OUTDOOR EDUCATION DURING THE COVID-19 CRISIS: AN ANALYSIS OF THE SITUATION IN THE CZECH REPUBLIC

Roman Kroufek[1], Vlastimil Chytrý[1], Karel Nepraš[1], Ladislava Filipová[1], Jan Musil[1]

[1]*Jan Evangelista Purkyně University in Ústí nad Labem (CZECH REPUBLIC)*

EduPort 6 (2) – Reviewed Papers
DOI: 10.21062/edp.2022.006

Abstract

The Covid-19 pandemic and its associated limitations represent one of the greatest challenges of our age. This is also true of the constraints on education and schooling. Closed schools have brought about a strong attachment of students to screens of electronic devices. Many teachers have been looking for ways to change this situation, and one way to make such a change is through outdoor education. This paper presents the results of an analysis of the implementation of distance learning during the closure of primary schools in the Ústí nad Labem region of the Czech Republic. Using a sample of teachers (N = 152) from a representative number of primary schools, it reflects on their experience with distance learning and emphasises the possible inclusion of outdoor learning elements. It also explores teachers' perceptions of the benefits and barriers to outdoor learning.

Distance learning was very challenging for teachers, who often limited themselves to core curriculum and neglected the cultivating role of the school. For many teachers, distance learning was also a way to enhance their teaching skills and deepen their collaboration with colleagues. Teachers who had already had experience of outdoor learning before the school closure were more likely to incorporate it in distance learning. They also perceived outdoor education more positively and did not see its obstacles as insurmountable. For a positive shift, it was sufficient to implement outdoor learning only a few times per term. Therefore, in order to incorporate elements of outdoor learning into distance learning more frequently, it is advisable to implement this educational approach regularly in traditional teaching, to get to know it and to gain confidence in its implementation.

Keywords: outdoor learning, distance learning, Covid-19, primary school, school closure

INTRODUCTION

Along with global climate change and keeping peace on the planet, the Covid-19 pandemic is one of the greatest challenges facing the world today. In the last two years, it has affected virtually every sector of human activity, from healthcare to media to education. It is perhaps education that has been most affected by the pandemic and its associated restrictions. An entire generation of children spent their school hours on computers, tablets, and phones to communicate with their teachers during school closures. For teachers, the situation was probably the biggest challenge of their professional lives. In a very short time, they had to adopt new educational approaches using modern technology, restructure their planned curriculum and often completely change their approach to pupils and education.

The situation in the Czech Republic

The closure of schools in the Czech Republic took place in several waves, which differed in their nature and severity (MŠMT, 2021). The first extraordinary patronage, when a ban on the personal presence of pupils and students in education and study at Czech primary, secondary, higher vocational and higher education schools and educational establishments was issued, is dated 11 March 2020. On 11 May 2022, the 9th year of primary school and the final years of secondary schools, conservatories, colleges returned to schools (voluntary, max. 15 students), all years of higher education at the decision of the university (max. 15 students). On 25 May, the

1st grade return to schools (voluntary, max. 15 students). From 8 June, all 2nd year students from primary schools, secondary schools, conservatories and universities return to school.

Schools closed for the autumn (Primary, Secondary, Conservatoire and Higher Education) on 14 October 2020. On 18 November 2020, Years 1 and 2 and the preparatory classes of Primary Schools returned to schools, on 25 November the final years of Secondary Schools, Conservatoires and Higher Education and on 30 November the return of pupils in Years 3-5 and Year 9 of Primary Schools, with Year 2 on a rotation.

From 27/12/2020 to 4/1/2021 only Kindergarten and 1st and 2nd grades and preparatory classes of primary schools opened, other grades and educational levels closed. From 1 March 2021 all schools closed. On 12.4.2021 Kindergarten (last year - groups of up to 15 children) and preparatory classes, 1st level of Primary School opened, rotational teaching took place here (normal teaching was in preparatory classes and small schools). From 19 April 2021, there was the possibility of group teaching for vulnerable pupils in Primary 2. On 26 April, practical teaching in kindergartens was resumed in some regions, and practical teaching in secondary schools, conservatories and colleges was resumed throughout the country; practical teaching in colleges was carried out in the last years according to the decisions of the colleges. As of 3 May 2021, half of the regions had fully opened kindergartens and rotational teaching at the second level of primary schools. As of 10 May 2021, all counties had fully opened Kindergartens and rotational teaching in Secondary School; in most regions, practical teaching was allowed in all years of universities. On 17 May 2021, primary schools were fully open throughout the country, half of the regions had fully open secondary, and practical teaching was possible at universities in all regions. As of 24 May, Secondary Schools, Conservatories and Colleges were fully open in all regions.

During the Covid-19 pandemic so far, Czech schools have been operating in distance education mode for several tens to hundreds of distance days due to the pandemic. Specifically, for the school years 2019/2020 and 2020/2021, this was the following for each type of school: kindergartens - 28 days (for compulsory pre-school education), Primary (1 to 5th grade) - 94 days, Primary (6th to 9th grade) - 141 days, secondary schools - 155 days, secondary vocational schools - 133 days (including practical training), colleges - 135 days. At the same time, selected schools providing education for children of members of the crisis infrastructure were never closed for full-time education (MŠMT, 2021).

Considering that the school year lasts 196 days, Czech pupils and students at the second level of primary school and above spent more than half of their education during the pandemic in distance learning mode (calculated from March 2020 to June 2021).

Current state of research on the impact of distance learning

Such an unclear and unique situation was also an opportunity for educational research both in the Czech Republic and in the world. Research articles reflecting on the impact of the school closure on pupils and teachers began to appear even during the closure. Over time, some recurring themes emerged, linked to the first stage of primary school or its individual actors.

Teachers were forced to collaborate more with each other and with parents and to improve their computer skills (Mankki & Räihä, 2022). The significant time-consuming nature of preparing for distance education is repeatedly found across the world (Munoz, 2021; Folkman et al., 2022; Shobeiry, 2022). Shobeiry (2022) also points to the low equipment of Iranian schools and the lack of computer skills of first grade teachers, thus teachers often used traditional social networking sites for distance education (Jogezai et al, 2021). Despite this, teachers were still looking for ways to manage the challenges of distance learning (Guzzo et al., 2022). According to Rabaglietti et al. (2021), the stress of lack of preparedness for distance learning is mediated by teacher self-efficacy, which can reduce it. Fear of technology and age were then variables that negatively influenced working with IT technology according to Jevsikova et al. (2021). Anderson et al.'s (2021) study highlighted a hierarchy of fears that teachers returned to schools with. Primary concerns were student health, student academic development, personal health, and student mental health.

For children, school performance was often the focus of researchers. The comparison of school performance in and before distance education is interesting. Tomasik et al. (2021) documented on more than 28,000 Swiss pupils that there was no difference in school performance in either mathematics or language for pupils of secondary school, but for pupils of primary school there was a slowdown in distance learning and also a

widening of the gap between pupils. Scarpellini et al. (2021) also highlight similar differences between primary and secondary school based on a nationwide online survey in Italy. They highlight the short attention span of primary school children during online learning, which often led to restlessness and even aggression. Distance education according to the study's findings increased educational deprivation and social inequalities, especially for the youngest children, who lost almost one year of school. The situation was even worse for children with disabilities, who were neglected by the institutions. Children from different social, linguistic and ethnic backgrounds were also disadvantaged, where the role of the family could not be as strong (Popyk, 2021; Weber et al., 2022). Due to the inability to sustain attention, there were large differences in the form of distance learning between primary and secondary school pupils in Italy (Szpunar et al, 2021). The negative health impact of prolonged use of mobile phones and tablets by young children cannot be overlooked (Picca et al, 2021).

Parents played a key role in the distance learning of primary school children, having to take on part of the role of educator for a time (Han et al., 2022), a role they were often not satisfied with (Alharthi, 2022). Parental involvement in distance learning is regarded as crucial for successful learning, especially for younger children. Interestingly, parents' online skills were often perceived by children as insufficient (Matkovic & Vejmelka, 2022).

No research study has yet looked at the involvement of outdoor education during school closures. We seek to close this research gap by seeking answers to the following research questions:

- How do Czech primary school teachers reflect on distance learning?
- How did they incorporate elements of outdoor learning into distance learning?
- How is the implementation of outdoor distance learning influenced by the teacher's view of outdoor learning and their previous experience of it?

METHOD

The research had a mixed design, the quantitative part was predominant, with data collected using an electronic questionnaire. In the qualitative part, ten interviews were conducted to reflect on the themes of the quantitative part.

Participants

Data from 152 teachers were included in the analysis. Teachers came from 46 randomly selected primary schools in the Ústí nad Labem region, the selection was subject to geographical stratification and stratification according to the size of the school expressed by the number of pupils.

Given the trends in Czech (primary) education, this was a gender-unbalanced group, with a significant majority of women (N = 144), 7 men and one respondent who did not want to specify gender. Because of this imbalance, analyses involving gender comparisons were abandoned.

Also, the age distribution of respondents was consistent with trends in the general teacher population. Age ranged from 23-66 years, (M = 48.59; Med = 49). The length of teaching experience oscillated between 1 and 43 years (M = 24.05; Med = 25). All respondents were actively working in Primary School at the time of completing the questionnaire, but the range of qualifications studied was varied, with the expected predominance of Teaching for Primary School (N = 139). Seven teachers were graduates in special education and six were graduates in secondary school teaching.

Data collection

The research instrument for quantitative data collection was a self-constructed questionnaire consisting of: (i) a segment focused on the socio-demographic characteristics of the respondents (age, gender, length of teaching experience, school location), ii) a segment dedicated to the reflection on distance learning during the school closure, (iii) a scale to measure how respondents incorporated elements of outdoor learning during school closure, iv) scales focused on teacher perceptions of outdoor education, (v) scales eliciting the teacher's

perception of barriers to outdoor education,(vi) items eliciting experience with outdoor education prior to the Covid-19 pandemic.

Respondents expressed agreement with the items on a five-point Likert scale (Chytrý & Kroufek, 2017). For segments (ii) and (iii), the Likert scale took the form of completely agree - rather agree - not sure how to decide - rather disagree - completely disagree. For segments (iv) and (v), the Likert scale was completely agree - rather agree – I don't have a strong opinion - rather disagree - completely disagree. Both the individual items and, in the case of segments iii), iv) and v), the entire corresponding scales were used for interpretation. The full text of all items can be found in the results section (Fig. 1-4).

The interviews were recorded in the Big Blue Button environment and analyzed using classic qualitative analysis approaches. During the interviews, data were collected from five areas: (i) the place of teaching practice (location of the school, nature of the school, grades in which teaching was implemented during the closures), (ii) the nature and circumstances of distance education (system settings, tools used, motivation of students and teachers), (iii) the nature and circumstances of outdoor teaching in distance education (methods used for outdoor teaching, sources of inspiration, the impact of closures on subsequent teaching periods, perceived needs for better implementation of outdoor learning during closures), iv) the nature and circumstances of outdoor learning in face-to-face teaching (methods and design of outdoor learning, limits to the use of outdoor learning), v) other information (other communications, comments).

RESULTS

First, the results will be presented, focusing on the course of distance learning in general and on the inclusion of elements of outdoor learning, then we will focus on the issue of teachers' perception of outdoor learning and finally we will synthesize both perspectives.

Distance learning

A primary school teachers' perspective on the course of distance learning during the Covid-19 pandemic yields some interesting and positive findings. Almost all teachers agree that they missed the contact with their students and were always looking for new ways to implement quality online teaching. Such efforts were time-consuming for them and therefore they often focused only on the core curriculum. More than half of them reported that collaboration with colleagues was more important to them than in the days before the pandemic. An equal number believe that the situation caused by the school closures has resulted in an increase in their teaching competences (see Fig. 1).

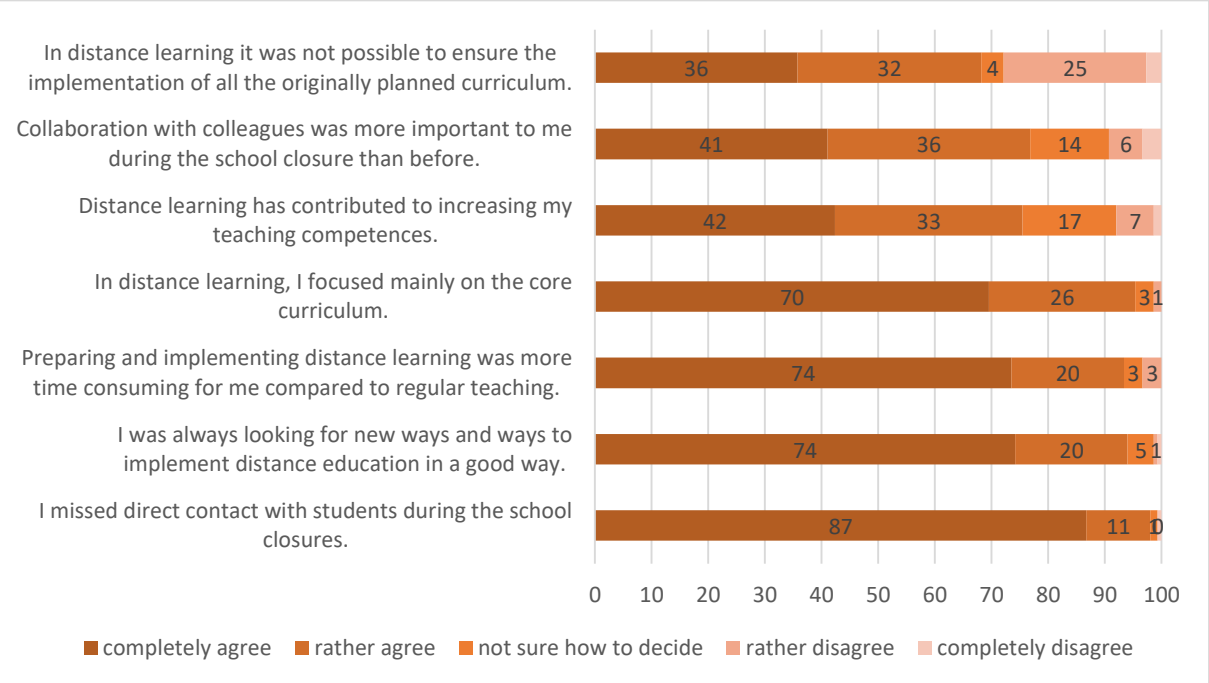

Figure 1 Primary school teachers' perceptions of distance learning (%)

Distance learning was new to the pupils at the beginning and brought them the joy of discovering the unknown. Some teachers had similar feelings but found it challenging to prepare such lessons. The fact that the pupils' enthusiasm waned quite quickly was demotivating for them.

"...at first they were excited to see themselves on those little bricks, right, everybody, hello... ... and now they've been waving for five minutes, yeah, so they were excited, but then it got long, then you could just see that they didn't want to get up, I know they were there-they weren't, they just had it on, but when I called them up, for example, they just texted me, he's coming right up, he said he was going to the toilet, I said, yeah, so it got long, by the end it didn't have any effect at all, but anyway, I mean, I know, for sure. " (L.)

Distance learning in an outdoor environment

Encouragingly, half of the respondents were looking for ways to get students away from the computer screen, mostly by including activities that take place outdoors. However, only a small percentage of teachers were doing this on a regular basis. Some were incorporating outdoor activities as part of larger educational projects. Overall, however, there were still large gaps in primary school teachers' integration of outdoor learning into distance education (Fig 2).

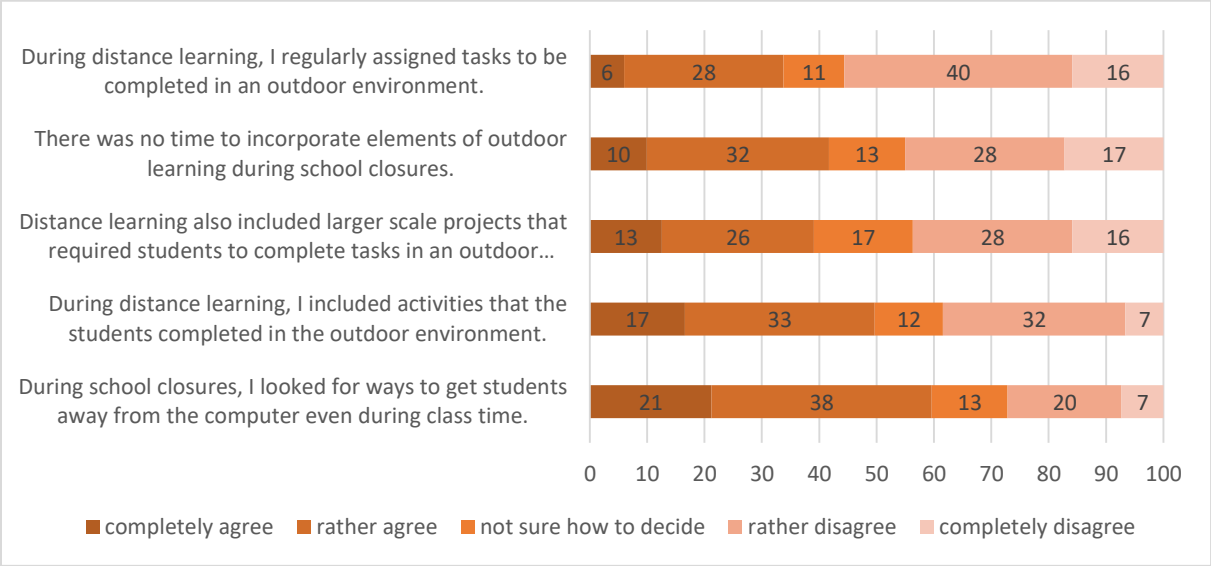

Figure 2 Incorporating outdoor education elements into distance learning (%)

In some schools, outdoor learning took the form of challenges that pupils completed outdoors with their parents.

"... sometimes it was cross-curricular, sometimes it was only focused on a certain subject, some of the challenges were also light, that is, they were also from physical education, or we involved the biology together with art activities, we usually focused the videos on outdoor activities, so not only were they filmed in an outdoor environment, but also basically the challenge contained a task that could be performed outdoors..." (M.)

Teachers' perceptions of outdoor education

Teachers' perceptions of outdoor education were measured using two scales. The first one focused on teachers' attitudes towards outdoor education and their desire to implement it. The second surveyed teachers' perceived barriers to outdoor education.

Czech primary school teachers are quite progressive in their perception of outdoor learning. They enjoy outdoor learning, feel comfortable doing it and more than half would like to do it more often than they currently do. They are quite clear that outdoor learning can be implemented in virtually every subject and is not limited to science. At the same time, more than 60% know that the current curriculum does not restrict

outdoor learning in any way. The attitudes of primary school teachers are not clear about the benefits of outdoor education. While they believe that pupils enjoy it more than classroom teaching, only half think it is motivating for pupils and even fewer agree that the number of disciplinary problems decreases during outdoor learning (Fig. 3).

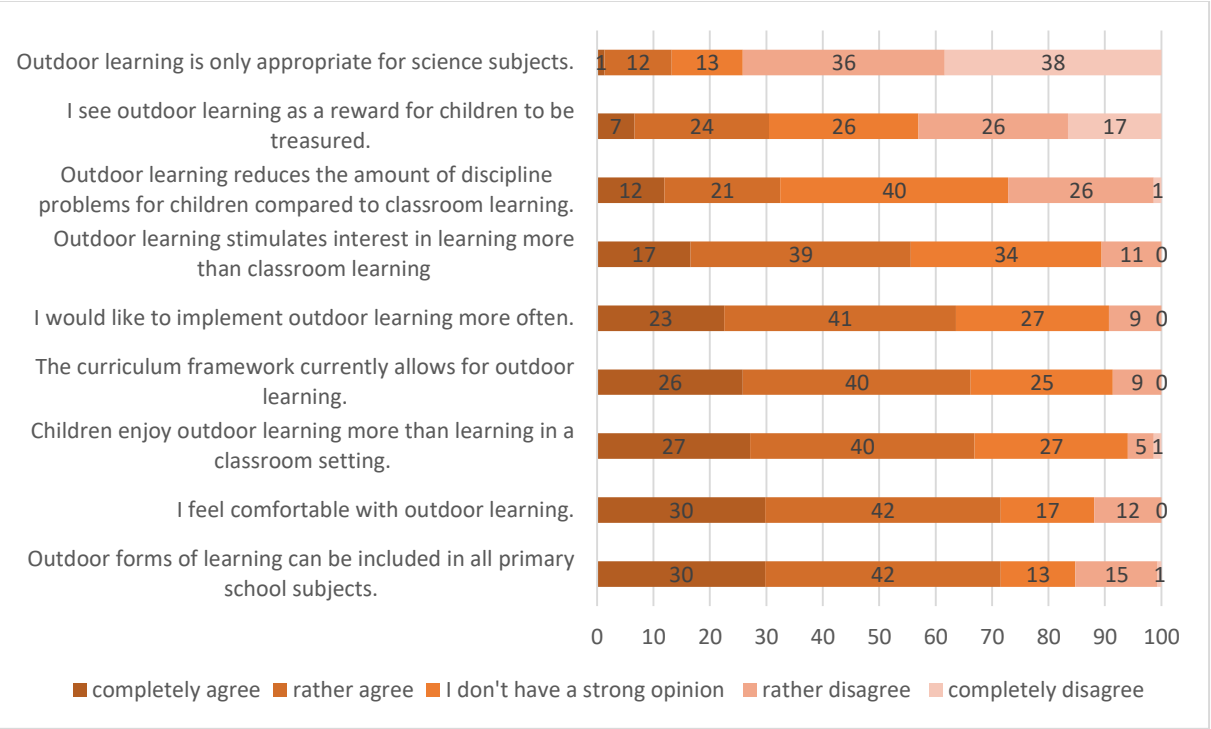

Figure 3 Primary school teachers' perceptions of outdoor education

Teachers' inclination towards outdoor education is influenced by their own experiences, hobbies and beliefs. Some strongly perceive the health benefits of being outdoors as crucial.

"...not only because they're having a good time outside and I think kids need an immunity boost these days, but also because the class just really works well afterwards." (S.)

The low perception of barriers to outdoor learning can be considered positive. Teachers are most lacking in equipment and sufficient competence, as well as other colleagues to engage with them in outdoor learning. Almost no one is bothered by poor weather conditions; on the contrary, the time aspect emerged as the second strongest. Less than half would welcome more support from the school management (Fig. 4).

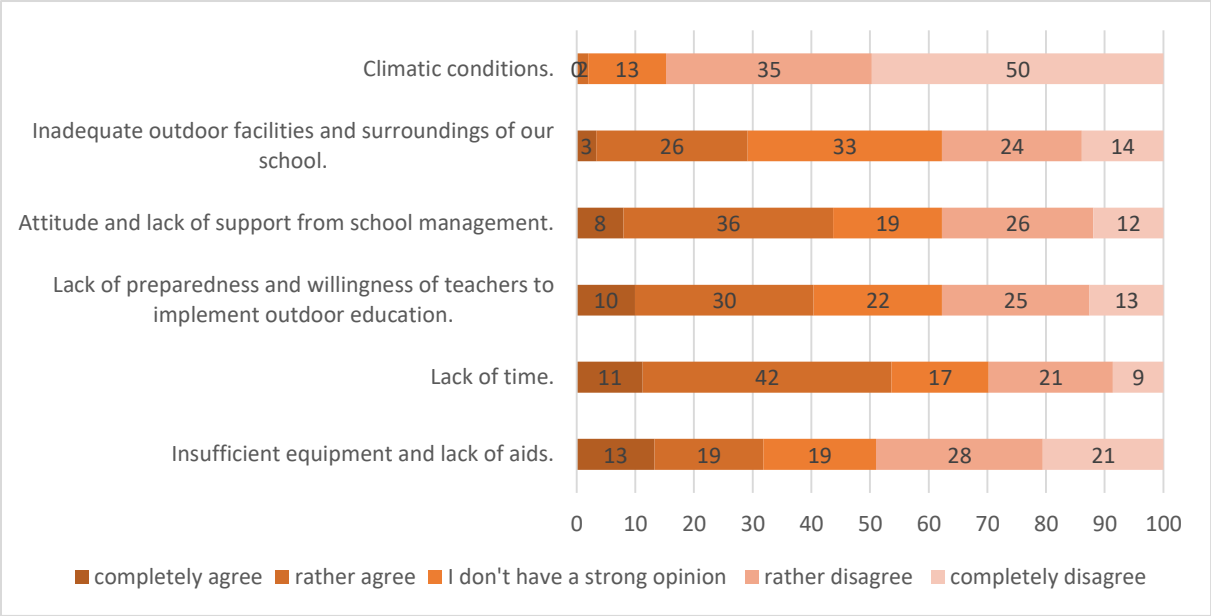

Figure 4 Primary school teachers' perceptions of barriers to outdoor learning

"...sometimes I used to get blasted for being a person who spends a lot of time outside, yeah, I used to go and ask the headmistress if I could go out again, so she always said, please don't say too much in front of my colleagues." (S.)

Experience with outdoor education

Many teachers had experience with outdoor education before the Covid-19 pandemic. Fifteen percent of respondents conducted outdoor education at least once a week. 28% several times a month and 48% rarely several times a semester. Only 9% of respondents had no experience with outdoor education. Based on these data, we divided the respondents into four groups and made comparisons between them for the three selected variables (Fig. 5).

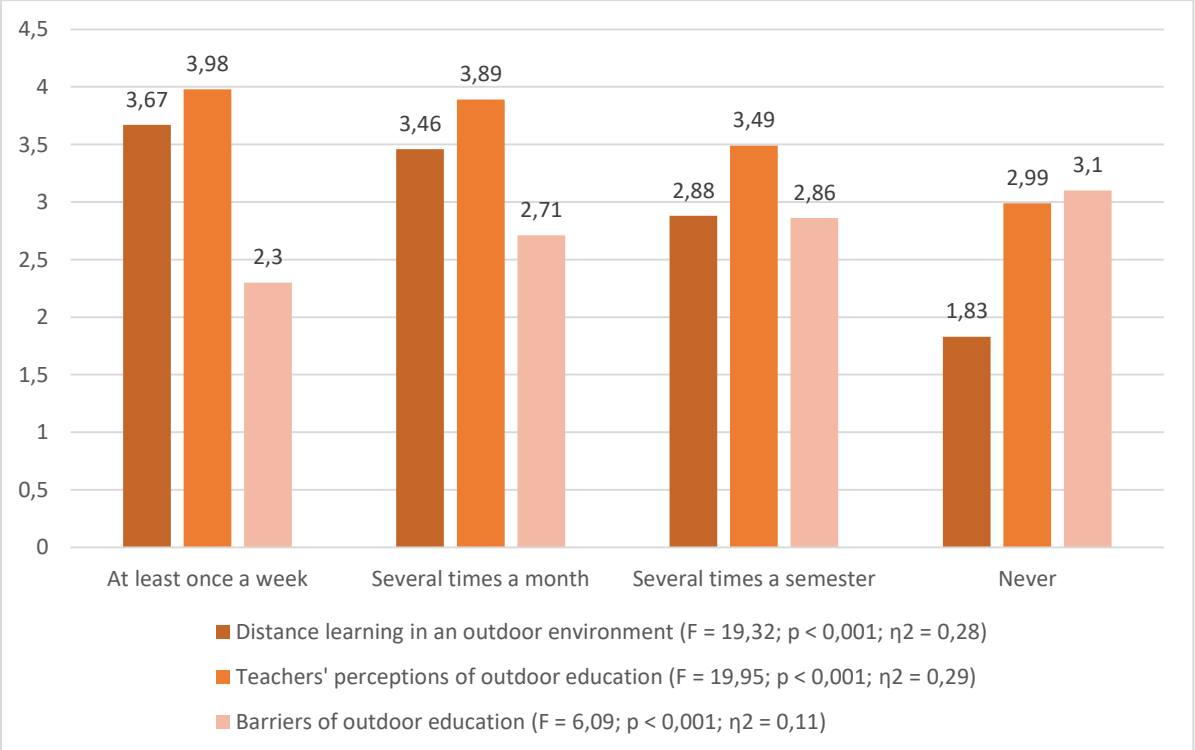

Figure 5 Comparison of selected variables based on the intensity of outdoor education implementation

As we can see, the differences between the groups are strong. Teachers with the most experience with outdoor education have incorporated it most into distance education, have the most positive attitudes towards it, and are least aware of its barriers. In contrast, teachers with no experience of outdoor education resisted its inclusion and perceived its barriers more strongly.

Regression analysis

A multiple linear regression analysis was conducted to determine what most influenced the incorporation of outdoor learning elements into distance education. In Table 1, we see that the biggest positive influence on incorporating outdoor learning into distance education is how teachers perceive outdoor learning and whether they had experience with it prior to the Covid-19 pandemic.

At the 10% significance level, we then see that the age of teachers plays a negative role in the implementation of outdoor education in distance education. Older teachers implemented outdoor distance learning less than their younger colleagues. On the contrary, the length of teaching experience helped to reduce the influence of age; more experienced teachers did not avoid outdoor distance learning. Teachers' perceptions of barriers to outdoor learning in general had no effect on the incorporation of outdoor learning elements into distance education.

Table 1 Multiple linear regression for the variable Outdoor education at the time of closure (R^2 = 0.38)

	β	*t*	*p*
Age	-0,247	-1,75	0,08
Length of teaching experience	0,252	1,81	0,07
Perception of outdoor education	0,375	4,63	< 0,001
Barriers to outdoor education	-0,032	-0,44	0,66
Experience with outdoor education	0,294	3,83	< 0,001

DISCUSSION

The results of the presented research do not bring completely surprising findings, but they help to form an idea of how primary school teachers in the Czech Republic perceived the situation of distance education and how they implemented elements of outdoor education into it.

Distance learning was very time-consuming for teachers, and they often had to limit their activities to the core curriculum. This is a situation that has been repeatedly documented from all continents where extended primary school closures have occurred (Munoz, 2021; Nisiforou et al., 2021; Folkman et al., 2022; Shobeiry, 2022). As elsewhere (Domínguez-Lloria et al., 2021; Perifanou et al., 2022), there was a growing need for closer collaboration among primary school teachers in the Czech Republic. Teachers lacked contact with their pupils, the school was very limited in its social role (Kovacs et al., 2021).

Only a small number of teachers implemented regular outdoor teaching at this time. Most, however, tried to get pupils away from tablet and computer screens at least occasionally.

The attitudes of Czech primary school teachers towards outdoor learning are positive, many of them enjoy it and would like to implement it more often. They perceive poor equipment and their own lack of competence to implement outdoor learning as the biggest obstacles.

Those teachers who are experienced in outdoor education are not afraid to include it in their work even in such a complicated time as the school closure. They also have a more positive view of outdoor education. Teachers with no experience then ignored outdoor education during the closure. Greater self-efficacy generally leads to more successful teaching (Rabaglietti et al., 2021), so this is also true for outdoor education.

Knowing all of the research documented benefits of outdoor education (Kroufek et al., 2021) and the results of this study, the need for more in-depth training of primary school teachers in outdoor education and distance outdoor education can be pointed out. They should be exposed to it already during their studies and should also have the opportunity to study it in the framework of teacher training courses provided by both the state and NGOs. This will give them the necessary confidence to implement this educational approach in traditional teaching and, where appropriate, in times of crisis. The need to further prepare teachers for possible further school closures is also seen as important in other states (Perifanou et al., 2022).

All interpretations were made with the limitations of this study in mind. Although the selection of primary schools was random, it was carried out in only one region of the Czech Republic, a region with a higher proportion of socially deprived population and burdened with many environmental problems. It is possible that if all regions of the country had been included, the results would have been different.

References

[1] Alharthi, M. (2022, January 22). Parental Involvement in Children's Online Education During COVID-19; A Phenomenological Study in Saudi Arabia. *Early Childhood Education Journal*. https://doi.org/10.1007/s10643-021-01286-y

[2] Anderson, J. R., Hughes, J. L., & Trivedi, M. H. (2021, March 19). School Personnel and Parents' Concerns Related to COVID-19 Pandemic's Impact Related to Schools. *School Psychology Review*, *50*(4), 519–529. https://doi.org/10.1080/2372966x.2020.1862626

[3] Domínguez-Lloria, S., Fernández-Aguayo, S., Marín-Marín, J. A., & Alvariñas-Villaverde, M. (2021, May 23). Effectiveness of a Collaborative Platform for the Mastery of Competencies in the Distance Learning Modality during COVID-19. *Sustainability*, *13*(11), 5854. https://doi.org/10.3390/su13115854

[4] Folkman, A. K., Josefsson, K. A., & Fjetland, K. J. (2022, January 5). Norwegian Teachers' Experiences with Distance Teaching and Online Schooling During the COVID-19 Pandemic. *Scandinavian Journal of Educational Research*, 1–16. https://doi.org/10.1080/00313831.2021.2021445

[5] Guzzo, T., Boffo, S., Ferri, F., Gagliardi, F., & Grifoni, P. (2022, July 10). Towards Quality Digital Learning: Lessons Learned during COVID-19 and Recommended Actions—The Teachers' Perspective. *Sustainability*, *14*(14), 8438. https://doi.org/10.3390/su14148438

[6] Han, C., Liu, L., & Chen, S. (2022, July 6). Factors Influencing Parents' Intention on Primary School Students' Choices of Online Learning during and after the COVID-19 Pandemic in China. *Sustainability*, *14*(14), 8269. https://doi.org/10.3390/su14148269

[7] Chytrý, V. & Kroufek, R. (2017). Možnosti využití Likertovy škály – základní principy aplikace v pedagogickém výzkumu a demonstrace na příkladu zjišťování vztahu člověka k přírodě. *Scientia in educatione, 8*(1), 1-16.

[8] Jevsikova, T., Stupurienė, G., Stumbrienė, D., Juškevičienė, A., & Dagienė, V. (2021). Acceptance of Distance Learning Technologies by Teachers: Determining Factors and Emergency State Influence. *Informatica*, 517–542. https://doi.org/10.15388/21-infor459

[9] Jogezai, N. A., Baloch, F. A., Jaffar, M., Shah, T., Khilji, G. K., & Bashir, S. (2021, April). Teachers' attitudes towards social media (SM) use in online learning amid the COVID-19 pandemic: the effects of SM use by

teachers and religious scholars during physical distancing. *Heliyon*, *7*(4), e06781. https://doi.org/10.1016/j.heliyon.2021.e06781

[10] Kovacs, H., Pulfrey, C., & Monnier, E. C. (2021, June 22). Surviving but not thriving: Comparing primary, vocational and higher education teachers' experiences during the COVID-19 lockdown. *Education and Information Technologies*, *26*(6), 7543–7567. https://doi.org/10.1007/s10639-021-10616-x

[11] Kroufek, R., Nepraš, K., Musil, J., & Filipová, L. (2021). Effect of Outdoor Education and Stay in Nature on Pupils' Physical and Psychival Health. *EduPort*, *5*(2). https://doi.org/10.21062/edp.2022.001

[12] Mankki, V., & Räihä, P. (2022, January 2). Primary teachers' professional learning during a COVID-19 school lockdown. *Educational Research*, *64*(1), 1–17. https://doi.org/10.1080/00131881.2021.2013127

[13] Matković, R., & Vejmelka, L. (2022, August 8). Online aktivnosti, e-učenje i roditeljska uloga kod osnovnoškolaca za vrijeme pandemije COVID -19. *Medijske Studije*, *13*(25), 3–26. https://doi.org/10.20901/ms.13.25.1

[14] MŠMT (2021). *Zpráva o dopadech pandemie covid-19 na vzdělávání*. Available at: https://www.vlada.cz/assets/urad-vlady/poskytovani-informaci/poskytnute-informace-na-zadost/material.docx

[15] Munoz, K. (2021). HOW DO PRIMARY SCHOOL TEACHERS WORK REMOTELY IN TIMES OF PANDEMIC? LEARNING MODALITIES AND CHILEAN TEACHERS' PERCEPTIONS OF DISTANCE EDUCATION. *Perspectiva Educacional*, *60*(1), 107–138.

[16] Nisiforou, E. A., Kosmas, P., & Vrasidas, C. (2021, April 3). Emergency remote teaching during COVID-19 pandemic: lessons learned from Cyprus. *Educational Media International*, *58*(2), 215–221. https://doi.org/10.1080/09523987.2021.1930484

[17] Perifanou, M., Economides, A. A., & Tzafilkou, K. (2022, May 1). Greek teachers' difficulties & opportunities in emergency distance teaching. *E-Learning and Digital Media*, *19*(4), 361–379. https://doi.org/10.1177/20427530221092854

[18] Picca, M., Manzoni, P., Milani, G. P., Mantovani, S., Cravidi, C., Mariani, D., Mezzopane, A., Marinello, R., Bove, C., Ferri, P., Macchi, M., & Agostoni, C. (2021, October 11). Distance learning, technological devices, lifestyle and behavior of children and their family during the COVID-19 lockdown in Lombardy: a survey. *Italian Journal of Pediatrics*, *47*(1). https://doi.org/10.1186/s13052-021-01156-8

[19] Popyk, A. (2020, October 13). The impact of distance learning on the social practices of schoolchildren during the COVID-19 pandemic: reconstructing values of migrant children in Poland. *European Societies*, *23*(sup1), S530–S544. https://doi.org/10.1080/14616696.2020.1831038

[20] Rabaglietti, E., Lattke, L. S., Tesauri, B., Settanni, M., & De Lorenzo, A. (2021, May 6). A Balancing Act During Covid-19: Teachers' Self-Efficacy, Perception of Stress in the Distance Learning Experience. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.644108

[21] Scarpellini, F., Segre, G., Cartabia, M., Zanetti, M., Campi, R., Clavenna, A., & Bonati, M. (2021, June 2). Distance learning in Italian primary and middle school children during the COVID-19 pandemic: a national survey. *BMC Public Health*, *21*(1). https://doi.org/10.1186/s12889-021-11026-x

[22] Shobeiry, M. (2022, March 31). Covid-19 and analysis of needs of the primary school teachers in online-schooling in Iran. *Revista on Line De Política E Gestão Educacional*, e022050. https://doi.org/10.22633/rpge.v26iesp.2.16545

[23] Szpunar, G., Cannoni, E., & Di Norcia, A. (2021, June 17). La didattica a distanza durante il lockdown in Italia: il punto di vista delle famiglie. *Journal of Educational, Cultural and Psychological Studies (ECPS Journal)*, *23*. https://doi.org/10.7358/ecps-2021-023-szpu

[24] Tomasik, M. J., Helbling, L. A., & Moser, U. (2020, November 24). Educational gains of in-person vs. distance learning in primary and secondary schools: A natural experiment during

the COVID -19 pandemic school closures in Switzerland. *International Journal of Psychology*, *56*(4), 566–576. https://doi.org/10.1002/ijop.12728

[25] Weber, C., Helm, C., & Kemethofer, D. (2021, December 13). Are Social and Ethnic Reading Inequalities Increasing During School Closures?—The Mediating Role of Parental Involvement in Distance Learning. *Frontiers in Education*, *6*. https://doi.org/10.3389/feduc.2021.737064