools? Please, list software programs you use.

(3) How good are you at storing, sharing and retrieving educational information, educational material (in different formats), links to online resources?

(4) How good are you at using various digital technologies for interacting with colleagues, parents and schoolchildren?

(5) How good are you at using digital tools and technologies for constructing and creating (co-constructing and co-creating) data, resources and knowledge?

(6) How good are you at recognizing where your digital competence needs to be improved and what the most appropriate ways are to improve it?

The authors examine information they obtained by using the mentioned combination of empirical methods of investigation.

Research Results

Finding educational information on the Internet before the outbreak of the Covid-19 pandemic and after nearly two years into the pandemic

Answering this question the majority of general secondary schoolteachers (71%) noted that before the introduction of social distancing measures caused by the Covid-19 pandemic thought that the level of digital competence was rather high and they definitely could call themselves digitally competent. But after the school closures and the shift to the distance learning they understood that their

digital knowledge and skills were not enough. The results obtained clearly demonstrate that before the outbreak of the Covid-19 pandemic the majority of respondents (47%) experienced some difficulties and had to spend much time to find relevant educational information on the Internet. Some respondents (18%) were able to find all the necessary educational information they wanted to use during their classes without anyone’s help. 24% of respondents replied that they asked their teenage children to help them. 11% of respondents noted that they helped their colleagues to find educational information they needed and often explained and showed how to search for it.

The results concerning general secondary schoolteachers’ digital ability to find the relevant educational information of the Internet are given in Figure 1.

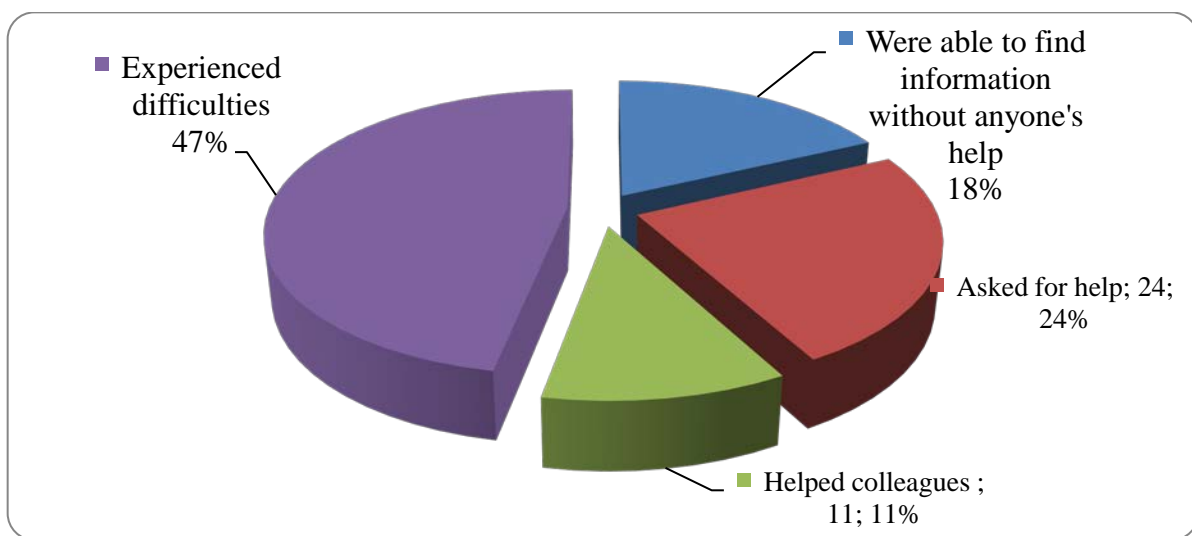


Figure 1 General Secondary Schoolteachers’ Digital Ability to Find Relevant Educational Information on the Internet Before the Outbreak of the Covid-19 pandemic (created by authors)

After nearly two years into the pandemic the situation changed greatly (Figure 2).

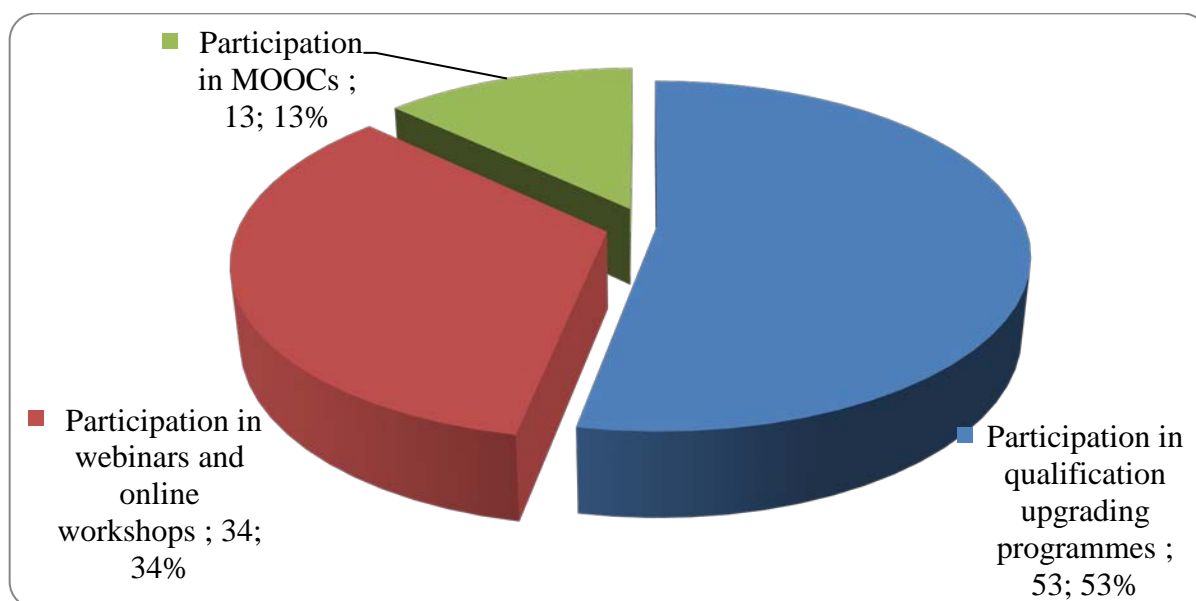


Figure 2 Steps Aimed at Improving their Digital Competence Taken by General Secondary Schoolteachers (created by authors)

Figure 2 shows that all respondents took steps to develop their digital competence (including digital ability to find relevant educational information on the Internet). This time 53% of respondents mentioned that they experienced no difficulties and were able to find educational information which they could use during their classes. Moreover, they stated that they were able to share this information with schoolchildren. According to their replies, after the school closures caused by the Covid-19 pandemic in March 2020, they decided to take part in qualification upgrading programmes organized by various educational institutions in order to improve their digital competence. 34% of respondents attended webinars and online workshops to get some basic knowledge on how to use digital technologies. And 13% of respondents pointed out that they participated in MOOCs (Massive Open Online Courses) because they provided their participants with various learning opportunities for professional development.

Preparing presentations using various digital tools before the outbreak of the Covid-19 pandemic and after nearly two years into the pandemic

In general, before the outbreak of the Covid-19 pandemic the majority of general secondary schoolteachers (83%) did not prepare any presentations and used visual aids available in the classroom (illustrations, tables, flashcards etc.). Only 17% of general secondary schoolteachers tried to enrich their classes preparing presentations. The most popular digital tool for preparing presentations was Microsoft PowerPoint. Figure 3 demonstrates the results concerning general secondary schoolteachers' need to prepare presentations using various digital tools before the outbreak of the Covid-19 pandemic.

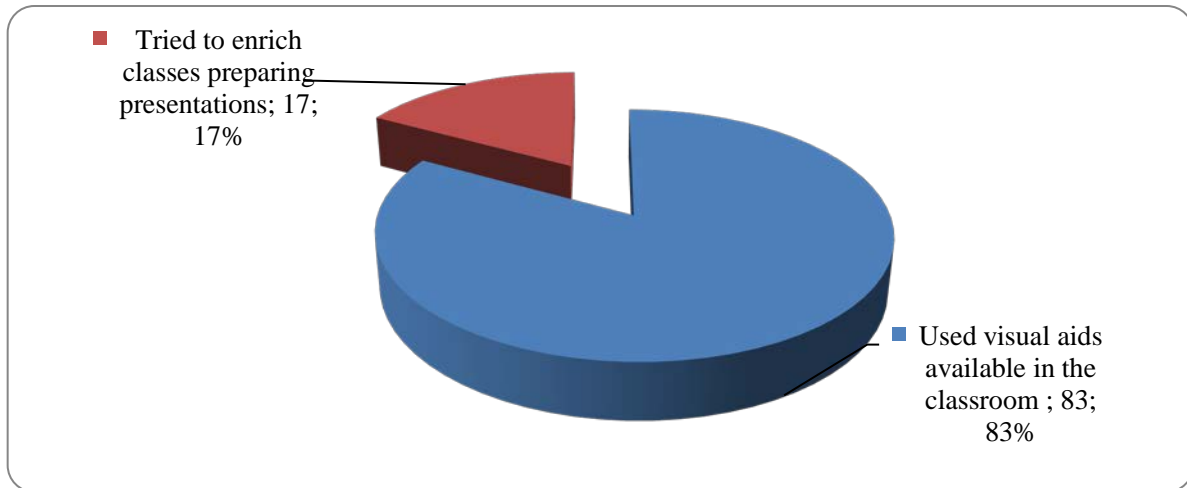


Figure 3 General Secondary Schoolteachers' Need to Prepare Presentations Using Various Digital Tools before the Outbreak of the Covid-19 pandemic (created by authors)

After nearly two years into the pandemic and the need to deliver instruction online, 62% of respondents stated that they should prepare presentations to visualize their lessons. The list of digital tools for creating presentation included Microsoft PowerPoint, Prezi and Canva.

Storing, sharing and retrieving educational information, educational material (in different formats) and links to online resources before the outbreak of the Covid-19 pandemic and after nearly two years into the pandemic

The majority of respondents (57%) mentioned that before the outbreak of the Covid-19 pandemic they did not have to store, share or retrieve educational information and educational material (in different formats), let alone links to online resources. 43% of respondents pointed out that their ability to store, share and retrieve educational information and links to various online resources was rather high. These respondents noted that they were the members of professional learning networks for teachers (PLNs) and they often shared interesting information (links, lesson plans etc.) with their colleagues online. And due to the massive shift to distance learning the situation changed dramatically. All respondents (100%) noted that to deliver instruction remotely and provide schoolchildren with all the necessary information they had to learn quickly how to store, share and retrieve information even at a basic level.

Using various digital technologies for interacting with colleagues, parents and schoolchildren before the outbreak of the Covid-19 pandemic and after nearly two years into the pandemic

Before the outbreak of the Covid-19 pandemic the majority of general secondary schoolteachers (89%) used emails and various messaging apps (for instance, Viber and WhatsApp) for communicating with schoolchildren and their parents, there was no need to use videoconferencing services for communicating

with them. Digital technologies like email services and messaging apps were mostly used for providing schoolchildren and their parents with some organizational information regarding teachers-parents meetings, extracurricular activities. 11% of respondents found it difficult to answer this question. After the first lockdown and the need to deliver instruction remotely, all respondents mentioned (100%) that they started using various digital technologies for interacting with colleagues, parents and schoolchildren. The digital technologies they pointed out included videoconferencing services (namely, Zoom, Webex, Google Meet), messaging apps (namely, Viber, WhatsApp, Telegram, etc.) and email services.

Using digital tools and technologies for constructing and creating (co-constructing and co-creating) data, resources and knowledge before the outbreak of the Covid-19 pandemic and after nearly two years into the pandemic

Analysing the results obtained during our research we found out that only 26% of respondents used digital tools and technologies for constructing and creating data, resources and knowledge before the introduction of the first lockdown caused by the spread of coronavirus. Answering these questions 74% of respondents explained that there had been no need to do it before the Covid-19 pandemic. After nearly two years into the pandemic more respondents (46%) stated that they were able to use various tools and technologies for constructing and creating data, resources and knowledge. 29% of respondents pointed out that they hoped to learn how to do it and were planning to continue participating in webinars, online and face-to-face masterclasses and training to improve their digital competence. They also added that their colleagues shared data, resources and knowledge they created with them. 25% of respondents found it difficult to answer the question about their ability to use digital tools and technologies for constructing and creating data, resources and knowledge after nearly two years into the pandemic. They noted that although they participated in various training they did not have the opportunity to create anything themselves.

Conclusions

The main aim of this research is to clarify the most effective ways of improving schoolteachers' digital competence amid blended learning caused by the Covid-19 pandemic. To reach this aim the research methodology for generalizing theoretical material and empirical data collecting implies combining theoretical (analysis and synthesis) and empirical (a web-based questionnaire, individual interviews, conversations with respondents and analysis of reflexive texts) methods of investigation. The research activities have been organized and realized taking into account the undisputable fact that digital competence is the key one for lifelong learning. Trying to examine general secondary

schoolteachers' strategies for assessing, self-assessing and improving their digital competence, the researchers define, describe and recommend the scope of the most effective strategies and ways for developing schoolteachers' digital competence amid blended learning caused by the Covid-19 pandemic. The research results also clearly demonstrate that the process of developing general secondary schoolteachers' digital competence amid blended learning organized effectively is the basis for boosting their further lifelong learning.

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