



4

The Learning Environment

Students perform better in orderly classrooms and with the support of engaged teachers and parents. Using reports from students, school principals and, for some countries, parents, this chapter describes and analyses six key aspects of the learning environment: teacher and student behaviours that affect learning, the disciplinary climate, teacher-student relations, how teachers stimulate students' engagement in reading, parents' involvement in and expectation of schooling, and school principals' leadership.

Research into what makes schools effective finds that learning requires an orderly and co-operative environment, both in and outside the classroom (Jennings and Greenberg, 2009). In effective schools, academic activities and student academic performance are valued by both students and teachers (Scheerens and Bosker, 1997; Sammons, 1999; Taylor, Pressley and Pearson, 2002).

The learning environment is also shaped by parents and school principals. Parents who are engaged in their children's education are more likely to support their school's efforts and participate in school activities, thus adding to available resources (Epstein, 2001). Because they want their children to receive the best education possible, parents often put pressure on schools to raise their academic standards. School principals, in turn, can define their schools' educational objectives and guide their schools towards achieving them.

The results from PISA 2000 and PISA 2003 suggested that students and schools perform better when parental expectations are high, classrooms are well-disciplined and relations between students and teachers are amiable and supportive. Results from PISA 2009 confirm these findings. In general, students perform better in schools with more disciplined classrooms, partly because such schools tend to have more students from advantaged socio-economic backgrounds, who generally perform better, and partly for reasons unrelated to socio-economic background. Parental expectations of both their children and their children's schools are also closely related to socio-economic background and affect the learning environment.

This chapter describes the learning environment in the participating countries in detail, using reports from students and principals and reports from parents in the countries that administered the optional questionnaire for parents. More specifically, this chapter examines the quality of teacher-student relations and the disciplinary climate inside classrooms. It also analyses the degree to which student and/or teacher behaviour hinders the quality of instruction, how parents can encourage school administrators to raise standards and improve instruction, and how much school principals are involved in school matters.

Data presented in this chapter should be interpreted with caution (see Box IV.1.1). Students and principals in different countries, or even in different schools within the same country, may not apply the same criteria when assessing the school climate. For example, principals in countries with generally low absenteeism may consider a modest level of absenteeism in their school to be a major disciplinary problem. Meanwhile, students are likely to consider the disciplinary climate from the perspective of their experiences in other classes or schools, rather than measured against some objective standard or national average. In addition, respondents may adjust their responses in the belief that their genuine perceptions may be considered unacceptable within their society. Despite these problems of interpretation, many of the patterns revealed by PISA 2009 are strikingly similar across countries.

TEACHER-STUDENT RELATIONS

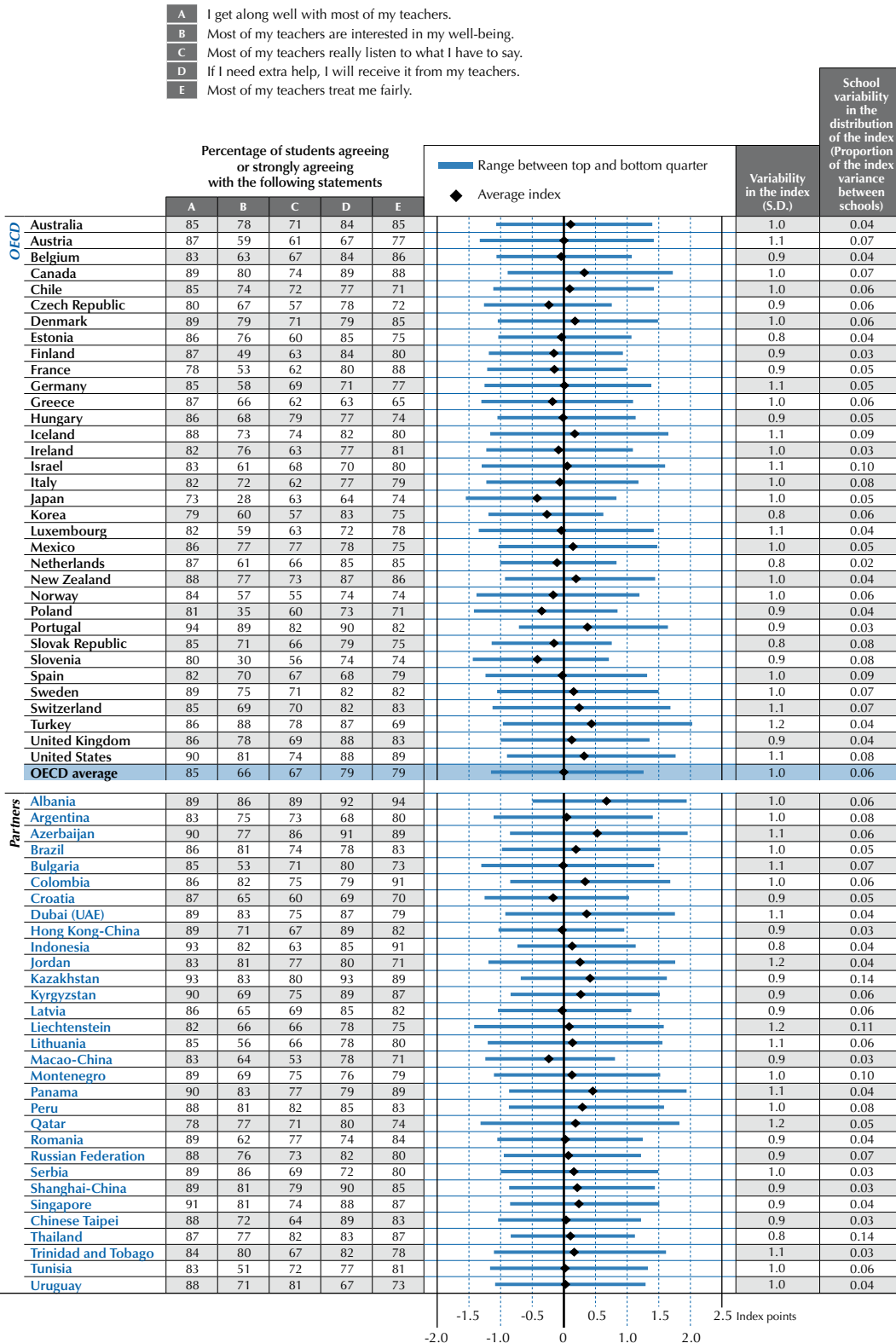
Positive teacher-student relations are crucial in establishing an environment that is conducive to learning. Research finds that students, particularly disadvantaged students, learn more and have fewer disciplinary problems when they feel that their teachers are devoted to their academic success (Gamoran, 1993) and when they have good working relations with their teachers (Crosnoe, Johnson and Elder, 2004). One explanation is that positive teacher-student relations help transmit social capital, create communal learning environments and promote and strengthen adherence to norms conducive to learning (Birch and Ladd, 1998).

PISA 2009 asked students to indicate the extent of their agreement with several statements regarding their relationships with teachers in school. These statements include whether they get along with the teachers, whether teachers are interested in their personal well-being, whether teachers take the student seriously, whether teachers are a source of support if the student needs extra help, and whether teachers treat the student fairly. This information was combined to create a composite *index of teacher-student relations* such that the index has an average of zero and a standard deviation of one for the OECD countries. Higher values indicate better teacher-student relations.

Results from PISA 2009 suggest that students in the OECD are generally satisfied with the quality of teacher-student relations. For example, on average across OECD countries, 85% of students reported to agree or strongly agree that they get along with their teachers, 79% reported that teachers treat them fairly, 79% reported that teachers are available if students need extra help, 67% reported that teachers really listen, and 66% reported that their teachers are interested in their well-being (Figure IV.4.1).




■ Figure IV.4.1 ■
Students' views of teacher-student relations
Index of teacher-student relations based on students' reports



Note: Higher values on the index indicate positive teacher-student relations.

Source: OECD, PISA 2009 Database, Table IV.4.1.

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Although a large majority of students in OECD countries reported good teacher-student relations, there is large variation in the *index of teacher-student relations* across OECD countries. On average, the *index of teacher-student relations* is highest in Turkey, Portugal, Canada and the United States, and lowest in Japan, Slovenia, Poland and Korea. For example, over 80% of students in the United States agree or strongly agree that their teachers are interested in their well-being, but only 28% of students in Japan and 30% of students in Slovenia reported teachers' interest in their well-being. Differences in student-reported teacher interest in their well-being may reflect either different student expectations of their teachers' level of involvement or different roles that teachers assume with respect to their students. In either case, a low percentage of agreement with these statements indicates a mismatch between student expectations and what teachers are actually doing. That discrepancy may influence the quality of the learning environment within schools.

Although students reported positive relationships between students and teachers across OECD countries, not all students within each country experience the same type of relationship with their teachers. Teacher-student relations often vary widely within countries, as measured by the standard deviation of the *index of teacher-student relations*. Within-country variation (*i.e.* the standard deviation at the student level) is the lowest in the Netherlands, Korea, the Slovak Republic and Estonia, signalling that teacher-student relations are relatively similar across students and schools in those countries. In Turkey, Israel, Iceland, Switzerland, Luxembourg, Austria, the United States and Germany, there is more variation in teacher-student relations.

Students in partner countries and economies also generally reported good relationships with their teachers. As is the case in OECD countries, most students reported that they get along with their teachers (87%), that teachers treat them fairly (82%), that teachers are available if extra help is needed (81%), that teachers are interested in students' well-being (74%) and that teachers really listen (73%). The *index of teacher-student relations* is highest in Albania, Azerbaijan, Panama and Kazakhstan. This index is lowest in Macao-China and Croatia among the partner countries and economies, but their index scores are higher than those for the four lowest OECD countries discussed above. The variation in the *index of teacher-student relations* is lowest in Indonesia and Thailand, signalling that teacher-student relations are relatively similar across students and schools in those countries, and highest in Qatar, Liechtenstein and Jordan, where there is more variation in the quality of relations that students have with their teachers.

DISCIPLINARY CLIMATE

The disciplinary climate in the classroom and school can also affect learning. Classrooms and schools with more disciplinary problems are less conducive to learning, since teachers have to spend more time creating an orderly environment before instruction can begin (Gamoran and Nystrand, 1992). More interruptions within the classroom disrupt students' engagement and their ability to follow lessons.

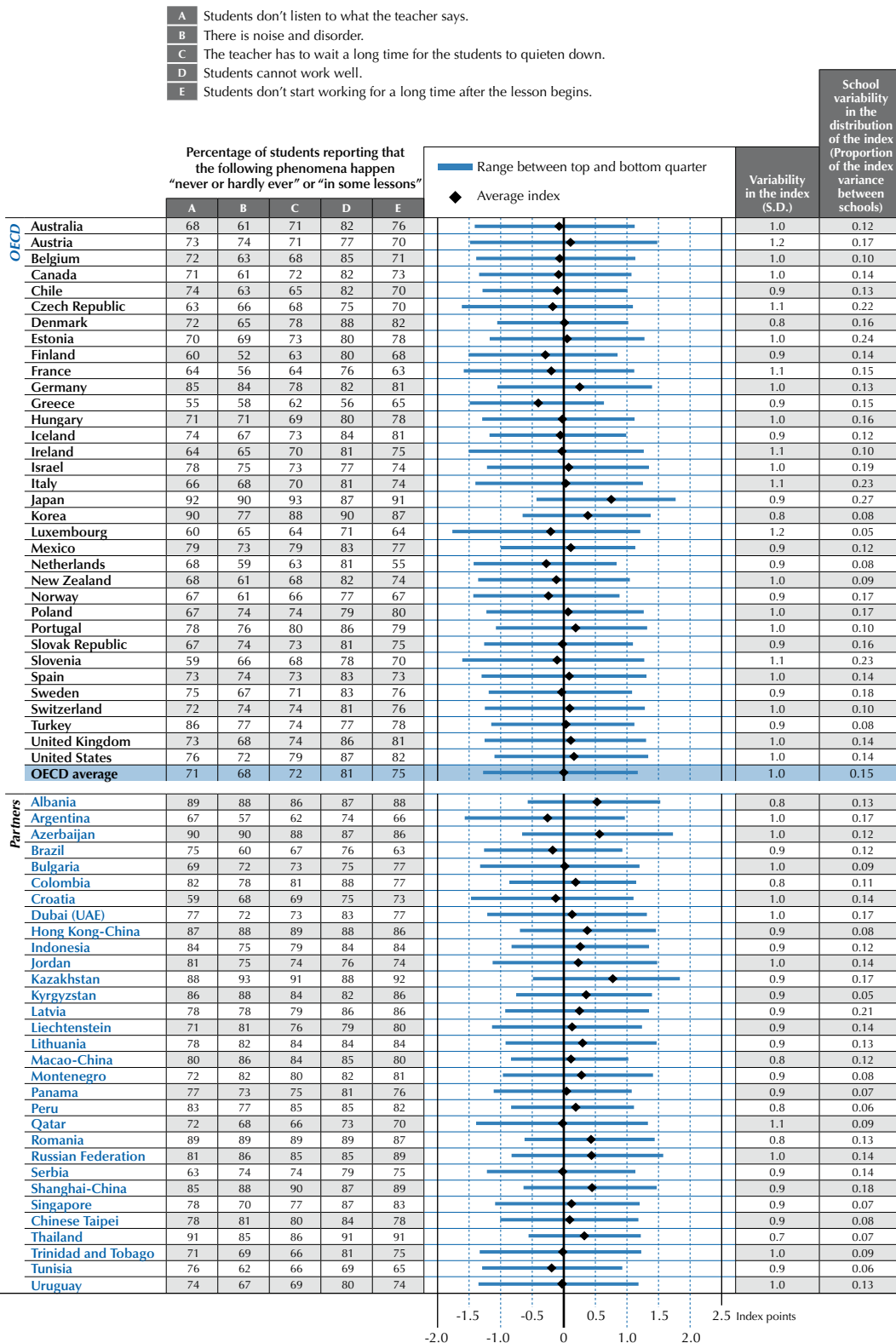
Students were asked to describe the frequency with which interruptions occur in reading lessons. This included how often – never, in some, in most or in all lessons on the language of instruction – students don't listen to what the teacher says, there is noise and disorder, the teacher has to wait a long time for students to quieten down, students cannot work well and students don't start working for a long time after the lesson begins. These responses were combined to create a composite *index of disciplinary climate* such that the index has an average of zero and a standard deviation of one for the OECD countries. Higher values indicate a better disciplinary climate within the classroom. When comparing estimates across school systems, it is important to keep in mind that several factors beyond students' experiences in school may determine the patterns of these responses (see Box IV.1.1).

The majority of students in OECD countries enjoy orderly classrooms in their lessons on the language of instruction. Some 75% of students reported that they never or only in some lessons feel that students don't start working for a long time after the lesson begins, 71% of students reported that they never or only in some lessons feel that students don't listen, 68% reported that noise never or only in some lessons affects learning, 72% reported that their teacher never or only in some lessons has to wait a long time before students settle down, and 81% of the students attend classrooms where they feel they can work well practically most of the time (Figure IV.4.2).

Across OECD, the *index of disciplinary climate* is highest in Japan and Korea. The *index of disciplinary climate* in Korea is one-third of a standard deviation higher than that of the OECD average, and Japan has a disciplinary climate that is three-quarters of a standard deviation higher than the OECD average level. In contrast, the student-reported *index of disciplinary climate* in Greece, Finland, the Netherlands, Norway, Luxembourg and France is, on average, more than 20% of a standard deviation below the OECD average.




■ Figure IV.4.2 ■
Students' views of how conducive classrooms are to learning
Index of disciplinary climate based on students' reports



Note: Higher values on the index indicate a better disciplinary climate.

Source: OECD, PISA 2009 Database, Table IV.4.2.

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The *index of disciplinary climate* also varies within OECD countries. It varies the most in Luxembourg and Austria, and least in Korea and Denmark. In the latter group of countries, students across the school system experience relatively similar levels of classroom disruptions. In contrast, students in the former group of countries experience varying levels of classroom disruptions, and the teaching conditions in classrooms vary greatly, depending on the classroom or school. The variation in disciplinary climate can occur between or within schools. Higher levels of between-school variation mean that students and teachers within the same school share similar levels in the *index of disciplinary climate*. Such is the case in Japan, Estonia, Italy, Slovenia and the Czech Republic, where more than 20% of the variation in the *index of disciplinary climate* occurs between schools. In other school systems, most of the variation in the *index of disciplinary climate* occurs within schools, meaning that students and teachers experience different levels of classroom disruption, depending on their classmates, teachers or a combination of the two.

The disciplinary climate also varies between and within schools among partner countries and economies. Among these countries and economies, the *index of disciplinary climate* is at least one-third of a standard deviation above the OECD average level in Kazakhstan, Azerbaijan, Albania, Shanghai-China, the Russian Federation, Romania, Hong Kong-China, Kyrgyzstan and Thailand; but it is more than 10% of a standard deviation below the OECD average in Argentina, Tunisia, Brazil and Croatia. The *index of disciplinary climate* varies the most in Qatar, Jordan and Croatia and is most homogeneous in Thailand, Macao-China and Peru. In Latvia, it is more a school-level attribute, where more than 20% of the variance in the *index of disciplinary climate* occurs between schools.

HOW TEACHERS STIMULATE STUDENTS' ENGAGEMENT WITH READING

Volume III, *Learning to Learn*, highlights the positive and strong relationship between students' level of engagement with reading and how well they learn. Research suggests that students who are substantively engaged, that is, who are interested in what is being taught, learn much more than students who are only procedurally engaged, that is, who follow the rules and do assignments as required, or who have no interest in what is being taught. Research also suggests that more interaction between teachers and students in the classroom promotes substantive engagement. This occurs when teachers ask questions that require more than a simple recitation of received knowledge, and when teachers incorporate previous answers into subsequent questions and/or further discussion (Nystrand and Gamoran, 1991).

PISA 2009 asked students to evaluate their interactions with their teachers to measure the extent to which teachers stimulate students' engagement with reading. Students were asked to describe the frequency with which teachers ask students to explain the meaning of a text, ask questions that challenge students, give enough time for students to think about their answers, recommend a book or author to students, encourage students to express their opinions about a text, help students relate the stories they read to their lives, and show students how the information in the texts builds on what they already know. Students were asked to report whether each of these behaviours occurs "never or hardly ever", "in some lessons", "in most lessons", or "in all lessons". These answers were combined to create a composite *index of teachers' stimulation of students' reading engagement* such that the index has an average of zero and a standard deviation of one for the OECD countries. Higher values indicate greater involvement among teachers in stimulating students' engagement with reading according to students' reports. When comparing estimates across school systems, it is important to keep in mind that several factors beyond students' experiences in school may determine the patterns of these responses (see Box IV.1.1).

A large percentage of students in OECD countries reported that teachers actively stimulate their engagement with reading. For example, 60% of students reported that teachers give them enough time to think about their answers in most or all lessons. In Hungary, the United States and Turkey, more than 70% of students reported this to be the case in most or all lessons, while in Mexico, Greece, Korea and Norway, less than 50% of students reported that teachers give them enough time to think about their answers in most or all lessons. On average across OECD countries, 59% of students reported that teachers ask challenging questions in most or all lessons. In Denmark, Turkey and Greece, three-quarters or more of students reported that teachers ask challenging questions. In Finland, Sweden, Austria and Iceland, less than 45% of students reported that teachers ask such questions. Teachers can also stimulate reading engagement by encouraging students to express their opinions about a text. On average, among OECD countries, 55% of students reported that teachers encourage students in this way in most or all lessons. In Turkey, Poland and the United States, over two-thirds of students reported such encouragement, while in Korea, the Netherlands and Iceland, less than 40% of students reported that teachers encourage them to express their opinions about a text.

Student engagement with reading can also be stimulated by teachers asking students to explain the meaning of a text. On average among OECD countries, 52% of students reported that teachers do this in most or all of their lessons. Some 70% of students in Turkey and Denmark reported this, while less than 35% of students in Iceland, Sweden, Finland and the Netherlands reported that teachers ask them to explain the meaning of a text.



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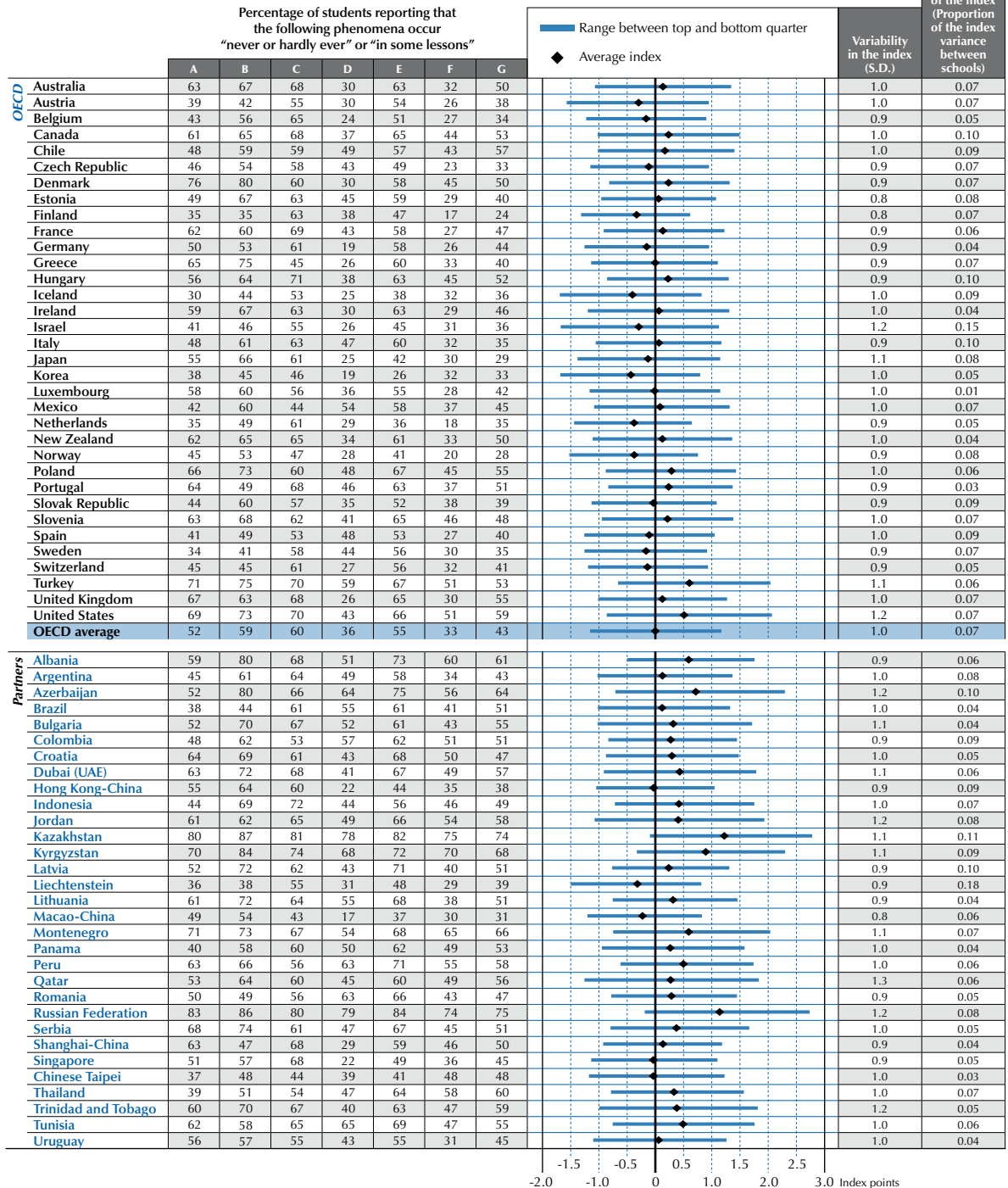
■ Figure IV.4.3 ■

Students' views of how well teachers motivate them to read

Index of teachers' stimulation of students' reading engagement based on students' reports

- A The teacher asks students to explain the meaning of a text.
- B The teacher asks questions that challenge students to get a better understanding of a text.
- C The teacher gives students enough time to think about their answers.
- D The teacher recommends a book or author to read.
- E The teacher encourages students to express their opinion about a text.
- F The teacher helps students relate the stories they read to their lives.
- G The teacher shows students how the information in texts builds on what they already know.

School variability in the distribution of the index (Proportion of the index variance between schools)



Note: Higher values on the index indicate higher teacher stimulation of reading engagement.

Source: OECD, PISA 2009 Database, Table IV.4.3.

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On average across OECD countries, 43% of students reported that, in most or all of their lessons, their teachers show how the texts they read build on what they already know. While more than 55% of students in the United States, Chile, Poland and the United Kingdom reported this kind of stimulation, less than 30% of students in Finland, Norway and Japan reported similar class activities.

On average among OECD countries, 36% of students reported that teachers recommend books or authors to students in most or all lessons. While in Mexico and Turkey more than half of all students reported that teachers recommend books to them, less than a quarter of students in Korea, Germany and Belgium reported this. Meanwhile, some 33% of all students, on average across OECD countries, reported that their teacher helps students relate the contents of a text to their lives in most or all lessons. More than half of all students in Turkey and the United States reported this, while less than 20% of student in Finland and the Netherlands did (Figure IV.4.3).

Taking all these responses together, according to students' reports, teachers prompt student interest in reading the most in Turkey, the United States and Poland. In these three countries, the average level of the *index of teacher stimulation of students' reading engagement* is at least one-quarter of a standard deviation above the OECD average. In contrast, in Korea, Iceland, the Netherlands, Norway and Finland, this level falls to one-third of a standard deviation or lower below the OECD average. In most school systems, this variation occurs within schools, signalling that different students within the same schools have different perceptions about the extent to which teachers stimulate their reading engagement. The variation is greatest in the United States, Israel, Turkey and Japan, while the *index of teacher stimulation of students' reading engagement* is relatively more homogeneous in Finland and Estonia.

Among partner countries and economies, teachers' role in stimulating interest in reading follows a similar pattern to that of OECD countries. The highest levels of the *index of teacher stimulation of students' reading engagement* are observed in Kazakhstan, the Russian Federation, Kyrgyzstan, Azerbaijan, Montenegro and Albania. In most countries, the greatest part of the variation occurs within schools. The variation between schools is largest in Liechtenstein and Kazakhstan, while there is relatively little variation between schools in Chinese Taipei and Panama.

STUDENT-RELATED FACTORS AFFECTING SCHOOL CLIMATE

The learning atmosphere in schools is also influenced by student and teacher behaviour (OECD, 2009b). PISA 2009 asked school principals to indicate the extent to which learning is hindered by behaviours such as student absenteeism, the use of alcohol or illegal drugs, bullying, disruption of classes by students, and students' lack of respect for teachers. These questions were combined to create a composite *index of student-related factors affecting school climate* that has a mean of zero and a standard deviation of one in the OECD countries. Positive values reflect principals' perceptions that student-related behaviours hinder learning to a lesser extent, and negative values indicate that school principals believe students' behaviour hinders learning to a greater extent compared to the OECD average. When comparing estimates across school systems, it is important to keep in mind that several factors beyond principals' experiences in school may be determining the patterns in these responses (see Box IV.1.1).

Most students attend schools in which principals reported that student-related factors affect instruction "very little" or "not at all". Nonetheless, a substantial number of students attend schools whose principal reported that student-related factors hinder learning to "some extent" or "a lot". Across OECD countries, 48% of students attend schools whose principals reported student absenteeism as a problem; 33% whose school principals reported that students skipping lessons is a problem; 40% whose school principals reported that student disruptions in class is a problem; 24% whose principals reported a lack of student respect for teachers; 9% where student drug use hinders learning; and 14% of students in the OECD countries attend schools where the principal reported that bullying hinders student learning to "some extent" or "a lot" (Figure IV.4.4).

The responses of school principals indicate that learning is disrupted by student behaviour the most in Turkey, where the average student attends a school in which the *index of student-related factors affecting school climate* is more than one and a half standard deviations below the OECD average. School principals in Finland, Canada, Slovenia, the Slovak Republic, Ireland and Austria also reported high levels of student behaviours that hinder student learning. In these six countries, the *index of student-related factors affecting school climate* is more than one-fifth of a standard deviation below that of the OECD average. In contrast, student behaviour is less of a concern in Japan, Korea, Denmark, Belgium and Mexico, where the average student attends a school that is more than one-fifth of a standard deviation above the OECD average. Within countries, the level of student disruption of classes is relatively homogeneous in Norway, the United Kingdom, Finland and the Slovak Republic and heterogeneous in Turkey, Chile, Hungary and Greece.

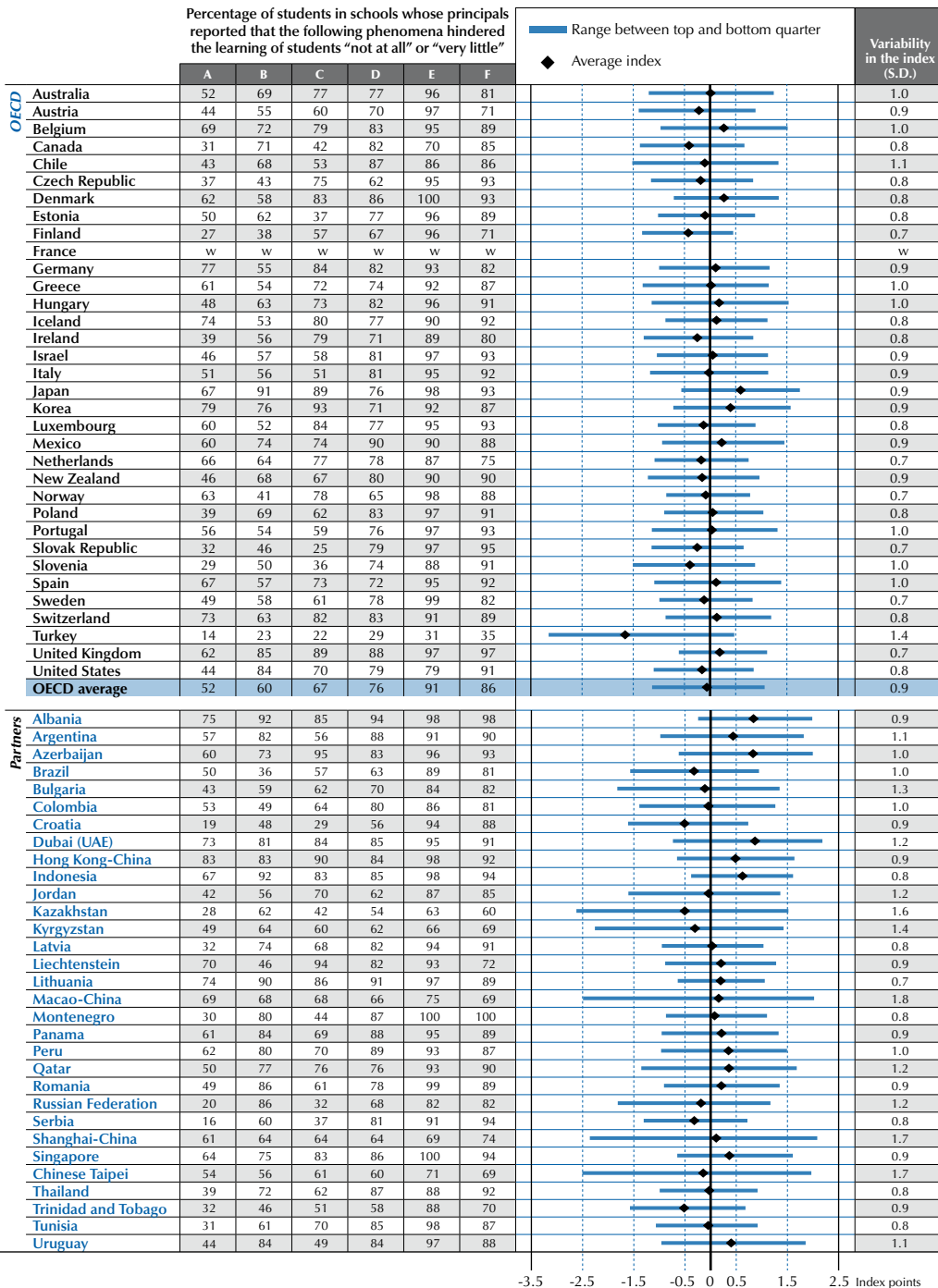


■ Figure IV.4.4 ■

School principals' views of how student behaviour affects students' learning

Index of student-related factors affecting school climate based on school principals' reports

A	Student absenteeism
B	Disruption of classes by students
C	Students skipping classes
D	Students lacking respect for teachers
E	Student use of alcohol or illegal drugs
F	Students intimidating or bullying other students



Note: Higher values on the index indicate a positive student behaviour.

Source: OECD, PISA 2009 Database, Table IV.4.4.

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In 6 of the 31 partner countries and economies, the average student attends a school in which the *index of student-related factors affecting school climate* is more than one-fifth of a standard deviation below the OECD average. In Trinidad and Tobago, Croatia and Kazakhstan, the average student attends a school that is more than half a standard deviation below the OECD average, while in Dubai (UAE), Albania, Azerbaijan and Indonesia, students disrupt learning to a lesser extent, on average. In these countries, the average student attends a school that is half a standard deviation above the OECD average in the *index of student-related factors affecting school climate*. Within countries, the level of student behaviour that hinders learning is relatively homogeneous in Lithuania, Thailand, Tunisia and Indonesia and relatively heterogeneous in Macao-China, Shanghai-China, Chinese Taipei and Kazakhstan.

TEACHER-RELATED FACTORS AFFECTING SCHOOL CLIMATE

As described in Chapter 2, students in more favourable learning environments tend to perform better in reading. This is corroborated by the literature on effective schools and learning environments, which suggests that learning is best accomplished when students have good relations with their teachers (Jennings and Greenberg, 2009), and when teachers have high expectations for their students, especially when those students are from disadvantaged backgrounds (Gamoran, 1993; Gamoran *et al.*, 1997; Jussim and Harber, 2005).

To determine the extent to which these and other teacher-related behaviours influence student learning across schools and within school systems, school principals were asked to report the extent to which they perceived learning in their schools to be hindered by such factors as teachers' low expectations of students, poor student-teacher relations, absenteeism among teachers, staff resistance to change, teachers not meeting individual students' needs, teachers being too strict with students and students not being encouraged to achieve their full potential. The responses were combined to create an *index of teacher-related factors affecting school climate* that has a mean of zero and a standard deviation of one in the OECD countries. Positive values reflect principals' perceptions that teacher-related behaviours hinder learning to a lesser extent, and negative values indicate that school principals believe teachers' behaviour hinders learning to a greater extent compared to the OECD average. When comparing estimates across school systems, it is important to keep in mind that several factors beyond principals' experiences in schools may be determining the patterns in these responses, as described in Box IV.1.1.

The majority of students across OECD countries attend schools whose principals agree that teacher-related factors in their schools affect learning either "not at all" or only "very little". However, a substantial number of students are enrolled in schools whose principals reported that teacher-related behaviour affects student learning "a lot" or "to some extent": 28% of students are enrolled in schools whose principals reported that staff's resistance to change negatively affects students; 28% are enrolled in schools whose principals reported that students' needs are not met; 22% attend schools whose principals believe that learning is hindered by low teacher expectations; 23% attend schools whose principals reported that students are not encouraged by teachers to achieve their full potential in the school; 17% attend schools whose principals reported that teacher absenteeism hinders learning; and 12% attend schools whose principals reported that the quality of student-teacher relations is poor (Figure IV.4.5).

In particular, less than 10% of students in Denmark and Hungary attend schools whose principals believe that the staff's resistance to change negatively affects students, while more than 50% of students in Turkey and Italy attend schools whose principals believe this is the case in their schools. Less than 10% of students in Hungary and the Czech Republic attend schools whose principals reported that individual students' needs are not met by teachers, but more than 50% of students in Turkey and the Netherlands attend such schools. Less than 5% of students in Denmark and Luxembourg attend schools whose principals believe that student learning is affected by teachers' low expectations for students, while 72% of students in Turkey and 49% of students in Chile attend such schools. According to school principals' reports, the incidence of teachers not sufficiently encouraging their students is highest in Turkey and the Netherlands and lowest in Denmark, the United Kingdom, Iceland and Poland. In Korea, Portugal, Japan, the Czech Republic, Switzerland, New Zealand, Hungary, Spain, Italy and the United States, less than 10% of students attend schools whose principals believe that teacher absenteeism is not a problem. In contrast, over 70% of students in Turkey attend schools whose principals believe that teacher absenteeism adversely affects student learning. Less than 5% of students in Poland, Denmark, the United Kingdom, Belgium, Hungary and Portugal attend schools whose principals reported that poor student-teacher relations hinder learning, while three-quarters of all students in Turkey attend such schools.



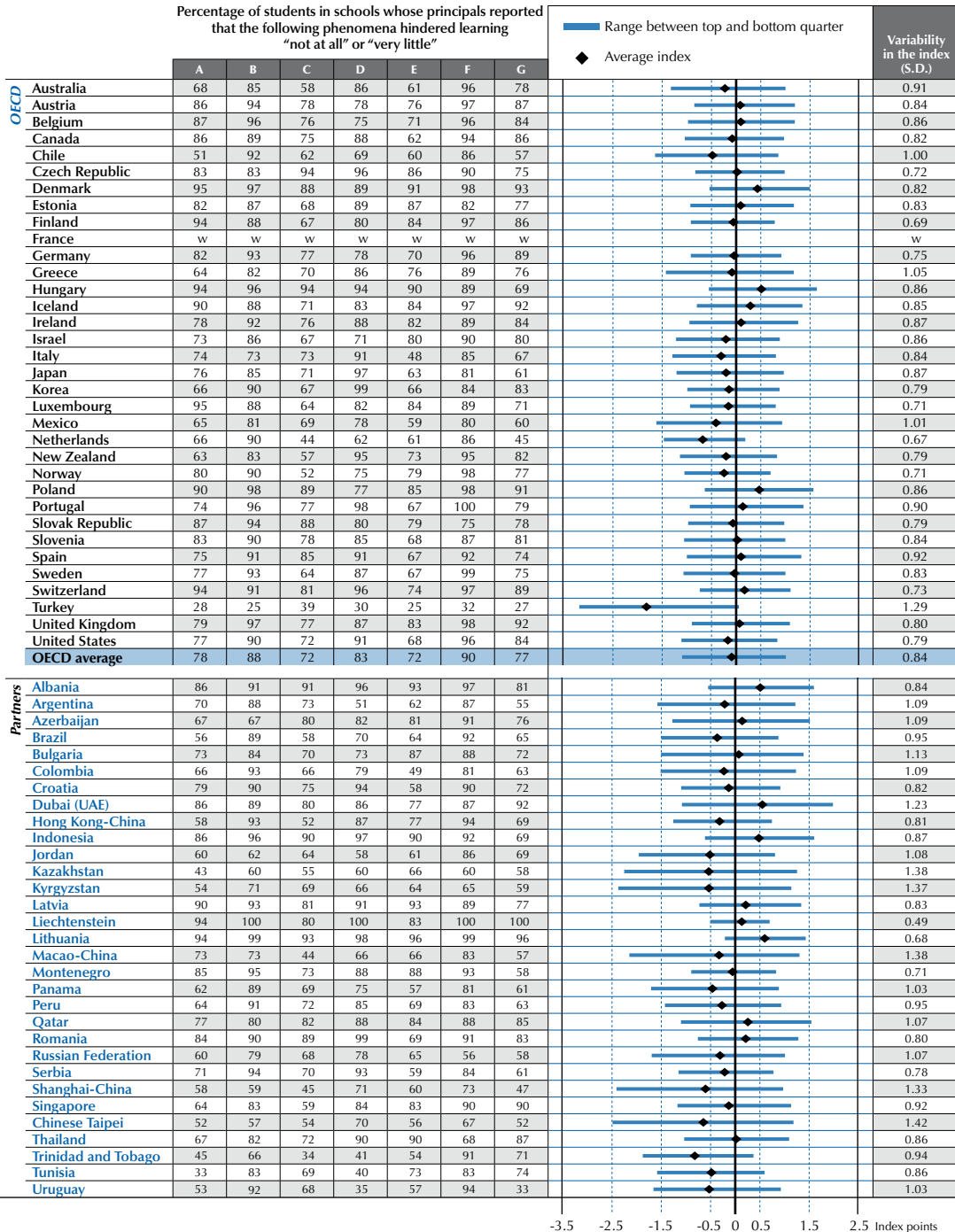
■ Figure IV.4.5 ■

School principals' views of how teacher behaviour affects students' learning

Index of teacher-related factors affecting school climate based on school principals' reports

- A Teachers' low expectations of students
- B Poor student-teacher relations
- C Teachers not meeting individual students' needs
- D Teacher absenteeism
- E Staff resisting change
- F Teachers being too strict with students
- G Students not being encouraged to achieve their full potential

Percentage of students in schools whose principals reported that the following phenomena hindered learning "not at all" or "very little"



Note: Higher values on the index indicate a positive teacher behaviour.

Source: OECD, PISA 2009 Database, Table IV.4.5.

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Taking all these responses into account, among OECD countries, principals' reports suggest that teacher-related factors adversely affect the learning environment the most in Turkey, where the average student attends a school that is more than one-and-a-half standard deviations below the OECD average in the *index of teacher-related factors affecting school climate*. Teacher-related factors also adversely affect learning in the Netherlands, Chile and Mexico, where the average student attends a school that has an *index of teacher-related factors affecting school climate* of more than one-third of a standard deviation below the OECD average. In contrast, learning is less negatively influenced by teachers' attitudes and behaviours in Hungary, Poland, Denmark and Iceland, according to school principals. In these four countries, the average student is enrolled in a school that has an *index of teacher-related factors affecting school climate* of more than one-quarter of a standard deviation above the OECD average. Countries with high values on the *index of teacher-related factors affecting school climate* are generally also those with high values on the *index of student-related factors affecting school climate*, possibly indicating that these problems in the learning environment are not solely due to student or teacher behaviour, but may involve other factors in the school or the school system as well.

The degree to which teachers' attitudes and behaviour is reported to affect the learning environment also varies within a school system. Large variations in the way principals reported teacher-related factors affecting learning are observed in Turkey, Greece, Mexico and Chile; low levels of variation are observed in the Netherlands, Finland, Norway and Luxembourg.

Among the partner countries and economies, school principals reported that teachers' attitudes and behaviours adversely affect student learning the most in Trinidad and Tobago, Chinese Taipei, Shanghai-China, Kazakhstan, Kyrgyzstan, Uruguay and Jordan. The average student in these countries and economies attends a school that has an index value of at least half a standard deviation below the OECD average. In four other partner countries and economies, the average student attends a school with an index value of at least one-third of a standard deviation below the OECD average. Only in four partner countries and economies is the average *index of teacher-related factors affecting school climate* one-third of a standard deviation above the OECD average: Lithuania, Dubai (UAE), Albania and Indonesia. Variation within school systems is greatest in Chinese Taipei, Macao-China, Kazakhstan and Kyrgyzstan. Variation is the lowest in Liechtenstein, Lithuania, Montenegro and Serbia, indicating relative homogeneity in how teacher-related factors affect student learning.

PARENTS' INVOLVEMENT IN AND EXPECTATIONS OF SCHOOLING

Most countries provide formal and active channels for parents to be involved in schooling (OECD, 2010a). Parents' actions in this partnership include discussing educational matters with their children, supervising their children's educational progress, communicating with the school, and participating in school activities. While the first two forms of parental involvement entail interactions between parents and students, the latter two involve interactions between parents and the school (Ho and Willms, 1996).

Research suggests that students perform better when parents, teachers and schools have high expectations for them. A driving force behind school expectations is parental pressure for the school to set high academic standards for its students (Epstein, 2001). PISA asked school principals to report on the level of parental pressure for the school to set and achieve high standards for its students. It is important when comparing estimates across school systems to keep in mind that several factors beyond principal's experiences in schools may be determining the patterns in these responses, as described in Box IV.1.1.

In OECD countries, approximately 19% of students attend schools whose principals reported that many parents expect high academic standards from the school. In New Zealand, Ireland, the United States, the United Kingdom and Sweden, over one-third of students attend such a school, but in Finland, Austria, Germany, Switzerland, the Netherlands and Luxembourg, less than 10% of students attend such a school. Among partner countries and economies, expectations for high academic standards are greatest in Singapore, Qatar, Dubai (UAE) and Peru, and lowest in Liechtenstein, Macao-China, Hong Kong-China, Montenegro, Uruguay, Serbia, Croatia, Lithuania and Argentina. In all these countries, less than 10% of students attend schools whose principals reported that parents exert pressure on the school to raise academic standards (Table IV.4.7).

In a questionnaire addressed to parents in both OECD countries and partner countries and economies, PISA asked parents about their level of communication with the school and their participation in school activities, such as volunteering in sports or other extra-curricular activities or in the school library, assisting a teacher in school,



appearing as a guest speaker, or participating in the school government. Eight OECD countries – Italy, Germany, Denmark, Portugal, Hungary, Korea, Chile and New Zealand – administered the parent questionnaire. Among these countries, on average, 79% of parents reported having discussed their children’s behaviour or progress with a teacher in the academic year, either at their own initiative or that of the teacher (Table IV.4.6). This proportion is highest in Portugal and Denmark, where 87% of parents reported having this form of communication with the school. In contrast, in Hungary, less than 64% of parents reported any communication with the school.

Among the six partner countries and economies that administered the parent questionnaire – Lithuania, Macao-China, Croatia, Panama, Hong Kong-China and Qatar – less than two-thirds of parents in Hong Kong-China and Macao-China discussed their children’s behaviour or progress with a teacher, while more than 85% of parents in Croatia reported to have done so.

PRINCIPAL LEADERSHIP

School principals can shape teachers’ professional development, define the school’s educational goals, ensure that instructional practice is directed towards achieving these goals, suggest modifications to improve teaching practices, and help solve problems that may arise within the classroom or among teachers. They are also in a position to provide incentives and motivate teachers to improve the quality of instruction (Hallinger and Heck, 1998).

PISA asked principals to report on their level of involvement in and leadership of several issues, including making sure that teachers’ work and development reflects the educational goals of the school, monitoring student performance and classroom activities, and working with teachers to resolve problems. An *index of school principal’s leadership* combines their answers to evaluate whether or not principals are active in improving teaching practices and the working environment within the school. This index has a mean of zero and a standard deviation of one for the OECD countries. Higher values on the index indicate higher levels of principal leadership in the school. It is important when comparing estimates across school systems to keep in mind that several factors beyond principals’ experiences in schools may be determining the patterns in these responses, as described in Box IV.1.1.

As in any organisation, decisions made at one level determine what actions can be taken at other levels. The degree to which principals can assume leadership roles in various domains may be constrained by external administrative agencies, regulatory frameworks, or the level of autonomy that is granted to individual schools. In federal education systems, the responsibility that principals have and the expected roles of principals differ across the administration units within a country. Thus, the results presented below must be interpreted in the context of the broader organisational configuration of the school system. In addition, the roles attributed to school principals and teachers may differ such that in some school systems, school principals are responsible for maintaining coherence between teacher development and the educational goals of the school, but they do not supervise classroom instruction or replace absent teachers. In these school systems, then, teachers are responsible for their daily work, and principal leadership is judged against other standards.

Among OECD countries, 93% of students attend schools whose principals reported that he or she ensures that teachers’ work reflects the school’s educational goals “quite often” or “very often”; over 86% of students attend schools whose principal “quite often” or “very often” takes the initiative to discuss a problem teachers may have in their classrooms; half of students attend schools whose principal “quite often” or “very often” observes classes; 61% of students attend schools whose principal “quite often” or “very often” considers exam results when making decisions regarding curriculum development; and over a quarter of OECD students attend schools whose principals “quite often” or “very often” take over lessons from teachers who are unexpectedly absent (see Figure IV.4.6).

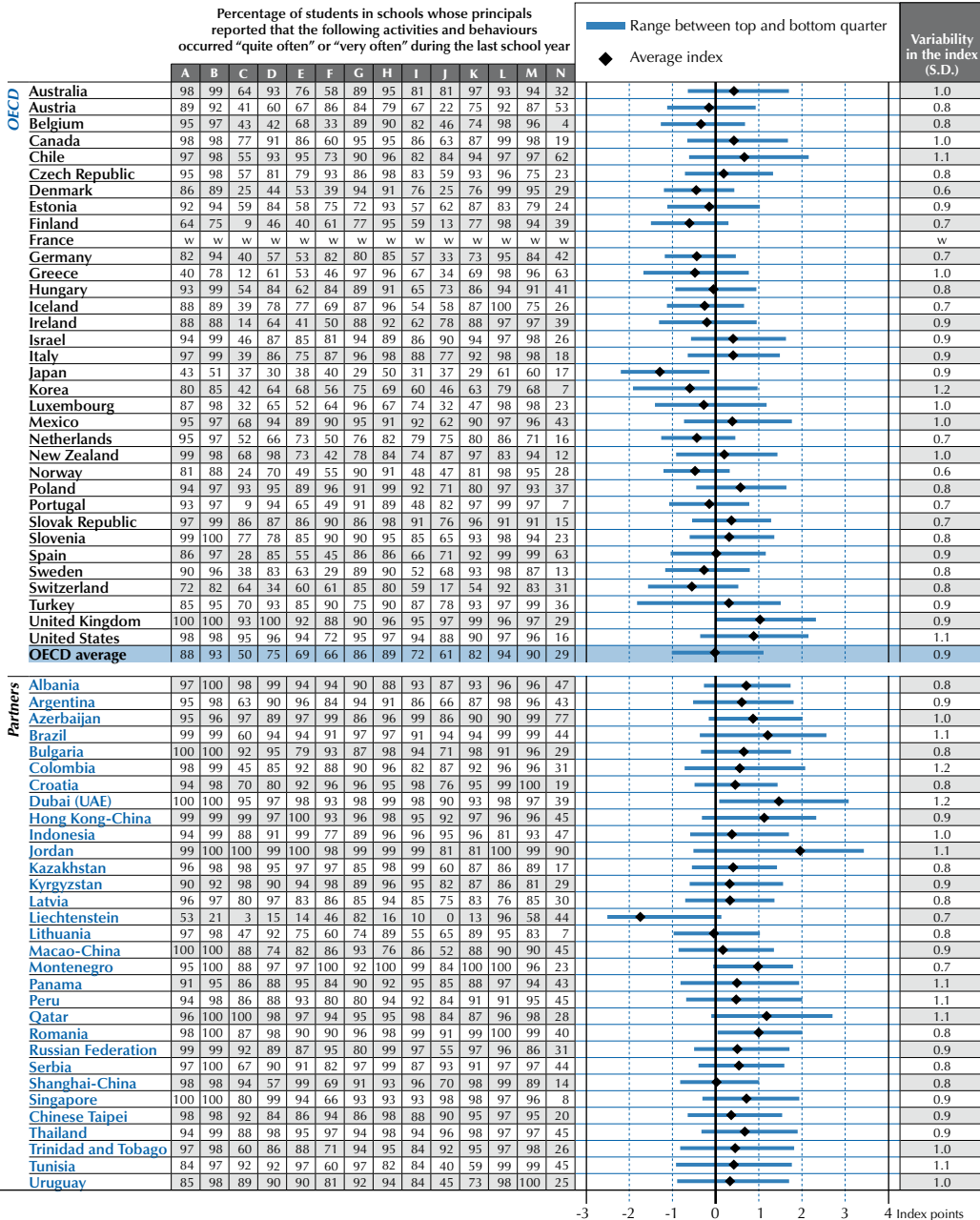
Among OECD countries, the *index of principal’s leadership* is highest in the United Kingdom, the United States, Chile and Poland. In these countries, the average student attends a school where the *index of principal leadership* is over half a standard deviation above the OECD average. Principal leadership is lowest in Japan, Finland and Korea. In particular, the average student in Japan attends a school that scores more than one standard deviation below the OECD average in the *index of principal’s leadership*. In Finland, for example, very few students attend schools whose principals monitor teaching practices in the classroom or use examination results to make decisions about the curriculum. This could indicate different roles for teachers and principals in Finnish schools as compared to other school systems. Variation in principals’ leadership role within the school system is greatest in Korea, Chile and the United States; principals’ leadership roles are relatively more homogeneous across schools in Norway and Denmark.

■ Figure IV.4.6 ■

School principals' views of their involvement in school matters

Index of school principal's leadership based on school principals' reports

A	I make sure that the professional development activities of teachers are in accordance with the teaching goals of the school.
B	I ensure that teachers work according to the school's educational goals.
C	I observe instruction in classrooms.
D	I use student performance results to develop the school's educational goals.
E	I give teachers suggestions as to how they can improve their teaching.
F	I monitor students' work.
G	When a teacher has problems in his/her classroom, I take the initiative to discuss matters.
H	I inform teachers about possibilities for updating their knowledge and skills.
I	I check to see whether classroom activities are in keeping with our educational goals.
J	I take exam results into account in decisions regarding curriculum development.
K	I ensure that there is clarity concerning the responsibility for co-ordinating the curriculum.
L	When a teacher brings up a classroom problem, we solve the problem together.
M	I pay attention to disruptive behaviour in classrooms.
N	I take over lessons from teachers who are unexpectedly absent.



Note: Higher values on the index indicate greater involvement of school principals in school matters.

Source: OECD, PISA 2009 Database, Table IV.4.8.

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Among partner countries and economies, principal leadership is highest in Jordan, Dubai (UAE), Brazil, Qatar, Hong Kong-China and Romania. The average student in these countries attends a school in which the *index of principal's leadership* is more than one standard deviation above that of the OECD average. Students in Liechtenstein, in contrast, attend schools whose principals assume less active leadership roles in the domains examined by PISA.

RELATIONSHIP BETWEEN LEARNING ENVIRONMENT AND SCHOOL CLIMATE VARIABLES

Several of the indices discussed in this section are often inter-related: schools with a good disciplinary climate may also be schools with good relationships between teachers and students, or schools in which principals take an active leadership role. The correlation is a measure that captures the level of association between two variables. The correlation ranges from -1 to 1 with the extremes, indicating a perfect negative or positive relationship, and 0 indicating no association between the two variables. Generally, values above 0.3 or below -0.3 are considered moderate relationships, and values above 0.6 or below -0.6 are considered strong relationships.

In OECD countries, the different variables affecting the learning environment are, at most, moderately related to each other, which indicates that these characteristics may correspond to different aspects of the learning environment.

The most prominent exception is the relationship between the teacher-related and student-related factors that hinder student learning. In all OECD countries where data are available, school principals who reported that student-related factors hinder learning also tend to report that teacher-related factors do so as well. This relationship is not necessarily causal; it may indicate that there is a common underlying factor influencing student and teacher behaviour; or that when student-related factors begin to hinder learning, teacher-related factors also arise or vice versa; it may also reflect the way school principals assign responsibility for problems occurring within the school. The average OECD country has a correlation of 0.61 between student-related and teacher-related factors affecting student learning (Figure IV.4.7).

In 16 OECD countries, there is a moderate relationship between teacher-student relations and how teachers stimulate students' engagement with reading (Table IV.4.9). This relationship may indicate that, in these countries, the way teachers stimulate students' engagement with reading may benefit teacher-student relations and the learning environment. However, causality cannot be determined through these statistical analyses and this relationship may exist for different reasons. One may be that when relations between students and teachers are good, teachers are more likely to encourage their students to read. The average OECD country has a correlation of 0.29 between teacher-student relations and teachers' stimulation of students' engagement with reading.

■ Figure IV.4.7 ■

Relationship between student, teacher and principal behaviour

Values in the cells present correlation coefficients between pairs of measures

Correlation coefficients range from -1.00 (*i.e.* a perfect negative linear association) to +1.00 (*i.e.* a perfect positive linear association).


When a correlation coefficient is 0, there is no linear relationship between two measures.


	Teacher-student relations	Disciplinary climate	Teachers' stimulation of students' reading engagement	Student-related factors affecting school climate	Teacher-related factors affecting school climate	School principals' leadership
Teacher-student relations		0.19	0.29	0.05	0.04	0.01
Disciplinary climate	0.17		0.17	0.10	0.05	0.01
Teachers' stimulation of students' reading engagement	0.30	0.15		0.03	0.03	0.02
Student-related factors affecting school climate	0.04	0.09	0.04		0.61	0.10
Teacher-related factors affecting school climate	0.03	0.05	0.02	0.65		0.18
School principals' leadership	0.01	0.01	0.01	0.11	0.19	

Upper triangle is the OECD average
Lower triangle is the average of all participating countries and economies

Note: Average coefficients are calculated as the arithmetic mean of the individual countries/economies' correlation coefficients. All countries and economies are weighted equally. Correlation coefficients that are statistically significant at the 5% level ($p < 0.05$) are indicated in bold.

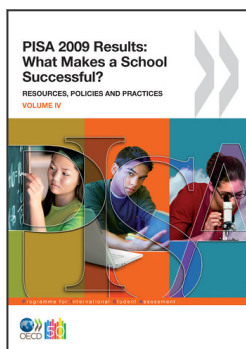
Source: OECD, *PISA 2009 Database*, Table IV.4.9.

StatLink  <http://dx.doi.org/10.1787/888932343418>



The leadership of school principals is positively associated with teacher-related factors affecting school climate in five OECD countries – Chile, Luxembourg, Korea, Ireland and Mexico – with a correlation of 0.30 or above. School principal leadership is also positively associated with student-related factors hindering learning in two OECD countries: Luxembourg and Chile. In these countries, schools whose principals reported that they assume an active leadership role in many areas are also schools in which learning is less often disrupted by teachers' or students' attitudes or behaviour. Again, the causal nature of this relationship cannot be established. The relationship may be the result of principals' involvement in guiding teacher development and helping to resolve problems among teachers or between students and teachers. Principal leadership may also be more likely to exist in schools where teachers work together to achieve the school's educational goals. The average OECD country has a correlation of 0.18 between the leadership of school principals and teachers' attitudes and behaviour that hinder student learning, and a correlation of 0.10 between school principals' leadership and students' attitudes and behaviour that disrupt learning.

These relationships are moderate in only a handful of OECD countries; they are weak or nonexistent in most OECD countries. While this analysis cannot explain the reasons behind the differences in the strength of these relationships across countries, the differences may be related to the way schools are organised or to the ambient attitudes concerning schooling and education in general.



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