

## Article

# Telework Experience of Pedagogues during the COVID-19 Pandemic: Strong Learning Seniors and Relaxed Leaders?

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**Abstract:** Due to the wide application of remote teaching during the COVID-19 pandemic, the foundations of the education system have been shaken; education has entered a new era of teaching and learning on digitalized platforms. How do pedagogues evaluate their experiences when information technologies have become the main axis of carrying out their work? What impact did telework have on pedagogues as employees of an education institution or as individuals? What could be expected from older pedagogues in the shift to using digital means of teaching? These were the main questions raised in this research, the results of which are presented in this article. This research is original because the differences in experiences of telework were studied not only in terms of age and nature of work (professional/leader) but also the type of education institution. This delineation is of key importance in understanding the virtual work challenges faced by pedagogues in schools, professional education institutions, colleges, and universities.

**Keywords:** pedagogues; IT competencies; teleworking skills; management of educational institutions; school; college; university; teacher professional development



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## 1. Introduction

The possibilities provided by information and communication technologies in the last decade have created conditions for work outside of the office. However, COVID-19 has made telework a widespread and everyday phenomenon. Telework has become mandatory in the majority of work fields, thus creating many challenges in communication, including collaboration over IT platforms. The pandemic has become a point of change, stimulating society to create and adapt to new social norms.

In the context of changes due to pandemic, the education sector was particularly affected. Before the pandemic, pedagogical work was based on the tradition of direct contact, determined by the nature of the work. Students in institutions of higher education such as universities were studying remotely, but students in elementary and high schools were not. The main reason for this is that the relationship between pedagogues and students is inherently based on trust and productive interpersonal contact. In general, non-contact work, such as checking students' work and preparing for lectures is not always understood as work requiring intensive mental involvement and long hours [1–3], despite research showing that pedagogues' workload averages 50-plus hours per week [4,5].

Having moved to working from home due to the pandemic, pedagogues had to change the methods for both contact work with their students and many other work practices, such as communication with leadership, professional improvement, everyday routines, etc. How did pedagogues cope with adapting to informational technologies as the main axis of their work? Did the age and position of pedagogues have a significant impact on carrying out their work remotely? What impact did telework have on the pedagogue as an employee and an individual? What could be expected from an older

pedagogue in the shift to using digital means of teaching? These questions are significant because, after wide application of remote learning, the foundations of the education system were shaken, with the system entering a new era of learning and teaching on digitalized platforms. It is unlikely that schools will return exclusively to in-person teaching after the pandemic. The benefits of digital means of teaching, in terms of collaboration between teachers and students and verifying students' knowledge, have presented promising alternatives to traditional pedagogical means [6–8]. However, studies in this area have been focused mainly on learning methods rather than teaching methods [9–11]. Meanwhile those applying the methods have not been the focus of researchers' attention; pedagogues' ability to collaborate with students and colleagues in a virtual environment, their attitude towards digital products, and evaluations of the changes to work and work conditions during the pandemic have not been fully explored. Understanding the opportunities for expansion of teachers' and professors' competencies in applying information technologies for teaching in a new, digitalized reality is an important theoretical and practical assignment. This article contributes to contributing to this understanding.

The goal of the research is to identify the effects of telework during the pandemic on pedagogues based on the results of a survey. The research results add to an evidence-based discussion of pedagogues' attitudes toward the use of information technologies for contact work and allows for the establishment of guidelines for improving pedagogues' professional and work conditions in the future.

## 2. Theoretical Analysis

### 2.1. Challenges of Telework

The results of prior research have shown an unambiguous connection between the nature of work and employee productivity [12–14]. Such results are found mainly in research carried out for telework conducted as an optional means of work under a company's policy. The results of research during the COVID-19 pandemic paint a different picture. It became clear that telework during the pandemic was not equal to telework under ordinary conditions, because "mandatory choice" is not equivalent to free choice [15]. During lockdown conditions, when people started working remotely en masse, productivity levels were lower than when working from the office or in a mixed manner. In addition, employee productivity was also affected by the fact that other people in the same household were also working or learning from home. The tendency toward lower productivity was especially notable for women [16,17].

However, in terms of employees' attitude to telework, the majority claim to have become accustomed to working remotely and believe in its continuity [18]. Most employees believed telework to be entrenched in the labour market. Only a handful of aspects of telecommuting are considered to be worrying, such as a lower chance of promotion and weaker connections to colleagues or employers. In addition, people living with children are less satisfied with telework [19,20].

It can be also noticed that in Lithuania, around 40% of people who worked remotely expressed a wish to return to working from the office. Such attitudes were mostly expressed by younger people who lacked socialization and face-to-face contact [21] and people who worked for numerous years in workplaces provided by their employers, who lacked skills in technology use and self-discipline and had difficulty understanding what to do with their new supposed "freedom" [22]. In terms of telework as a method of teaching and learning and a platform for collaboration between lecturers and students, attitudes were ambiguous. According to the research, one of the bigger drawbacks of remote contact is decreased organizational identity. Telecommuting complicates the ability to maintain the loyalty of teachers and students to the education institution and impedes the creation of conditions to remain a part of a single education institution [23]. Another observed nuance was that employees distanced themselves from seeking to fulfil organizational goals and focused on their personal individual achievements [24].

On the other hand, it should be noted that in all age groups, more people are satisfied with telework than not. Therefore, telecommuting could be seen as an appropriate alternative for traditional work in the office regardless of employee age. This is important when considering whether pedagogues, especially middle-aged and older individuals, require more attention than young teachers in terms of working remotely with students.

In any case, the contribution of telework necessitated by the pandemic is most significant in terms of increasing employee competencies. As Baffour and Betsey [25] note, everyone who worked remotely had to improve their information technology competencies and communication skills and develop motivation and confidence to work independently without supervision.

Long before the pandemic, Kowalski and Swanson [26], distinguished three interconnected success factors of telework: assistance (support), communication, and trust. These factors are equally important today.

Due to the widespread application of remote teaching and learning being a new phenomenon, support in terms of technical aspects and emotional well-being has become increasingly important. In addition, in terms of communication, which starts with assigning new tasks and ends with feedback, it should be noted that both task assignment and collecting feedback becomes increasingly more complex with an increasing number of participants. Prior to the pandemic, remote teaching processes used separate digital content elements for small groups of people (e.g., for teaching languages or for independent learning). During lockdown conditions, teachers needed to work with large groups of people and present the majority of material in a way that was available over the internet. Finally, mutual trust and integrity became more relevant. For remote collaboration, it is critical to be able to trust that assignments, both from the side of teachers and students, will be accomplished honestly. According to authors who have researched telework during different periods, even when productivity is proven and demonstrated, the feeling of lack of control and trust remains present in telecommunication [27,28].

An aspect of telework that is worthy of special focus is the leader's role. The teacher a leader for students in the education process. According to Neeley [29], a leader needs to assist with appropriate infrastructure, care about psychological well-being, arrange communication methods, frequency, and rules, and ensure that team members are always aware of the situation. Kraft [27], emphasizes that the main challenge of a virtual leader is strengthening communication and trust as a unit, because these two components influence each other. On the other hand, the style of leadership necessary for virtual communication between students and academic staff remains unclear. According to McGaughey et al. [30], top-down governance intensified in universities in the period of the pandemic, whereas trust in university leaders weakened. The question remains: how should the characteristics of communication change for successful remote work?

There are four main functions of communication: control, motivation, expression of emotion, and information exchange. They are all undoubtedly important, but in the context of telework, where trust is emphasized, control should be of least importance while motivation and information exchange should be the highest priority (Scott, Mitchell 1976, quoted from Dahlstrom, 2013) [31].

In a virtual environment, two main directions of communication can be distinguished: task-focused communication and social needs-focused communication. Bearing in mind that remote learning is a new experience for the majority of participants, communication directed toward social relations becomes of extreme importance [32]. Remote communication was not an everyday experience before the pandemic; therefore, misunderstandings, misinterpretations, and difficulties, even in strong relationships, became more frequent [33–35]. Communicating remotely, it is very important to present detailed information related to a task, initiate frequent and regular communication, and take responsibility for creating sustainable interpersonal relations [36]. As Neeley [29] notes, when telecommuting, people undergo emotional tension due to being afraid to speak up even when warranted, e.g., to express their opinion on the discussed matter or to agree or disagree with a statement or

idea. Both lecturers and students might feel separated from the organization due to a lack of skills in communicating via virtual means. Thus, it is important to maintain frequent communication through various channels, including messages, letters, and phone calls.

The differences in the results of the research on telework before the pandemic have raised questions and sparked discussions between scientists and practitioners. However, in spite of different attitudes, professionals in the education field understand and accept the necessity of telecommunication and digitalization of teaching material and look for ways and methods to improve the effectiveness of remote teaching.

In the next section, the newest research on the challenges facing education sector employees when working from home is discussed in order to strengthen the theoretical and methodological basis of our empirical research.

## *2.2. Education Professionals' Challenges with Telework during the Pandemic*

Before the COVID-19 outbreak, only around 15% of people in the EU were working remotely [37]. After strict measures were put in place to control the spread of the disease around the world [38], difficulties in becoming accustomed to the new way of working were largely dependent on previous experience with working remotely as well as technological knowledge and skills [37]. The uniqueness of the situation also changed the provision of education on a global level [39]. Research shows that employees attempted to fill different roles, create new procedures, and control work–life balance [40]. Issues like poor work conditions, difficulties with students and families, and other problems with work organization became clear as factors limiting the success of telework [39]. Education via the Internet is different for the various stages of education; there is a significant difference between organizing remote education at the elementary and secondary education levels. Success is dependent on the skills and independence of the participants in the education process, their knowledge level, education plans and programs, and the number of students in a group [41]. The effect of COVID-19 on education, virtual teaching, and telework has been significant; limited knowledge and resources have made remote learning a serious challenge [42]. Research reports note that due to their prior work experience, lecturers in universities grew accustomed to new technologies and teaching remotely more quickly than their counterparts in elementary and secondary education institutions [43]. This fact highlights the importance of viewing traditions with criticality and accepting innovations in education.

Research carried out in Mexico has shown that the most common issues faced by educators were logistics (43.3%), challenges with technology (39.7%), issues of pedagogical origin (35.2%), and socio-emotional problems (14.9%) [44]. Particular challenges were observed in countries needing to update their technological infrastructure, e.g., Romania, Indonesia, Latin American countries, etc. Education communities in these areas had to find solutions on how to provide means and conditions for adequate social interaction without modern means of communication [43,45]. However, even in advanced countries, education professionals sought various opportunities to implement innovations in order to improve the education process. Adapting to the use of new technologies for work proved to be of the utmost importance [43]. For instance, sports teachers started to implement innovative teaching methods while teaching both remotely and at schools [46]. It is expected that these education methods will remain in use even after the pandemic. However, not all subjects can effectively use virtual means and formats.

The majority of education specialists had to acquire new skills and information to use online learning platforms. Institutional and administrative assistance became very important in this process of development [41], something that was lacking before the pandemic. New norms became entrenched, with educators working longer hours than before the pandemic and deemed to be available for students and leaders at almost any time of the day [47]. Despite this, mandatory telework has weakened the relationship between pedagogues and students [48]; the stress caused by remote teaching as well as

the anxiety and general discomfort felt by teachers had a strong impact on the quality of knowledge transfer [42].

Teachers were not always successful in defining clear work schedules and functions [41]. Furthermore, teachers faced a challenge in ensuring the quality of education services in cases where students were lacking the skills and knowledge to use electronic means of learning. Education via the Internet is not limited to sending and downloading files over a virtual platform, but rather is a didactic strategy that facilitates the comprehension of content [41]. This is coupled with hinderances outside of the influence of participants, such as internet connection issues, etc. [45].

The transfer of education services to home has altered pedagogues' lifestyle and quality of life in general. Research carried out during the pandemic has shown evidence that muscle and bone system disorders became more frequent in educators, that stress levels increased, and that quality of life indicators decreased [18,30]. Research has also shown that teachers younger than 44 years of age had a higher risk of psychological disorders while those over 44 had a higher risk of physical disorders [18,47]. Neuropsychological disorders are influenced by the mandatory additional effort required to organize education activities [43]. It is important to note that women's mental health has been harmed more due to the COVID-19 restrictions than men's [40]. Bearing in mind the fact that there are more female teachers, it can be forecast that the education sector might be faced with future challenges related to teacher burnout and withdrawal due to fatigue.

Finally, managing physically distanced employees requires remote management skills. When teleworking, employees experience problems in interpersonal relations and challenges due to professional isolation [30,49]. Thus, managerial and organizational support in the education field is also of great importance [40].

However, knowledge gained during the pandemic and new skills and abilities may have positive consequences in the future [47]. Scientists believe that virtual teaching will most likely be institutionalized or at least extended after the pandemic [42,45].

### 3. Materials and Methods

The research was conducted using a survey. Based on the analysis of scientific publications on teleworking, we formed a questionnaire to determine how pedagogues evaluate the experience of working from home during the pandemic. The survey also asked the respondents for sociodemographic information such as age, gender, work experience, and position in the education institution.

When filling out the closed-type questionnaire, the participants were asked to express their opinion on a five-point Likert scale ranging from 1 (not important at all) to 5 (absolutely essential). To verify the reliability of the questionnaire, Cronbach's alpha coefficient was invoked. The Cronbach's alpha coefficient of the questionnaire was equal to 0.818. According to Nunnally and Bernstein [50], Cronbach's alpha values of 0.8 to 1.0 show a high reliability of the study.

Empirical research was organized following ethical principles, such as anonymity, confidentiality, and voluntary participation. The introduction to the survey informed the respondents that they could withdraw from the survey at any time. The questionnaire was prepared in a way to avoid any personal or institutional identification of the participants.

The questionnaire was hosted at a website: [www.manoapklausa.lt](http://www.manoapklausa.lt) (accessed on 23 August 2021). It was available for 3 weeks (from 26 February to 18 March 2021). A request to share the questionnaire with employees and an invitation to participate in the survey was sent to education institutions as identified using information from the official system of education institutions at [www.aikos.smm.lt](http://www.aikos.smm.lt) (accessed on 5 February 2021).

The gathered data were analysed using SPSS statistical software for analysis. For the analysis,  $p$ -value and significance level  $\alpha$  were used, with the following parameters: (a) the difference between frequencies is significant if  $p < 0.05$ ; (b) the difference between frequencies is essential if  $p < 0.01$ ; (c) the difference between frequencies is very significant

if  $p < 0.001$ ; (d) frequencies are completely different if  $p < 0.0001$ ; (e) differences between frequencies are statistically insignificant if  $p > 0.05$ .

The research surveyed leaders and employees of universities, colleges, schools, and professional schools. Based on the data from the Lithuanian Republic department of statistics available for the first quarter of 2021, there are 41,614 active pedagogical workers in Lithuania. This general set was used to calculate the sample size. Sample size was calculated using I. Paniott's formula:

$$n = 1/(\Delta^2 + 1/N) \quad (1)$$

$n$ —sample size (i.e., required number of respondents)

$\Delta$ —margin of error (chosen margin: 0.05)

$N$ —general sample size

Calculations showed that in order to make conclusions about the general sample, 396 pedagogues needed to be surveyed. The questionnaire was correctly filled out by 582 respondents, which was sufficient to ensure a representative sample.

The analysis of the survey results also determined the distribution of respondents by education institution. The calculations for the layered sample were made taking into consideration the required sample size, i.e., 396 individuals. Table 1 illustrates that the sample was valid based on the distribution of respondents by their education institution.

**Table 1.** The distribution of participants according to education institution.

Educational Institution	Number of Pedagogical Employees in the Institution	Representative Sample in the Layer	Number of Correctly Filled Out Questionnaires
University	7536	71	94
College	2444	24	28
General education school	28,599	272	380
Professional education school	3035	29	80
Total	41,614	396	582

The survey was completed by 72 men and 510 women. Although the number of participants by gender is unequal, this does not reduce the validity and value of the research, as the Lithuanian education sector employs significantly more women than men [51].

By position, 135 (23.2%) of the participants were working in managerial positions and 447 were teachers. The absolute majority of the respondents had three or more years of work experience (up to 3 years: 4%; 3 to 10 years: 13.7%; 11 to 20 years: 12.6%; 21 to 30 years: 32.5%; more than 31 years: 28.2%). It should also be noted that 90.7% of the respondents admitted to having no prior experience with remote teaching and that they started teaching remotely only during the COVID-19 pandemic. The remaining respondents marked that they work by combining remote and office work for numerous years.

#### 4. Results

The analysis of survey results began with the age of the pedagogues. While analysing experiences of telework, statistically significant differences were found between age groups (Table 2).

**Table 2.** Challenges in telework by age.

Telework Challenges	Age in Years	%	$\chi^2$ *	<i>p</i>
Lack of communication with leaders	Under 30	14.3	16.940	0.000
	Between 31 and 50	53.6		
	Over 50	32.1		
Exaggerated expectations of leaders without regard to actual workload	Under 30	7.3	7.945	0.019
	Between 31 and 50	54.5		
	Over 50	38.2		
Higher workload	Under 30	1.6	6.166	0.046
	Between 31 and 50	44.9		
	Over 50	53.5		
Lack of discipline and time management skills	Under 30	10.5	12.202	0.002
	Between 31 and 50	55.3		
	Over 50	34.2		
Lack of competencies to effectively work remotely	Under 30	1.3	25.564	0.000
	Between 31 and 50	20.3		
	Over 50	78.5		
Separation of work and personal life zones	Under 30	4.7	23.195	0.000
	Between 31 and 50	57.0		
	Over 50	38.3		

Note:  $\chi^2$ \*—Chi-squared, *p*—level of significance.

The research made clear that pedagogues of middle and older age lacked communication with their leaders ( $p = 0.000$ ) compared to pedagogues under the age of 30. Older employees also highlighted that they felt their leaders had exaggerated expectations and stated that leaders did not consider their actual workload ( $p = 0.019$ ). In general, older respondents more frequently reported increased workload ( $p = 0.046$ ) and lack of discipline and time management ( $p = 0.002$ ) than their younger counterparts. In addition, it was observed that the older the respondent, the less they claimed to possess the competencies required to work remotely ( $p = 0.000$ ). Considering the fact that the education sector employs more people of older age, the research suggests that pedagogues face serious challenges with telework.

On the other hand, when analysing the respondents' answers to questions about improving IT competencies, it was found that while working remotely, pedagogues of all age groups improved their IT skills and abilities. A trend was observed that employees of middle and older age improved their information technology competencies more (50% of respondents under 30 claimed to have improved their competencies, while 66.1% and 80.5% of respondents aged 31–50 and over 50, respectively, indicated improvement). This result may correlate with the fact that younger individuals had better IT skills to begin with and did not feel the necessity to improve them further. However, this shows that their older colleagues learned a substantial amount. Thus, the age of a pedagogue is a significant factor when analysing telework.

When asked to evaluate the satisfaction with telework in general, two-thirds of participants claimed to look forward to returning to their workplace (67.2%). The majority of pedagogues also reported negative evaluations of telework. Worsened physical and emotional state was mentioned by 63.2 and 57.6% of participants, respectively. The leaders of education institutions may also find it worrying that as much as 52% of participants stated that, by working remotely, organizational identity and emotional connection with their employer was weakened.

Moreover, the research did not confirm the observations of previous studies regarding higher productivity when teleworking. Only 23.1% of the respondents agreed that their productivity increased while working from home. The aspect of productivity requires wider scale research, as there are significant differences between optional and mandatory work from home.

The research results were further analysed according to leader/employee variables. We interviewed leaders (i.e., persons who have responsibility in decision-making at universities, colleges, vocational schools, and secondary schools) and employees (i.e., teachers and professors) and found that those who did not play leading roles were involved in the specifics of telework more than their leaders, with a statistical significance of  $p = 0.000$ . In addition, teachers, more than leaders, claimed that the new form of work organization significantly contributed to the improvement of their informational technology competencies ( $p = 0.002$ ). Teachers also felt more negative health effects as a result of teleworking as compared to leaders (Table 3).

**Table 3.** Feedback from school, college, and university leaders and teachers/academic staff on their personal experience with teleworking during the pandemic.

Statements	Position	N	%	$\chi^2$	$p$
After I started working remotely, I carefully studied its specifics	Leaders	135	14.1	22.437	0.000
			16.3		
			11.9		
			40.0		
			17.8		
	Employees	447	5.4		
			9.6		
			8.1		
			49.0		
			28.0		
Due to teleworking, my skills in information technology use have improved significantly	Leaders	135	5.9	16.855	0.002
			7.4		
			23.0		
			43.0		
			20.7		
	Employees	447	2.7		
			9.8		
			11.4		
			55.7		
			20.4		
Telework negatively affects my emotional well-being	Leaders	135	7.4	11.044	0.026
			24.4		
			22.2		
			35.6		
			10.4		
	Employees	447	5.6		
			17.2		
			16.1		
			42.5		
			18.6		

Table 3. Cont.

Statements	Position	N	%	$\chi^2$	<i>p</i>
While working remotely, I strive to achieve personal goals more than organizational goals	Leaders	135	17.8	30.228	0.000
			37.8		
			25.9		
			16.3		
			2.2		
	Employees	447	5.6		
			30.0		
			28.9		
			32.2		
			3.4		

Furthermore, we asked the research participants to name the most important competencies and personal characteristics necessary for pedagogues to be able work with students on digital platforms. Information technology competencies were named as the most important (94.2%), followed by independence (74.6%) and time management skills (62%), and finally communication skills (56.8%). The competencies and characteristics of least importance were the following: ability to maintain productive relations with colleagues (23.4%), reliability (21%), and teamwork skills (18.9%). Thus, it would seem that relations with colleagues and teamwork were not priority fields while teleworking; therefore, their perceived relevance is low.

In addition, the study showed that information exchange in telework was statistically significantly ( $p < 0.05$ ) better evaluated by instructors than those in leading positions (25.8%). As much as two-thirds of the questioned teachers and lecturers claimed that digital communication platforms allow them to achieve efficiency in almost all fields of communication with students: information exchange, motivation, control, and emotional expression. The latter aspect, the expression of emotion, is of interest. It seems that the mass shift to remote teaching and learning during the pandemic provided an opportunity to learn how to express emotion and understand the emotions of others with the limited availability of non-verbal signs. It should be emphasized that leaders, contrary to pedagogues, evaluated virtual communication unfavourably. The aspect of emotional expression caused significant issues when communicating on digital platforms.

Finally, the research tried to determine if attitudes toward teleworking differed according to the type of education institution of the participant. It was observed that frequent and regular communication was statistically significantly ( $p < 0.05$ ) more often initiated in general education schools (77.7%) and professional education schools (70.0%) than in colleges (53.6%). In universities, according to the results of the survey, the employees were left in an information vacuum: only 1.7% of respondents representing universities agreed online learning platforms allowed for frequent and regular communication.

Sufficient communication with leaders and colleagues was more often noted by respondents working in professional education schools (81.3%) and general education schools (hereafter, schools) (74.8%) than in colleges (57.5%) and universities (57.2%). It also became clear that leaders of education institutions created sustainable relations with employees and attempted to maintain their organizational identities during telework statistically significantly more in schools (70.5%) and professional education schools (61.3%) than in universities (53.1%) and colleges (50.0%).

The respondents' answers to questions on communication showed that at the beginning of distanced learning, telework procedures (work hours, methods and frequency of communication, work tools) were statistically significantly ( $p < 0.05$ ) more often discussed with leaders in schools (86.1%) and professional education schools (76.3%) than in universities (61.7%) and colleges (57.1%). In addition, teachers feel more informed in schools (76.9%) and professional education schools (62.6%) than in colleges (54.2%) and universities (51.1%).

The results confirm that general and professional education schools were more actively involved in communication with pedagogic staff after starting telework than higher education institutions.

Finally, according to the respondents, university administration has demonstrated poor communication with professors and provided almost no support. The results show that verbal support related to pedagogical work and social needs was statistically significantly ( $p < 0.05$ ) more often provided by leaders in schools (58.8 and 75.0%, respectively) than in universities and professional education schools (21.7 and 4.5%, respectively, for both) and colleges (15.0 and 15.0%, respectively).

## 5. Discussion

In conclusion, it is evident that work on digital platforms has proven to be a serious challenge for pedagogues, mainly due to a lack of competencies required for telework, issues in work planning and organization, and exaggerated expectations of leaders. If increased workload and lack of support from leadership are interpreted as subjective factors, the respondents' reports on the lack of skills and abilities required for telework indicate an area in need of improvement. It should be highlighted that, despite the correlation between telework issues and pedagogue age, the impact of age on individual's ability to work remotely cannot be evaluated unambiguously. Despite older employees admitting the lack of competencies for telework more often, six out of ten pedagogic staff in the age group 31 to 50 and up to eight out of ten in the age group over 50 put serious effort into gaining the information technology knowledge required to efficiently carry out their duties. In other words, those educators who lacked telework competencies focused on improving their personal skills and abilities, which changed alongside the work conditions and demonstrated high personal responsibility, readiness to accept change, and a potential to grow. Our research results do not provide a basis to link the effective use of information technology for telework with those generations with early exposure to smartphones and tablets. It seems that the desire to learn and use information technology for personal purposes and the potential to carry out work functions are two separate subjects, which at least in the case of pedagogues, should not be linked to an individual's age.

Generalizing other aspects of telework examined in the research, it was determined that telework had a negative effect on the physical and mental well-being of 50% of respondents, while the impact of telework on productivity was evaluated especially negatively. Therefore, when considering the opportunities and benefits of remote learning for the students, teachers, and professors, who creates that benefit should not be forgotten. Further research on the drawbacks to remote learning is required.

Furthermore, the research ascertained that significant differences exist between educators in leading positions and those whose main responsibilities are limited to instruction. Educational institution leaders improved their IT skills to a lesser degree, and their attitude toward virtual communication was unfavourable. The aspect of expression of emotion created the most significant challenges in communicating with employees in a virtual medium. It could be assumed that working remotely had a lesser impact for educational institution leaders than their subordinates, who worked directly with students. However, this assumption has yet to be verified. Our research shows that leaders improved their telework and virtual communication skills to a lesser degree, but we did not determine the reasons for such behaviour.

Finally, the research attempted to provide insight into the attitudes towards telework according to the type of educational institution. According to the survey results, general education schools were most involved in informational and methodological support for pedagogues, devoting attention to communications and the maintenance of social relations between leadership and subordinates. Meanwhile, universities, in spite of tending toward some aspects of fluency of telework, e.g., approving procedures for remote organization of work, provided significantly less support to professors compared not only with general education schools but professional education schools and colleges as well. There is a visible

lack of research regarding pedagogical telework by the type of educational institution (school, college, university). This research is a novel attempt to look into how the telework challenges that pedagogues faced during the COVID-19 pandemic differed between institutions. Such research could provide data and insight on how to improve the quality of education services.

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