Part 1

Education and well-being

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1.1 COVID-19: an exceptional stress test for educational systems

COVID-19 has disrupted education and training in an unprecedented way. The pandemic and the subsequent move to remote and later blended learning have been a watershed event for Member States' education systems. Some systems and some schools were able to mitigate the impact on students' exams results better than others, pointing to the importance of teachers and schools in the aftermath of the pandemic.

The COVID-19 pandemic has also moved the well-being of children and young people up the policy agenda, with increasing media attention and growing political interest. Students' life satisfaction, sense of well-being, and ability to develop decision-making skills and psychological coping mechanisms are crucial for lifelong learning and for leading a meaningful life. These factors lay the foundations for self-awareness, relationship building and building resilience, enabling all of us to adjust and to overcome personal adversity, long-term life challenges and societal shocks and disasters[1].

Students' well-being can be defined as a state of overall mental and physical health, strength, resilience and fitness that allows them to function well at school and in their personal lives. International research[2] shows that the school environment in general, and educational attainment in particular, are fundamental determinants of good or poor mental health in children and adolescents[2]. The World Health Organization defines good mental health as a state of well-being, the realisation of one's own abilities and the ability to cope with the normal stresses of life[3]. A sense of well-being includes having a positive sense of identity and an ability to manage thoughts and emotions, to build social relationships, and to acquire an education that allows active citizenship as an adult.

The concept of well-being can be analysed in multiple ways. While the literature shares a rather general starting point[4], i.e. that well-being is about quality of life and is multidimensional, the degree of consensus decreases as the definition attempts to become more precise and operational. Among the many existing concepts, the OECD has developed a specific framework to analyse student well-being[5]. This has also been adopted in the OECD Programme for International Student Assessment (PISA) 2018[6]. It includes five dimensions: cognitive, psychological, physical, social and material.

The OECD conceptual framework will be broadly followed in the analysis, mostly focusing on the psychological, social and physical dimensions. When relevant, material indicators will be taken into account.

The actual measurement of well-being is a challenge[7], given that indicators are usually self-reported and collected through surveys. The comparability of cross-country data requires not only

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1 Agasisti, T., et al. (2018). Academic resilience: What schools and countries do to help disadvantaged students succeed in PISA, OECD Education Working Papers, No. 167.

2 Cefai, C., Simões, C. and Caravita, S. (2021). A systemic, whole-school approach to mental health and well-being in schools in the EU. A NESET report for the European Commission.

3 World Health Organization (2004). Promoting mental health: concepts, emerging evidence, practice (Summary Report).

4 Statham, J. and Chase, E. (2010). Childhood Wellbeing: A Brief Overview, Childhood Wellbeing Centre Research Centre Briefing Paper N. 1.

5 Borgonovi, F. and Pál, J (2016). A framework for the analysis of student well-being in the PISA 2015 study: Being 15 in 2015, OECD Education Working Papers, No. 140.

6 OECD (2019). PISA 2018 Results (Volume III): What School Life Means for Students' Lives.

7 Selwyn, J. and Wood, M. (2015). Measuring Well-Being: A Literature Review. University of Bristol.

international surveys asking the same question in several countries, but also selecting the most "unbiased" indicators, i.e. those that are more independent from country-specific cultural contexts[8].

The analysis that follows distinguishes between the "pre-COVID-19" and the "during-COVID-19" periods. For the former, the key sources of well-being indicators for primary and secondary school that are used are the Trends in International Mathematics and Science Study (TIMSS)[9] 2019 and the PISA 2018 surveys, which gather data on educational aspirations, absenteeism and learning outcomes in mathematics. More subjective data from the PISA survey are also analysed, notably on bullying and feelings of well-being. Teacher's views are taken into account in a third subsection. For the during-COVID-19 period, the analysis looks at the impact of the pandemic on well-being indicators for primary, secondary and tertiary students, based on a few recent international surveys that cover a number of EU countries. Specific attention is paid to students in Vocational Education and Training (VET) in a final subsection of the analysis. Unfortunately, due to the lack of cross-country comparable data on learning outcomes after the spread of the pandemic[10], the relationship between well-being and learning outcome indicators at international level cannot yet be investigated for the duration of the COVID-19 period.

Box 1: Well-being as part of education policies in Estonia

In Estonia's education strategy for 2021-2035, a well-being-focused learning environment is defined as "a combination of mental, social and physical conditions for learning that support the learner's self-efficacy and self-esteem, the development of life skills and social competences, and mental and physical health in general". Since 2018, the well-being of students and teachers is regularly monitored through a satisfaction survey targeted at students, teachers and parents. Each school receives feedback on areas for improvement. This year's well-being survey focused on distance learning and self-management.

1.2 What we know about well-being before COVID-19: an analysis of data from PISA 2018 and TIMSS 2019

A sense of belonging is a fundamental human need. It includes a desire for social approval and to be accepted, respected and liked by others. A sense of belonging helps people make sense of their lives and contributes to their overall well-being[11].

This also applies in a school context[12]. Since students spend a considerable part of their lives in school, interactions with their peers and teachers affect their overall well-being as well as school

8 Life satisfaction can suffer from cultural biases, which makes it unsuitable for international comparisons, Cf. OECD (2019). PISA 2018 Results (Volume III): What School Life Means for Students' Lives, p. 36.

9 TIMSS is carried out every four years by the International Association for the Evaluation of Educational Achievement (IEA). It is an international assessment of student achievement in mathematics and science at fourth and eighth grades.

10 There are country-specific studies estimating the negative impact of the spring 2020 COVID-19-induced lockdowns on student learning outcomes.

Cf. Engzell, P., Frey, A. and Verhagen, M.D. (2020). Learning Loss Due to School Closures During the COVID-19 Pandemic. SocArXiv (on the Netherlands);

Maldonado, J. and De Witte, K. (2020). The Effect of School Closures on Standardised Student Test Outcomes. KU Leuven Faculty of Economics and Business Discussion Paper Series 20.17 (on Belgium-Flemish Community);

French Ministry of National Education, Youth and Sports (2021). Évaluations repères 2020 de début de CP et de CE1: baisse des performances par rapport à 2019, notamment en français en CE1, et hausse des écarts selon les secteurs de scolarisation, an information note N. 21.02 (on France).

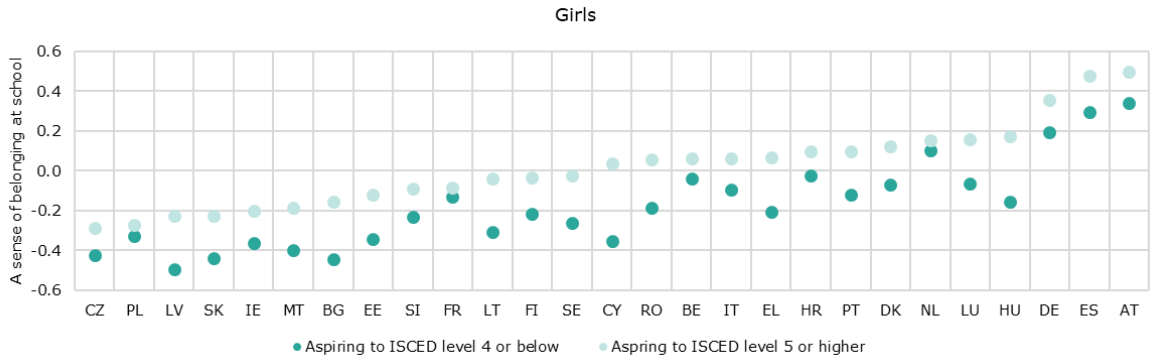
11 Greenaway, K. H., Haslam, S. A., Cruwys T, Branscombe, N. R., Ysseldyk, R. and Heldreth C. (2015). From "we" to "me": Group identification enhances perceived personal control with consequences for health and well-being. In: Journal of Personality and Social Psychology 109 (1): 53.

motivation, and performance at school. In this section, a student's sense of belonging at school as an indicator of their well-being is analysed in relation to three types of academic outcomes, namely educational aspirations, absenteeism and performance on standardised tests[13].This analysis is based on data from two large cross-national surveys: PISA[14] and TIMSS[15]. Both surveys used a similar approach, calculating a single scale of well-being on the basis of responses to several statements (for details, cf. Box 3 and Box 4). These surveys were last carried out in 2018 and 2019, respectively.

1.2.1 Sense of belonging at school and educational aspirations

PISA data (Figure 1) shows that 15-year-old boys and girls in the EU with a stronger sense of belonging at school have higher educational aspirations, as measured by the highest level of education they expect to complete: ISCED level 5[16] or above and ISCED level 4 or below. Magnitudes of difference between the variables vary considerably across EU countries. For example, among girls, the difference in the sense of belonging is relatively large in Bulgaria, Hungary, Romania and Sweden, and relatively small in France, Poland and the Netherlands. Among boys, relatively large differences are observed in Portugal, Hungary, Luxembourg and Greece, and rather small differences in Sweden, France and the Netherlands.

Figure 1: Sense of belonging at school by educational aspirations and sex – "What level of education do you expect to complete?" (PISA)



12 Osterman, K. F. (2000). Students' Need for Belonging in the School Community. In: Review of Educational Research 70 (3): 323–67.

13 Causal interpretation of our results cannot be guaranteed, but they are largely consistent with findings from other studies which established a causal effect of sense of belonging at school on education-related outcomes. E.g.

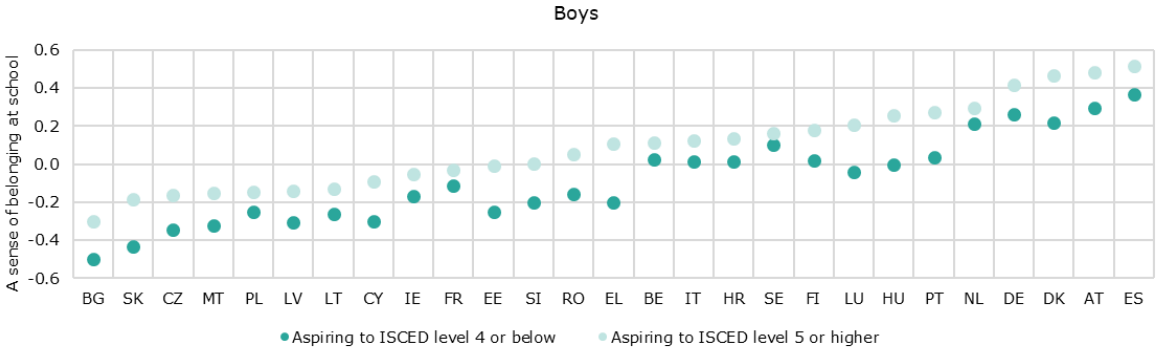
Walton, G. M., and Cohen, G. L. (2011). A Brief Social-Belonging Intervention Improves Academic and Health Outcomes of Minority Students. In: Science 331 (6023): 1447–51;

Walton, G. M., Cohen, G. L., Cwir, D, and Spencer S. J. (2012). Mere Belonging: The Power of Social Connections. In: Journal of Personality and Social Psychology 102 (3): 513.

14 PISA is targeted at 15-year-olds and aims at assessing their achievement in three main areas: reading, mathematics, and science. In 2018, PISA was carried out in nearly 80 countries and economies, including all member states of EU.

15 TIMSS is concerned with mathematics and science achievements of students in grades 4 and 8. In 2019, TIMSS was administered to grade 4 students in 64 countries, including 22 members of EU, and to grade 8 students in 46 countries, including 10 members of EU.

16 ISCED is the International Standard Classification of Education. Cf. Eurostat's "Statistics Explained" for details.



Source: DG JRC calculations based on OECD PISA 2018 data.

Note: The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their schoolmates. It is scaled so as to have a mean of 0 and standard deviation of 1 across equally weighted OECD countries. Negative values indicate a sense of belonging at school lower than the OECD average. Positive values indicate a sense of belonging at school above the OECD average.

Box 2: The sense of school belonging in PISA 2018

In PISA 2018, responses to the following questions were used to build a composite index of the sense of school belonging:

1. I feel like an outsider (or left out of things) at school
2. I make friends easily at school
3. I feel like I belong at school
4. I feel awkward and out of place in my school
5. Other students seem to like me
6. I feel lonely at school

It is assumed that all these questions actually represent a single underlying construct — the sense of belonging at school — which influences students' responses. Specifically, the responses were coded on a 4-point scale ranging from "Strongly agree" to "Strongly disagree". Thus, students[17] with a strong sense of belonging are expected to generally agree with the positively worded questions (i.e., questions 2, 3, and 5) and disagree with the negatively worded ones (i.e., questions 1, 4, and 6). For students with a weaker sense of belonging, a reverse pattern of responses is predicted. That is, such students are expected to disagree with the positively worded questions and agree with the negatively worded ones. The responses are then aggregated and scaled to have a mean of 0 and a standard deviation of 1 across equally weighted OECD countries. Thus, a typical student in an OECD country has a score of 0 on the scale of school belonging. Also, roughly two thirds of all OECD students are expected to have belonging scores between -1 and 1. Similarly, about 95% of all students in OECD countries are expected to have belonging scores ranging from -2 to 2.

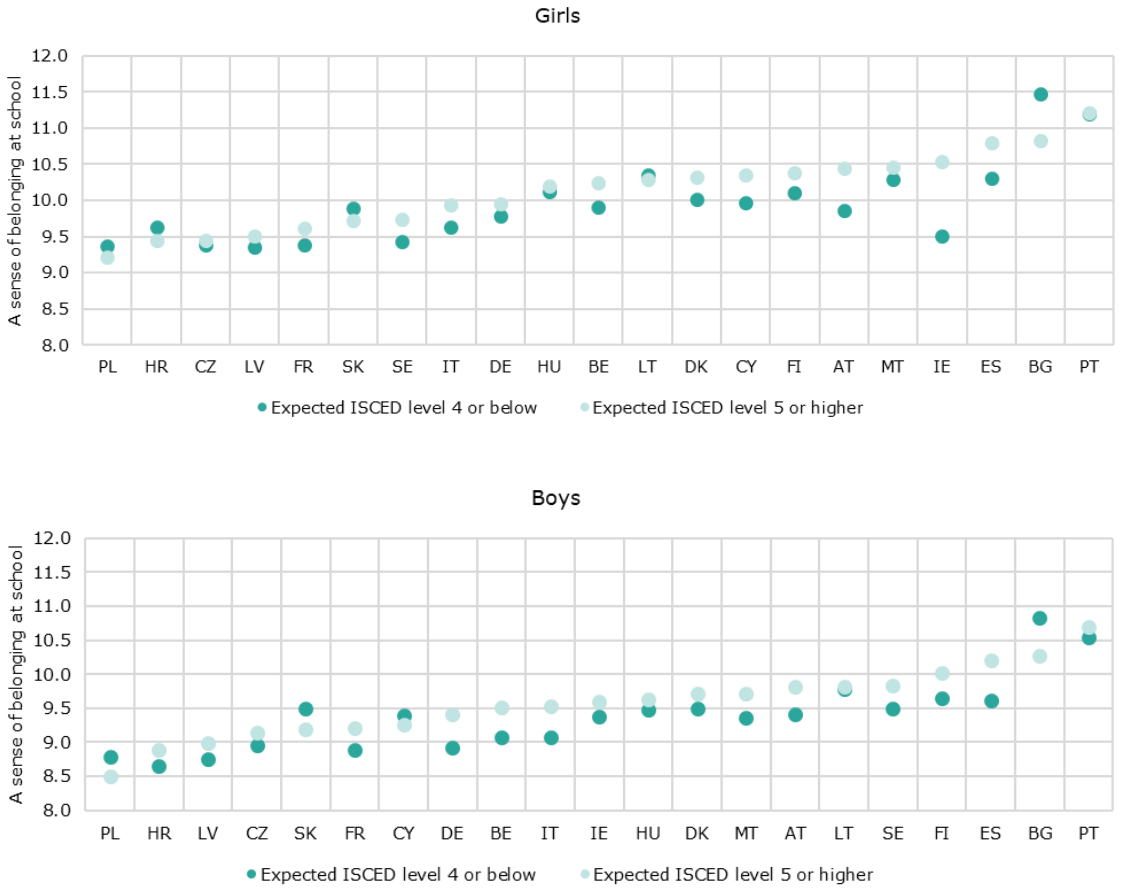
In other words, a negative value on the scale of sense of belonging at school in a given country doesn't mean that students in this country have a poor sense of belonging at school. Instead, it means that the average sense of school belonging at school is below the OECD average. For instance, the average sense of belonging at school in Czechia is equal to 0.28. It means that an average student in Czechia has a somewhat weaker sense of belonging at school than their

[17] Note that by "students" we mean here "15-year-olds" because this is the target population of PISA.

average OECD peer. Similarly, the average value of the index of the sense of school belonging in Germany is 0.28. This means than an average German student has a stronger sense of school belonging than their average OECD peer. At the same time, the results suggests that the average students in Czechia and Germany are among two-thirds of their OECD peers when it comes to the sense of belonging at school.

TIMSS 2019 (Figure 2) illustrates the aspirations of grade four students, as answered by their parents on their behalf. Among this younger sample, students with higher educational aspirations tend to have, on average, a stronger sense of belonging at school. However, among girls in Poland, Croatia, Slovakia and Bulgaria, this pattern is reversed. In Lithuania, Czechia and Hungary, the difference in the sense of belonging by level of aspiration is virtually non-existent. Furthermore, boys in Poland, Slovakia, Cyprus and Bulgaria who are not expected to complete tertiary education have a stronger sense of belonging at school.

Figure 2: Sense of belonging at school by parental educational expectations towards children by sex of the children – "What level of education do you expect your child to complete?" (TIMSS)



Source: DG JRC calculations based on IEA TIMSS 2019 data.

Note: Data not available for: EE, EL, LU, NL, RO and SI.

The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their teachers. It is assumes only positive values. Values below 7.2 indicate a weak sense of belonging at school. Values equal to or higher than 9.6 indicate a strong sense of belonging at school. Values between 7.2 and 9.6 indicate a moderate sense of belonging at school.

Box 3: Ireland – integration of well-being and mental health measures of education staff and students at system-level

Ireland's well-being Policy Statement and Framework for Practice (2018-2023)[18] sets out the definition of well-being and establishes an overarching structure encompassing the existing, ongoing and developing work on well-being in education. In recent years, Ireland has focused strongly on the well-being of its students and educational personnel, particularly with the onset of COVID-19. At the ECEC (early childhood education and care) level, *Aistear*, the early childhood curriculum framework, strongly emphasises the relationship between education and care. It promotes a "nurturing pedagogy" that is sensitive to children's feelings and dispositions such as motivation, confidence, perseverance, and how they see themselves as learners. In primary education, the Social Personal and Health Education (SPHE) programme supports the development of strong and positive mental health and well-being among children. Well-being is one of the eight key principles of the junior cycle given that a student's school experience contributes directly to their physical, mental, emotional, and social well-being and resilience. At upper secondary level, the SPHE programme aims to help learners make choices to ensure their health and well-being now and in the future. The Professional Development Service for Teachers (PDST) provides resources for individual primary and secondary teachers and schools. In relation to COVID-19, a range of advice and resources were developed and made available to parents, students and school staff. They include a dedicated well-being advice and resources website[19] and well-being guidance and advice for parents from the National Educational Psychological Service of the Department of Education. An example of resources provided is a booklet on "Supporting Children to Cope with Loss and Grief". Health Service Executive (HSE) online resources were also available including "Minding Your Well-being" programme[20] and a booklet on "Understanding Self-Harm"[21] with advice to parents, carers and teachers who are concerned about a young person self-harming. In addition, the National Council for Special Education has developed resources for parents and children with special educational needs, in particular to support well-being and learning during school building closures[22] due to COVID-19. In higher education, the National Student Mental Health and Suicide Prevention Framework (2020) provides a framework to address the issues of student mental health and suicide prevention in a structured and planned way. A "Connecting for Life" group has been established to support implementation across Irish higher education institutions. The Framework for Consent in Higher Education Institutions: Safe, Respectful, Supportive and Positive – Ending Sexual Violence and Harassment in Irish Higher Education Institutions (2019) promotes an institutional campus culture which is safe, respectful and supportive. Institutions have developed individual action plans, aligned with the framework, aimed at tackling sexual violence and harassment in higher education and a number of initiatives are in place to support this.

Students from advantaged socio-economic backgrounds and from families with higher educational attainment are likely to have a stronger sense of belonging at school, while parental educational attainment also has an impact on educational aspirations of students[23]. The link between

18 Government of Ireland/Department of Education (2019). Wellbeing Policy Statement and Framework for Practice 2018-2023.

19 Government of Ireland / Department of Education (2021). Wellbeing advice and resources during COVID-19.

20 Government of Ireland / Health Service Executive (2021). Minding Your Wellbeing.

21 Government of Ireland / Health Service Executive (2021). Self-Harm and Young People.

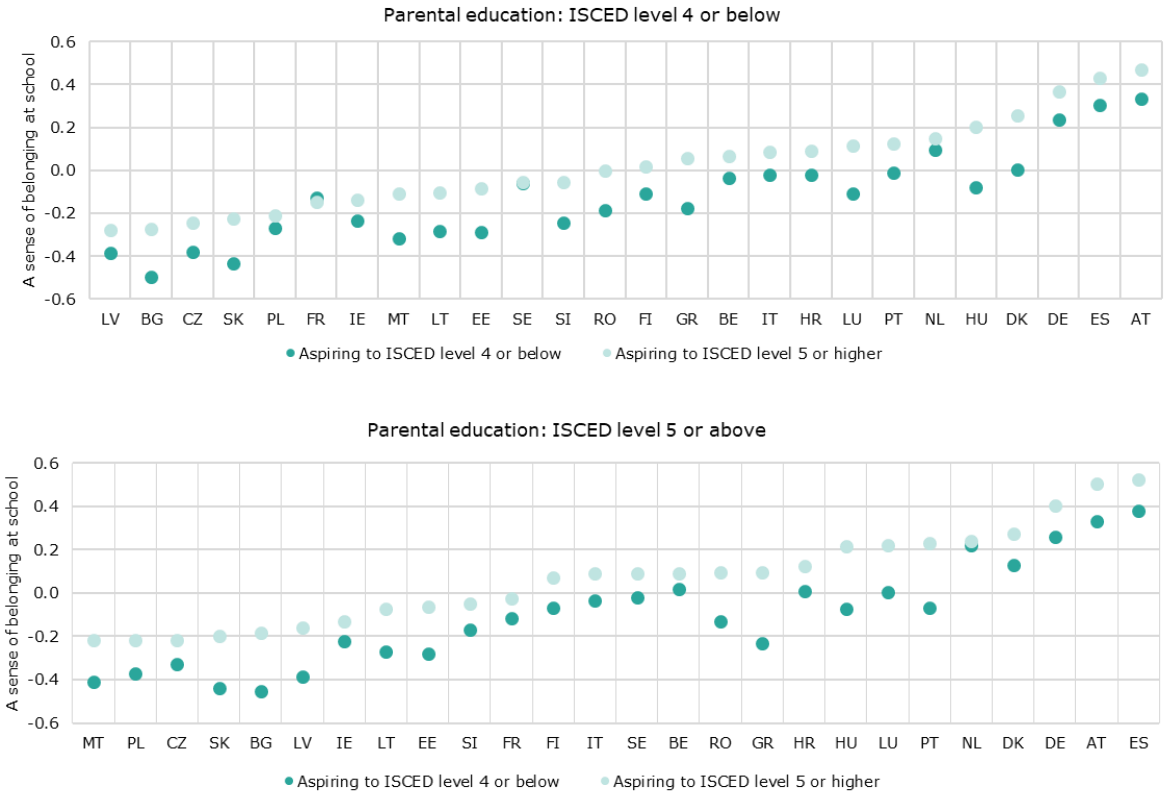
22 Government of Ireland / National Council for Special Education (2021). Remote Teaching – Support for Teachers.

23 An established line of research in sociology argues that a primary motivation for students (and their families) when making educational decisions is to avoid *downward social mobility*, or to reach a social position at least as high as that of their parents:

Breen, R and Yaish, M. (2006). Testing the Breen-Goldthorpe Model of Educational Decision Making. In Mobility and Inequality, 232–58;

educational aspirations and a sense of school belonging may therefore simply be due to socio-economic status alone. However, PISA 2018 data show that students with higher aspirations have a stronger sense of belonging at school even when the parental education level is held constant (Figure 3). However, there are considerable variations between countries. Among students with at least one university-educated parent, differences in the sense of belonging by level of aspiration are relatively large in Greece, Portugal and Hungary, and rather small in Belgium and the Netherlands. Similarly, among students whose parents do not have a university education, the difference is quite large in Denmark and Hungary but practically non-existent in France and Sweden.

Figure 3: Sense of belonging at school by parental educational expectations towards children by parental education – "What level of education do you expect your child to complete?" (PISA)



Source: DG JRC calculations based on the 2018 PISA data.

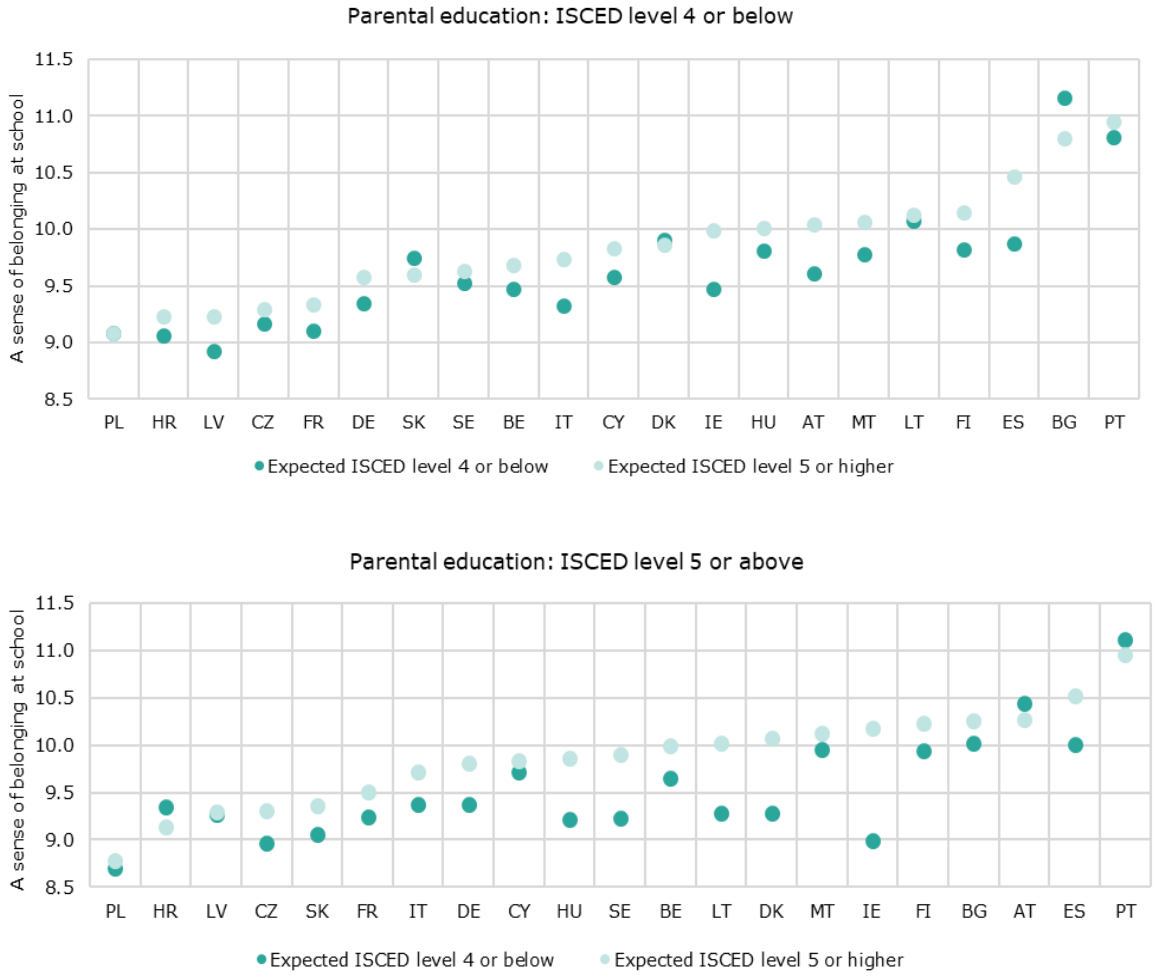
Note: The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their schoolmates. It is scaled so as to have a mean of 0 and standard deviation of 1 across equally weighted OECD countries. Negative values indicate a sense of belonging at school lower than the OECD average. Positive values indicate a sense of belonging at school above the OECD average.

A similar tendency is clear among fourth-graders in TIMSS 2019 (Figure 3): the overall sense of belonging at school is stronger among students with higher educational aspirations, even when their parents' education level is held constant. The relationship seems to be more pronounced at the higher level of parental education with some exceptions. For example, among students whose

Breen, R., and Goldthorpe J. H. (1997). Explaining Educational Differentials: Towards a Formal Rational Action Theory. In: Rationality and Society 9 (3): 275–305.

parents did not complete university education, the trend is reversed in Bulgaria and Sweden. In Poland, Denmark and Lithuania, there is little difference in the sense of belonging by educational aspiration.

Figure 4: Sense of belonging at school by parental educational expectations towards children and parental education – "What level of education do you expect your child to complete?" (TIMSS)



Source: DG JRC calculations based on IEA TIMSS 2019 data.

Note: Data not available for: EE, EL, LU, NL, RO and SI.

The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their teachers. It is assumes only positive values. Values below 7.2 indicate a weak sense of belonging at school. Values equal to or higher than 9.6 indicate a strong sense of belonging at school. Values between 7.2 and 9.6 indicate a moderate sense of belonging at school.

Box 4: The sense of school belonging in TIMSS 2019

In TIMSS 2019, responses to the following questions were used to build a composite index of the sense of school belonging:

1. I like being in school
2. I feel safe when I am at school
3. I feel like I belong at this school
4. Teachers at my school are fair to me
5. I am proud to go to this school

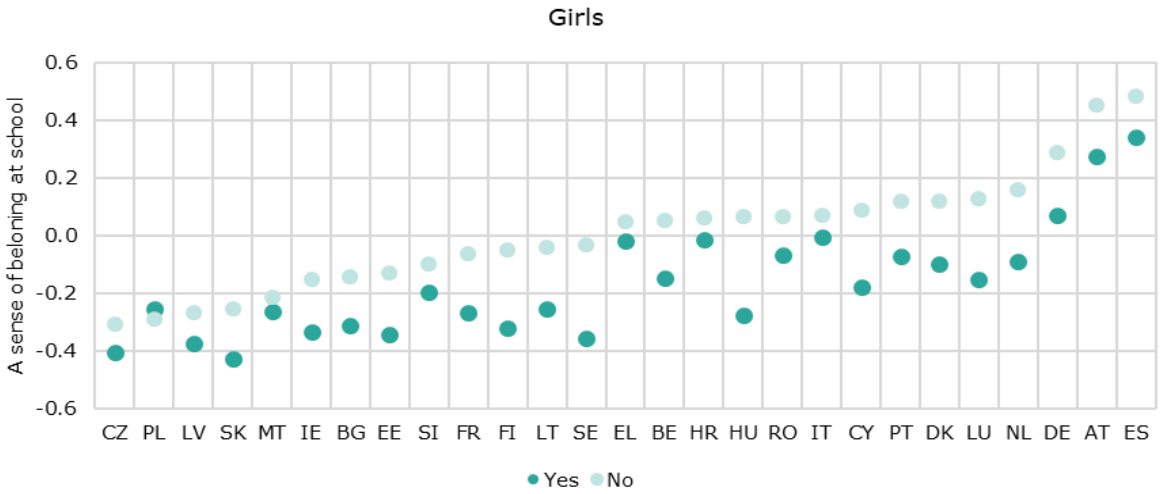
Responses were coded on a 4-point scale ranging from "Agree a lot" to "Disagree a lot". Again, it is assumed that responses to these questions are driven by the single underlying construct. Thus, the responses are aggregated and scaled to form a composite index of the sense of school belonging. The index is, however, slightly different from the one in PISA 2018. First, it assumes only positive values. Second, threshold values are defined to distinguish students[24] with a strong, moderate, and weak sense of belonging at school. Students with a score of 9.6 or higher on the composite index are classified as having a strong sense of belonging. Students with a score below 7.2 on the index are classified as having a weak sense of belonging. Finally, all other students are classified as having a moderate sense of belonging. Alternatively, one can think of the TIMSS 2019 index of the sense of school belonging as follows. A student with a strong sense of school belonging (i.e., with a score of 9.6 or higher on the index) would answer "Agree a lot" to all the items making up the index. Similarly, a student with a moderate sense of school belonging (i.e., with a score of at least 7.2 but lower than 9.6) would response "Agree a little" to these questions. Finally, students with a weak sense of school belonging would respond "Disagree a little" or "Disagree a lot" to these questions.

1.2.2 Sense of belonging at school and absenteeism

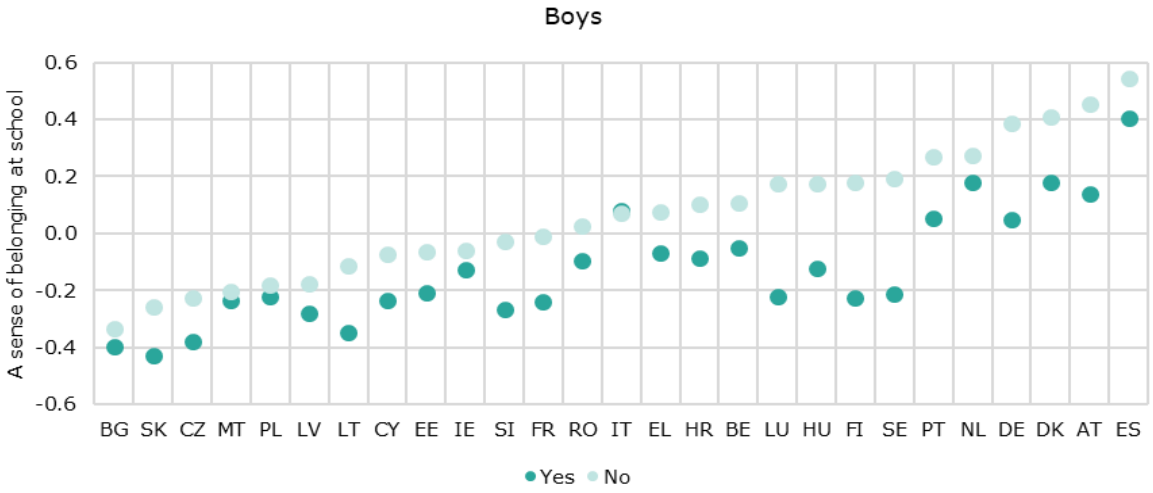
Absenteeism is also likely to be associated with low sense of belonging at school. It can reflect underlying school engagement or motivation, although factors other than motivation (e.g. recurring health problems) can affect the likelihood of absence as well.

While the degree of absenteeism can vary from arriving late to skipping lessons or entire days at school, PISA data distinguishes between students who skipped at least 1 day and those who skipped none when, comparing the average sense of belonging at school between these two groups. As the evidence points to systematic differences between girls and boys (in favour of the former) with respect to learning motivation, results are broken down by sex.

Figure 5: Sense of belonging at school by absenteeism and sex – "Skipped at least 1 day of school within the past 2 weeks?" (PISA)



[24] Here, by "students" we mean 4-graders, as this is the target population in TIMSS 2019. More precisely, TIMSS is targeted at students in grades 4 and 8. However, in the report we use only data on the former.



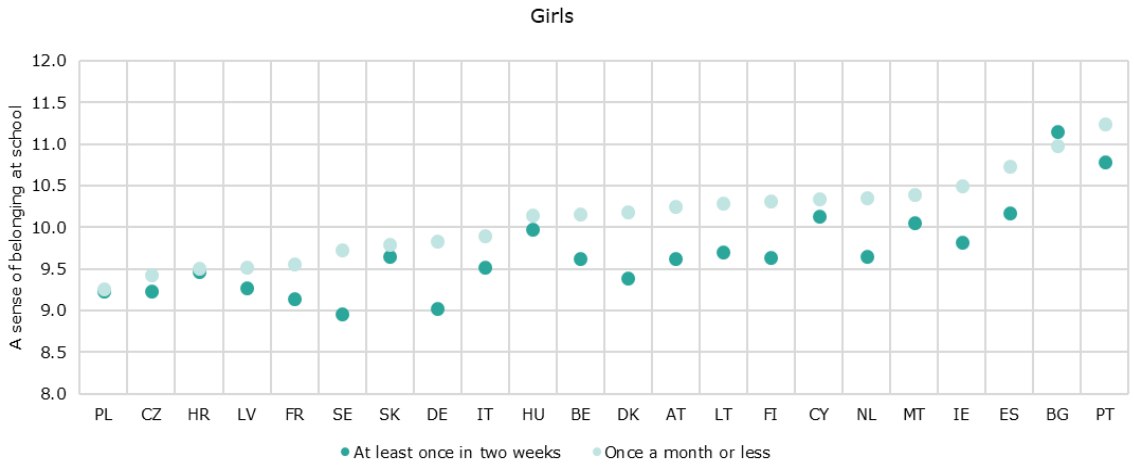
Source: DG JRC calculations based on OECD PISA 2018 data.

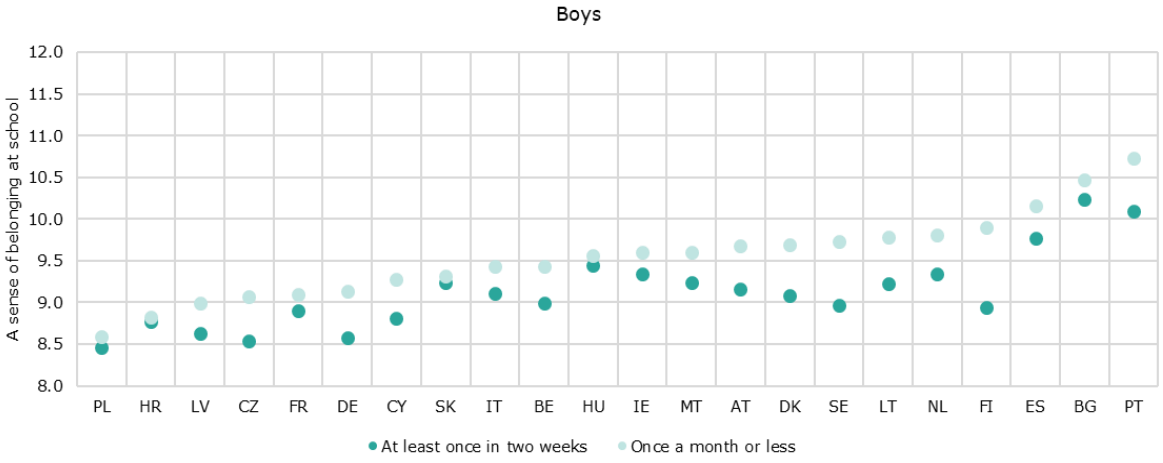
Note: The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their schoolmates. It is scaled so as to have a mean of 0 and standard deviation of 1 across equally weighted OECD countries. Negative values indicate a sense of school belonging lower than the OECD average. Positive values indicate a sense of belonging at school above the OECD average.

The result is generally consistent with expectations: the sense of belonging is, on average, stronger among students who did not skip a single day of class than among those who skipped at least one. The magnitude of the difference in the sense of belonging by absenteeism varies considerably across countries. Among girls, for instance, the difference is quite large in Sweden, Finland, Luxembourg and Hungary, and quite small in Malta, Greece and Italy. Among boys, the difference in the sense of belonging between students with at least one absence and students with no absences is the largest in Sweden, Finland, and Luxembourg. It is also substantial in Austria, Germany and Hungary. On the other hand, in Italy, Malta and Poland, it is virtually non-existent.

In TIMSS 2019, fourth grade students were asked how often they missed school, with answers ranging from "once a week" to "never or almost never". As occasional absences from school may result from random events such as illness, Figure 6 shows average levels of the sense of belonging at school by two categories of absenteeism ("at least once every 2 weeks", and "once a month or less") among fourth grade boys and girls who participated in TIMSS 2019. Students who have fewer absences have a stronger sense of belonging at school, on average, than students with more absences, with a variation across countries.

Figure 6: Sense of belonging at school by degree of absenteeism and sex – "How often are you absent from school?" (TIMSS)





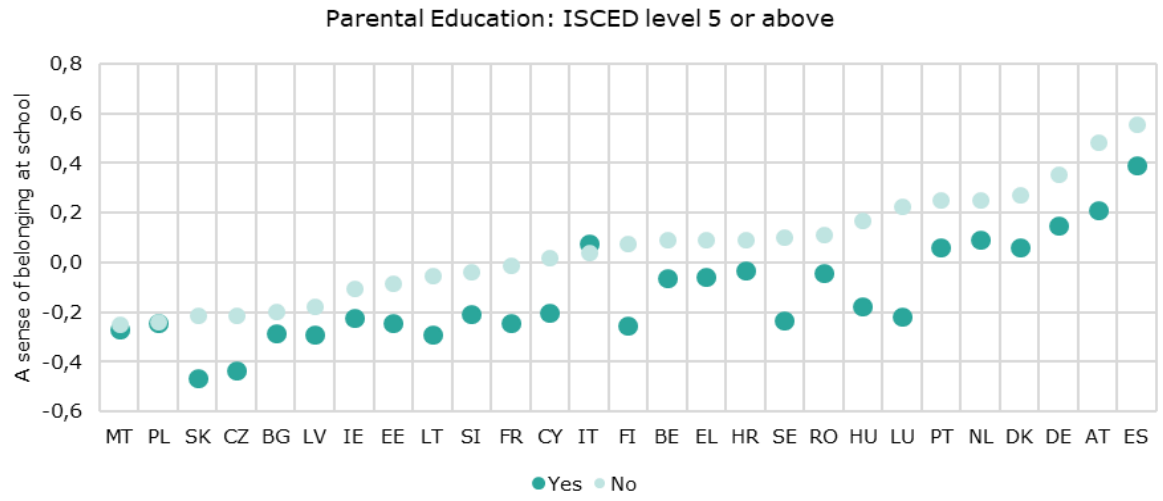
Source: DG JRC calculations based on IEA TIMSS 2019 data.

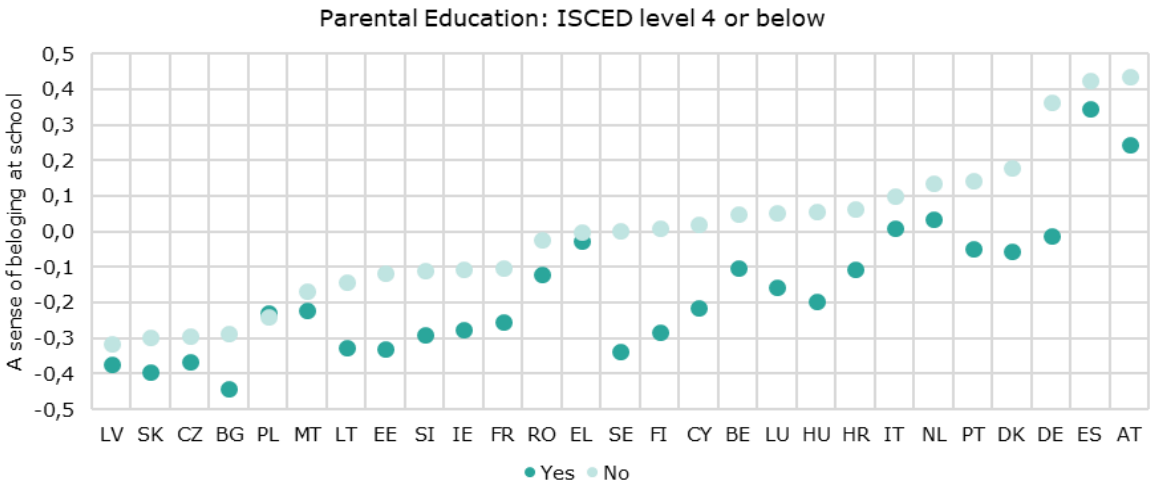
Note: Data not available for: EE, EL, LU, NL, RO and SI.

The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their teachers. It is assumes only positive values. Values below 7.2 indicate a weak sense of belonging at school. Values equal to or higher than 9.6 indicate a strong sense of belonging at school. Values between 7.2 and 9.6 indicate a moderate sense of belonging at school.

Breaking down the results by parental education, data from PISA 2018 (Figure 7) show that in both groups of students (girls and boys), the average sense of belonging at school is stronger among students with no absences than with students who have at least one absence. In other words, the relationship between school absenteeism and the sense of belonging appears to hold regardless of students' socioeconomic background. To be sure, the magnitude of the difference is not uniform across countries. In Poland and Malta, the difference is very small at both levels of socio-economic status. In Greece, there is no difference in belonging at school by absenteeism in the lower socio-economic category.

Figure 7: Sense of belonging at school by absenteeism and parental education – "Skipped at least 1 day of school within the past two weeks?" (PISA)



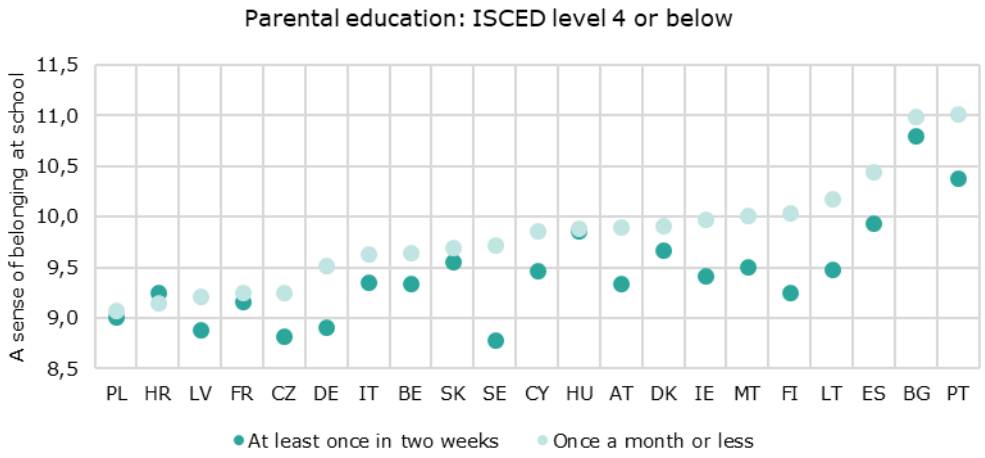


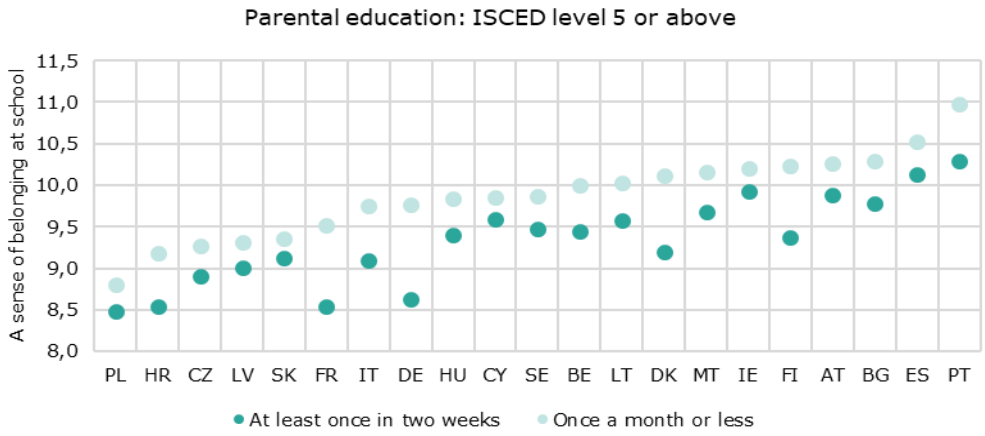
Source: DG JRC calculations based on OECD PISA 2018 data.

Note: The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their schoolmates. It is scaled so as to have a mean of 0 and standard deviation of 1 across equally weighted OECD countries. Negative values indicate a sense of belonging at school lower than the OECD average. Positive values indicate a sense of belonging at school above the OECD average.

Also among the fourth graders who participated in TIMSS 2019 (Figure 8) a link between absenteeism and the sense of belonging at school holds when students' socio-economic background is accounted for: the sense of belonging at school continues to be stronger among those with fewer absences.

Figure 8: Sense of belonging at school by degree of absenteeism and parental education – "About how often are you absent from school"? (TIMSS)





Source: DG JRC calculations based on IEA TIMSS 2019 data.

Note: Data not available for: EE, EL, LU, NL, RO and SI.

The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their teachers. It is assumes only positive values. Values below 7.2 indicate a weak sense of belonging at school. Values equal to or higher than 9.6 indicate a strong sense of belonging at school. Values between 7.2 and 9.6 indicate a moderate sense of belonging at school.

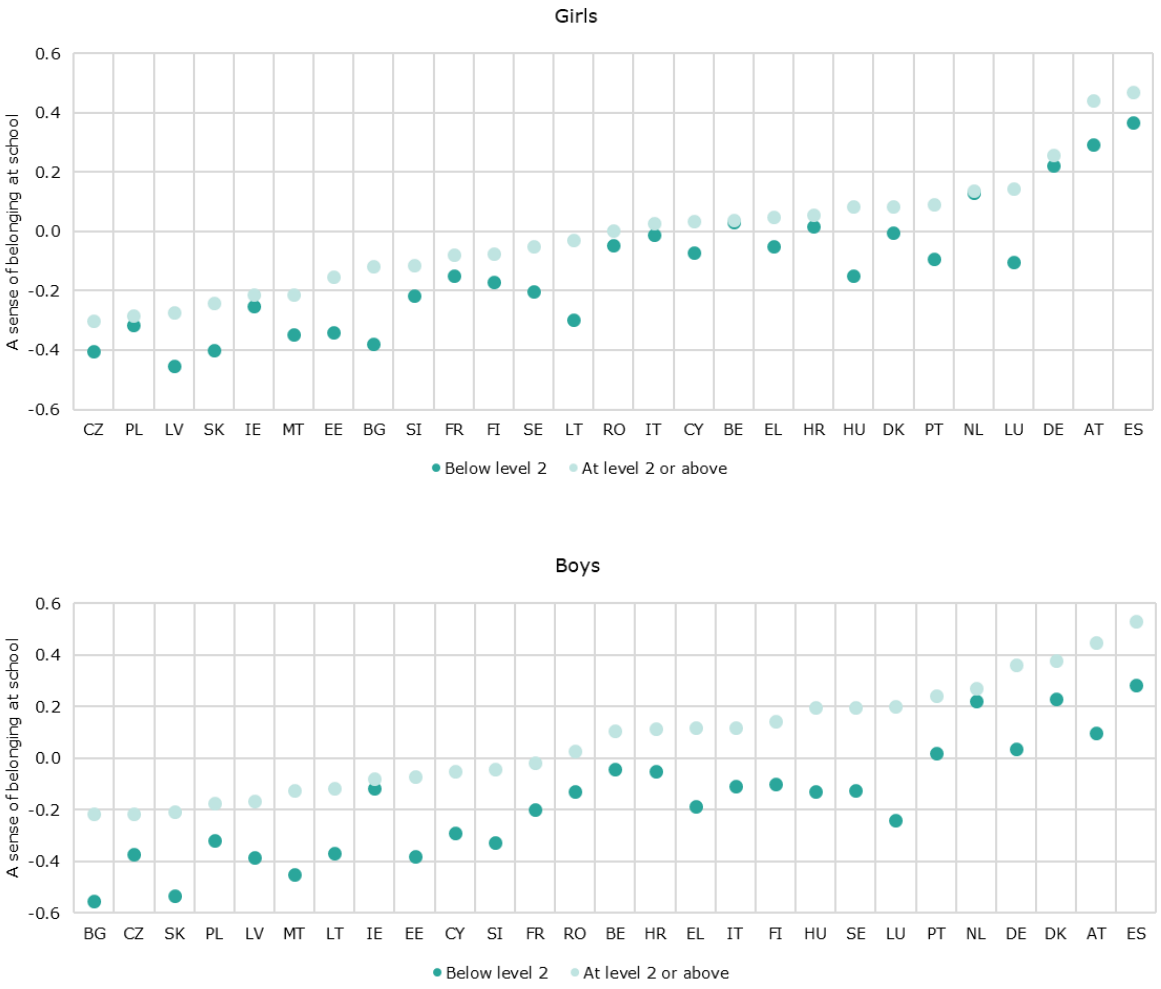
1.2.3 Sense of belonging at school and academic performance

In this section, we look at how academic performance is related to the sense of belonging at school. Academic performance is represented by scores on standardised tests in mathematics and science, two areas covered by both PISA and TIMSS.

For mathematics performance, Figure 9 shows differences in the average sense of belonging at school of boys and girls by performance at level 2 or above on the one hand and below level 2 on the other hand[25].

[25] Students' performance on the PISA 2018 mathematics test was originally represented in the form of numerical scores with the mean of 500 and the standard deviation on 100, the scores were then divided into discrete "levels" to make interpretation of the test a little easier. In the original PISA 2018 report, students below Level 2 (with scores lower than 420 points) are considered as "low achieving students." Level 2, out of six levels of proficiency in mathematics, represents the "minimum level of proficiency" in mathematics that all students should acquire by the end of secondary education (even though it may not be sufficient for making well-founded decisions in everyday situations); see chapter 6 of OECD (2019). PISA 2018 Results (Volume I): What Students Know and Can Do.

Figure 9: Sense of belonging at school by performance in the PISA 2018 mathematics test and by sex



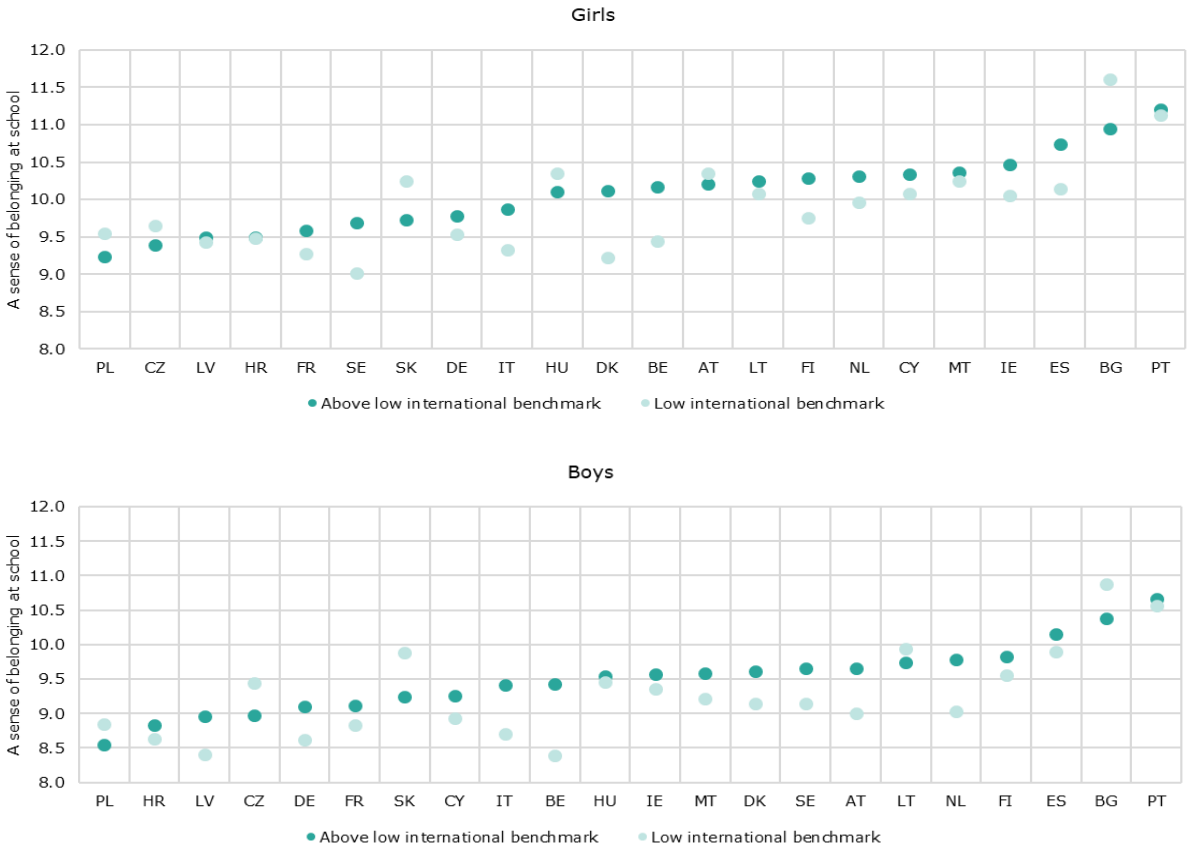
Source: DG JRC calculations based on OECD PISA 2018 data.

Note: The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their schoolmates. It is scaled so as to have a mean of 0 and standard deviation of 1 across equally weighted OECD countries. Negative values indicate a sense of belonging at school lower than the OECD average. Positive values indicate a sense of belonging at school above the OECD average.

Sense of belonging at school is lower, on average, among low performing students than among students at level 2 or higher. This applies to both boys and girls, although the magnitude of the difference among girls appears to be slightly smaller than among boys and the magnitude of the differences varies significantly across countries.

Similarly, TIMSS 2019[26] data show that in the majority of countries the sense of belonging at school is stronger among students who performed better on the mathematics test. The trend is not as pronounced as in PISA 2018 however. One explanation for the less pronounced relationship between mathematics performance and the sense of belonging among fourth graders participating in TIMSS 2019 may be the small percentage of students at the lower performance level: below 10% in nearly all the EU Member States that participated in TIMSS 2019 and even below 5% in about half of them[27]. It is also likely that different age groups react differently to low performance.

Figure 10: Sense of belonging at school by performance in the TIMSS 2019 mathematics test and by sex



Source: DG JRC calculations based on IEA TIMSS 2019 data.

Note: Data not available for: EE, EL, LU, NL, RO and SI.

The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their teachers. It is assumes only positive values. Values below 7.2 indicate a weak sense of belonging at school. Values equal to or higher than 9.6 indicate a strong sense of belonging at school. Values between 7.2 and 9.6 indicate a moderate sense of belonging at school.

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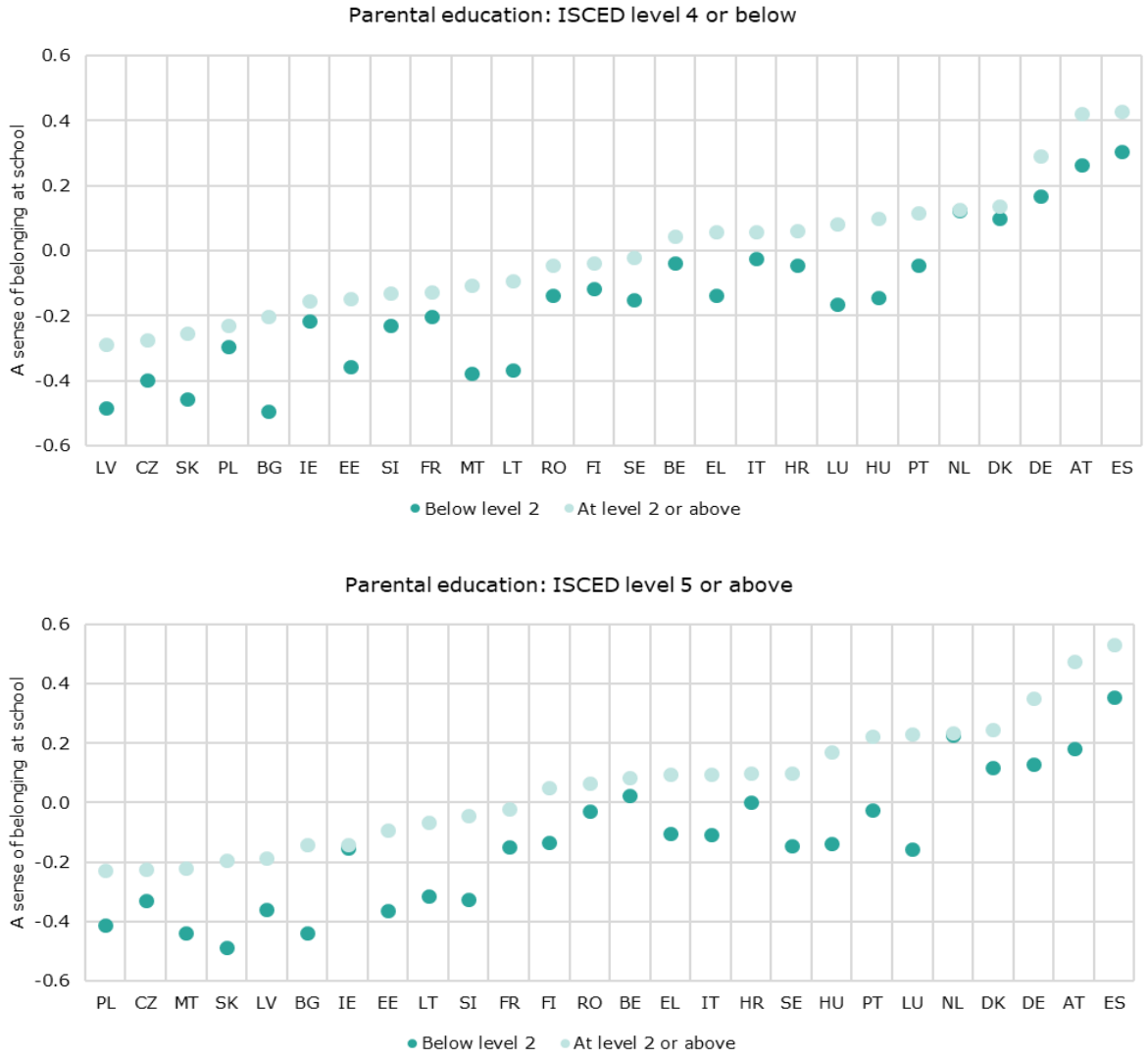
26 In TIMSS 2019, scores on the mathematics tests were also represented in the form of a numerical scale with the mean of 500 and the standard deviation of 100 points. As in PISA, the TIMSS 2019 mathematics scale was divided into a set of discrete proficiency levels used for international benchmarking. Again, we distinguish between students who were classified as "low achievers" (those who scored below 400 points) and all the rest. For a detailed description on the levels Cf.: Mullis, I. V. S., Martin M. O., Foy, P., Kelly D. L., and Fishbein, B. (2020). TIMSS 2019 International Results in Mathematics and Science.

27 In addition, the low benchmarking level is defined in terms of simple algebraic operations performed on whole numbers smaller than 100. This criterion may not distinguish well between students with necessary mathematics skills and those who lack those skills.

Figure 11: Sense of belonging at school by performance in the PISA 2018 mathematics test and by parental education



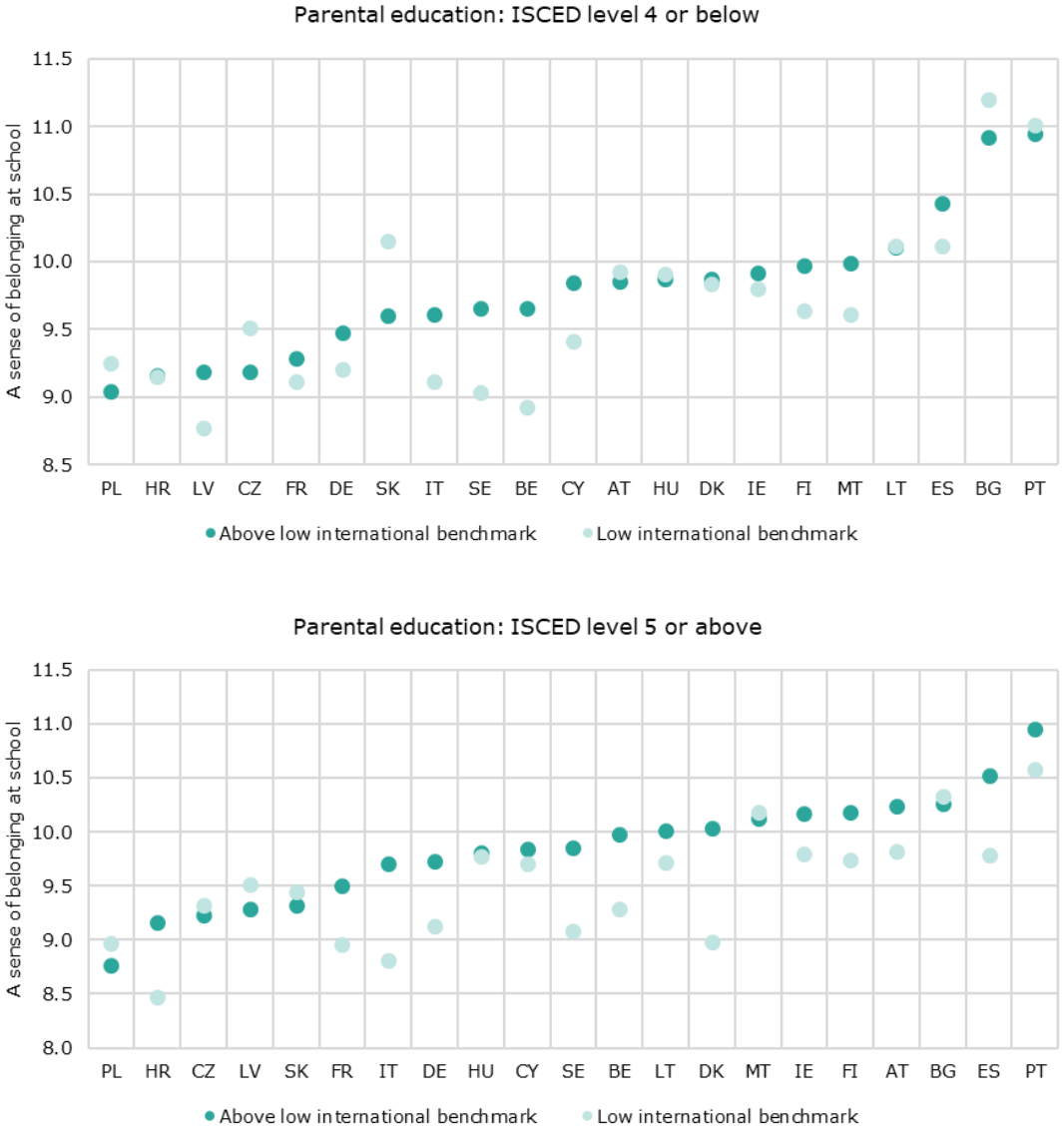
Source: DG JRC calculations based on the OECD PISA 2018 data.

Note: The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their schoolmates. It is scaled so as to have a mean of 0 and standard deviation of 1 across equally weighted OECD countries. Negative values indicate a sense of belonging at school lower than the OECD average. Positive values indicate a sense of belonging at school above the OECD average.

Research has also demonstrated that academic performance, including in mathematics, correlates with students' socio-economic background and parental attainment (Figure 11). For both levels of parental attainment (ISCED level 4 or below; and ISCED level 5 or above), the sense of belonging at school is, on average, stronger among students who perform better in mathematics. However, the difference appears to be more pronounced among students whose parents have a higher level of education.

Finally, Figure 12 shows the relationship between the performance of fourth graders on the TIMSS 2019 mathematics test and their sense of belonging at school, broken down by parental education. Keeping parental education fixed does not change the overall picture: students who performed better on the mathematics test turn out to have a stronger sense of belonging at school. There are exceptions to this general tendency, however. Among students whose parents do not have university education, the difference in the sense of belonging is either reversed or negligible in nearly half of the countries. Among students whose parents have university education, the pattern is somewhat clearer.

Figure 12: Sense of belonging at school by performance on the TIMSS 2019 mathematics test and parental education



Source: DG JRC calculations based on IEA TIMSS 2019 data.

Note: Data not available for: EE, EL, LU, NL, RO and SI.

The sense of belonging at school is represented by a composite index built from responses to questions asking students about how they feel when they are in school and relationships with their teachers. It is assumes only positive values. Values below 7.2 indicate a weak sense of belonging at school. Values equal to or higher than 9.6 indicate a strong sense of belonging at school. Values between 7.2 and 9.6 indicate a moderate sense of belonging at school.

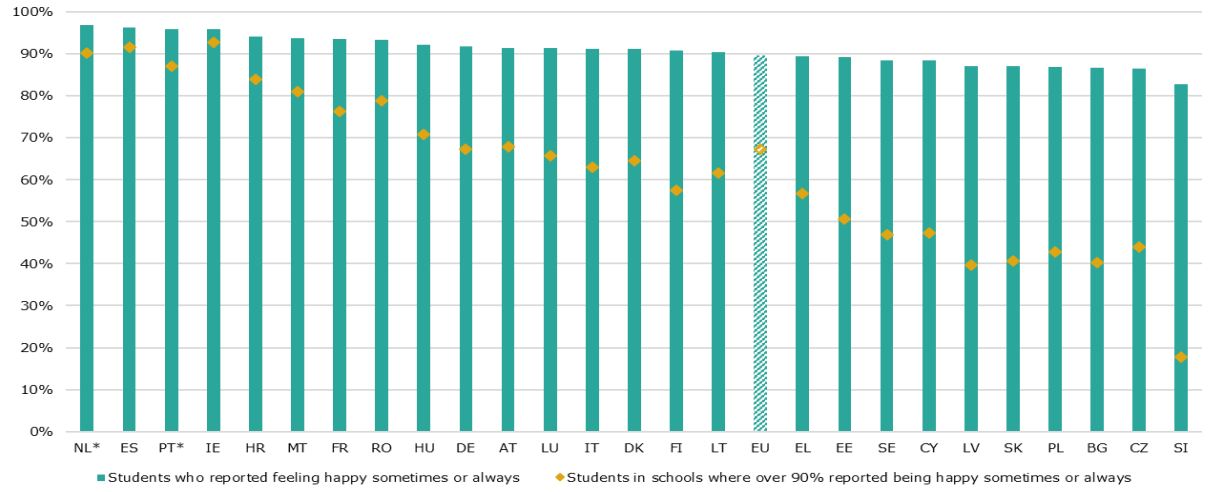
1.3 Students' perspective: PISA data on student feelings and bullying

1.3.1 Students' feelings and well-being

As previously established, well-being is a multidimensional concept that can be measured in different ways. This section will look into student feelings (both positive and negative) in PISA 2018, as a contribution to their sense of well-being, on the basis of self-reported indicators on the frequency of feelings of happiness and sadness.

A vast majority of students reported feeling happy sometimes or always (Figure 13).

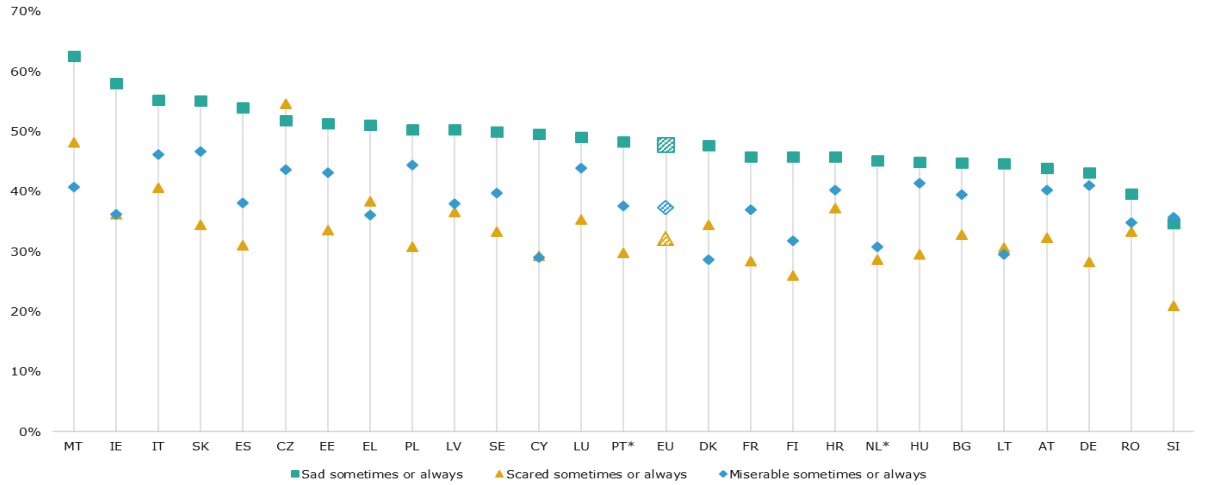
Figure 13: Prevalence of students who report feeling happy [%]



Source: PISA 2018.

Note: Data is ordered in descending order according to students who reported feeling "happy sometimes or always". Data not available for BE. *Data did not meet the PISA technical standards but were accepted as largely comparable.

Figure 14: Prevalence of students' negative feelings [%]



Source: OECD PISA 2018.

Note: Countries are presented in descending order for the survey response "sad sometimes or always". Data not available for BE. *Data did not meet the PISA technical standards but were accepted as largely comparable.

Box 5: Skills labs, a strong tool for better well-being in Greek schools

In 2020, the Greek Ministry of Education and Religious Affairs in collaboration with the Institute of Educational Policy, introduced an innovative initiative, called "21st century skills lab", to integrate the development of soft skills, life skills and technology and science skills into the school curricula. The initiative, which covers pre-primary, primary and lower secondary education, promotes non-violent behaviour, mental and emotional health, mutual respect in diversity as well as bullying and cyberbullying prevention. It is being implemented under the umbrella "quality of school life" and "personal development at school", it complies with the European Skills Agenda and is organised in four thematic cycles ((a) Better living – Well-being, (b) Environmental consciousness, (c) Interest and action — Social consciousness and responsibility, and (d) Creation and innovation — Creative thinking and initiative). The Skills labs received a 2021 award for quality and good practice in global education across Europe, awarded by GENES Global Education.

Source: Greek Ministry of Education and Religious Affairs, Institute of Education Policy

Nearly one in two students in the EU reported feeling sad sometimes or always (Figure 14) with a peak 62.6% of students in Malta[28]. Some 32.2% of students in the EU reported being scared sometimes or always, with a peak as high as 54.6% in Czechia, while 37.3% reported feeling miserable. Girls are disproportionately affected by feelings of sadness. On average, girls reported feeling sad sometimes or always 28 percentage points (pps) more than boys in the EU. In individual Member States, the gap between girls and boys in feelings of sadness was as high as 40 pps (Denmark).

Various factors seem to contribute to these negative feelings, including the phenomenon of bullying[29]. A school's socio-economic status also plays a role in students' negative feelings. In 15 Member States, student sadness was more than 5% more prevalent in socio-economically disadvantaged schools[30] than in socio-economically advantaged ones, with an EU average of 5.1%[31]. An important moment in this sense is the transition from primary to secondary school: the transition of less advantaged students into schools with a higher socio-economic status tends to have a detrimental effect on their well-being.

1.3.2 Bullying

Bullying has a direct negative effect on both the academic performance and the well-being[32] of students. Conversely, the absence of bullying has a positive impact on their mental health[33]. The concept of "bullying" is not easily defined. The Council of Europe defines it as an "unwanted, aggressive behaviour [that is repeated over time] among school aged children that involves a real

[28] This contrasts with the findings of the ISCWEB study with 8-12 year olds (Cefai, C. and Galea, N. (2020). International Survey of Children's' Subjective Wellbeing, the national report for Malta. This finding is complemented with other findings in the same study, which measured various aspects of cognitive, affective and psychological well-being. Maltese children were in the top five in terms of happiness among 35 countries.

[29] See below; Yu, S. and Zhao, X. (2021). The negative impact of bullying victimization on academic literacy and social integration: Evidence from 51 countries in PISA. Social Sciences and Humanities Open, 4 (1), 100151.

[30] The socio-economic status is measured by the PISA index of economic, social and cultural status (ESCS). A socio-economically disadvantaged (advantaged) school is a school in the bottom (top) quarter of the index of ESCS in the relevant country/economy.

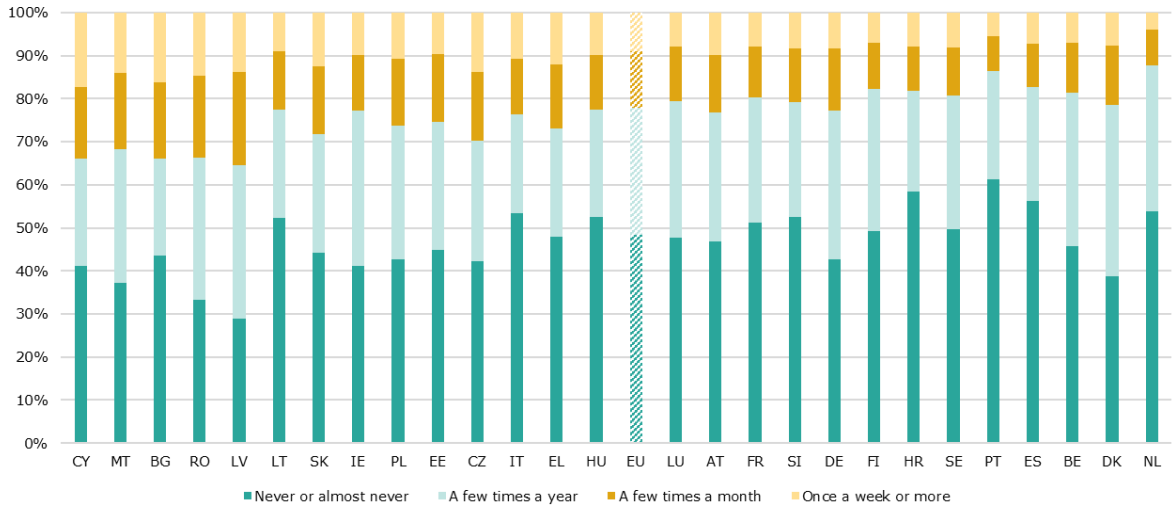
[31] OECD PISA 2018.

[32] Oliveira, F. R., de Menezes, T. A., Irffi, G. and Oliveira, G. R. (2018). Bullying effect on student's performance. EconomiA, 19(1), 57-73.

[33] European Union (2020). Anti-bullying Practices from the Repository of the European Platform for Investing in Children.

or perceived power imbalance"[34]. A power imbalance and repetitive nature as well as an "intention to harm" are key characteristics[35]. Bullying can take different forms, including: (1) direct bullying, which takes place in person and can either involve physical violence and/or verbal insults; (2) indirect bullying, spreading rumours or ignoring the victim, and characterised by psychological or social aggression; (3) discriminatory bullying aimed at, but not limited to, the race, ethnicity, gender identity, sexual orientation or religion of the individual; or (4) cyber bullying, harmful behaviour that occurs between peers online, and includes the dissemination of pictures, videos and messages designed to humiliate the victim. The PISA dataset that provided the data for the analysis focused mostly on the first three forms.

Figure 15: Frequency of being bullied [%]



Source: OECD PISA 2018.

Note: The index of exposure to bullying includes the following statements: "Other students left me out of things on purpose"; "Other students made fun of me"; and "I was threatened by other students". Higher values in the index indicate more exposure to bullying.

Bullying appears to be widespread in the EU, with more than 50% of students having experienced bullying. In 19 EU Member States, more than half of all students experience bullying at least a few times a year. The rate of being "frequently bullied" stands at 6.9% in the EU, with values as high as 14.6% (Cyprus). Among the different types of bullying, being called names is by far the most prevalent, followed by having nasty rumours spread about you[36].

Box 6: Anti-bullying NGO "Friends" in Sweden

Friends is a non-profit organisation working since 1997 to prevent bullying and violence within schools and sports associations throughout Sweden. On their website, Friends provides information, advice, videos and online courses for teachers, students and parents about various forms of bullying and possible actions to take. The NGO can also develop programmes tailored to an individual school's problem areas and resources, including staff training. The programme will run for 3 years. It includes an annual school survey for students and staff on security and well-

34 Ibid.

35 Cefai, C., Simões, C. and Caravita, S. (2021). A systemic, whole-school approach to mental health and well-being in schools in the EU. A NESET report for the European Commission.

Gaffney, H., Ttofi, M. M. and Farrington, D. P. (2019). Evaluating the effectiveness of school-bullying prevention programs: An updated meta-analytical review. In: Aggression and violent behaviour, 45, 2019, 111-133.

36 OECD (2019). PISA 2018 Results (Volume III): What School Life Means for Students' Lives.

being issues, with the survey's results used as a basis for further targeted action. The organisation is financed through donations and fees from participating schools. It has also initiated an international and multidisciplinary forum to broaden the understanding of bullying, harassment, discrimination, racism, and other forms of violence among and against children and youth, cf. The World Anti-Bullying Forum.

Frequent bullying has a considerable detrimental effect on students' life satisfaction, an element of well-being[37]. Figure 16 shows that, in 2018, the EU average share of students with low life satisfaction was nearly 15 pps higher if they also reported being bullied frequently. This "life satisfaction gap" stood at more than 20 pps in two Member States (Sweden and Ireland), indicating the severity of the effect bullying has on students.

Figure 16: Students' low life satisfaction, by frequency of being bullied [%] (2018)

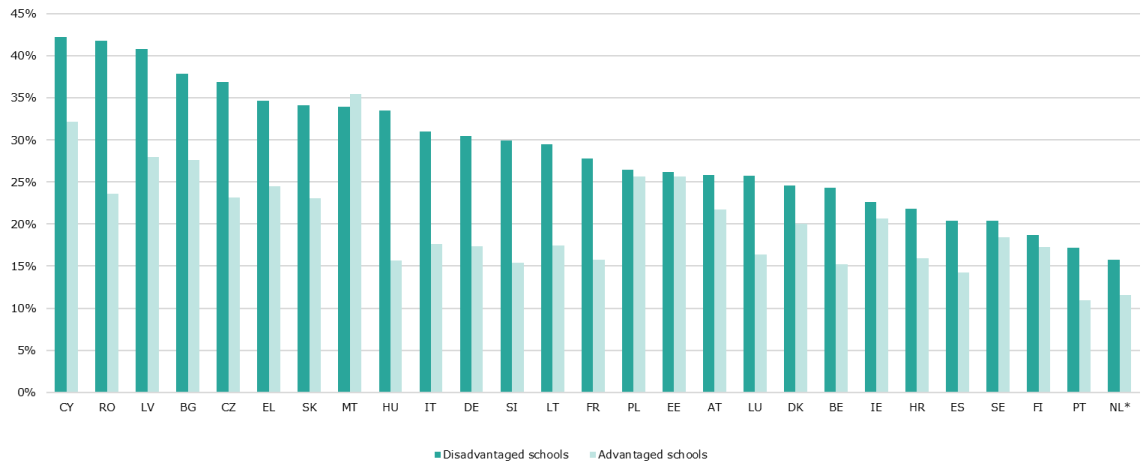
Source: OECD PISA 2018.

Note: Countries are presented in ascending order for the survey response "frequently bullied". Data not available for BE, DK and ES. *Data did not meet the PISA technical standards but were accepted as largely comparable. A student is classified as "not satisfied" with life if they reported between 0 and 4 on the life-satisfaction scale. The life-satisfaction scale ranges from 0 to 10.

Looking at who is most vulnerable to and most affected by the phenomenon of bullying, PISA 2018 data unequivocally show that socio-economically disadvantaged groups and students from disadvantaged schools are disproportionately affected.

[37] Life satisfaction differs from other elements contributing to well-being in that it is based on personal criteria rather than generalisable standards of evaluation; Borgonovi, F. and Pál, J. (2016). 18. A framework for the analysis of student well-being in the PISA 2015 study: Being 15 in 2015, OECD Education Working Papers, No. 140.

Figure 17: Students who reported being bullied at least a few times a month, by school's socio-economic status [%]



Source: OECD PISA 2018.

Note: The socio-economic status is measured by the PISA index of economic, social and cultural status (ESCS). A socio-economically disadvantaged (advantaged) school is a school in the bottom (top) quarter of the index of ESCS in the country or entity in question.

Figure 17 shows the gap in the percentage of students who reported being bullied at least a few times per month, by the socio-economic status of their schools. In all but one Member State (Malta), the share of bullied students was higher in disadvantaged schools than in advantaged ones. In the EU, the gap between advantaged and disadvantaged schools stood at 7.9% in 2018. A lower socio-economic school environment is therefore clearly linked with the prevalence and propensity for school bullying, a finding that has been corroborated by recent studies using PISA data in- and outside of the EU[38].

Box 7: The index of economic, social, and cultural status in PISA 2018

In PISA 2018, the index of economic, social, and cultural status (ESCS) is built from indicators of parental education, parental occupation, and home resources. The indicator of home resources is built of responses to a set of questions asking students about availability of various items, such as a room of their own, a quiet place to study, a desk, a computer and other electronic devices, cars, but also cultural items, such as books or works of art or musical instruments. The specific list of items used in the question varies across countries. The three indicators are combined to form a single composite index. Instead of using values of the index, it is often convenient to divide students — separately in each country — into four equally sized groups, such that the highest group comprises 25% of students with the highest ESCS score, the lowest group comprises 25% of students with the lowest ESCS scores, etc.

[38] Yu, S., and Zhao, X. (2021). The negative impact of bullying victimization on academic literacy and social integration: Evidence from 51 countries in PISA. In: Social Sciences and Humanities Open, 4(1), 100151.

A 2018 analysis by the OECD suggests that differences in socio-economic status of peers and their schools has a direct effect on students' chances of success[39]. Other factors such as fewer resources, lower-skilled teachers and local services may also explain the higher prevalence of bullying in socio-economically disadvantaged schools. The need to balance out pre-existing socio-economic disparities and promote inclusion and equity in schools is therefore crucial[40].

Box 8: Monitoring and tackling violence in schools in Poland: the RESQL system

RESQL is an innovative, research-based system that supports schools in resolving problems of peer violence. It was created in collaboration with the school community itself (students, teachers, principals and parents) and its measures were piloted in primary and secondary schools before being rolled out further. For example, in 2019-2020, a team of psychologists and educators from the University of Social Sciences and Humanities in Warsaw piloted lessons on peer violence, leading to the development of a set of lessons on: relationship violence, cyberbullying, response to violence and the role of witnesses, resolving conflicts, and socio-moral thinking. The system allows heads of schools to monitor, report on and analyse the problems, and give appropriate pedagogical advice. The system consists of:

1. A mobile application enabling students to anonymously report incidents to teachers.
2. Materials on how to respond in crisis situations and in various peer violence scenarios, to help school staff take appropriate decisions and actions.
3. Tested scenarios for lessons on violence-related issues.

Source: The resql.pl website (in Polish).

In addition to the socio-economic gap, PISA data points to a clear gender gap in bullying. The EU average for bullied boys (at least a few times a month) was nearly 5 pps higher than that of girls (24.4% vs 19.7%). The recent report analysing the PISA data confirms the increased likelihood of boys to being bullied, and points to further characteristics such as class repeaters and students prone to truancy in middle school[41]. Finally, low-achievers in reading are twice as likely to be bullied as high-achievers[42].

1.3.3 Possible approaches to increase student well-being

One specific protective factor against bullying is the awareness and response of schools, school principals and teachers. However, when asked whether bullying hinders student learning, principals in different EU countries give significantly different responses.

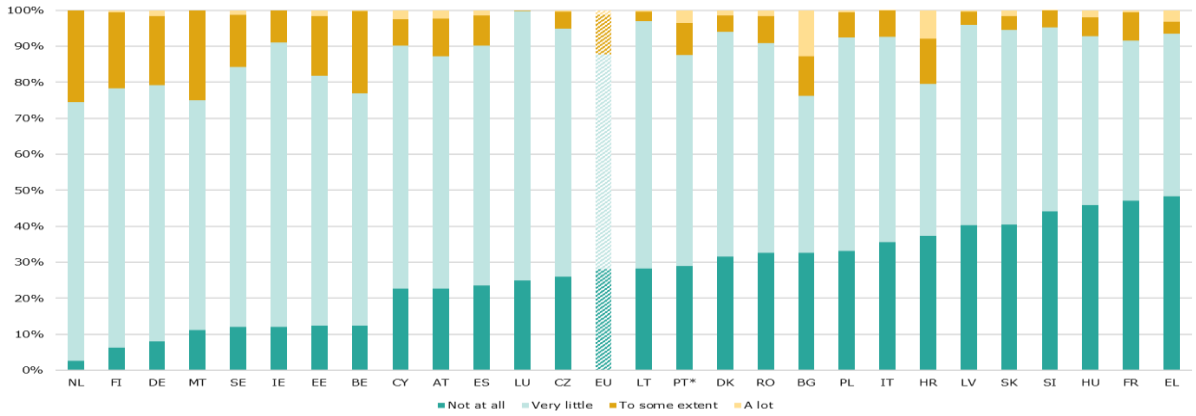
39 Agasisti, T., Avvisati, F., Borgonovi, F., and Longobardi, S. (2018). Academic resilience: What schools and countries do to help disadvantaged students succeed in PISA.

40 Also acknowledged as the first strategic priority of the Council Resolution of 18 February 2021 on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030) 2021/C 66/01.

41 Yu, S. and Zhao, X. (2021). The negative impact of bullying victimization on academic literacy and social integration: Evidence from 51 countries in PISA. In: Social Sciences and Humanities Open, 4(1): 11.

42 OECD (2019). PISA 2018 Results (Volume III): What School Life Means for Students' Lives.

Figure 18: Percentage of students in schools whose principal reported that learning is hindered to the following extent by students intimidating or bullying other students



Source: OECD PISA 2018.

Note. *Data did not meet the PISA technical standards but were accepted as largely comparable.

As can be seen in Figure 18, the vast majority of students attend schools where the principal considers that learning is hindered "very little" by students intimidating or bullying their peers. This share ranges from to 42.3% (Croatia) to 79% (Ireland). In 22 Member States, more than half of all students are in schools where principals indicated "very little" hindrance to learning by bullying.

The PISA data on the high prevalence of bullying in general, and in particular its effects on socio-economically disadvantaged groups, compared with data on the perception of bullying, may indicate that bullying is not taken as seriously as it should be at leadership level[43]. Viewed together with the notion that school staff are rarely equipped to treat bullying as a serious mental health issue[44], these results warrant further attention. For anti-bullying campaigns and interventions to succeed, the involvement of school staff and educators from all levels is key[45]. The Repository of the European Platform for Investing in Children (EPIC) has compiled a list of national and transnational campaigns to combat bullying. They include a Greek curriculum-based initiative and a British-German computer-based anti-bullying programme, both aimed at fostering peer intervention and training teachers in intervention methods[46]. EPIC is evaluating national and transnational interventions based on three factors: how effective they are, how transferable their approaches are, and how enduring their impact is. The evaluation provides interesting insights into the efficacy and proposed designs of interventions. Firstly, they need to encompass all aspects of students' school and social lives to provide balanced, sensible solutions such as classroom interventions and information sessions for parents. Secondly, measures must be tailored to the changing nature of bullying given the rise of cyber bullying and the current digital transformation.

In general, analysing student feelings when assessing well-being is relatively new, as is the understanding of how student well-being can best be safeguarded, and negative feelings mitigated. It is clear, however, that a sense of belonging can be achieved when students have meaningful social connections and relationships with their peers and their teachers[47].

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43 Foody, Mairéad, Murphy, Helena, Downes, Paul and James O'Higgins Norman (2018). Anti-bullying procedures for schools in Ireland: principals' responses and perceptions, Pastoral Care in Education.

44 Ibid.

45 Ybarra, Michele L., et al. (2019). Perceptions of middle school youth about school bullying. In: Journal of adolescence 75, 2019, 175-187.

46 European Union (2020). Anti-bullying Practices from the Repository of the European Platform for Investing in Children.

47 OECD (2019). PISA 2018 Assessment and Analytical Framework.

Among the various options, school-level interventions are the best for improving student well-being, as they can counteract socio-economic inequalities[48]. One remarkable school-level initiative involves health literacy classes to help overcome inequalities in the long term[49]. By contrast, ill-advised school interventions may increase inequalities rather than reduce them. An analysis of Finnish upper secondary schools concluded that improving students' well-being and self-esteem requires long-term interventions tailored to individual students[50]. Systemic interventions that cover the whole school and that concentrate on building individual competences, developing school policies, and improving social relationships, are most likely to have an impact[51].

A key consideration is the increasing linguistic and cultural diversity in European schools. According to PISA 2015 data, more than one in ten 15-year-olds in European schools are first or second-generation migrants – with first-generation migrants accounting for 4.8% of the PISA student cohort, and second-generation migrants (i.e. students with foreign-born parents who were born in the country of assessment) accounting for 6.5%[52].

The same PISA 2015 data reveal that an average of around one in ten (9%) 15-year-old learners across the EU speak a different language at home to the one they are taught in[53].

Poor command of the language of instruction can contribute considerably to students' feelings of alienation and lack of well-being. Language deficiencies can also be a source of bullying. Data show[54] that primary school students who do not speak the language of schooling at home have a lower sense of belonging at their school, and they report being more frequently bullied by their peers.

The traditional approach to dealing with linguistic differences has been to try to make students focus completely on the language of schooling, ignoring and often actively suppressing their home languages. There is however ample evidence that such practices can be detrimental to students' self-esteem and well-being. Recognising students' individual linguistic capital and using it as stepping stones towards acquisition of better competences in the language of schooling yields better academic results[55].

Linguistic support measures should ideally endeavour to maintain students' existing languages while developing their proficiency in the language of schooling, since this is known to have a positive impact on functional literacy, including educational success as a whole[56]. At the same time, these diverse linguistic backgrounds add value to the host country's classroom, as a means of engaging with migrant learners. Promoting language awareness among the whole school

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48 Moore G. F. (2020). Socioeconomic status, mental wellbeing and transition to secondary school: Analysis of the School Health Research Network/Health Behaviour in School-aged Children survey in Wales.

49 Flecha, A., García, R. and Rudd, R. (2011). Using Health Literacy in School to Overcome Inequalities. In: European Journal of Education, 46: 209-218.

50 Cefai, C., Simões, C. and Caravita, S. (2021). A systemic, whole-school approach to mental health and well-being in schools in the EU. A NESET report for the European Commission.

Holopainen, L., Waltzer, K., Hoang, N. and Lappalainen, K. (2020). The Relationship between Students' Self-esteem, Schoolwork Difficulties and Subjective School Well-being in Finnish Upper-secondary Education. In: International Journal of Educational Research, 104, 101688.

51 Cefai, C., Simões, C. and Caravita, S. (2021). A systemic, whole-school approach to mental health and well-being in schools in the EU. A NESET report for the European Commission.

52 European Commission (2016). Pisa 2015: EU performance and initial conclusions regarding education policies in Europe.

53 European Commission/EACEA/Eurydice (2017). Key data on Teaching Languages at School in Europe: 2017 Edition. A Eurydice Report, p. 22.

54 EC/EACEA/Eurydice (2019). Integrating Students from Migrant Backgrounds into Schools in Europe: National Policies and Measures.

55 Van Der Wildt, A., Van Avermaet, P. and Van Houce, M. (2017). Multilingual school population: ensuring school belonging by tolerating multilingualism. International journal of bilingual education and bilingualism, 20(7), 868–882.

56 Cummins, J. (2001). Bilingual Children's Mother Tongue: Why is it important for education? In: Sprogforum *19* (2), p. 15-20.

population increases tolerance and inclusion while encouraging all learners to develop their linguistic skills[57].

Analyses on classroom and school variables have also found a direct link between teacher and student well-being[58]. Involving teachers in strategies to improve student well-being is sensible as they have close day-to-day interactions with their students[59].

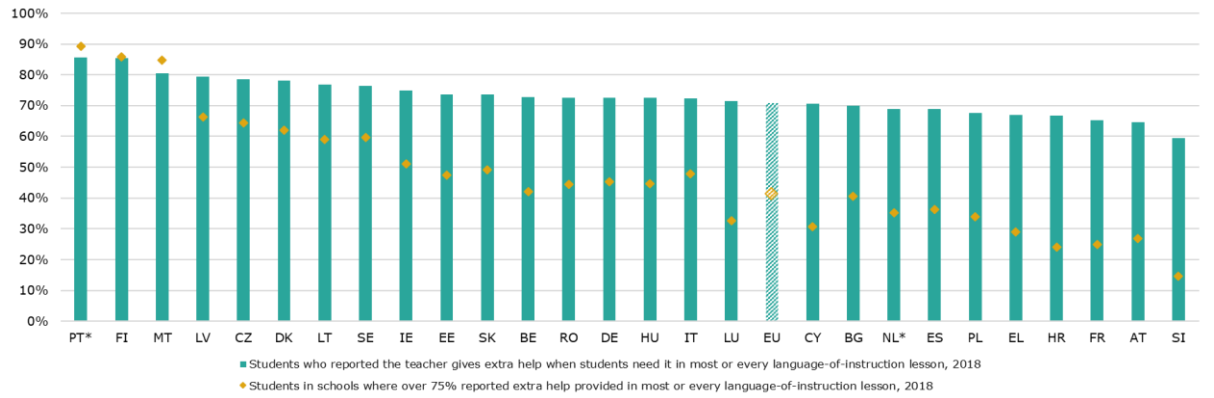
1.4 Teachers' perspective and the role of school governance in shaping well-being

1.4.1 The role teachers play in students' well-being

A teacher's role is to support students in their learning process, and their social and emotional development. They can make students feel confident in their skills, and feel supported and understood. Teaching behaviour and school practices can foster a pleasant climate and increase students' well-being. There is a clear link between the mental health of teachers and that of students[60]. There is also evidence[61] that students' perceptions of teachers' support are significantly correlated with greater life satisfaction.

According to PISA 2018, an average of 71% of students in the EU reported that their teacher gives extra help when needed in most or in every lesson taught in the language-of-instruction. The proportions varies across the EU, ranging from 85.6% in Portugal to 59.4% in Slovenia.

Figure 19: Students who reported that the teacher gives extra help when they need it in most or every language-of-instruction lesson, 2018 [%]



Source: PISA 2018.
Note: *Data did not meet the PISA technical standards but were accepted as largely comparable. Original OECD Table III.B1.6.4

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57 See Herzog-Punzenberger, B., Le Pichon Vorstman,E. and Siarova, H. (2017). Multilingual Education in the Light of Diversity: Lessons Learned. A NESET network report for the European Commission.

58 Van Petegem, K., Aelterman, A., Van Keer, H. and Rosseel, Y. (2008). The influence of student characteristics and interpersonal teacher behaviour in the classroom on student's wellbeing. Social indicators research, 85(2), 279-291.

59 Another approach is closely involving educators and empowering them through, *inter alia,* achievement motivation, environmental resilience (i.e. teaching educators how to focus on developing their students' strengths), and developing social competences; Morrison, G. M. and Allen, M. R. (2007). Promoting student resilience in school contexts. Theory into Practice, 46(2), 162-169.

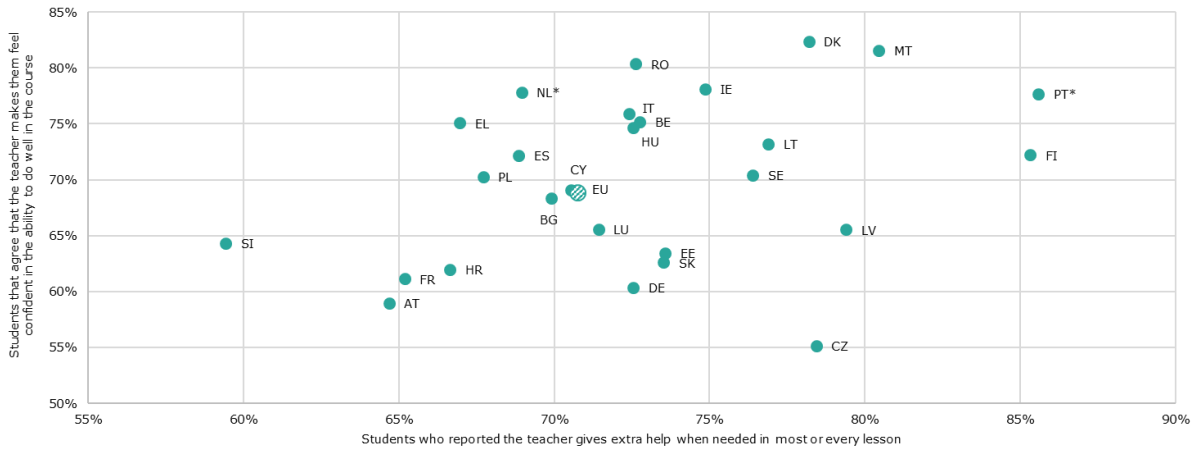
60 Cefai, C., Simões, C. and Caravita, S. (2021). A systemic, whole-school approach to mental health and well-being in schools in the EU. A NESET report for the European Commission.

61 Guess, P.E., and McCane-Bowling S.J. (2016). Teacher support and life satisfaction: an investigation with urban, middle school students. In: Education and Urban Society 48.1, 2016: 30-47.

Whether a consensus exists in these perceptions can be deduced from the proportion of students in schools where over 75% students reported extra help. As shown in Figure 19, countries with the highest share of students reporting teachers' extra help correspond to the ones where the majority agrees with this perception. Conversely, a low percentage of students in schools where 75% reported extra help shows that students' differ on their perception, not reporting help similarly in all schools. Indeed, in the EU, there is still disparity of students' opinions regarding the extra help provided by teachers: only 41.4% of students are in schools where at least three out of four agreed that the teacher gives extra help when needed in.

In addition to educational help, teachers provide students with emotional support, which makes them more confident in their skills and ability to participate in class, and thus contributes to their well-being. As shown in Figure 20, among EU countries, there is generally a positive relationship between students reporting that extra help was provided when needed, and students reporting that the tutor makes them feel confident in their ability to perform well. Denmark (82%), Malta (82%) and Romania (80%) are the countries where most students agreed that the teacher's behaviour helped give them confidence to perform well.

Figure 20: Teacher's extra help versus self-reported confidence influenced by the teacher, 2018



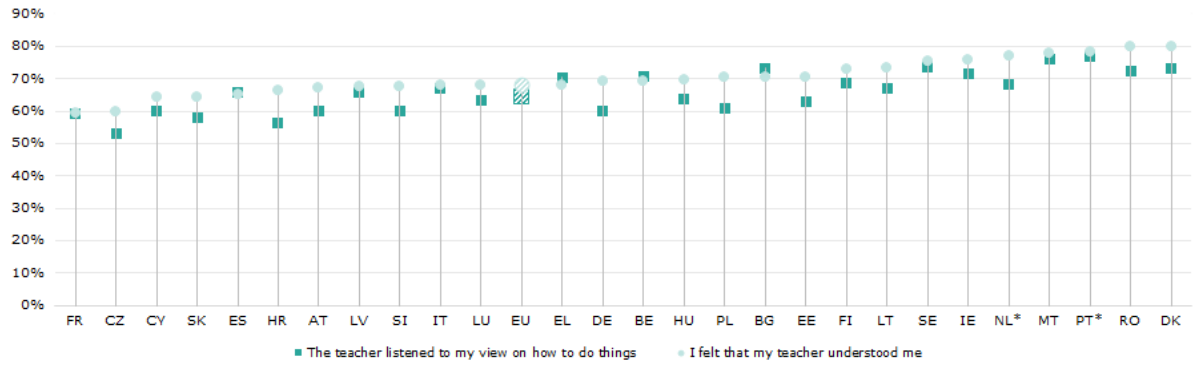
Source: PISA 2018.

Note: *Data did not meet the PISA technical standards but were accepted as largely comparable. Original OECD Table III.B1.6.4

Developing a classroom environment where questions are encouraged is one of the factors that makes students more likely to perceive support from teachers. This support is also perceived when teachers try to connect with students on an emotional level, including by demonstrating fairness or acknowledging academic success. According to the same study, teacher support accounted for 16% of the variance in students' subjective well-being.

Teachers who listen and consider students' opinions can help their students to feel understood. A supportive teacher-pupil relationships can therefore increase a schools' potential to support student well-being. An average of 64% of students in the EU agreed that their teacher listens to their views on how to do things, but there is a 20 pps difference across countries. On average, 68% of EU students felt that their teacher understands them, but again there are large variations across EU countries, ranging from 60% in France and Czechia to 80% in Romania and Denmark. Figure 21 shows that countries where fewer students report that the teacher listened to their views coincide with the ones with lower proportions of students who felt understood by the instructor.

Figure 21: Students who agreed or strongly agreed that the following occurred during the previous two language-of-instruction lessons, 2018 [%]



Source: PISA 2018.

Note: *Data did not meet the PISA technical standards but were accepted as largely comparable. Original OECD Table III.B1.6.2.

The quality of teacher-students interactions also matters for educational outcomes and student well-being. To be able to learn, students need to be understood by their teachers and have them recognise the challenges they face outside school. At-risk students reported better outcomes when teachers worked with them respectfully and provided opportunities to exercise more autonomy[62].

A study[63] comparing the influence of support on students' social, academic and emotional adjustment, found that – although support from parents, classmates and friends also had an influence on their adjustment – emotional support from teachers was particularly predictive of better social skills and academic competence. Consequently, greater emotional support provided to disadvantaged students can help close the gap between socio-economic backgrounds by boosting social and academic competences in this group. In this sense it is reassuring that PISA 2018 shows that students from disadvantaged schools perceive support from teachers to a greater extent than their counterparts in advantaged schools[64]. This was the case in 23 EU Member States, and in 16 of them this difference was statistically significant. The negative difference was most pronounced in Austria (-0.52), Germany (-0.43) and Bulgaria (-0.41). In contrast, in only four countries (Cyprus, Denmark, Finland, Sweden) students from disadvantaged schools reported lower perceptions of teachers' support than students in advantaged schools.

In general, across the EU, satisfaction with the quality of school life seems to be more common than dissatisfaction. However, in some countries (cf. Figure 22) interpersonal teacher-student interactions was rated as negative[65]. Improving teacher-student interactions and students' sense of achievement requires comprehensive support systems. To improve perceived quality of life, the same study suggests the need of pre-service and in-service training for teachers on monitoring

62 Sanders, J., Munford, R., and Liebenberg, L. (2016). The role of teachers in building resilience of at risk youth. In: International Journal of Educational Research 80, 2016, 111-123.

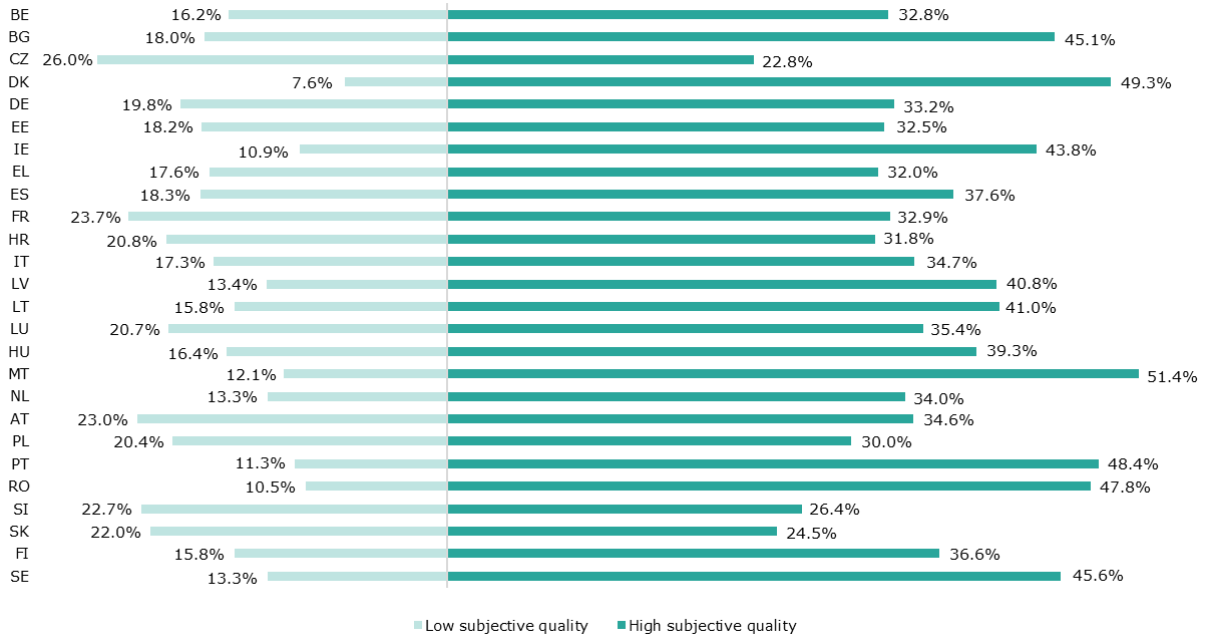
63 Malecki, C. K. and Kilpatrick Demaray, M. K. (2003). What type of support do they need? Investigating student adjustment as related to emotional, informational, appraisal, and instrumental support. In: School psychology quarterly 18.3, 2003, 231.

64 In 2018, there was a negative difference in the EU (-0.23 points difference) in the PISA index of teacher support in advantaged and disadvantaged school. For the index students were asked about the occurrence of following statements: "The teacher shows an interest in every student's learning"; "The teacher gives extra help when students need it"; "The teacher helps students with their learning"; and "The teacher continues teaching until students understand". Students' responses were combined to create the index of teacher support.

65 Hristova A. and Tosheva, E. (2021). Quality of School Life in Europe in the Light of Large-Scale International Assessments. An EENEE network report for the European Commission.

emotions, identifying and addressing destructive behavioural patterns and promoting constructive interactions. Teachers' programmes should therefore aim at improving self-efficiency in classroom management, in teaching, in engaging students and working in multicultural environments[66].

Figure 22: Share of students perceiving the quality of teacher-student relations as low or high



Source: PISA 2018, calculations by the EENEE network of experts.

Note: CY was not included in the EENEE study.

To have a positive impact on students, a teacher's well-being is essential, but this can depend on their working environment and practices. Teachers in the EU still experience high levels of work-related stress, according to the OECD's 2018 Teaching and Learning International Survey, which affects their mental health.

Teachers point to administrative tasks, changing requirements from authorities and being held responsible for students' achievements as major sources of stress. Among the top five sources of stress across the EU[67], only two ("having too much marking" and "maintaining classroom discipline") are directly related to the tasks of teaching. Factors inducing lower levels of stress are a collaborative school environment, perceived autonomy in their job, and self-confidence in motivating students[68].

66 For tools available to teachers for assessing the quality of classroom climate Cf. a NESET network project A formative, inclusive, whole school approach to the assessment of Social and Emotional Education in the EU.

67 European Commission/EACEA/Eurydice (2021). Teachers in Europe: Careers, Development and Well-being. A Eurydice report. EU refers to all European Union countries/regions that participated in TALIS survey 2018, including UK.

68 European Commission/EACEA/Eurydice (2021). Teachers in Europe: Careers, Development and Well-being. A Eurydice report.

1.4.2 Teachers' and school governance's influence on well-being

Considering students' life satisfaction, well-being and resilience can help schools themselves become more successful and resilient to long-term challenges. The Council conclusions on "European teachers and trainers for the future"[69] stressed that: "In order to support both the achievement and well-being of teachers and trainers, as well as learners, it is beneficial to build and promote collaborative learning communities, and a collaborative team culture between teachers and trainers, their peers and institution leaders, learners, parents, and other stakeholders, such as employers".

School climate is a determinant of resilience and well-being[70]. Schools and teachers are therefore important protective assets for students. Higher levels of school discipline and order have been associated with lower probability and frequency of behavioural problems[71]. Sufficient security policies and practices, students' respect for teachers and school property, clear rules of conduct as well as the consistent and fair enforcement of rules influence teachers' perceptions of safety and order in schools across the EU. In 2019, between 45% and 60% of fourth grade students in EU countries for which TIMSS data is available (

Figure 23) were in schools considered "very safe and orderly" by teachers, with some countries scoring higher than others. For example, Ireland (78%), Spain (76%), Bulgaria (73%) and Portugal (71%) were on the higher end of the scale while the Flemish community of Belgium (28%), France (37%), Sweden (37%) and Finland (31%) were on the lower end.

Box 9: Strengthening teacher policies in Bulgaria

Bulgaria has taken additional measures to strengthen initial teacher education (ITE) and continuous professional development (CPD). New requirements for the acquisition of teacher professional qualifications were adopted in February 2021 with a focus on strengthening the competence-based approach in both ITE and CPD. The State requirements for obtaining a vocational teacher qualification have also been updated. Compulsory disciplines were introduced in various fields of pedagogy, while others were reinforced with additional hours of training. Furthermore, the proportion of teachers taking part in professional development has increased in recent years. In 2021-2027, the European Social Fund (ESF+) will continue to provide support to upgrade the competences of teachers. Significant efforts have also been made in recent years to increase teachers' salaries and therefore the attractiveness of the teaching profession.

69 Council conclusions of 26 May 2020 on European teachers and trainers for the future, OJ C 193, 9.6.2020, C 193/16.

70 Cohen J. (2013). Creating a Positive School Climate: A Foundation for Resilience. In: Goldstein S., Brooks R. (eds) Handbook of Resilience in Children. Springer, Boston, MA.

71 Wang, M. T., et al. (2010). A tobit regression analysis of the covariation between middle school students' perceived school climate and behavioral problems. In: Journal of Research on adolescence 20.2, 274-286.

Figure 23: Percentage of students in schools that are "very safe and orderly" according to the teachers, 2019 (TIMSS).

Source: IEA TIMSS 2019.

Note: Students were scored according to their teachers' responses to eight statements on the Safe and Orderly School scale. Cut scores divide the scale into three categories. Students in "very safe and orderly" schools had a score at or above the cut score corresponding to their teachers "agreeing a lot" with four of the eight statements and "agreeing a little" with the other four, on average.
(*) indicates data are available for at least 70% but less than 85% of the students.

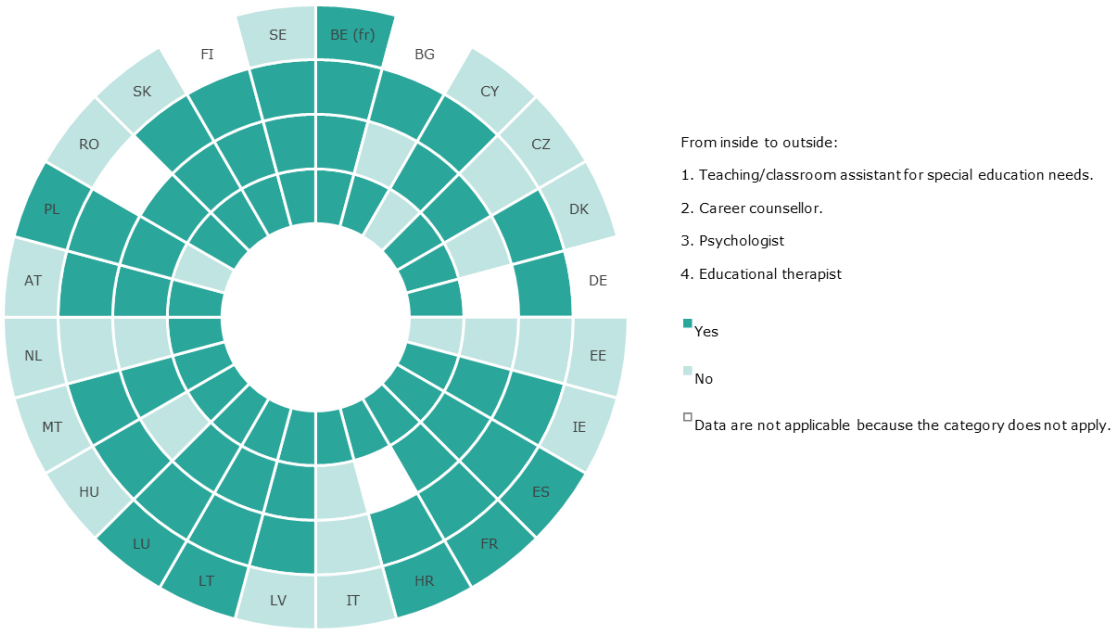
School-level support measures and help enable learners to overcome academic, social and personal difficulties. Multi-professional teams and integrated strategic responses can give tailored assistance to students to improve their resilience. EU countries have therefore been adopting policies and regulations to integrate specific support staff in schools. Assistant teachers for special education needs are the most widespread support staff in primary, lower secondary and upper secondary education (Figure 24). In 21 countries this support is mandatory in at least two out of the three levels mentioned, and in 18 of them, it applies to all three. The support of psychologists is also widespread in EU educational systems. In only four EU countries, for which data are available, the presence of psychologists is not required at any level (Czechia, Estonia, Italy and the Netherlands). To help students in serious emotional distress, emotional counselling is provided in a range of EU countries. Some countries, such as Poland, provide one-to-one academic tutoring and psychological support, other countries offer psychological or socio-emotional support to students at risk of early school leaving[72] to reduce drop-out rates[73].

Requirements for having educational therapists in schools are less widespread, as are requirements for having career counsellors. The latter are present in only nine countries for all three educational levels and in four countries for both secondary levels (Austria, Cyprus, France and Luxembourg).

[72] Donlevy, V., Day, L., Andriescu, M., Downes, P. (2019). Assessment of the Implementation of the 2011 Council Recommendation on Policies to Reduce Early School Leaving. Final Report July 2019. Directorate General, Education, Sport, Youth and Culture.

[73] Quiroga,C. V., Janosz, M. and Bisset, S. (2013). Early adolescent depression symptoms and school dropout: Mediating processes involving self-reported academic competence and achievement. Journal of Educational Psychology, 105, 2, 552–560.

Figure 24: School support staff required by policy or regulation to provide access to students in schools, general programmes 2018.



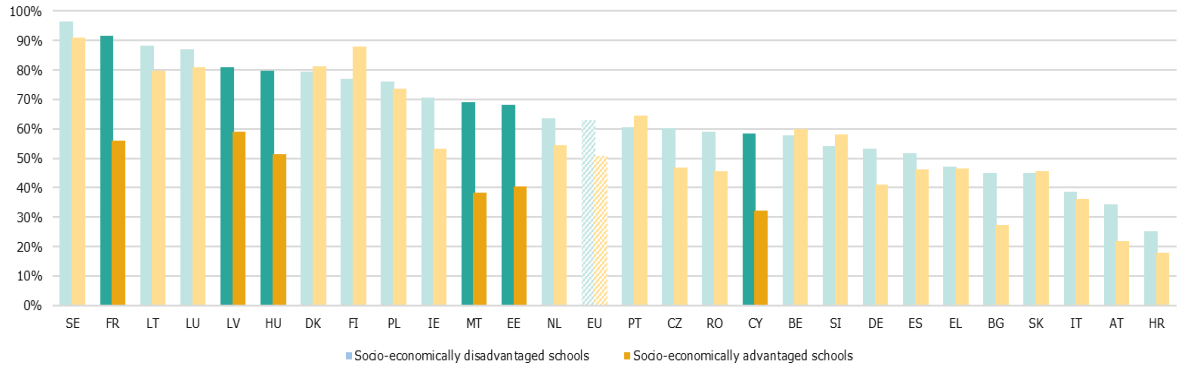
Source: PISA 2018 system-level data collection.

Note: Responses are marked as "yes" if at least 2 out of 3 levels have the staff (primary education, lower secondary education, upper secondary education). Data are missing for BE (fl), EL, SI and PT. Data for career counsellor at primary level does not apply to IE and SE due to inapplicability of the category. Federal states or countries with highly decentralised school systems may experience regulatory differences between states, provinces or regions. For further information see: System-level data collection for PISA 2018.

At a personal level, positive and respectful teacher-student relationships that empower students, can increase resilience, particularly for students in the high-risk category. On average, EU students from disadvantaged schools (63%) receive more support from school staff to do their homework than students in advantaged schools (51%). Schools can therefore help to protect at-risk students[74] and help narrow gaps due to socio-economic background. Help with homework is very widespread in schools in Sweden, Lithuania, Latvia, Denmark, Finland and Poland. Some countries focus on disadvantaged students where the difference with their advantaged peers is significant, such as France (35 pps), Malta (31 pps), Hungary (28 pps), Estonia (28 pps) and Cyprus (26 pps). On the other hand, regardless of schools' socio-economic status, fewer than 40% of students received help with homework in Italy, Austria and Croatia (Figure 25).

[74] Sanders, J., Munford, R. and Liebenberg, L. (2016). The role of teachers in building resilience of at risk youth. In: International Journal of Educational Research 80, 2016: 111-123.

Figure 25: Percentage of students in schools where staff provides help with homework, by school's socio-economic status, 2018.

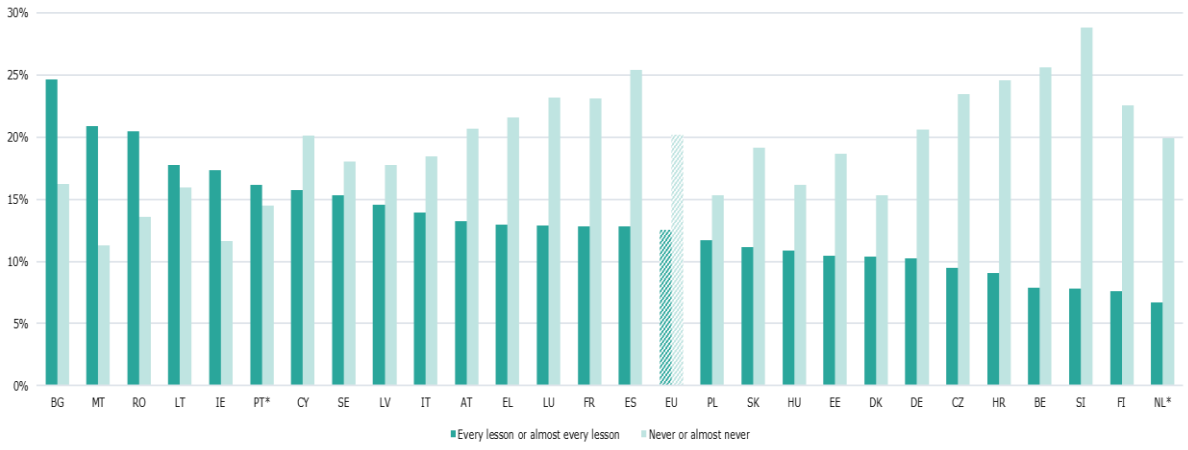


Source: PISA 2018.

Note: a socio-economically disadvantaged (advantaged) school is a school in the bottom (top) quarter of the PISA index of economic, social and cultural status (ESCS) in the country/education system in question. Values of the percentage point difference between both that are statistically significant (20 pps or more) are shaded. Data sorted in descending order according to socio-economically disadvantaged schools' values.

Guidance and feedback from teachers on their tasks can help students to develop their abilities and figure out how to solve similar problems in the future. However, the data show that students across the EU do not perceive that they receive extensive feedback, or guidance to improve. On average, 13% of EU students reported that the teacher tells them how to improve their performance in every lesson or almost every lesson while 20% reported that this never or almost never happened (Figure 26). This is worrisome, as the percentage of those that claim to receive guidance exceeds the percentage that claim the opposite (i.e. guidance is (almost) never given) in only six EU countries. These countries (Bulgaria, Malta, Romania, Lithuania, Ireland and Portugal) are also those where students are more likely to report that constant feedback for improvement is given. In 12 EU Member States, over one fifth of the students reported that they never or almost never receive feedback for improvement (Figure 26). This can hamper the capacity of students to develop resilience.

Figure 26: Percentage of students reporting that the teacher tells them how to improve their performance by frequency, 2018.

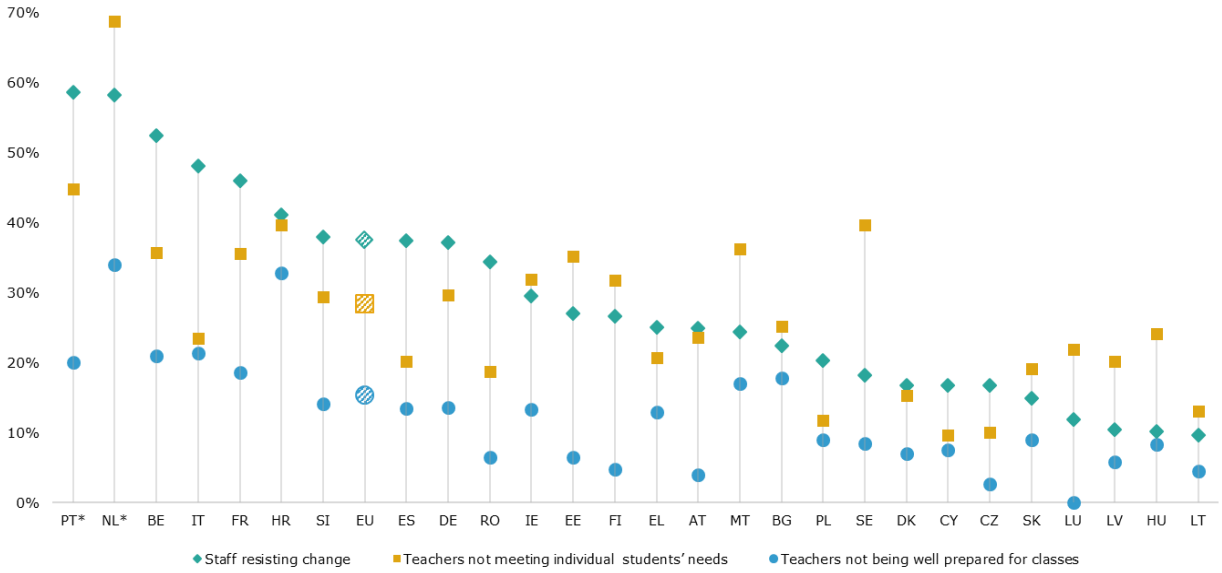


Source: PISA 2018.

Note: *Data did not meet the PISA technical standards but were accepted as largely comparable. Data based on student's reports and in descending order according to "every lesson or almost every lesson" values. Original table III.B1.6.3.

In addition, 28% of students attend a school where the principal considers the inability of teachers to meet individual students' needs to be a hindrance (Figure 27). This problem may be linked to a lack of staff, which remains a concern across the EU and is reported as being a hindrance for 28.5% of students. Also according to school principals, teachers' resistance to change affects 37% of learners across the EU. Yet, equipping students with tools and skills to adapt to changing and unexpected circumstances is crucial for strengthening their resilience and their ability to overcome life challenges.

Figure 27: Percentage of students in schools whose principal reported that the following behaviours hinder student learning to some extent or a lot, 2018.



Source: PISA 2018.

Note: Countries are presented in descending order according to the survey response "Staff resisting change". *Data did not meet the PISA technical standards but were accepted. Original table III.B1.7.1

Finally, evidence has shown that structured outdoor learning measures increase resilience and a growth mind set[75]. Extracurricular activities provided by the school and outdoor programmes can help balance the negative health impacts caused by excessive screen time. They can also help students to develop non-cognitive skills and increase their sense of belonging at school. On average, creative extracurricular activities were more frequently offered in advantaged schools (2.01 in PISA index of creative extracurricular activities[76]) than in disadvantaged ones (1.53 in PISA index). However, with variations across countries, on average in the EU the difference between cities (1.78 in PISA index) and rural areas (1.74 in PISA index) was minimal, and inexistent between private and public schools.

[75] O'Brien, K. and Lomas T. (2017). Developing a Growth Mindset through outdoor personal development: can an intervention underpinned by psychology increase the impact of an outdoor learning course for young people? In: Journal of Adventure Education and Outdoor Learning 17.2, 2017: 133-147.

[76] The PISA index of creative extracurricular activities at school was computed as the total number of the following music- and art-related activities that are offered at school: band, orchestra or choir; school play or school musical; and art club or art activities. Values in the index range from 0 to 3. Higher values in the index indicate greater number of creative extracurricular activities at school.

Building students' resilience and prioritising their well-being requires a joint effort from the whole community. This has become even clearer in the last 2 years when the COVID-19 pandemic forced learners and teachers to adapt to new educational challenges, highlighted the importance of well-being and resilience and revealed the need of efforts across the EU to ensure that no one is left behind.

1.5 Effect of COVID

The COVID-19 pandemic, which led to physical school closures in many countries worldwide coupled with a move to online teaching, considerably reduced the intensity of students' social interactions with their peers and teachers. This reduction in social contact due to the pandemic is expected to be particularly detrimental to vulnerable students (OECD, 2020)[77].

Harmonised and internationally comparable sources allowing to analyse what happened to children's well-being during the pandemic across the EU are still rare. This chapter sets out to draw conclusions from several surveys undertaken to clarify the picture: the "Kids' Digital lives in COVID-19 Times" (KiDiCoTi) survey, coordinated by the European Commission's Joint Research Centre[78], the COVID-19 International Student Well-being Study (C19 ISWS), a global survey on "Student perceptions of remote learning" and an online survey conducted by the European Commission in 2020 on how Vocational Education and Training (VET) ensured continuity of learning and teaching during the COVID-19 lockdown measures[79].

1.5.1 Well–being during COVID-19: evidence from the KiDiCoTi Survey

The project on "Kids' Digital lives in COVID-19 Times" (KiDiCoTi) aimed to understand how children at the end of primary education and in secondary education (10-18 year-olds) and their parents engaged with digital technologies while staying at home and how these experiences may have affected children's online safety and overall family well-being. The survey was carried out during the COVID-19 lockdown in spring 2020 and involved nine EU Member States (Austria, France, Germany, Ireland, Italy, Portugal, Romania, Slovenia and Spain), plus Switzerland and Norway.

In these 11 countries, Figure 28 shows, very few students continued with regular face-to-face schooling during the lockdown (maximum 1%), while between 1 and 4% of the children did not receive any education. Depending on the intensity of the lockdown and the preparedness of the system, other countries moved education for most of the respondents to remote education totally[80] or partially[81]. On the effects physical school closures had on schoolwork (as a sum of school hours and homework), no unified image emerged in the participating countries.

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77 OECD. The impact of COVID-19 on student equity and inclusion: Supporting vulnerable students during school closures and school re-openings (2020).

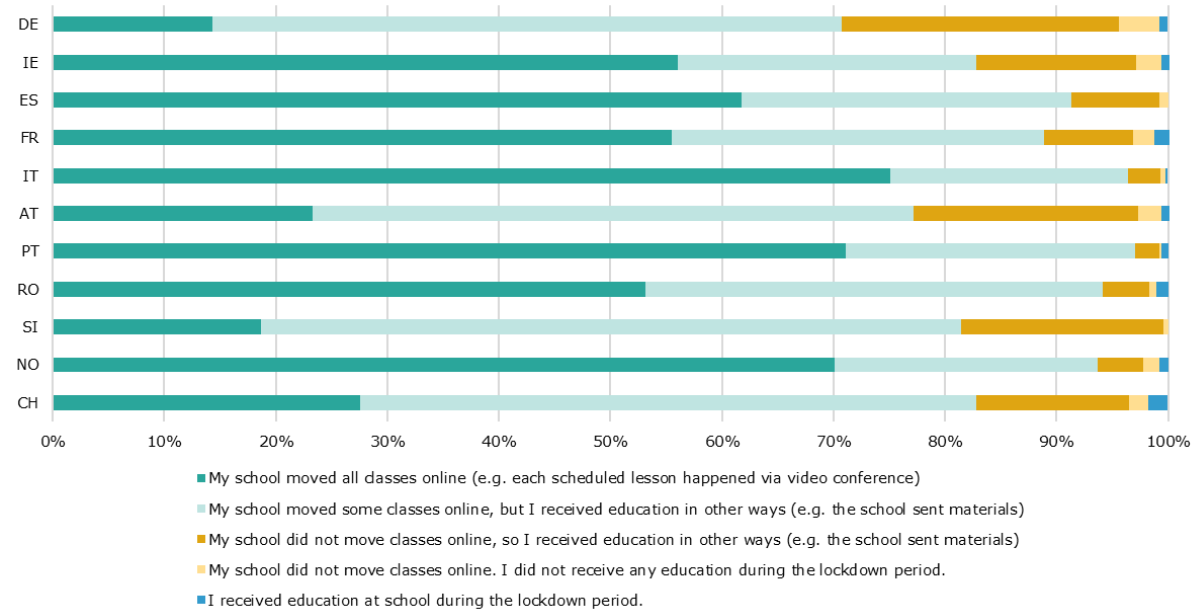
78 In a partnership with the research office of UNICEF and 26 research centres in 15 European countries.

79 European Vocational Skills Week 9-13 November 2020.

80 IT (75%), PT (71%), NO (70%), ES (62%), FR (56%) and RO (53%).

81 SI (63%), DE (56%), CH (55%) and AT (53%).

Figure 28: Different modes of emergency remote schooling during the lockdown



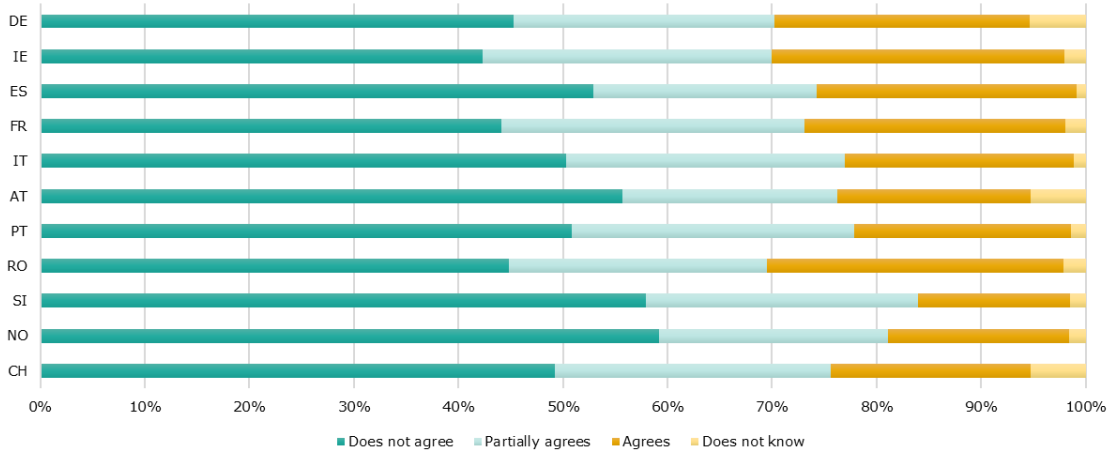
Source: KiDiCoTi consortium calculations.

Physical school closures caused concern among children that they would not be able to keep up with the workload, and among parents that the school closure could negatively affect their children's education[82]. While several factors – e.g. readiness of the education system to react to the COVID-19 challenge – may have affected the perceived difficulties, there was a correlation between the share of children whose classes were moved partially or entirely on line and the extent of their worries.

Indeed, a specific burden on students was the helplessness they felt when doing school activities and homework online, as shown in Figure 29: Ireland (28%), Romania (28%), France (25%), Spain (25%) and Germany (24%) are the countries where around one quarter of the students said they feel "helpless" when facing on-line learning.

82 Vuorikari, R., Velicu, A., Chaudron, S., Cachia, R. and Di Gioia, R. (2020). How families handled emergency remote schooling during the Covid-19 lockdown in spring 2020 – Summary of key findings from families with children in 11 European countries, A JRC Science for policy report, p. 10ff.

Figure 29: Share of students agreeing/disagreeing with the following sentence: "I feel helpless when I have to do school activities and homework online"



Source: KiDiCoTi consortium calculations.

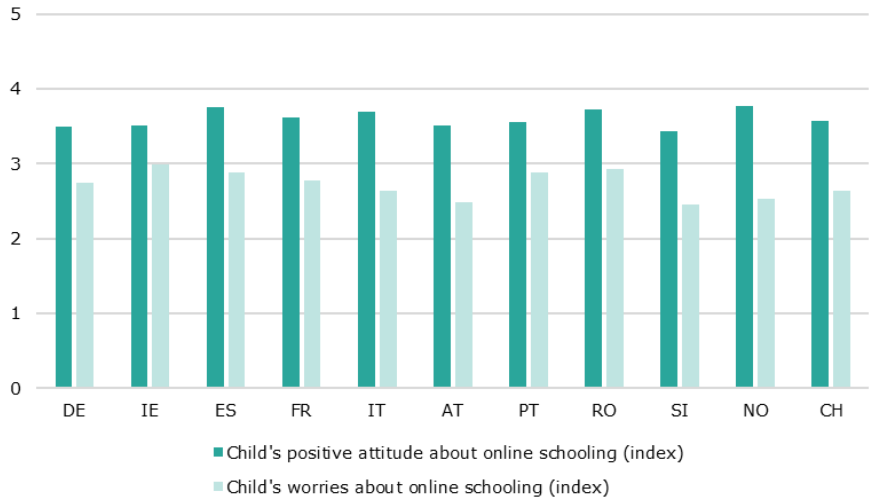
A broader indication of the effects of remote learning due to COVID-19 on children's well-being can be derived from two indices calculated on the basis the KiDiCoTi responses, one of negative[83] and one of positive[84] attitudes related to remote learning. Both indices are measured on a scale from 0 (lowest) to 5 (highest).

Figure 30 shows that, overall, a positive attitude prevails in all countries, with the highest positive values recorded in Norway (3.8), Spain (3.8), Italy (3.7), and Romania (3.7). At the same time, some countries did experience stronger negative attitudes, notably Ireland (3.0), Portugal (2.9), Romania (2.9), and Spain (2.9). In some countries the gap between negative and positive attitudes is high, which indicates a potential polarisation in the student population. This is true in Norway (1.3), Italy (1.1), Austria (1), Switzerland (1), Slovenia (0.9), and Spain (0.9).

83 This index uses the replies to the following statements capturing students' negative attitudes related to on-line learning: (a) I get nervous participating in on-line activities; b) I worry that it will be difficult for me in on-line activities; c) I worry that I will get poor grades because of on-line activities; d) I worry that it will be difficult for me in on-line activities; e) I worry that it will be difficult for me to complete school activities on-line; f) I feel helpless when I have to do school activities and homework on-line). The index is obtained by summing up the individual responses over the five items, computing the individual average first and the country average as a final step.

84 This index is a measure of the positive attitudes that students' have with respect to on-line learning, obtained from the following items: g) I am motivated to participate in on-line activities; h) I learn quickly how to participate in on-line activities; i) I can follow even the most difficult teaching during on-line activities; l) have always believed that I am good with on-line activities. The index is obtained by summing up the individual responses over the four items, computing the individual average first and the country average as a final step.

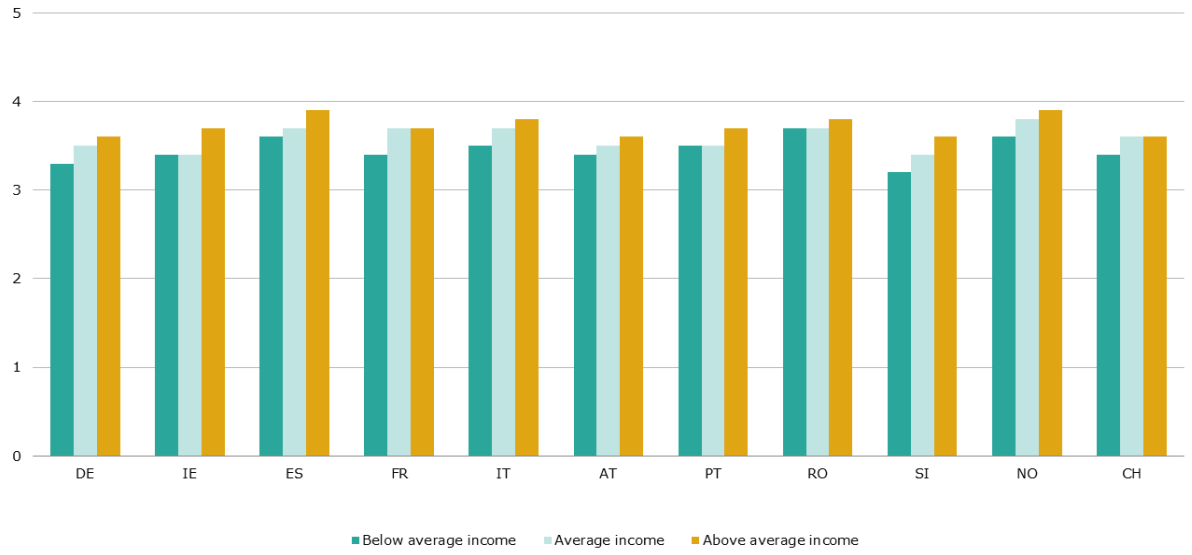
Figure 30: Child's positive and negative attitudes towards online learning (index)



Source: KiDiCoTi consortium calculations.

Positive and negative attitudes across different income[85] groups reveal a clear socio-economic gap, with a more positive view among children from above average income households (Figure 31 and Figure 32) and a more negative outlook in students (with the exception of Germany and Italy) from below-average income households. As further data becomes available it would be interesting to analyse whether a similar difference in impact will also be apparent in learning outcomes.

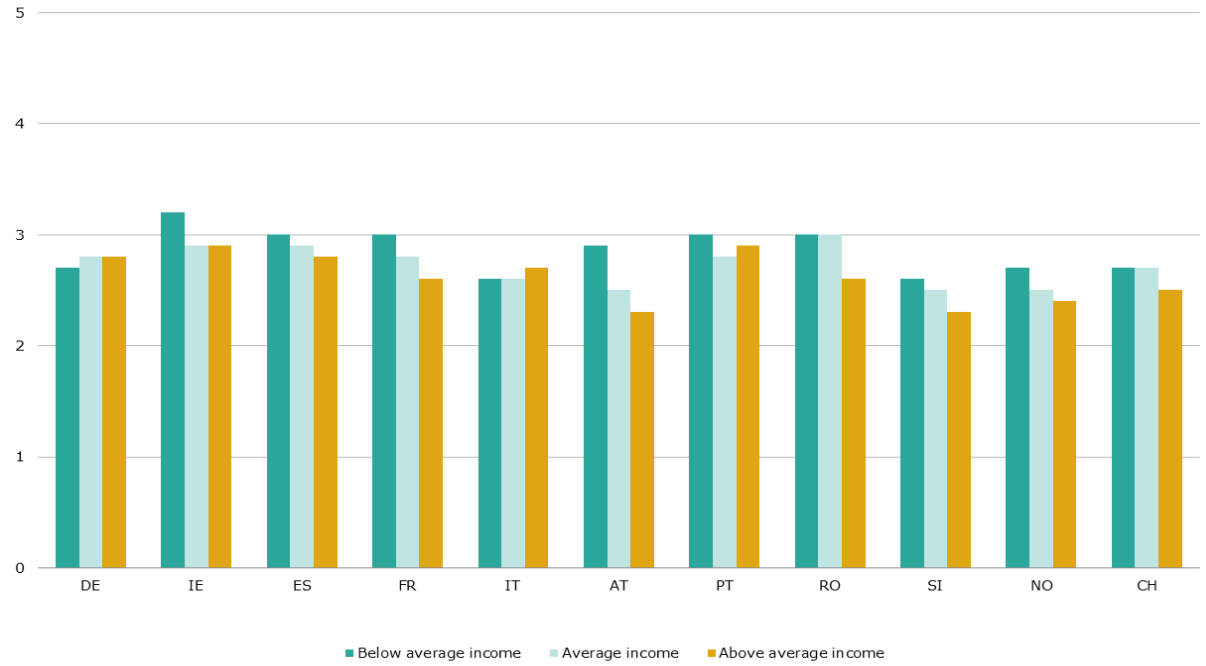
Figure 31: Child's positive attitudes towards online learning (index): by income group



Source: KiDiCoTi consortium calculations.

[85] This is the perception of household income relative to the "average" by the parent responding to the questionnaire.

Figure 32: Child's negative attitudes towards online learning (index): by income group



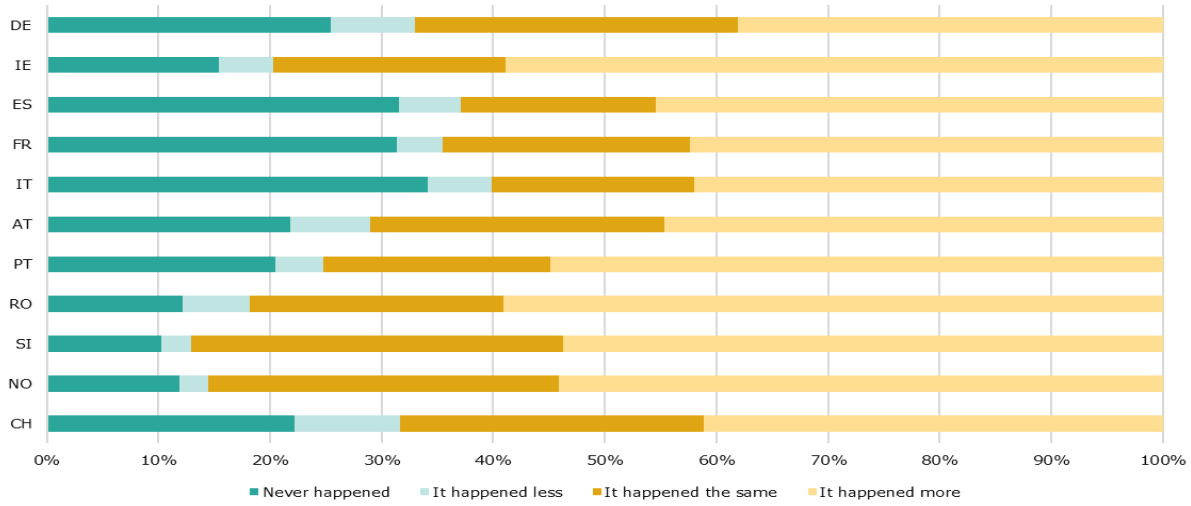
Source: KiDiCoTi consortium calculations.

On how schoolchildren spent their time during lockdown[86], KiDiCoTi data show that students spent close to 3.5 hours per day on digital technologies for school activities only. Many hours per day, close to 40% of their available time[87], were spent on the internet or using digital technologies (including digital games). This is somewhat expected, given the limitations to social activities during the lockdown, but it also signals a potential risk for the physical and mental well-being of students. Indeed, many students felt that they spent too much time on the internet or using digital devices, compared to pre-lockdown (Figure 33). The share of students reporting overuse of such tools was especially high in Romania (59%), Ireland (59%), Portugal (55%) and Norway (54%). In fact, a significant proportion of KiDiCoTi respondents across all countries replied that they were unable to sleep or eat because of the amount of time spent on the internet during the lockdown (and compared to the pre-lockdown period).

86 For an analysis of the risks related to the use of internet and digital devices during the lockdown see: Lobe, B., Velicu, A., Staksrud, E., Chaudron S., Di Gioia, R. (2021). How children (10-18) experienced online risks during the COVID-19 lockdown – Spring 2020. A JRC Technical Report.

87 Assuming that 8 hours are devoted to sleeping.

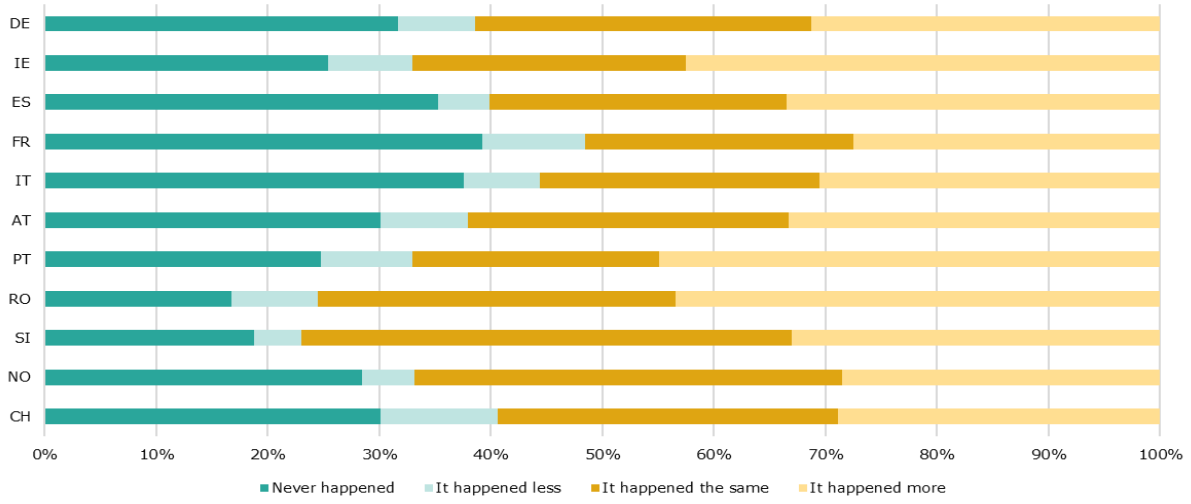
Figure 33: Share of students declaring to overuse internet or digital devices during lockdown (compared to pre-lockdown)



Source: KiDiCoTi consortium calculations.

It is worrying that in all countries a large proportion of students has unsuccessfully tried to reduce the time spent on the internet or on digital devices. Figure 34 shows that this has been especially the case in Portugal (45%), Romania (43%), and Ireland (43%), not surprisingly 3 of the 4 countries with the highest number of hours spent on-line or on digital devices.

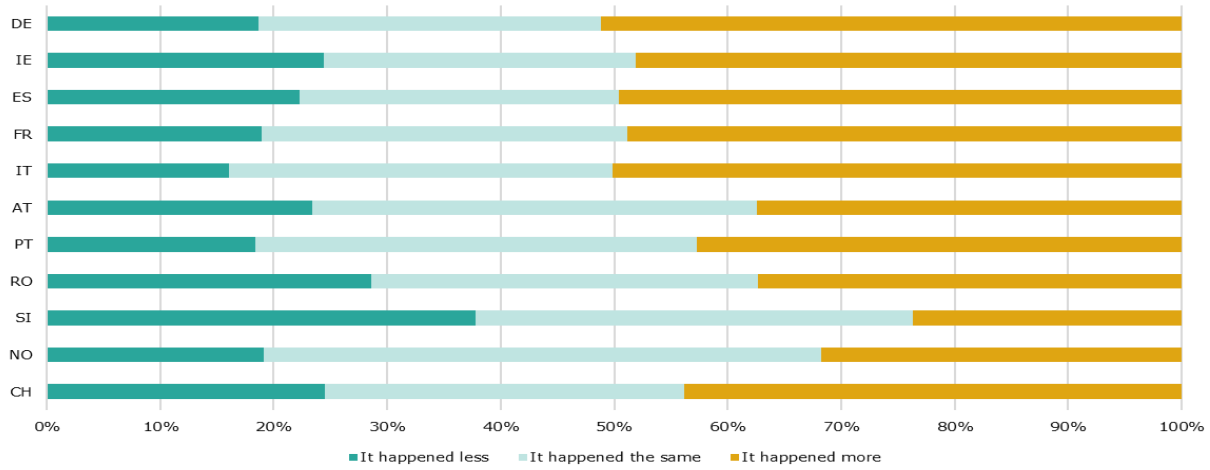
Figure 34: Share of students declaring to have been unable to reduce the number of hours spent on the internet or digital devices



Source: KiDiCoTi consortium calculations.

Given the substantial amount of time during lockdown spent using digital devices, an analysis of the occurrence of cyberbullying[88] during the lockdown is called for (Figure 35). The data show that in five countries (Germany, Italy, Spain, France and Ireland) around 50% of students have been more exposed to at least one form of cyberbullying during the lockdown than before[89]. Moreover, an average of 44% (across the 11 countries covered by the survey) reports a higher exposure to cyberbullying during the lockdown whereas only 22% report a reduction during the same period.

Figure 35: Share of students who have been the victim of cyberbullying (CB) during the lockdown (compared to the pre-lockdown period)



Source: KiDiCoTi consortium calculations.

Finally, parents were asked for their opinions on the types of interventions schools could put in place to support parents and children during the lockdown. Three interventions stand out in the responses: (1) support to activities that allow interaction with schoolmates; (2) guidance on how to support the children with distance learning activities and homework; and (3) ideas for extracurricular activities that could be done at home. This indicates that parents, children, teachers and schools were ill-prepared for a sudden move to remote and on-line learning, but it also fits very well with conclusions from the pre-COVID evidence on the importance of need for social interaction for students' well-being.

1.5.2 COVID-19 and the well-being of higher education students

COVID-19 and the related containment measures have posed a great challenge to student well-being, especially well-being of higher education students. As individuals progress through the education system, academic challenges increase and so does the pressure to perform well. Add to this lifestyle changes, relocation to a different geographical area or even abroad, a newly gained freedom to make decisions, and a higher form of mental pressure is to be expected. Indeed, evidence shows depressive symptoms occur more often among university students than among the general population[90].

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88 The KiDiCoTi questionnaire qualifies four behaviours as cyberbullying: (1) "nasty or hurtful messages sent to me" (i.e. to the student answering the question); (2) "nasty or hurtful messages about me were passed around or posted where others could see"; (3) "I was left out or excluded from a group or activity on the internet"; (4) "I was threatened on the internet".

89 Some of this phenomenon may have been a "transfer" of in-person bullying, which was no longer possible as children were only interacting with their peers online.

90 Wörfel F., Guys, B., Lohmann, K., Töpritz, K. and Kleiber, D. (2016). Mental health problems among university students and the impact of structural conditions. Journal of Public Health, 24(2), 125–33.

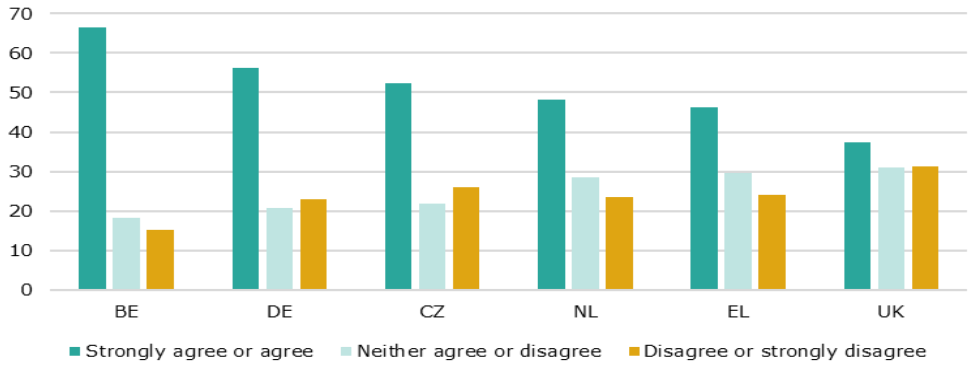
During the COVID-19 pandemic several factors may have negatively affected the well-being of higher education students. These include changes in social and family life, lack of social life and fear of illness, the sudden switch to remote teaching and learning, the cancellation or postponement of important events such as graduation ceremonies or participation in study exchange programmes or traineeships, the loss of part-time jobs, and the increased uncertainty about labour market prospects after graduation.

One cross-country data source that examines the impact of COVID-19 on higher education students' well-being is the COVID-19 International Student Well-being Study (C19 ISWS)[91]. Several studies based on the C19 ISWS data make it possible to take a closer look at students in one or more higher education institutions in Greece, Germany, the Netherlands, Belgium, Czechia and the United Kingdom[92].

Following the COVID-19 pandemic, most higher education institutions around the world were quickly forced to move their courses online. It might be expected that such an unexpected change could pose a serious threat to student well-being by inducing academic-related stress and anxiety, in turn leading to a reduced memory span, distraction, lack of confidence and poor reasoning power[93].

As shown in Figure 36, in all the European countries here considered a large proportion of students perceive a significantly increased workload during the COVID-19 pandemic; this perception, it should be noted, may be biased.

Figure 36: "My university/college workload has significantly increased during the COVID-19 outbreak"



Source: C19 ISWS Survey

91 Data were collected on students from 110 higher education institutions located in 26 different countries during the spring of 2020. Participants were contacted online and asked to compare their current situation with that before the COVID-19 outbreak. For more information on C19 ISWS, see Van de Velde S., Buffel, V., Bracke, P., Van Hal, G., Somogyi, N.M., Willems, B., Wouters, E. and C19 ISWS consortium (2021). The COVID-19 International Student Well-being Study. In: Scandinavian Journal of Public Health, 49(1), 114-122.

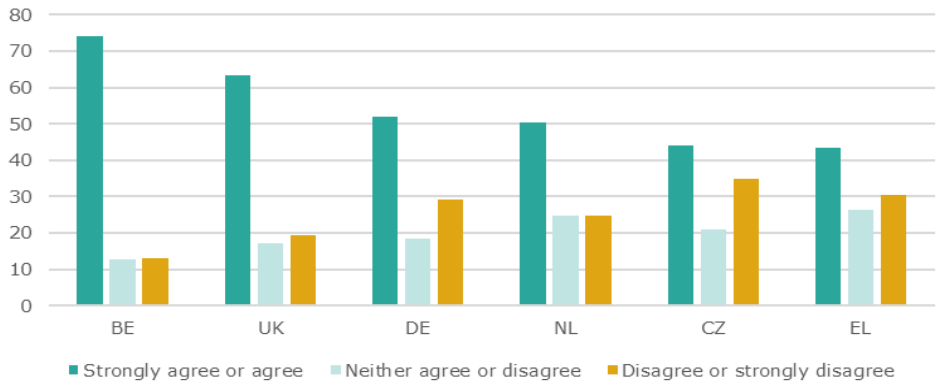
92 Stathopoulou T., Mouriki A. and Papaliou O. (2020). Student well-being during the COVID-19 pandemic in Greece. Results from the C19 ISWS Survey. A National Centre for Social Research paper (EKKE); Busse, H. and Zeeb, H. (2020). International COVID-19 Student Well-being Survey (C19 ISWS). Kurzbericht zu Ergebnissen der Online-Befragung für den Standort Bremen; Super, S. and van Disseldorp, L. (2020). COVID-19 International Student Well-being Study (C19 ISWS). Data from Wageningen University and Research. De Man, Buffel, V., van de Velde, S. Bracke, P., Van Hal, G.F. and Wouters, E. (2021). Disentangling depression in Belgian higher education students amidst the first COVID-19 lockdown (April-May 2020). Archives of Public Health, 79(1), 1-10; van de Velde, S., Buffel, V., Wouters, E., Van Hal, G.F., Bracke, P. and Colman, L. (2020) COVID-19 International Student Well-being Study. Eerste resultaten Belgische cijfers. Klusáček, J. Kudrnáčová, M. and Soukup, P. (2020). Studenti VŠ v první vlně pandemie: COVID-19 International Student Well-being Study. Rabiee-Khan, F. and Biernat, K. (2021). Student well-being during the first wave of COVID-19 pandemic in Birmingham, UK. Results from the C19 ISWS Survey.

93 Aronen, E.T., Vuontella, V., Steenari, M.R., Salmi, J. and Carlson, S. (2004). Working memory, psychiatric symptoms, and academic performance. In: Neurobiology of Learning and Memory, 83(1), 33-42.

Furthermore, following COVID-19 and the related lockdown, a high percentage of students, especially in Belgium and Greece, reported concern about their ability to successfully complete the academic year.

The change in teaching methods resulting from the COVID-19 pandemic created a source of stress for higher education students (Figure 37) like it did for the respondents of the KiDiCoTi survey (see above). This seems to be especially the case in Belgium and in the United Kingdom. Possible reasons include not having a computer, affordable access to the internet, a stable internet connection or even basic digital skills.

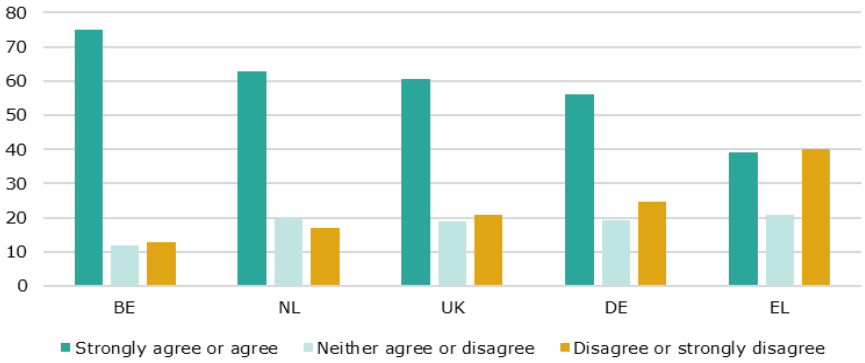
Figure 37: "The change in teaching methods resulting from the COVID-19 outbreak has caused significant stress to me"



Source: C19 ISWS Survey

Indeed, the move to an online learning environment was a major adjustment. For instance, the content of many courses, which was originally designed for face-to-face teaching, had to be revised, and student assessments had to be changed to an online format. As shown in Figure 38[94], the implications of the sudden switch to online learning created a lot of uncertainty among students. The percentage of students being uncertain about expectations since the pandemic was high, particularly in Belgium.

Figure 38: "I have known less about what is expected of me in various course modules/units since the COVID-19 outbreak"

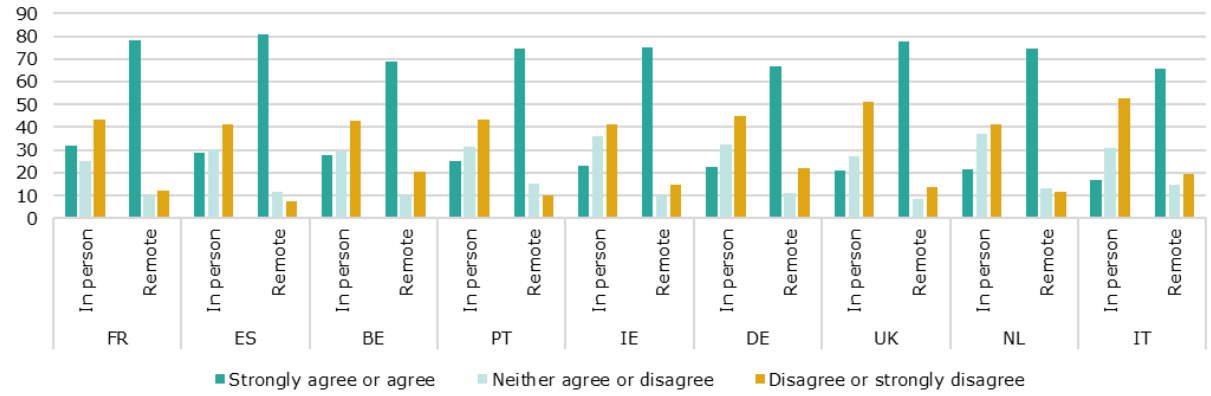


Source: C19 ISWS Survey

[94] Data from CZ are not shown in this table given that the wording of the relevant question is slightly different from that in the other countries.

Data from a global survey on "Student perceptions of remote learning"[95], which contacted participants through Instagram, corroborate the hypothesis that the switch from in-person to online learning was a source of great preoccupation for higher education students, affecting their learning motivation as well as their ability to concentrate. Considering only those European countries for which the number of respondents is 99 or more, there is consistent evidence indicating that motivation in online learning environments is considerably lower compared to in-person classes[96]. Students from different European countries systematically report to be *more distracted in online* environments compared to in-person settings (Figure 39).

Figure 39: "I am often distracted when doing course work or attending classes"



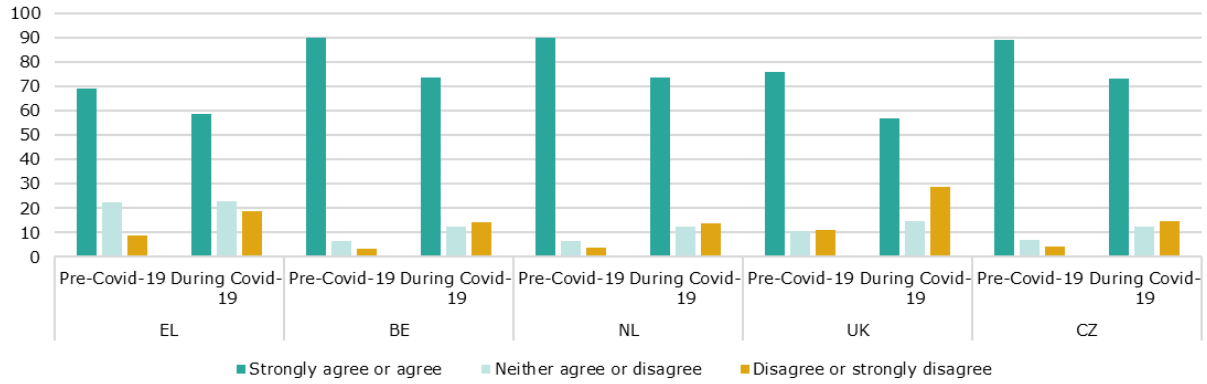
Source: Student perceptions of remote learning.

In addition to academic stress, COVID-19 is likely to cause increased financial stress, for example due to job loss or parents' decreased ability to contribute to the cost of their children's education, having a negative impact on higher education students' well-being. Financial stress can cause depression and lack of sleep. It may have a negative impact on cognitive ability because of concentration problems. As illustrated in Figure 40, the C19 ISWS survey shows that the pandemic had a negative impact on students' ability to cover their monthly costs. The proportion of students reporting to be financially stressed has significantly increased during COVID-19.

95 Stein, G. (2020). Student perceptions of remote learning, Harvard Dataverse, V1.

96 One should bear in mind that the samples from the two surveys used here are both convenience samples and hence are not representative of the student population in higher education. This means that the results should be interpreted cautiously as they may be subject to some bias. E.g. it is possible that participation in the surveys was higher among students suffering from stress due to COVID-19 compared to their peers who did not experience any stress. A study of student motivation during the remote learning during pandemic should not necessarily lead to more general conclusions on student motivation in online learning environments in non-crisis periods (e.g. students who follow exclusively-online masters' courses). The motivation of a student who expected to attend physical classes but was forced to go online due to a pandemic, and the motivation of a student who chooses to do an online degree, will not be the same as their initial expectations were not the same.

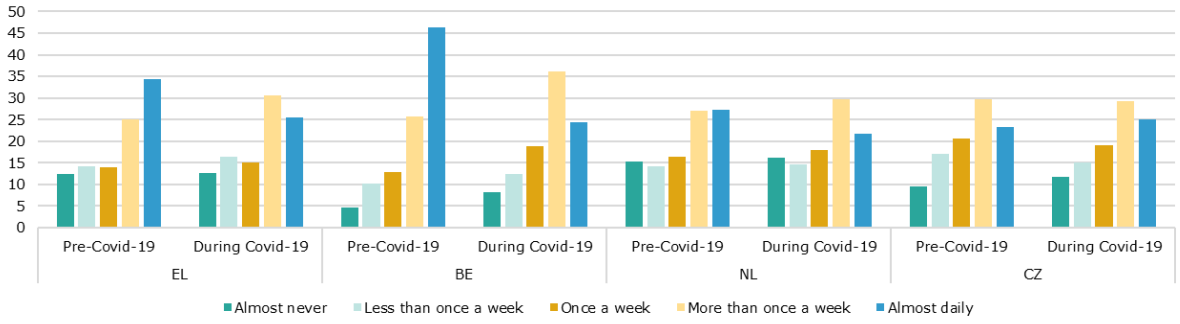
Figure 40: "I had sufficient financial resources to cover my monthly costs"



Source: C19 ISWS Survey.

Regular physical activity contributes to well-being: research has demonstrated that physical exercise may improve mood, the ability to sleep and self-esteem and can enhance cognitive functioning[97]. Fewer occasions to exercise through lockdown measures as well as greater anxiety caused by both academic and financial stress as a result of COVID-19 could be expected to have increased physical inactivity among students. Findings from the C19 ISWS survey[98] indeed show a decrease in the share of students performing almost daily "moderate" physical activities (e.g. easy cycling, walking) in all countries considered but Czechia (Figure 41). The opposite result, however, is observed in Figure 42 for "vigorous" physical activities (defined as at least 30 minutes of fast cycling, aerobics, running, lifting heavy weights): the proportion of students who engage almost daily in these types of activities increased during the pandemic (with the exception of Dutch students).

Figure 41: Frequency of moderate physical activity before and during COVID-19

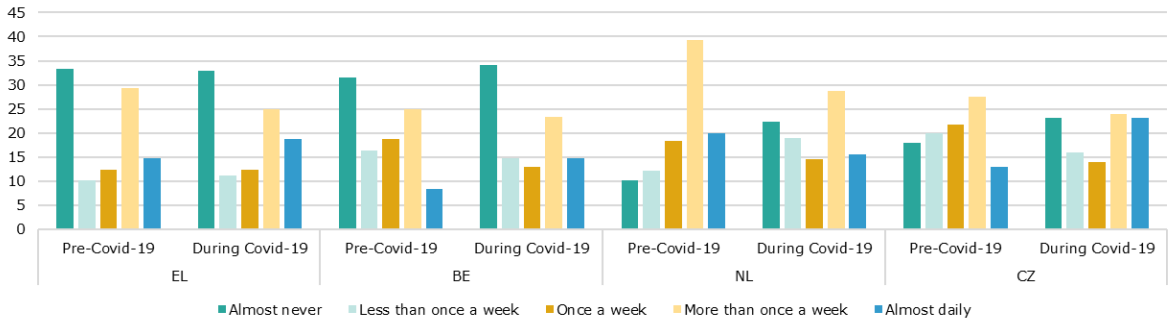


Source: C19 ISWS Survey.

97 Lambourne, K. (2006). The relationship between working memory capacity and physical activity rates in young adults. Journal of Sports Science and Medicine, 5(1), 149–153.

98 Relevant information about the UK, though available, is unfortunately not comparable with data from other countries since UK respondents were given the possibility to select an additional option, i.e. "twice a week".

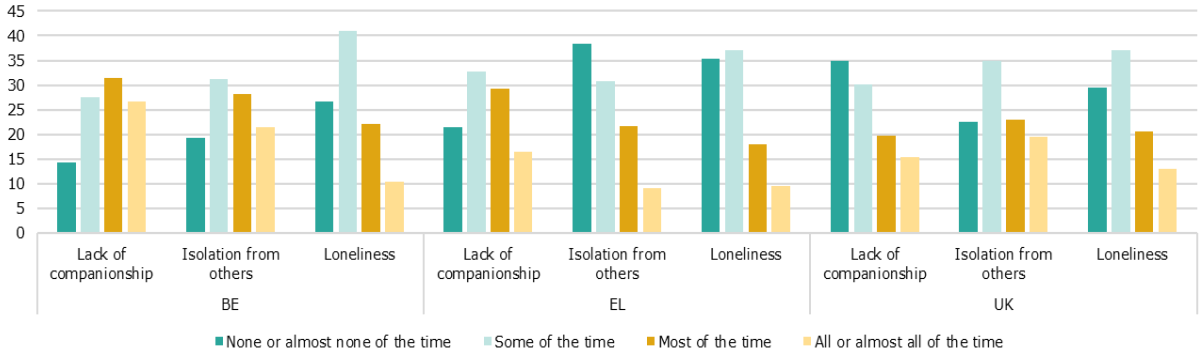
Figure 42: Frequency of vigorous physical activity before and during COVID-19



Source: C19 ISWS Survey.

COVID-19 social distancing and lockdown measures meant that students could not meet up with their family (unless they were in the same household), friends and colleagues, impacting negatively on their well-being. Indeed, evidence associates loneliness with clinical insomnia[99], depression and anxiety[100]. C19 ISWS data from Belgium, Greece and the United Kingdom indicate that a relatively large proportion of students reported a lack of companionship, isolation from others, and loneliness at least some time during the week prior to the interview (Figure 43).

Figure 43: Feelings of loneliness during the pandemic



Source: C19 ISWS Survey.

Overall, the available evidence suggests that the pandemic had a negative impact on higher education students' well-being, with increased academic and financial stress, a lack of regular moderate physical activity (partially compensated by an increase in regular vigorous physical activity) and an increased sense of isolation and loneliness.

This may have consequences in both the short- and long-term both at micro and macro level. For example, anxiety is associated with lower academic performance, a higher drop-out risk, delays in graduation[101] and worse labour market prospects. At macro level, since higher education is heavily

99 Kokou-Kpolou, C.K., Megalakaki, O., Laimou, D. and Kousouri, M. (2020). Insomnia during COVID-19 pandemic and lockdown: prevalence, severity, and associated risk factors in French population. In: Psychiatry Research, 290, 113–128.

100 Hoffart, A., Sverre U.J., Ebrahimi, O.V. (2020). Loneliness and social distancing during the COVID-19 pandemic: Risk factors and associations with psychopathology. In: Frontiers in Psychiatry.

101 Using data on Swedish university students, a study (i.e. Andersson, C., Johnsson, K.O., Berglund, M. and Öjehagen, A. (2009). Stress and hazardous alcohol use: Associations with early dropout from university. Scandinavian Journal of Public Health, 37(3), 713–719) finds a close association between stress and dropout. According to the American College of Health Association, in 2015 30% of students stated that stress interfered with their academic achievement within the previous year. Finally, there is some evidence that financial stress makes college students less likely to graduate on time.

subsidised by governments, higher drop-out rates may lead to an inefficient use of public money and a lower future economic growth. To alleviate these effects and assist students in these difficult circumstances, higher education institutions could put in place mechanisms to monitor stress among their students. Easy, accessible mental help support could be provided by these institutions (e.g. mindful mediation can be quite effective in reducing stress and anxiety in higher education students[102]).

1.5.3 Well-being and resilience of VET students under COVID-19

The analysis so far has made it clear that the transition from the physical space of schools and workplaces to being secluded at home and learning online has come at a cost. The extraordinary experience of this pandemic has placed a lot of stress on the education and training systems as well as on career guidance and counselling services. Besides the obvious challenges, it is possibly even more important to find out how countries were able to support vocational learners (both in school-based VET and apprenticeships) in this overnight transition.

According to Cedefop's *Network of Ambassadors tackling early leaving from Vocational Education and Training*[103], the socio-economic impact of COVID-19 was felt hardest by the most vulnerable learners across Europe. While the consequences of the crisis might be similar irrespective of the level of education, they are expected to be more serious for the VET sector. According to an online survey conducted by the European Commission in 2020 on how VET ensured continuity of learning and teaching through COVID[104], VET learners may be at a greater disadvantage than those from other educational tracks. For many of them, living in poverty with no digital devices and/or web access at home, or living in remote areas with a lack of learning materials or school supplies, the school closures due to COVID-19 have plunged them further into hardship.

Cedefop CareersNet[105] experts drew attention in particular to similar issues concerning guidance and counselling, for example the social digital divide, the potential higher drop-out rates in VET, geographical disparities, and an increase in anxiety and psychological disorders in relation to the COVID-19 crisis. They noted that demand for psychosocial support increased considerably, reflecting the uncertainty created by the pandemic for specific groups, particularly end-year learners. To help VET learners stay in education and training and cope with increased anxiety and psychological disorders, the approach taken by education and training systems and lifelong guidance systems (educational sector) was broadly the same even though the level of actual implementation might have differed across countries. On the one hand, the goal was to make tailored support available to vulnerable individuals based on their specific needs or support the whole family rather than the individual where necessary. Although distant support was the default, face-to-face services were not excluded if deemed necessary and where resources were available. Attempts were made to establish personal contact with learners over the phone, e.g. to support those at risk of early leaving from education and training (ELET). Where necessary and possible, both learners and their parents were provided with support. Finally and in the best case scenario, the support was generally wide-ranging, involving teachers, guidance practitioners, social workers and psychological counsellors. The aim was to support learning and well-being, and qualities such as resilience and adaptability.

E.g. Letkiewicz, J., Lim, H., Heckman, S., Bartholomae, S., Fox, J. and Montalto, C.P. (2014). The path to graduation: Factors predicting on-time graduation rates. In: Journal of College Student Retention: Research, Theory and Practice, 16(3), 351-371.

102 Bamber, M.D and Schneider, J.K. (2016). Mindfulness-based meditation to decrease stress and anxiety in college students: A narrative synthesis of the research. Educational Research Review, 18, 1-32.

103 Cedefop (2020). Digital gap during COVID-19 for VET learners at risk in Europe. Synthesis report based on preliminary information on seven countries provided by Cedefop's Network of Ambassadors tackling early leaving from VET.

104 European Vocational Skills Week 9-13 November 2020.

105 Cedefop (2020). Note on lifelong guidance and the COVID-19 pandemic. Responses from Cedefop's CareersNet.

Particular attention should be paid to apprentices, who, unlike school-based VET learners, spend an extensive period of their studies at an employer, with whom they have a contractual link and receive remuneration. While they face the same challenge as their peers in school-based VET and may need the same type of support (as outlined above), they also face additional issues such as the closure of their training company. During the lockdown, apprentices lost key learning outcomes (work and interpersonal skills) that they would have gained at the workplace[106]. Key challenges related to COVID-19 included: (i) a decrease in the supply of apprenticeships; and (ii) severe disruptions in the normal provision of education and training for those apprentices who remained in training[107].

Some initiatives were taken, often by public employment services and/or educational authorities, to mitigate the economic impact on apprentices, such as allowing those working under the labour code to access labour market measures or unemployment benefits, until they could resume their in-company training. Apprentices whose contracts were not covered by the labour code, usually received a State grant. Measures are now needed to enable apprentices to catch up on learning.

The current crisis has shown that there is no digital inclusion without social inclusion. Marginalised and vulnerable learners are less likely to be involved in distance learning procedures; disconnecting for a longer period may lead them to drop-out from their VET programme. At the same time, evidence shows that existing digital learning formats do have their limits and thus cannot replace or bring the same social benefits as the physical space of schools and workplaces.

106 Cedefop (2020). How are European countries managing apprenticeships to respond to the COVID-19 crisis? Synthesis report based on information provided by Cedefop community of apprenticeship experts.

107 According to the European Alliance for Apprenticeships (EAfA) Pledge Monitoring Survey of EAfA members, conducted between February and April 2021; EAfA Monitoring Survey 2019-2020, Apprenticeship Support Services.