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Mobile phone bans in schools: Are they related to students' knowledge, cyberbullying, and well-being?



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Introduction

Mobile phones have become a common part of everyday life for children and adolescents. This has raised growing concerns among parents, teachers, and education policymakers about their possible effects on concentration, classroom behavior, and academic performance. In recent years, several education systems – for example, those in France, the Netherlands, Australia, Finland, and the United States – have expanded or introduced bans on mobile phone use in schools.

International research on the effects of school phone bans, however, has produced mixed results. Some studies report improvements in academic performance, especially for students with lower achievement or those from socially disadvantaged backgrounds (Beland & Murphy, 2016; Beneito & Vicente-Chirivella, 2022; Abrahamsson, 2024), while others find no such benefits (Kessel et al., 2020; Guldvik & Kvinnsland, 2018; Smith et al., 2018). Findings on the effects of bans on cyberbullying and well-being are similarly inconsistent (Campbell et al., 2024).

Moreover, studies on the use of mobile phones in teaching have not produced consistent findings either. Several studies of students, teachers, and school leaders describe mobile phones as a source of distraction and disruption in the classroom (Gao et al., 2017; Walker, 2013; Porter et

al., 2016). Similarly, experimental research shows that even the mere presence of mobile phones may impair students' academic performance (Ward et al., 2017; Glass & Kang, 2019). At the same time, other research finds no negative effects of mobile device use or directly highlights their educational potential (Smith et al., 2018; King et al., 2024).

Empirical studies of Czech children are still very limited. Since 2020, schools have had expanded authority to ban mobile phone use. At the same time, the Czech School Inspectorate (2020) has emphasized the need to take students' interests and needs into account. Schools should consider potential restrictions or bans only after dialogue with students and parents, and they should not overlook the possible use of mobile phones in instruction and school leisure activities (Czech School Inspectorate, 2020). Nevertheless, current research on Czech children and school phone bans remains limited. In this report, we present the results of two analyses:

(1) We summarize an analysis of PISA 2022 data from 21 European education systems¹, including the Czech Republic, and examine the relationships between school phone bans and students' performance in mathematics². The analysis also explores in greater detail the mechanisms through which school phone bans may

¹ Specifically, the analysis works with data for the following countries: Albania, Czechia, Denmark, Estonia, Finland, France, Ireland, Iceland, Kosovo, Lithuania, Latvia, Moldova, Germany, Netherlands, Norway, Portugal, Romania, Slovakia, Spain, Sweden, and Switzerland.

² The analysis focuses primarily on results in mathematics, as the PISA 2022 survey focused in greater detail on mathematical literacy and mathematics instruction. Variables related to distraction or teaching disruption in the PISA 2022 data thus refer specifically to mathematics lessons.

affect learning. Specifically, it focuses on two possible pathways: (a) whether a phone ban reduces student distraction during instruction caused by the phones themselves, and (b) whether a phone ban changes the overall classroom climate, that is, the general level of disruption during instruction.

(2) We present an analysis of data from the EU Kids Online V study of Czech elementary school students. We focus on the relationship between school phone bans, parental mediation (that is, educational strategies related to mobile phone use), and outcomes in well-being, online addiction, cyberbullying, and digital skills. Including parental strategies is important because it allows us to compare which form of regulation is more strongly related to children's well-being.

Key findings

School phone bans and performance in mathematics:

- A school phone ban does not automatically lead to better academic performance. Across the countries analyzed, we found no direct relationship between a school phone ban and students' performance in mathematics.
- However, mobile phone bans may affect students indirectly. We found that bans are associated with lower student distraction during instruction, which contributes to better results in some countries.
- At the same time, across countries, a school phone ban is associated with greater overall disruption and lower classroom discipline. This is indirectly related to worse student performance in mathematics.
- Overall, the effect of a phone ban on student performance does not appear to be substantial across countries. This may suggest that its positive and negative effects cancel each other out. However, the situation differs across countries, so this aggregate result does not necessarily reflect the outcomes in every country.
- In the Czech Republic, phone bans are not directly related to students' mathematics performance. Phone bans in Czech schools are also not related to overall classroom disruption or a lack of discipline during instruction.
- On the other hand, in the Czech Republic, a phone ban is associated with lower phone-related distraction and thus

is indirectly linked to better mathematics performance through its reduction. The size of this effect, however, is very small and, in the context of PISA, practically negligible compared with the differences commonly observed between students.

Mobile phone bans in Czech schools versus cyberbullying, online addiction, and well-being:

- Strict mobile phone bans in the Czech Republic (during both class time and breaks) are associated with less frequent phone use at school but not with well-being. In other words, students' well-being is neither better nor worse when a phone ban is in place.
- A phone ban in Czech schools is also not associated with lower susceptibility to online addiction or with a lower likelihood of children becoming victims of cyberbullying. In other words, children in schools with a phone ban showed the same levels of online addiction symptoms and experiences with cyberbullying as children in schools without a ban.
- By contrast, enabling parental mediation – that is, parents talking with children about technology, explaining risks, and taking an interest in their online world – was the factor most strongly associated with children's well-being.
- Technical parental mediation (for example, blocking apps or setting time limits) reduces phone use outside school, but it may also limit opportunities to develop digital skills.

Recommendations for parents, schools, and policymakers

- Based on the results of our analyses, we do not recommend blanket bans on mobile phones in schools. The bans themselves do not appear to be a reliable tool for improving student performance, increasing well-being, or reducing susceptibility to online addiction and cyberbullying.
- International findings show that the effects of phone bans can be mixed, with both desirable and undesirable consequences. Therefore, if regulation is being considered, it is better framed as support for schools, with flexibility to adapt rules to local conditions, rather than as a one-size-fits-all solution.
- Rules for phone use in schools should focus on developing students' competencies, digital skills, and the ability to regulate their own use.
- Instead of focusing on phone bans, which may affect student outcomes in both positive and negative ways, we recommend giving primary attention to instruction and classroom disruption, where a clear relationship with student outcomes has been found.
- We recommend a context-sensitive approach: the effects of phone bans depend on the environment in which they are introduced and on how they are enforced in daily classroom practice. Rather than relying on simple solutions, schools should consider how phone-use rules affect student behavior and classroom atmosphere.
- We recommend that parents talk actively with their children about mobile phone use, explain potential risks, and agree on rules that take children's interests and needs into account.
- Technical mediation by parents (e.g., blocking websites with parental control apps) may partly reduce risks associated with phone use. Still, it can also hinder children's development of digital skills and self-regulation. It should therefore serve as a supplementary measure when enabling mediation is not effective or when a child is exposed to elevated online risks.

Methodology

Here we describe the methods used in both analyses, which relied on different data collection processes and were conducted in different years:

(1) International PISA data collected in 2022 across 21 European countries

The analysis is based on data from the international PISA 2022 survey, which tests 15-year-old students and collects extensive questionnaire data on school and classroom conditions. We included 21 European countries in our analysis, focusing on the primary education level at which school mobile phone bans are most common. Specifically, in the PISA 2022 data, the share of primary schools with a phone ban ranged from 6% in Finland to 89% in Albania. With 41% of primary schools banning phones, the Czech Republic was close to the European average. Information about the presence of a school phone ban came from the principal's questionnaire.

For the analysis, we used multilevel modeling, which appropriately accounts for the data structure while allowing us to examine multiple relationships among variables simultaneously. Specifically, we tested a mediation model in which the school phone ban was treated as the initial factor that might be related to students' performance in mathematics, not only directly but also indirectly through two mediators: (a) the level of student distraction caused by mobile phone use during instruction; (b) the level of

overall disruption in the classroom during instruction. Data on these two factors came from the students' questionnaire. Thus, students themselves reported the extent to which they were distracted by phone use in mathematics classes and the extent to which various forms of classroom disruption occurred (for example, students not listening to the teacher or noise and disorder in the classroom).

We conducted this analysis separately for each of the 21 European countries and then summarized the results across all countries using a random-effects meta-analysis. This procedure allowed us to calculate average effects across countries while also assessing the extent to which conditions differ by country. In all analyses, gender and socioeconomic status were used as control variables.

In the Results section, we use terms such as positive effect, negative effect, or relationship only when the differences observed in the data are statistically significant. Statistically non-significant results are described using phrases such as 'no improvement or deterioration' or 'there is no difference.' Strictly speaking, however, this does not mean that no effect exists; it means only that the available data did not allow us to confirm one.

(2) EU Kids Online project data collected in the Czech Republic in 2025

The second analysis is based on the Czech wave of the EU Kids Online V survey,

conducted from May to June 2025. The sample for this analysis consisted of 1,872 students in grades 3-9 and was obtained through representative random sampling stratified by school type and location. Data collection was conducted in schools using the CAWI method, with assistance from a trained interviewer (from the Focus agency).

We analyzed the data using structural equation modeling (SEM), a statistical method that allows multiple relationships among variables to be examined simultaneously. Unlike standard correlations, SEM can isolate individual effects from one another. This allowed us to assess whether a given factor is directly related to a particular variable or whether its effect is explained by other variables in the model.

We asked children about several areas. We were interested in the rules governing mobile phone use in schools, including strict and partial bans. Parental mediation was measured using scales for enabling and technical mediation, adapted from previous EU Kids Online questionnaires (Šmahel et al., 2020). For the enabling mediation, we asked children whether their parents talk with them about what they do online and whether their parents explain which online activities are good and which are bad. For the technical mediation, we asked whether children had time limits set or apps and websites blocked.

We also asked about mobile phone use both at school, during lessons and breaks, and outside school, in the morning, after school, before sleep, and at night. Other variables examined included well-being, digital skills, online addiction, and experiences of cyberbullying as a victim in the past year.

Results

School phone bans and students' academic performance

Summary results for 21 European countries

In the meta-analysis of school mobile phone bans across all 21 European countries, no direct relationship was found between the existence of a ban and students' mathematics performance. In other words, **across countries, students' results on the mathematics literacy test were comparable in schools with and without a phone ban.**

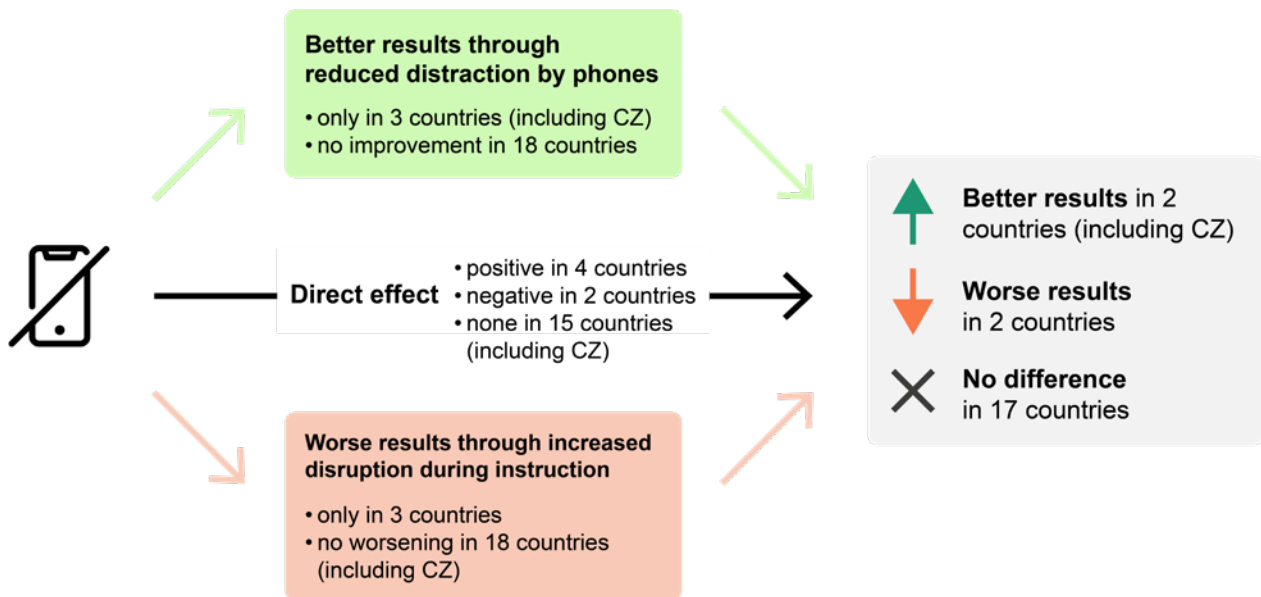
In addition to the direct relationship, we also examined possible indirect relationships through two factors related to what happens during instruction in the classroom: (1) student distraction caused by mobile phones during instruction and (2) overall disruption in the classroom during instruction. This type of analysis allowed us to investigate whether phone bans are indirectly related to student outcomes through distraction and classroom disruption rather than directly.

1. Across countries, the presence of a phone ban is associated with lower levels of student distraction caused by phone use. At the same time, higher levels of distraction are associated with worse performance in mathematics. However, when these two relationships are considered together as an indirect relationship between the school

phone ban and student performance through phone-related distraction, the indirect relationship is not statistically significant. This means that **across the countries analyzed, the data do not provide sufficient support for an indirect relationship between a phone ban and mathematics performance via student distraction.**

2. Across countries, schools with a phone ban also show higher overall levels of classroom disruption. At the same time, higher levels of disruption during instruction are associated with worse performance in mathematics. Together, these two relationships form an indirect negative relationship between a phone ban and mathematics performance, mediated by overall classroom disruption during instruction. In other words, **across the countries analyzed, a phone ban is associated with worse mathematics performance via greater classroom disruption.**

If we then consider the total indirect effect of phone bans on mathematics performance, that is, the combined effect through both factors at the same time, this effect is not statistically significant across the countries analyzed. Taken together, the data across countries do not support an indirect relationship between a phone ban and mathematics performance through mobile phone distraction and classroom disruption. One possible interpretation is that the effects of a phone ban on performance through reduced distraction (a desirable effect) and increased overall



disruption and lack of discipline during instruction (an undesirable effect) largely cancel each other out. As a result, the ban does not appear to affect overall mathematics performance.

These findings also point to considerable differences across countries in how mobile phone bans relate to students' educational outcomes. Although some relationships are significant in the cross-country meta-analysis, they may not be significant in the analysis of individual countries' data. The opposite may also occur in some countries; a given relationship may be significant even though it appears non-significant in the overall cross-country meta-analysis. The situation in individual countries may therefore differ substantially from the results presented above. This is also true for the Czech Republic, which we discuss in more detail in the following section.

Findings for the Czech Republic

When the Czech data were analyzed separately, no direct relationship was found

between mobile phone bans and student performance. In other words, **the Czech data also do not confirm a direct relationship between the existence of a ban at a school and students' mathematics performance.** However, the indirect relationships through students' distraction and overall classroom disruption look somewhat different in the Czech Republic than in the cross-country meta-analysis.

1. A mobile phone ban in Czech schools is associated with lower levels of student distraction caused by mobile phones during instruction, while higher levels of student distraction are associated with worse results on the mathematics literacy test. When these two relationships are evaluated together, an indirect relationship emerges between the school phone ban and mathematics performance through the reduction of phone-related distraction. **In other words, in Czech schools, a phone ban is indirectly associated with better mathematics performance by reducing distractions.**

2. By contrast, the Czech data did not show a relationship between a school phone ban and the overall level of classroom disruption during instruction, although higher overall disruption during instruction is also associated with worse mathematics performance. Taken together, **in the Czech data, we do find an indirect relationship between a phone ban and mathematics performance through general classroom disruption.**

Overall, the results for the Czech Republic show that although the two factors partly work in opposite directions, together they produce a positive indirect relationship between the school phone ban and mathematics performance. In other words, in the Czech Republic, when accounting for pupil distraction and overall classroom disruption, an indirect relationship between a phone ban and better mathematics performance is confirmed, primarily because of the reduction in distraction caused by mobile phones during instruction.

However, when translated into the size of the difference itself, while accounting for both the distraction and the general classroom disruption, students in schools with a phone ban score, on average, only 1.83 points higher on the mathematics literacy test. This is a very small and practically negligible difference, because differences between individual students typically amount to tens of points³.

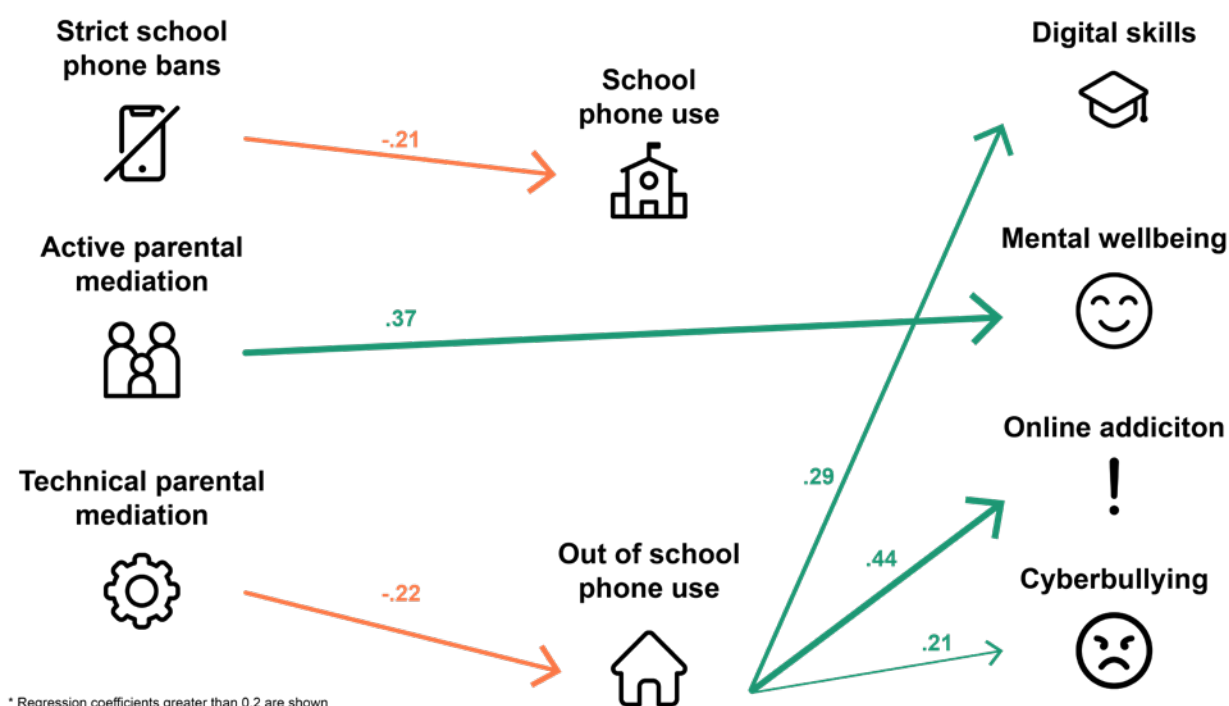
The relationship between bans and children's well-being

How many children reported that mobile phones are banned in their classroom?

Data from the EU Kids Online V project show that strict phone bans are most common in the lower grades and gradually become less common as children get older. In third grade, 43.3% of children reported a strict ban, but by seventh grade, the figure had dropped to 20.8%. In ninth grade, the share rises slightly to 32.1%, which may reflect differences among schools. Overall, 33% of all surveyed students reported a strict ban. At the same time, agreement with the rules declines significantly with age. While more than half of children in fifth grade and below agree with the rules, in the final years of elementary school, fewer than one-third do.

The following graph shows the model used (see Methodology). The arrows indicate relationships between variables; the absence of an arrow indicates no relationship, meaning that the variables in our sample are either unrelated or related only negligibly. Blue arrows indicate a positive relationship, meaning that an increase in one variable is associated with an increase in another. In contrast, red arrows indicate a negative relationship: an increase in one variable is associated with a decrease in the other, or vice versa. The strength of these relationships can range from 0 to 1, with values of 0.1 considered to be weak, 0.3 moderately strong, and 0.5 strong.

³ The average score at primary schools in the Czech Republic is 457 points (SD = 82.5), and the scores obtained across pupils range from 194 to 744 points.



Do the bans work?

It depends. We found that a **strict ban is associated with lower mobile phone use at school**, shown by the red arrow from ban to use in the graph. This effect remains stable even after age, and parental strategies are taken into account. In practice, this means that children in classrooms with a ban do in fact use their phones less often, both during lessons and during breaks. **Importantly, however, the direct relationships between the ban and the outcome variables – well-being, online addiction, cyberbullying, and digital skills – were negligible.** This is evident in the graph, where there are no arrows from the phone ban to these variables. Similarly, phone use at school itself was not related to these outcomes, unlike phone use outside school, which was associated with higher digital skills but also with online addiction and more frequent experiences of cyberbullying.

What, then, is related to well-being?

Parental strategies proved to be a much stronger factor than school rules. **Enabling mediation** – that is, situations in which parents talk with children about technology, explain risks, and take an interest in their online world – **showed a significant relationship with well-being**, represented by the thick blue arrow in the graph. Technical mediation, that is, blocking apps, setting time limits, or monitoring children’s activities, was associated in our model with lower phone use outside school. Unlike enabling mediation, we did not observe a direct effect on any outcome variable here, only an indirect effect through lower use. **Technical restrictions are therefore indirectly associated with a lower risk of online addiction and, to some extent, cyberbullying.** At the same time, **they may mean fewer opportunities to develop digital skills**, which are positively associated with overall time spent using phones.

In the analyses presented here, we used available data from school and student questionnaires that capture the situation at a single point in time. These are what we call cross-sectional data, so they do not allow for clear causal conclusions. In other words, we can describe what a phone ban is related to, such as student outcomes or well-being, but we cannot claim that the phone ban itself causes these outcomes.

The relationships identified here may also have several explanations. Although it may seem intuitive to assume a sequence such as phone ban → less distraction → better results, the data do not allow us to treat this scenario as the only possible explanation. On the contrary, it is also possible that some schools introduced a ban in response to preexisting problems, such as greater classroom disruption or weaker student performance. In addition, other features of the school environment that are not fully captured in the analyses, such as school climate, leadership style, or consistency in enforcing rules, may also shape these relationships.

Another limitation is the way bans are measured. This information comes from school management on one hand and from the pupils themselves on the other, and is collected only in a yes-or-no format. As a result, it may not fully capture how the rule is actually designed or the extent to which it is

followed in practice across classes and teachers. Very different practices may therefore be hidden under a single ban label, thereby weakening the relationships observed in the data.

For these reasons, the findings presented here should be read as evidence of possible relationships rather than as strict proof that introducing mobile phone bans automatically improves or worsens academic performance or other outcomes examined in the study.

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