# TRENDS IN THE PERCEPTION OF SCHOOL CLIMATE IN THE CZECH REPUBLIC: HBSC STUDY 1994–2022

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**SUMMARY**

*Objective:* This study aimed to examine long-term trends in Czech adolescents' perceptions of school climate between 1994 and 2022, focusing on school satisfaction, perceived school pressure, and perceived social support from classmates and teachers.

*Methods:* Data were drawn from eight cycles of the Czech Health Behaviour in School-aged Children (HBSC) study, encompassing responses from 63,252 students aged 11, 13 and 15 years. Binary logistic regression analyses were conducted to assess temporal trends and associations between school climate indicators and demographic variables, including gender, age, and family affluence.

*Results:* Compared to 2022, students were significantly more likely to report liking school a lot in 2010 (OR = 2.14, 95% CI: 1.94–2.36) and 2014 (OR = 1.64, 95% CI: 1.52–1.76). Reports of school dissatisfaction were lowest in 2010 (OR = 0.53, 95% CI: 0.49–0.57) and 2014 (OR = 0.60, 95% CI: 0.57–0.63) relative to 2022. Perceived school pressure was highest in 2022, while in 2002 the odds of feeling pressure were less than half as likely (OR = 0.44, 95% CI: 0.41–0.47). Classmate support peaked in 2010 (OR = 2.04, 95% CI: 1.90–2.18) vs. 2022, and teacher support was highest in 2018 (OR = 1.32, 95% CI: 1.26–1.39). Girls and older students consistently reported greater school pressure and lower levels of support, while those from more affluent families reported more favourable perceptions of school climate.

*Conclusions:* Czech adolescents' school climate perceptions have deteriorated over the past three decades, marked by rising demands and weakening support at school. These trends may contribute to reduced school engagement and heightened psychological distress, emphasizing the need for systemic interventions that ensure that high school expectations are coupled with relational and emotional support in schools.

*Key words:* school climate, adolescents, school satisfaction, school pressure, teacher support, classmate support, HBSC

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## INTRODUCTION

The concept of school climate has received considerable attention in recent decades as a critical factor influencing both school outcomes and the psychological wellbeing of children and adolescents (1, 2). Although there are substantial differences in how school climate has been defined in previous research (3), school climate generally includes the overall quality of interpersonal relationships within the school community, including perceptions of safety, the extent of support provided by teachers and peers, and students' general satisfaction with the educational environment. Empirical research consistently shows that a positive school climate (reflected in liking school, feeling supported by classmates and teachers, and reasonable levels of school-related pressure) is closely associated with better mental health outcomes, lower stress, and higher school motivation (4–8).

Recent research has documented concerning trends in the perception of school climate. Data from international studies show that adolescents are experiencing increasing school pressure and declining school satisfaction over time (9). Perceived teacher emotional support plays a key role in fostering adolescents' school engagement, with strong teacher-student relationships enhancing students' self-efficacy and resilience, which in turn contribute to greater emotional stability and consistent school involvement (10). Peer support also plays a substantial protective role, with higher levels of support from classmates linked to reduced loneliness and lower school-related stress (11).

The impact of school-related stress on child and adolescent health is well-documented. Increased school demands and negative school experiences are associated with higher rates of anxiety, depression, and somatic symptoms (12, 13). Additionally, perceived unfairness from teachers and peer victimization have been identified as strong predictors of emotional maladjustment (14). The cumulative evidence underscores that school climate is not only a contextual factor but a determinant of health and wellbeing of children and adolescents.

Theoretical models help explain how school environments influence student outcomes, with the Demand-Control-Support (DCS) model being especially relevant. It highlights how the balance of demands, students' decision-making autonomy, and the support they receive from teachers and peers shape health, stress, and satisfaction. Research using HBSC data shows that decision control and multiple sources of support can buffer the negative health effects of high demands, though the role of support may vary across age groups (15). Meta-analyses confirm that excessive demands increase the risk of academic burnout, while autonomy and strong teacher and peer support enhance wellbeing and reduce stress (16). Studies applying the DCS framework also link school conditions to adolescents' overall life satisfaction (17). Using this model therefore offers a valuable framework for understanding how school demands, autonomy, and support interact to influence student health and engagement.

Socioeconomic disparities play an additional role in shaping adolescents' school experiences (18). Students from disadvantaged settings often face less supportive school climates, which can amplify stress and undermine wellbeing. However, positive school climate can partially moderate the negative effects of low socioeconomic status on school performance.

While much of this research has focused on international trends, understanding national patterns is equally important. In Czechia, education has undergone major changes since the early 1990s, moving from a centrally controlled system to a more flexible and autonomous structure. Key reforms included the 2004 School Act and the 2005 curriculum modernization (19, 20). More recent priorities have emphasized digital skills, competency-based learning, and inclusive policies to support diverse student populations (20, 21). Examining long-term trends in school climate during this period helps reveal how these reforms and broader changes have shaped students' experiences and wellbeing.

Czechia, as a consistent participant in the Health Behaviour in School-aged Children (HBSC) study (22), provides a unique opportunity to assess trends in school climate perceptions over time. This study aims to analyse trends in the perception of school climate in Czechia from 1994 to 2022 using HBSC data. The HBSC study has been conducted in Czechia since 1993/1994, making it possible to track almost three decades of trends (23). We focus on four key aspects of school climate: school satisfaction, school-related pressure, perceived support from classmates, and perceived support from teachers.

## MATERIALS AND METHODS

The HBSC studies are large-scale, cross-national surveys conducted every four years using standardized research protocols developed by an international network. Data are collected through self-administered questionnaires completed by nationally representative samples of 11-, 13-, and 15-year-old schoolchildren, with sampling procedures adapted to national school systems to ensure comparability and representativeness across countries (22). The present analysis uses HBSC data collected between 1994 and 2022, encompassing eight survey cycles and allowing for the examination of long-term trends in adolescent school experience in Czechia.

During the observed period from 1994 to 2022, the total number of respondents included in the Czech HBSC data files across survey cycles was 63,608. For the purposes of the current analyses, all participants with missing responses on all four critical variables (school satisfaction, school pressure, student support, and teacher support) were excluded (n = 356). Respondents with at least one valid response on these variables were retained and included in at least one analysis. The final analytical sample sizes by gender, age group and survey year are presented in Table 1.

As a result of this retention strategy, some missing values remained. However, across all survey years, the proportion of missing data for the key school climate variables remained consistently low, with missing values for any given variable never exceeding 1% in any year. This suggests that the level of missing data has hardly any impact on the representativeness of the findings.

For the analyses, we selected questions from the standardized HBSC questionnaires (24) focusing on the school environment and students' perceptions of school climate, including one item on school satisfaction ("How do you feel about school at present?", with answer options ranging from "I like it a lot" to "I don't like it at all"), one item on perceived schoolwork pressure ("How pressured do you feel by the schoolwork you have to do?", with answer options ranging from "not at all" to "a lot"), and two composite scales, each based on three statements, assessing perceived support from classmates (e.g., "Most of the students in my class are kind and helpful.") and teachers (e.g., "I feel that my teachers care about me as a person."). For the school satisfaction measure, two cut-off points were used to capture both ends of the distribution – students who report liking school a lot and those who report not liking school at all. The inclusion of both

***Table 1.*** *Number of respondents with at least one valid response on key school-related variables*

| Year | Boys 11 | Boys 13 | Boys 15 | Girls 11 | Girls 13 | Girls 15 | Total |
|---|---|---|---|---|---|---|---|
| 1994 | 584 | 619 | 585 | 588 | 624 | 584 | 3,584 |
| 1998 | 586 | 646 | 607 | 598 | 644 | 622 | 3,703 |
| 2002 | 825 | 780 | 806 | 865 | 881 | 854 | 5,011 |
| 2006 | 761 | 803 | 833 | 737 | 801 | 818 | 4,753 |
| 2010 | 715 | 672 | 710 | 712 | 784 | 750 | 4,343 |
| 2014 | 2,212 | 2,400 | 2,359 | 2,290 | 2,460 | 2,395 | 14,116 |
| 2018 | 2,182 | 2,357 | 2,224 | 2,144 | 2,273 | 2,109 | 13,289 |
| 2022 | 2,121 | 2,420 | 2,769 | 2,154 | 2,303 | 2,686 | 14,453 |
| Total | 9,986 | 10,697 | 10,893 | 10,088 | 10,770 | 10,818 | 63,252 |

Final analytical sample

cut-offs is justified by their differing temporal dynamics, which are not simply inverse reflections of one another, thus offering a more nuanced understanding of students' experiences over time. The remaining indicators were dichotomized in line with the most recent HBSC report on adolescents' social contexts (25). We report those who felt some or a lot of pressure from the schoolwork. Both high classmate and teacher support were calculated as a mean score of 4 or higher (range 1–5) of three respective items.

Descriptive statistics were used to present prevalence estimates and temporal patterns. Binary logistic regression analyses were applied to assess long-term trends and associations between school climate indicators (high and low school satisfaction, school pressure, classmate support, and teacher support) and demographic variables (gender, age, and family affluence). Results are reported as odds ratios (ORs) with 95% confidence intervals (CIs) for the five key components. A p-value of $< 0.001$ was considered statistically significant. All models controlled for survey year, gender, age group, and socioeconomic status, which was assessed using the well-established 6-item Family Affluence Scale (FAS) (27).

## RESULTS

The time trends of all analysed variables are presented in Figure 1; the results of the logistic regression can be seen in Table 2 and are described in detail in the subsequent sections. Although some fluctuations occurred, recent years were generally marked by increased reports of school dissatisfaction and pressure, alongside declining perceptions of classmate and teacher support.

### School Satisfaction

Logistic regression analysis showed that students were significantly more likely to report liking school a lot in 2010 (OR = 2.14, 95% CI: 1.94–2.36), 2014 (OR = 1.64, 95% CI: 1.52–1.76), 2006 (OR = 1.35, 95% CI: 1.22–1.50), and 2002 (OR = 1.28, 95% CI: 1.15–1.42) compared to the reference year 2022. In contrast, students from 1998 and 1994 were significantly less likely to report liking school (OR = 0.76, 95% CI: 0.66–0.87 and OR = 0.72, 95% CI: 0.62–0.83, respectively).

Girls were significantly more likely than boys to report liking school (OR = 1.26, 95% CI: 1.19–1.33). With respect to age, younger students (11y) reported liking school more often than older students: 13-year-olds (OR = 0.66, 95% CI: 0.62–0.71) and 15-year-olds (OR = 0.60, 95% CI: 0.57–0.64) both showed decreased odds of liking school.

In contrast, family affluence showed only limited associations with the odds of reporting high school satisfaction. While students from high affluence backgrounds had slightly higher odds of liking school compared to their low affluence peers (OR = 1.11, 95% CI: 1.02–1.21, p = 0.019), this difference did not meet the stricter significance threshold applied elsewhere in the analysis ($p < 0.001$) and was relatively modest in size. Students from middle affluence backgrounds did not differ significantly from the low affluence reference group.

At the other end of continuum, the likelihood of not liking school very much or at all was significantly lower in all surveyed years compared to 2022, with the most pronounced differences in 2014 (OR = 0.60, 95% CI: 0.67–0.63), 2010 (OR = 0.53, 95% CI: 0.49–0.57), and 1994 (OR = 0.66, 95% CI: 0.61–0.71).

Girls were less likely than boys to dislike school (OR = 0.73, 95% CI: 0.70–0.75). Older students were significantly more likely to report that they did not like school very much or at all: 13-year-olds (OR = 1.51, 95% CI: 1.44–1.58) and 15-year-olds (OR = 1.87, 95% CI: 1.79–1.96). Students from higher and middle socioeconomic backgrounds had significantly lower odds of disliking school compared to those from low affluence backgrounds.

### School Pressure

Compared to 2022, students in all earlier survey years – except for 1994 – reported significantly less pressure from schoolwork, with the lowest levels observed in 2002 (OR = 0.44, 95% CI:

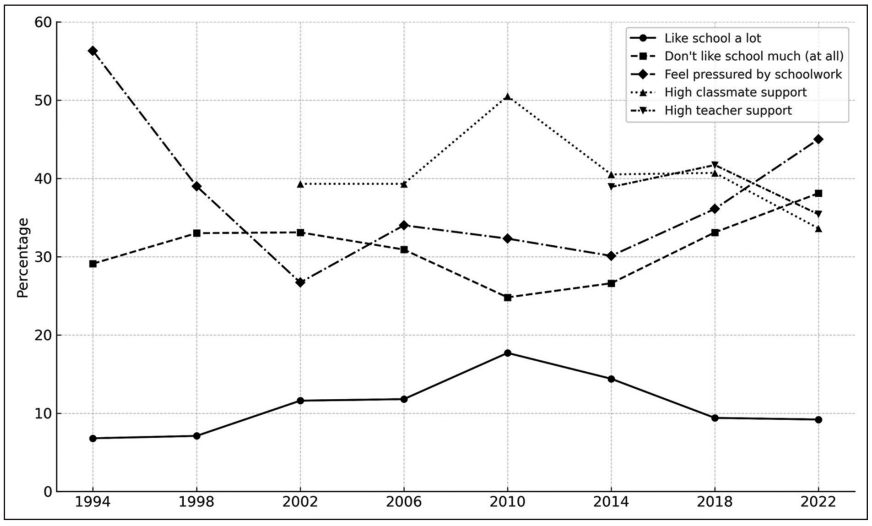


***Fig. 1.*** *School-related variables (total sample by year).*

Data on classmate support were not collected before the 2002 survey.
Although a similar concept to the teacher support described in the main text was investigated in the past, the measure currently used was introduced in the 2014 survey.

0.41–0.47), 2014 (OR = 0.53, 95% CI: 0.50–0.55), and 2010 (OR = 0.57, 95% CI: 0.53–0.62). In contrast, students in 1994 reported higher levels of school pressure than in 2022 (OR = 1.58, 95% CI: 1.47–1.70). These findings suggest a general upward trend in perceived school pressure over time, culminating in the highest levels reported in the most recent survey year.

Girls reported higher pressure than boys (OR = 1.30, 95% CI: 1.26–1.35), and older students were more likely to feel pressured: 13-year-olds (OR = 1.85, 95% CI: 1.77–1.94) and 15-year-olds (OR = 1.75, 95% CI: 1.67–1.83). No statistically significant differences in pressure were found across levels of family affluence.

## Classmate Support

Perceived classmate support was measured only in surveys conducted since 2002, with the highest levels observed in 2010 (OR = 2.04, 95% CI: 1.90–2.18), with moderately higher odds also observed in 2002, 2006, and 2014, relative to 2022.

Girls were significantly less likely than boys to report high classmate support (OR = 0.78, 95% CI: 0.76–0.81). A decline in perceived support was also seen in older students (13y: OR = 0.74; 15y: OR = 0.70) compared to 11-year-olds. Students from higher (OR = 1.30, 95% CI: 1.23–1.38) and middle (OR = 1.13, 95% CI: 1.08–1.19) socioeconomic backgrounds were more likely to report higher classmate support than those reporting low socioeconomic background.

## Teacher Support

Teacher support was measured only in the three most recent survey years. Students reported the highest levels in 2018 (OR = 1.32, 95% CI: 1.26–1.39), followed by 2014 (OR = 1.13, 95% CI: 1.07–1.19), with lower likelihood of high support corresponding to 2022.

Girls had a lower likelihood of perceiving high teacher support compared to boys (OR = 0.83, 95% CI: 0.80–0.86). A steep decline was observed across age groups, with 13-year-olds (OR = 0.42, 95% CI: 0.40–0.44) and 15-year-olds (OR = 0.28, 95% CI: 0.27–0.30) being notably less likely to report high teacher support compared to 11-year-olds. Socioeconomic status was associated with perceived teacher support as well, with students from high affluence families being less likely to report high teacher support (OR = 0.89, 95% CI: 0.83–0.96). No significant difference was observed between students from low and middle affluence families.

# DISCUSSION

This study provides a comprehensive overview of trends in Czech adolescents' perceptions of school climate from 1994 to 2022, highlighting substantial changes in school satisfaction, perceived stress, and social support.

The pronounced decline in school satisfaction and increase in dissatisfaction, alongside with the rising perception of school-related pressure, reveals a concerning shift in adolescents' overall

***Table 2.*** *Logistic regression analyses*

| | Like school a lot | | Don't like school very much/at all | | Feel some/a lot of pressure by the schoolwork | | High classmate support | | High teacher support | |
|---|---|---|---|---|---|---|---|---|---|---|
| | OR | 95% CI | OR | 95% CI | OR | 95% CI | OR | 95% CI | OR | 95% CI |
| Survey year | | | | | | | | | | |
| 2022 | Ref. | | Ref. | | Ref. | | Ref. | | Ref. | |
| 2018 | 1.04 | 0.95–1.12 | **0.81** | 0.77–0.8 | 0.68 | 0.65–0.72 | **1.36** | 1.29–1.43 | **1.32** | 1.26–1.39 |
| 2014 | **1.64** | 1.52–1.76 | **0.60** | 0.67–0.63 | 0.53 | 0.50–0.55 | **1.32** | 1.26–1.39 | **1.13** | 1.07–1.19 |
| 2010 | **2.14** | 1.94–2.36 | **0.53** | 0.49–0.57 | 0.57 | 0.53–0.62 | **2.04** | 1.90–2.18 | n/a | n/a |
| 2006 | **1.35** | 1.22–1.50 | **0.72** | 0.67–0.77 | 0.62 | 0.58–0.66 | **1.28** | 1.20–1.38 | n/a | n/a |
| 2002 | **1.28** | 1.15–1.42 | **0.81** | 0.75–0.86 | 0.44 | 0.41–0.47 | **1.27** | 1.19–1.36 | n/a | n/a |
| 1998[a] | **0.76** | 0.66–0.87 | **0.79** | 0.73–0.85 | 0.77 | 0.71–0.83 | n/a | n/a | n/a | n/a |
| 1994[a] | **0.72** | 0.62–0.83 | **0.66** | 0.61–0.71 | 1.58 | 1.47–1.70 | n/a | n/a | n/a | n/a |
| Gender | | | | | | | | | | |
| Boys | Ref. | | Ref. | | Ref. | | Ref. | | Ref. | |
| Girls | **1.26** | 1.19–1.33 | **0.73** | 0.70–0.75 | **1.30** | 1.26–1.35 | **0.78** | 0.76–0.81 | **0.83** | 0.80–0.86 |
| Age category/grade | | | | | | | | | | |
| 11y/5th | Ref. | | Ref. | | Ref. | | Ref. | | Ref. | |
| 13y/7th | **0.66** | 0.62–0.71 | **1.51** | 1.44–1.58 | **1.85** | 1.77–1.94 | **0.74** | 0.71–0.77 | **0.42** | 0.40–0.44 |
| 15y/9th | **0.60** | 0.57–0.64 | **1.87** | 1.79–1.96 | **1.75** | 1.67–1.83 | **0.70** | 0.67–0.73 | **0.28** | 0.27–0.30 |
| FAS | | | | | | | | | | |
| Low | Ref. | | Ref. | | Ref. | | Ref. | | Ref. | |
| Middle | 0.93 | 0.86–1.00 | **0.87** | 0.83–0.92 | 0.95 | 0.91–1.00 | **1.13** | 1.08–1.19 | 0.96 | 0.91–1.02 |
| High | 1.11 | 1.02–1.21 | **0.88** | 0.83–0.93 | 1.03 | 0.97–1.10 | **1.30** | 1.23–1.38 | **0.89** | 0.83–0.96 |

n/a – not available; FAS – family affluence scale was not used in 1994 and 1998. All bold ORs are significant at p < 0.001.

experience of education and school. While earlier years, such as 2010 and 2014, saw relatively higher levels of reported satisfaction, the trend has reversed sharply, with 2022 reflecting both the lowest likelihood of students' school satisfaction and the highest levels of dissatisfaction and perceived school pressure across all eight survey cycles. These parallel developments suggest that schools may increasingly be viewed less as supportive learning environments and more as sources of stress (27). Notably, the rise in school pressure was especially prominent among girls and older students, indicating both gender and developmental vulnerabilities. Adolescents may feel overwhelmed by school demands, driven in part by high-stakes testing, greater competitiveness in education, and broader social expectations (28). This growing burden may erode students' emotional connection to school, contributing not only to dissatisfaction but also to reduced engagement, burnout, and long-term disengagement from learning (29, 30). Addressing these challenges by promoting supportive school environments and re-evaluating resources students need to successfully cope with school demands should be a key priority in efforts to improve student wellbeing and educational outcomes.

Several factors may underlie these developments. Educational reforms, increased emphasis on school performance and testing, and the growing presence of social comparison via digital platforms may all contribute to a school experience perceived as more stressful and less personally fulfilling (31). Moreover, societal changes (including shifts in parenting styles, peer norms, and the broader sociopolitical climate) may influence how adolescents perceive institutional authority and relational dynamics in schools (32–34). As satisfaction with school is closely linked to student retention, motivation, and emotional wellbeing, this decline signals a need for systemic responses (35). Interventions aimed at promoting teaching practices that support autonomy, fostering meaningful student-teacher relationships, and enhancing the relevance of curriculum content could help reverse this trend (36, 37). This is particularly topical in Czechia, which ranks exceptionally low in cross-national comparisons in these areas (26).

One of the most consistent findings was a clear age-related pattern in school satisfaction, with older students reporting lower satisfaction than their younger peers. This pattern is likely linked to developmental changes during adolescence, including shifts in identity, autonomy, life satisfaction and cognitive evaluation of institutional structures (38, 39). Similar age-related differences in school satisfaction have been documented internationally, reflecting the broader challenge of maintaining engagement and positive affect toward school in older adolescents (40).

The gender differences observed in this study reflect a complex and paradoxical pattern. Girls consistently reported greater pressure related to schoolwork but also higher levels of school satisfaction, likely reflecting stronger school investment and conscientiousness. In contrast, boys reported lower school liking and school pressure, potentially contributed to weaker school attachment and motivation. This paradox is particularly striking when considered alongside broader developmental and international trends. Life satisfaction generally declines with age, especially among girls, who are more likely to experience emotional and psychological vulnerability during adolescence (41, 42), which would typically be expected to coincide with lower, not higher, school satisfaction. Despite generally reporting lower overall life satisfaction, girls have traditionally indicated higher school satisfaction than boys (43), likely due to stronger social relationships within the school environment. However, in Czech surveys, girls reported lower levels of classmate support than boys, suggesting a nuanced pattern in perceived peer relationships, and the need to consider additional factors to understand existing gender differences.

Recent international data indicate rising satisfaction among boys and increasing school pressure among girls, leading to a narrowing of satisfaction differences and a widening gap in perceived stress (9). Similar patterns have been observed also in Czechia, where HBSC data (2002–2018) show a significant decline in school satisfaction and a notable increase in school pressure among girls, while boys' satisfaction remained relatively stable with a moderate increase in pressure (9). Unlike previous studies, the present analysis considered gender differences across all survey years combined, without examining trends over time. Future research should explore temporal patterns in Czech data to better understand evolving gender dynamics in school satisfaction, school pressure, and perceived support. These gendered patterns can also be understood in light of the educational stressors hypothesis, which suggests that as modern societies place increasing emphasis on academic achievement, students are exposed to more stressors within school environments. Such stressors have been shown to disproportionately affect girls, contributing to sharper declines in mental health compared to boys (44).

Another notable finding concerns the observed shifts in perceived school pressure and social support. The marked increase in reported stress among adolescents may reflect intensified educational demands and societal expectations, while also being influenced by adolescents' appraisals on the availability of resources to cope with such demands. Concurrently, declining perceptions of support from teachers and peers, a key factor for maintaining students' engagement and psychological wellbeing (45), may indicate weakening school connectedness. These dual trends, rising demands and weakening support, may place adolescents at heightened risk of psychological distress (46, 47). Future studies should integrate qualitative and contextual data to better understand how institutional and cultural changes have shaped students' lived experiences over time.

When compared with previous national studies that analysed the HBSC data in Czechia from 2002 to 2014 (48), several parallel trends emerge: increased school pressure, persistent gender gaps, and the crucial role of social support. However, the present study expands the timeline significantly, offering a richer perspective on the evolution of school climate across nearly three decades and capturing the most recent dynamics, including post-2014 developments. This extended scope allows for a more nuanced understanding of how societal shifts, educational reforms, and changing youth cultures have shaped adolescents' experiences.

In light of these findings, it is notable that the Czech Ministry of Education has recently revised the Framework Educational Programme for Basic Education to reflect evolving societal needs and to better support student wellbeing (49). The new curriculum emphasizes key competencies, digital literacy, critical thinking, and an inclusive approach to education. It promotes respectful, collaborative classroom environments and supports the development of social and emotional skills – factors that align closely with protective aspects of school climate identified in this study, such as teacher and peer support. By fostering belonging, mutual re-

spect, and individualized support, these reforms aim to strengthen classroom cohesion and create safer, more trusting environments that are conducive to learning and positive interpersonal relationships. These changes may help counteract some of the negative trends observed in our data, including declining satisfaction and weakening perceived support, particularly if implemented with fidelity and adequate support for educators.

While this study benefits from a very large, nationally representative sample and standardized measurement tools, several limitations must be acknowledged. First, all measures are based on self-report, which may introduce subjective bias. Second, changes in educational policy, curriculum demands, and social conditions over the 30-year period may have influenced students' perceptions in ways not fully captured by the available variables. Third, teacher support was only assessed in three survey years, limiting longitudinal interpretation. Fourth, the present analysis examined gender, age, and family affluence differences across all survey years combined, without analysing how these patterns may have evolved over time – limiting insight into potential temporal trends. Finally, the most recent wave of data collection took place during the COVID-19 pandemic, which may have influenced students' experiences, perceptions, and reported mental health (50).

## CONCLUSION

This study highlights a concerning shift in Czech adolescents' perceptions of school climate over the past three decades, marked by increasing school pressure, declining satisfaction, and weakening social support. These trends suggest that schools may be increasingly perceived as demanding rather than supportive, with potential consequences for student engagement, emotional wellbeing, and long-term academic motivation. Addressing these challenges will require a systemic response that balances school expectations with relational, emotional and social support. Future research should explore how institutional and cultural transformations shape students' everyday school experiences in order to inform interventions that foster both student wellbeing and meaningful educational engagement.

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