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The Changing Nature of Work and a Need to Prepare Teachers for Involvement in Innovative Work During and After the Pandemic

Zmieniający się charakter pracy, a potrzeba przygotowania nauczycieli do zaangażowania się w innowacyjną pracę w czasie pandemii i po pandemii

Introduction

The current pandemic and social distancing measures introduced to reduce the spread of the COVID-19 virus have a profound global impact on all spheres of work and social life. They also strongly influence the education system and teacher education. The rapidly changed working conditions are particularly challenging for teachers, students and parents, since education is mainly carried out through face-to-face communication with relatively

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large groups of learners, while education also has other social functions, apart from academic. The lockdown of both schools and universities has presented policymakers, teacher educators, future teachers, and teachers with a unique and unprecedented challenge. New ways of developing teachers and preparing future teachers for their profession had to be found, without a direct contact between students and their teacher educators, and especially, without a possibility for a future teacher to practice in regular classrooms.

The COVID-19 pandemic directed our attention to the ability of the educational system and teacher education to withstand shocks, including possible resurgences of COVID-19 when schools reopen. The spread of the distance education shown how vital it is to ensure continued teaching and learning during school closures. It also revealed the importance of innovative work for efficient teaching and learning. The innovative work and innovative work behaviours can be perceived as key elements of the contemporary changes in education. They can take place “through either significant changes in the use of particular educational practices or the emergence of new practices in an educational system as a whole or its chosen aspect” (Madalińska-Michalak, 2017, p. 137). The times when the traditional basis for education is not available and resources are limited, call for innovative practices that encourage everyone in the school community to become effective learning resources for each other.

The paper addresses the role of preparing the teacher for involvement in the innovative work during and after the pandemic. It aimed at obtaining teachers' views on the distance education, on-line learning, teachers' preparation for on-line learning, and their preparedness for innovative forms of teaching. The study also focuses on teachers' views on their education and its quality. The paper focuses on the schools closure due to the COVID-19 pandemic and the changing nature of the teachers' work in such conditions. The article describes teachers' experiences and opinions about the transition to new requirements of teaching through distance education in Polish primary and secondary schools. The last part of the paper includes results concerning teachers' innovative work and learning, and examines some of the challenges in providing education during the COVID-19 pandemic. In the conclusions, it is emphasized that the times of the COVID-19 pandemic have some serious implications for teachers' work and require some changes in teacher pre-service education in the coming years. One of the issues discussed in this study is the need to prepare teachers for involvement in innovative work during and after the pandemic.

This paper adopts a comprehensive definition of teacher education (see: Madalińska-Michalak, 2019). According to this definition, teacher education is understood as the education that includes pre-service, induction and continuing professional development of teachers. Teacher education is considered as a process that refers to the career-long education with its formal and informal learning, rather than something that happens only at the university during the initial teacher education. It is as a highly complex process, raising many challenges, as well as many opportunities.

The study – aims and research questions

This research study aimed to examine teachers' views about the distance education, their preparing for online learning and the availability of equipment for this form of teaching. Teachers were also asked about their preparedness for innovative forms of teaching. The presented study focuses on answering the following research questions:

- What do teachers think about their education, and how do teachers perceive the distance education?
- How are teachers equipped and prepared for the distance education?
- What are teachers required to do, and to what extent they are prepared for this new form of teaching?
- How do teachers learn and prefer to learn about their work?

Methods

The presented study is a part of a larger research project on teachers' innovative work and learning at schools. The overall project objective is to examine teachers' interests and participation in innovative activities at school, as well as their interest in continuing their professional development in the domain of innovative work. One of the objectives of this study is to better understand teacher innovative activities and their interest in participation in learning and performing this type of work. More specific project objectives are the exploration of the impact that teacher demographics and employment-related characteristics have on their participation in and learning of this type of work, and learning about this kind of work. The study also focuses on teachers' preparedness for the distance education during COVID-19 times and teachers' educational needs.

This is a cross-sectional study using an online survey to collect empirical data, and this chapter includes the basic descriptive findings of this study. (Cohen, Manion, and Morrison, 2007, p. 206).

The survey included both closed- and open-ended questions that examine teachers' innovative work behaviour, their interests in learning about innovative work behaviour, and preferred organisational forms of learning about this innovative form of work. One of the objectives of this study was also to identify and describe the challenges to teacher education.

The online survey was voluntary, anonymous, and it was expected to take approximately 15–20 minutes to complete. The study included teachers qualified to teach in primary and secondary schools in Poland. Teachers were surveyed in May and June 2020, when schools had to respond to the COVID-19 crisis and organise the education at school through the distance education.

The qualitative data analysis used a thematic analysis approach in order to identify, analyse, and report themes within the data (Creswell, 2007; 2009). In the process of qualitative data analysis, an attempt was made to find certain trends based on the collected text by focusing on deeper into understanding (Creswell, 2009, p. 183). The themes were identified in an inductive 'bottom-up' way. The used inductive approach allowed research findings to emerge from the dominant and frequent themes inherent in raw data, without the restraints imposed by structured methodologies. During the process of searching for patterns in coded data to categorise them, the data were coded and organised not just because they were very much alike, but because they also had something in common - even if, that commonality consists of differences (Saldana, 2009, p. 6).

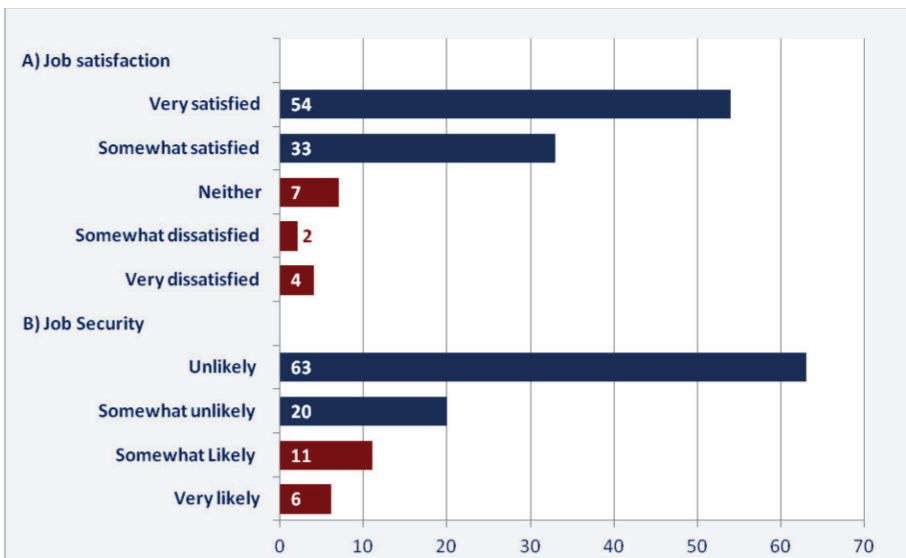
The plan for the research project was reviewed for its compliance to ethical guidelines and approved by the Research Ethics Board of the Faculty of Education at the University of Warsaw. Among 765 invited participants, 126 accepted the invitation to participate in our online survey and the overall response rate was 17%.

Characteristics of study participants

Our study sample consisted of 126 primary and secondary school teachers, including 111 women (88%) and 15 men (12%). The gender structure of the respondents is typical for teachers' workforce in schools in Poland.

In terms of their age, the majority of the participants' were 45 to 54 years old (40%) and between 35 and 44 years old (29%). The smallest number of participants were below 34 years of age (10%) and the remaining 20% were older than 55 years. Regarding the type of school, the majority of them were working in primary schools (72%) and about a quarter (23%) were employed in various types of secondary schools, including general secondary schools ("lyceums") or secondary vocational schools ("technical secondary schools"). In terms of the educational attainment, almost all (97%) participants in this study had the postgraduate education - master's degree in education, and all of them were qualified and eligible to teach regularly in Polish schools.

Figure 1. Teachers' experience of work – job satisfaction and job security



Regarding the participants' attitudes towards work, the great majority of them indicated that they are very satisfied (54%) or somewhat satisfied (33%) with their work. A small number (6%), much smaller than in other industries or professions, indicated they are dissatisfied or very dissatisfied with their work. In contrast, probably due to the current pandemic situation, approximately one in six participants (17%) indicated that they are afraid that they may lose their job during the next year.

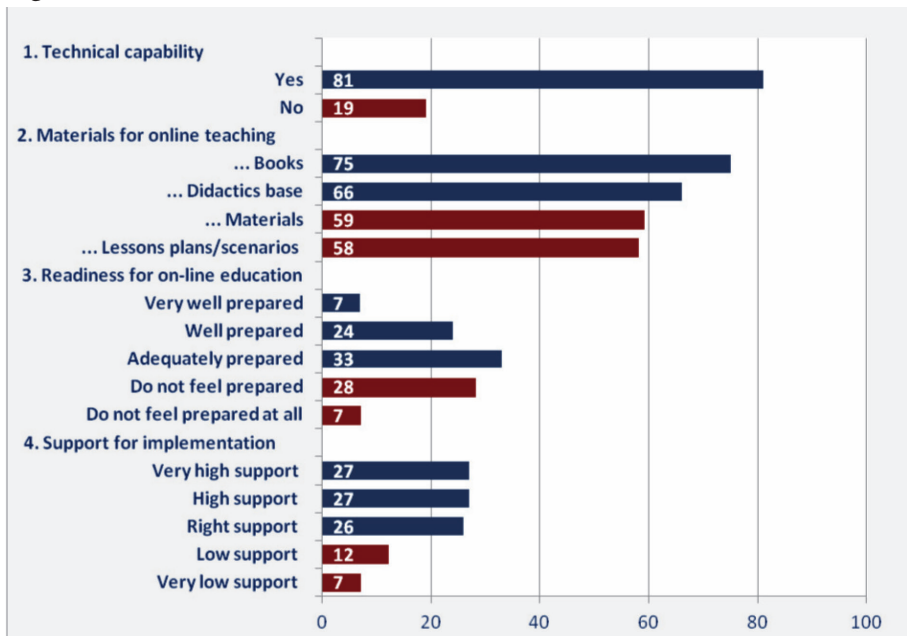
Results and Discussion

Distance education and work conditions

One of the main objectives of this study was to examine how conditions of teachers' work during the COVID-19 pandemic and social distancing influence teachers and their education. Furthermore, another objective of this study was to examine how teachers are equipped and prepared to teach under the current conditions.

Our results (Figure 2) show that the majority of teachers (81%) have sufficient technical capability to teach. Also, the majority of teachers (75%) indicated that they have appropriate literature or books, and two-third of them (66%) stated that they have the necessary didactical support. However, a smaller number (59%) of participants in this study indicated that they have appropriate materials for the distance education, and a similar proportion of teachers (58%) reported that they have proper scenarios and lesson plans. The obtained results indicate that, unfortunately, a significant number of teachers, approximately 40% of them, are lacking some of the essential elements for teaching, including materials for teaching through the distance education and appropriate lesson plans (scenarios) for this type of instruction. It is also important to note that one-fifth, or one out of five, teachers do not have sufficient technical capability for the distance education. This result shows that a large proportion of students are also affected by the lack of equipment that schools need to provide the efficient distance education, and the educational administration needs to solve this urgent problem (see Figure 2).

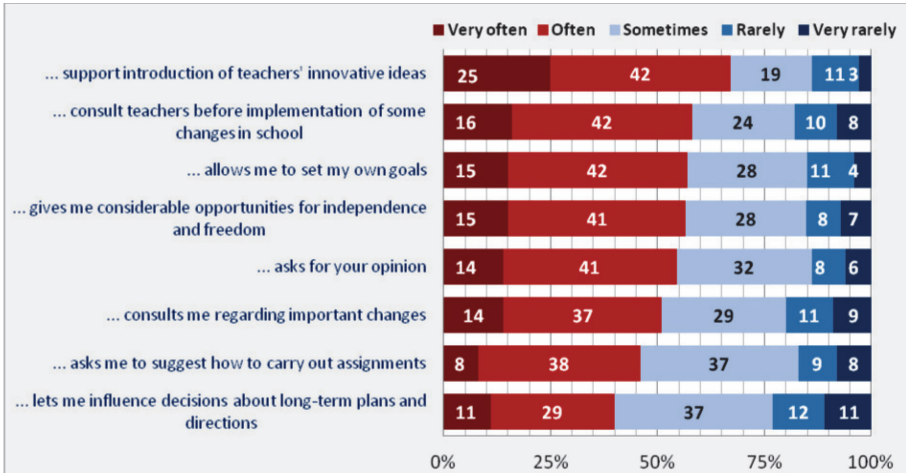
Regarding the readiness for the distance education, almost one-third of the participants (31%) indicated they feel well, or very well prepared for this form of teaching and a similar proportion (33%), reported that they feel adequately prepared. In comparison, slightly more than one-third of teachers (35%), indicated that they do not feel ready or well prepared for this form of education. Furthermore, regarding support, more than half of the teachers indicated they have robust, high or very high support in their teaching work. The adequate or right amount of support was reported by one-quarter of the respondents. In contrast, approximately one-fifth (19%) of teachers indicated that they do not have the proper support for teaching. The results demonstrate an urgent need for continuous professional development and more efficient support for teachers in the current situation, which requires a new and innovative form of work in schools.

Figure 2. Conditions for distance education

Innovative forms of teaching and teacher involvement in innovative work

As it is well known that teacher work is highly complex, and to be done well, it requires appropriate support. Our study shows that majority of teachers, approximately two thirds (67%) indicated that they are supported in introduction of new, innovative ideas in teaching. They are also quite often consulted before innovations are implemented (56%), and more than half (57%) indicated that they can freely set plans for their work, and have considerable opportunities for independent work and significant freedom in its performance.

Teachers are also relatively often asked for their opinions by their management and consulted about important changes in their institutions. However, a relatively small proportion of teachers are expected to share their ideas about how to perform daily duties in schools or to conduct their daily assignments. The smallest number of teachers (40%) reported that they have the opportunity to participate in decision-making processes concerning long-term plans and to decide about plans for work in their institutions (see Figure 3).

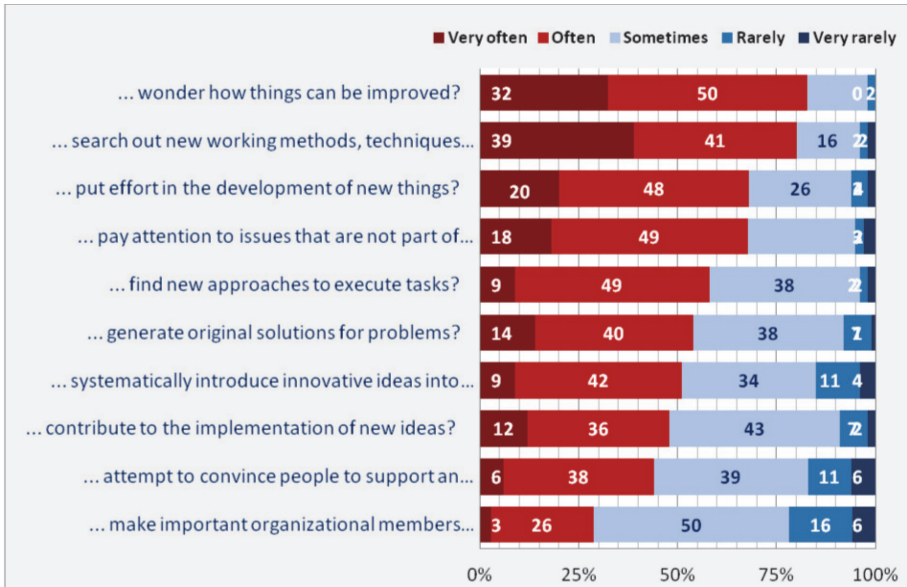
Figure 3. Teachers' involvement in innovative forms of work

When the involvement in innovative work is analyzed (Figure 4), a significant majority of teachers (82%) reported that they often think about how things can be improved in their work, and a similar proportion (80%) often think about new work methods and techniques. Also, more than two-thirds of teachers (68%) make efforts to develop new things at their work and also (68%) pay attention to issues that are not directly related to their daily duties, in order to improve work practices in their schools. A slightly smaller proportion try to find new approaches to their daily work and generate original solutions for problems that they face (58%). A slightly smaller number (54%) try systematically to introduce some innovative ideas in their work and to contribute to the development of new ideas (48%).

Results from our study further show (Figure 4) that a significantly smaller number of teachers are involved in the promotion of new ideas in their institutions by attempting to convince other people, i.e., their colleagues, to support their ideas (44%). However, a much smaller number of teachers (29%) try to interest some important members of their organizations in the development and implementation of their innovative ideas at work. Overall, the results of this study indicate that the majority of teachers are involved in the innovative work. Still, a much smaller number of teachers make efforts to obtain social and organizational support necessary for the implementation of innovative work practices on a broader organizational level. Because of the

lack of promotion of new ideas among colleagues, which is important for their implementation, this issue should be considered for inclusion in teachers' pre-service and continuous education.

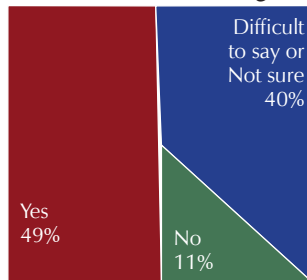
Figure 4. Teachers' involvement in innovative work



Teacher education and teachers' learning

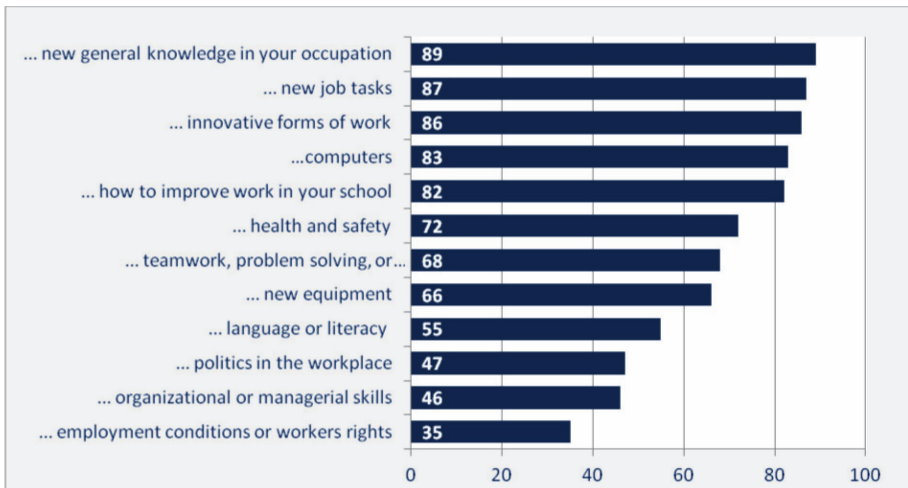
The results of this study show that a significant number of teachers, almost half of them (49%), believe that teacher education in Poland should be changed. Additional 40% are not sure, or it is difficult for them to give their opinions about this, and only a small minority (11%) of teachers stated that there is no need for changes in teacher education (see Figure 5).

Figure 5. Teacher education – the need for changes



Since half of the teachers believe that their pre-service education should be changed, it is a clear indication that many teachers have a substantial interests in learning and require a support in their work, particularly in the new situation, when they face many new and increased demands. Our study also shows that a vast majority of teachers satisfies their educations needs through informal or self-directed learning to gain new knowledge and skills necessary for their work (see Figure 6).

Figure 6. Teachers' informal learning

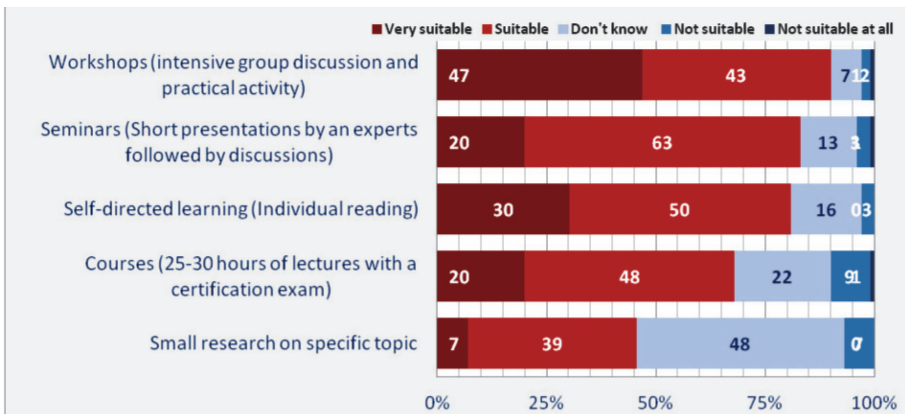


Similarly to several other studies concerning other professions (e.g. Cummins, Kunkel, and Walker, 2015; Hanushek, Schwerdt, Wiederhold, and Woessmann, 2013), results of our study demonstrate that a large number of teachers are involved in informal learning. Studies in this sector also demonstrate that most teachers are ready and already engaged in informal learning necessary for their work (Livingstone, 2018; Clark, Livingstone, and Smaller, 2012; Raykov, 2019). Many teachers are also involved in the demanding (De Jong & Den Hartog, 2010) and often stressful innovative work (Raykov, 2014), and, furthermore, interested in learning how to develop and implement innovative solutions in their workplace (Oba, Raykov & Ogawa, 2018).

Our current study shows that a vast majority of teachers are engaged in learning about new forms of knowledge (89%), new job tasks (87%), innovative forms of work (86%), computers (83%), and how to improve practices in their schools (82%). Also, more than two-thirds of teachers are engaged in learning

about health and safety (72%), teamwork and problem-solving (68%), and new equipment (66%). A slightly smaller proportion, approximately half of the teachers, are involved in learning about general topics, such as language or literacy (55%). The smallest number of teachers is engaged in learning about workplace relations, in workplace politics, organizational or managerial skills (46%), and their employment conditions and rights (35%). Results indicate a need for involving teachers and increasing their awareness about the importance of their organizing facilitating collective efforts to improve conditions of work in their profession, and thus, the overall quality of education.

Figure 7. Teachers' preferences in learning



Regarding participation in the formal continuous professional education and teachers' preferences of different organization forms of such learning, most teachers indicated that they consider participation in workshops (90%), or seminars (83%) as suitable or very suitable options. These results suggest that teachers are interested in intensive and active forms of learning, such as group discussions, practical activities and applying gained knowledge in practice. Most teachers (80%) also indicated that periodic seminars are another suitable form of learning, and this finding also suggests that teachers prefer shorter presentations by experts, followed by discussions. Furthermore, approximately the same proportion of teachers (80%) consider self-directed or informal learning as a suitable form of professional development.

A slightly smaller number of teachers (68%) consider longer courses consisting of 25 to 30 hours of lectures, followed by a certification exam as suitable forms of their continuous professional education. The smallest

proportion (46%) of teachers believe that small-scale research on specific topics is suitable for their development. However, almost the same percentage of teachers (48%) stated that they do not know to what extent this form of learning would be suitable for their learning (see Figure 7). This finding probably results from a lack of opportunities for teachers to participate in small-scale or classroom research in their practice. It would be useful if the administrators provided opportunities for teachers to involve in such small-scale applied research, which was found to be a preferable but rarely available form of teachers' professional learning in some studies (Raykov, 2019).

As it was already mentioned, almost one in two teachers indicated that teacher education must be changed (Table 5). The current situation, resulting from the COVID-19 pandemic, calls for re-thinking and reimaging teacher education.

The analysis of the data collected from open-ended questions showed that more than 62% of study participants responded to the open-ended question concerning main challenges in teacher education. In many cases, participants' responses were very extensive, and they show the respondents' concern for the issues raised by the survey.

The analysis resulted in 5 main themes that emerged from various answers. The study participants reported the following major challenges: (i) high-quality online courses and training; (ii) extensive compulsory training on distance learning solutions, combined with internships and workshops at school; (iii) more resources/financial support for teacher professional development; (iv) teacher training centres – more attention should be paid to the quality of their educational offers; and (v) the development of teacher educators. Because of the limitation in the length of this paper, we will focus mainly on the first challenge: high-quality online courses and training.

The teachers commented on the quality of teachers' pre-service education and the opportunities for continuing professional development. While sharing their thoughts and their competences, they emphasised that the COVID-19 pandemic and teaching in the social distancing conditions revealed the extent of importance of improving pre-service teacher education and provide teachers with the high-quality opportunities for continuous professional education, regardless of the extent of their experience.

Distance education with insufficient professional preparation was not acceptable for teachers. The respondents expressed their critical opinions

on the current situation in Polish schools, where, according to the teachers' standards, every teacher should have well-developed digital competences. However, in practice, their competences related to this form of teaching are still rather low.

While explaining what they find necessary for the improvement of teacher education, the respondents emphasised that, on one hand, the quality of education offered at universities during in-service teacher education should be improved and, and on the other hand, availability of postgraduate courses should increase and they should focus on the development of teachers' digital competences and their practical skills, rather than on broader theoretical knowledge. Findings of this study regarding the distance education indicate that this education should focus on the following domains:

- distance education,
- the essence of distance education,
- understanding of student experience of distance-learning,
- communication, and
- students' well-being.

The respondents' opinions obtained in this study were so direct and explicit that we would like to quote them without any further comment:

“The school closure reveals how many teachers require adequate training and preparation.”

“Teachers not only need an access to the Internet and necessary devices, they must understand the essence of remote work, on-line learning and teaching.”

“The university courses and trainings should work with teacher students and teachers on the nature of being a distance-learning student”

“Soft-skills are extremely important when we provide the distance education. The way in which we communicate with students helps to build relationships”.

“Courses should help teachers to support students' well-being in times of any crisis.”

Regarding the development of teachers' practical skills, the participants in this study emphasized the following issues:

- The use of ICT and on-line tools for the purpose of teaching and learning
- blended learning,
- soft skills,

- work with students with special educational needs,
- communication with students and their parents,
- teaching effectively, and assessment.

Teachers expressing their views on teacher education in the context of the COVID-19 situation pointed out the significance of “developing the skills in the use of ICT”. They said that “without the proper training in using tools for on-line teaching it is not possible to provide the effective distance education”. The participants also expressed views that teachers “must be good at blended learning” and they need support in “their communication with students and their parents”. In their opinions, effective distance education “can only be provided when having good practical skills”. A special attention should be paid to students with special educational needs. Teachers indicated that “we must know how to work remotely with students with special educational needs. It is very challenging for us, as well as for these students and their families”.

Conclusions

Our study shows that conditions for the provision of the distance education in Polish schools require urgent improvements. Still one-fifth, or one out of five, teachers do not have sufficient technical capabilities for distance education, and a significant number of teachers (approximately 40%) lack some of the essential preconditions for the successful distance education. Most frequently, teachers indicated a lack of educational materials for the distance education and appropriate lesson plans (scenarios) for this type of teaching. Also, a significant number of teachers (more than one-third) indicated that they do not feel ready or well prepared for distance education.

Yet, a relatively large number of teachers are not always supported in introduction of innovative teaching ideas, or consulted before the implementation of any innovations. Furthermore, four out of ten teachers feel that they do not always have a freedom to plan their work and notice a lack of opportunities for an independent professional practice. Less than half of teachers have the opportunity to participate in decision making about long-term plans and in planning decisions related to work in their schools. Our study also indicates that the majority of teachers are involved in innovative work at their schools. For example, teachers often think about ways for improving their practice, new methods and techniques related to their work,

make efforts to develop new materials for work, and pay attention to issues that can improve work practices in their institutions.

Almost half of the teachers who participated in this study try to find new approaches to their work, generate some new solutions for problems at their job, try to introduce some innovative ideas and attempt to contribute to the development of new teaching-related concepts. However, teachers rarely involve in a promotion of innovative ideas in their schools and attempts to convince their colleagues to support their new ideas. Since a small number of teachers make efforts to obtain social and organizational support which is necessary for the implementation of innovative work, it is not likely that such ideas will be implemented. Since the promotion of new ideas is vital for the implementation of any innovation, this topic should be considered for inclusion in teachers' pre-service and continuous professional development. It is particularly important, as the majority of teachers believe that teachers' pre-service education should be changed. Many teachers also indicate interest in learning and a need for support with their work in the new situation, when they face new challenges and increased demands at work. In the new condition caused by the COVID-19 pandemic, teachers satisfy their educational needs through informal or self-directed learning, to gain new knowledge and skills necessary for their work. The obtained results demonstrate an urgent need for the continuous professional development and more efficient support for teachers in the current situation that requires a new and innovative form of work in schools.

The COVID-19 pandemic requires re-thinking and reimagining of teacher education. The COVID-19 crisis revealed the need for innovative work, learning, and further digitalization of teacher work and learning. It also revealed a need for changes in teacher education if they are to respond well to the changing nature of their work. However, introducing major reforms to increase the quality of education and the quality of teacher education is always challenging. Therefore, there is an urgent need for extensive debates on new demands and best ways to respond to the challenges in the domain of teacher education. Changes in teacher education should be directed by the premise that the quality of teaching is determined not just by the "quality" of the teacher education, although that is highly important, but also requires changes in the environment in which teachers learn and work. Furthermore, teachers can realize their potential only in settings that provide appropriate

support and rewards (Chi-Kin Lee & Day, 2016, p. 1). The changing nature of the conditions for teacher work together with changes in the environment and form of their work visible during this pandemic reveal the need for preparing teachers for involvement in innovative work during and after the pandemic.

Abstract: The article presents a study which main objective was to expand knowledge on teachers' experiences, readiness, and conditions for effective reaction to significantly changed social circumstances and conditions of their work. The study was performed amongst primary and secondary teachers in Poland, using a proprietary online survey. The study found that the majority of teachers have access to the required equipment and traditional educational resources. However, a significant number of teachers still need recourses required for the distance education. The study also found that the majority of teachers feel very well or adequately prepared for work in new conditions. Yet, a considerable number of teachers still indicate a need for additional training and support, although a vast majority of them are intensively involved in various forms of innovative work and self-directed learning. On a basis of the study results, the authors recommend a number of topics and directions for pre-service teacher education at universities and continuous professional development. These recommendations can contribute to the quality of education during the COVID-19 pandemic and in post-pandemic conditions.

Keywords: labour market, innovative work, COVID-19, distance education, teacher education, Poland

Streszczenie: W artykule ukazano badania, których głównym celem było poszerzenie wiedzy na temat doświadczeń nauczycieli, ich gotowości i warunków skutecznego reagowania na silnie zmienione warunki społeczne i warunki pracy nauczycieli. Badanie zostało przeprowadzone za pomocą autorskiej ankiety internetowej wśród nauczycieli szkół podstawowych i ponadpodstawowych w Polsce. Badanie wykazało, że większość nauczycieli ma dostęp do wymaganego sprzętu i tradycyjnych zasobów edukacyjnych. Jednak znaczna część nauczycieli nadal potrzebuje środków niezbędnych do kształcenia na odległość. Badanie wykazało również, że większość nauczycieli czuje się bardzo dobrze lub odpowiednio przygotowana do pracy w nowych warunkach. Niemniej jednak wielu nauczycieli wykazuje potrzebę dodatkowego szkolenia i wsparcia, choć zdecydowana większość z nich intensywnie angażuje się w różne formy innowacyjnej pracy i samokształcenia. Biorąc pod uwagę uzyskane wyniki badań, autorzy przedstawiają szereg rekomendacji dotyczących tematów i kierunków kształcenia nauczycieli na uczelniach wyższych oraz ustawicznego doskonalenia zawodowego. Przedstawione

rekomendacje mogą wpłynąć na jakość edukacji w okresie pandemii COVID-19 oraz w warunkach po pandemii.

Słowa kluczowe: rynek pracy, praca innowacyjna, COVID-19, edukacja zdalna, edukacja nauczyciela, Polska

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