CHAPTER 7

Key Factors in Developing Effective Learning Environments: Classroom Disciplinary Climate and Teachers' Self-Efficacy

Highlights

- Research has shown that classroom disciplinary climate is associated with student performance and that self-efficacy is an important measure of productivity and effectiveness.
- Teachers with "constructivist" beliefs about teaching are more likely to report good classroom disciplinary climate in many countries, but those who emphasise the "direct transmission" of knowledge in instruction are more likely to teach classes with poorer disciplinary climate. Teachers who hold either of these types of beliefs strongly are more likely to report high self-efficacy.
- Structured teaching practices and student-oriented teaching practices are both associated with good classroom climate and teachers' self-efficacy in many countries. This is less true of other practices identified in the survey.
- Teacher appraisal is linked in some cases with self-efficacy, particularly when it involves public recognition of teachers' progress and is linked to innovative practices.
- More professional development is often associated with greater teacher self-efficacy, but not generally with more orderly classrooms.
- Teachers with relatively less experience and stability in their contractual status are significantly less likely to be teaching classes with a positive classroom disciplinary climate or to report high levels of self-efficacy. Teachers who are significantly more likely to report higher levels of self-efficacy are employed on permanent contracts (significant in 7 TALIS countries in the final net models estimated for each country), employed on a full-time basis (6 TALIS countries), and have more experience as a teacher (5 TALIS countries).

INTRODUCTION AND CONCEPTUAL FRAMEWORK

A number of important issues discussed in this report play an important role in school education. Chapter 3 discusses the professional development of teachers and issues such as its impact and teachers' professional development needs. Chapter 4 identifies a number of teaching practices, beliefs and attitudes across TALIS countries and analysed, among other issues, their interaction and the factors associated with them. Teachers' appraisal and feedback is the subject of Chapter 5 along with an analysis of school evaluation. Chapter 6 examines school leadership styles across and within TALIS countries as well as associations between such styles and various aspects of schools' operations and the working lives of teachers. All analyses are supplemented by Chapter 2's description of the characteristics of teachers and the schools in which they work.

This chapter focuses on two variables which are considered important pre-conditions for teachers' professional success: classroom disciplinary climate and teachers' self-efficacy (see *TALIS Technical Report* [forthcoming] for discussion of the reliability of these indices). It presents an analysis of extensive modelling (described in Annex A1.4) which incorporates variables from the previous chapters and examines their association with classroom disciplinary climate and teachers' reported self-efficacy (which are modelled separately). It builds on the analysis in other chapters, which concentrate on the specific issues that are their analytical focus. Separate modelling was conducted for each bloc of independent variables drawn from the earlier chapters estimating classroom disciplinary climate and self-efficacy. Results are contrasted with the effect of including a broad set of teacher background and various socio-economic background characteristics of classrooms and schools which better control for external factors. The final models are then presented, which include not only these background characteristics but also the significant variables from the estimations for each analytical bloc. This makes it possible to better isolate the variables that affect classroom disciplinary climate and self-efficacy and allows for a better understanding of the interaction of key variables identified in previous chapters.

The analytical model and the choice of dependent and independent variables are discussed to illustrate the development of the modelling presented here. This is complemented by a discussion of the descriptive statistics of teachers' reports of self-efficacy and of classroom disciplinary climate. The following section introduces the first results of the modelling and estimates classroom disciplinary climate and teachers' self-efficacy against various teacher background characteristics and measures of the socio-economic status of teachers' classes and the schools in which they work. Discussion is then presented of estimates of the association of classroom disciplinary climate and self-efficacy with measures of teachers' professional development from Chapter 3. Following this is discussion of the next bloc of variables included in the modelling, which encompasses measures of teachers' practices and beliefs (discussed in Chapter 4) and their association with classroom disciplinary climate and self-efficacy. Estimates of the association between measures of school evaluation and teacher appraisal and feedback (discussed in Chapter 5) and classroom disciplinary climate and self-efficacy are then discussed followed by the associations with school leadership styles from Chapter 6. Indicators of school climate and school autonomy and their relationship to the dependent variables are then discussed and finally concluding comments are presented.

Analytical model

The analytical model presented in this chapter builds upon the previous chapters of this report. Chapter 4 presents an analytical framework for the modelling presented in that chapter (see Figure 4.1). It illustrates how the various aspects of schooling that are the focus of TALIS are expected to be associated with effective schooling, with a particular emphasis on teaching practices and beliefs (the focus of that chapter). Modelling presented in Chapter 6 illustrates the associations between particular school characteristics and those of school principals and the leadership styles they adopt.

The modelling presented here is based on an analytical framework which extends that of previous chapters by including more background and socio-economic characteristics and by drawing on important elements of the analyses presented in all of the earlier chapters. The variables in the modelling include:

- teacher characteristics which describe their demographic profile and aspects of their employment and careers as teachers;
- socio-economic background characteristics measured at both the classroom and the school level;
- professional development characteristics which measure the extent and type of professional development undertaken, drawing on the analysis in Chapter 3;
- teaching practices and beliefs found across TALIS countries, drawing on the analysis in Chapter 4;
- school evaluation characteristics, with a focus upon specific aspects of the frequency and impact of school evaluation, discussed in Chapter 5;
- teacher appraisal and feedback characteristics that detail the frequency, criteria and impact of the appraisal and feedback provided to teachers, as discussed in Chapter 5; and
- school leadership styles that are prevalent across TALIS countries, as discussed in Chapter 6.

These variables are included in the modelling presented in this chapter, which estimate their association with teachers' reports of their self-efficacy and with classroom disciplinary climate. Both classroom disciplinary climate and teachers' self-efficacy are included in the analytical framework of Chapter 4, and it is important to note the differences with the considerably broader analytical framework for the modelling in this chapter. For example, a greater number of teachers' job characteristics and aspects of teachers' career structures are included in the modelling presented in this chapter which can be affected by policy. In addition, this chapter includes an analysis of school evaluation processes, of important aspects of teachers' appraisal and feedback, and of specific school leadership styles. This enables a broader analysis of the key features of the earlier chapters of the report. This broader approach requires slight changes to the modelling which are discussed below.

A focus on self-efficacy and classroom disciplinary climate

Classroom disciplinary climate and teachers' reports of their self-efficacy are the dependent variables in the modelling presented in this chapter. These variables could also be used as independent variables in other models with a different focus yet, both are considered important in school education and, as discussed below, have been shown to be important in numerous contexts. Classroom disciplinary climate not only affects student outcomes and attainment but is a prominent policy issue in a number of countries and regions (OECD, 2007). Students' actions in classrooms and a safe and productive learning environment are important for many schools and can be a challenging dimension of teachers' work. Teachers' self-efficacy is an important dimension given teachers' impact on students. The discussion below indicates that reports of self-efficacy have been linked to productivity and influence people's actions in workplaces in different industries and those of students. Given this, it is assumed here that teachers who report positive self-efficacy are more likely to undertake actions in classrooms that can enhance student learning and create a positive learning environment.

As discussed in Chapter 4, self-efficacy is an important factor for policy makers and stakeholders in school education to consider. Bandura (1994) defines self-efficacy as "the beliefs that determine how people feel, think, motivate themselves and behave", and is also related to "beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives". Reports of self-efficacy can be indicative not only of knowledge about oneself, but also of idiosyncratic beliefs about social situations (Cervone, 2000). When individuals envisage ability as a skill that can be acquired, a strong feeling of self-efficacy can help them better analyse and solve problems, while a weak feeling of self-efficacy can mean self-doubt and preoccupation with concerns about evaluation if they feel their efforts to be unsuccessful (Bandura, 1989). This has been shown to affect work in a number of environments including the education sector (Ross, 1998).

In addition to the research discussed in Chapter 4 showing the linkages between self-efficacy and teachers' actions, Ross (1998) analysed its association with teachers' actions in the classroom; its influence on how they interact with students, their performance expectations, and their classroom management practices. In the health sector, a number of survey instruments have been used to measure links between health and self-efficacy. In a number of instances, they have been used to measure reductions in productivity associated with specific diseases or to assess the impact of an illness on the workplace and the effect of the treatment for that illness upon productivity (Prasad *et al.*, 2004). Such measures are used in health research to complement indicators of the direct costs of ill health upon productivity which are more easily quantifiable such as the number of days of work missed. Prasad *et al.* (2004) reviewed the validity and reliability of the survey instruments used in a number of these studies across different industries and workplaces and concluded that they can be used to show effects upon productivity. A number of studies have shown that self-efficacy is related to productivity and can contribute to efforts to better measure productivity in organisations (*e.g.* Frayne and Latham, 1987). Lema and Agrusa (2006) found in a case study in the hospitality industry that self-efficacy accounted for 13% of the variance in self-directed learning. Self-efficacy has also been found to be related to the use of technology in the workplace (Hill *et al.*, 1987).

Organisational psychology research provides evidence that supports the importance of studying self-efficacy as a factor in the ability of workers to adapt to diverse and pluralistic workplaces. Those with high levels of self-efficacy tend to do their own performance monitoring and assessment in order to improve, rather than relying only on external supervisory practices. Moreover, high levels of self-efficacy were found to influence abilities to regulate and assess responses and handle volatile situations, and to adjust to a new organisational environment (Combs, 2002; Weiss, 1978; Jones, 1986). Chen *et al.* (1998) found a relationship between self-efficacy and an intended career in entrepreneurship. Beliefs of self-efficacy for innovation and risk taking were found to differentiate entrepreneurs from managers, as well as founders from non-founders.

Student self-efficacy has also been found to be linked to performance. Results from a meta-analytic study of student performance, which analysed 36 comparable studies, show evidence of a relationship between self-efficacy and academic behaviour (Multon *et al.*, 1991). The PISA 2006 index of students' self-efficacy in science measured their belief in their ability to handle tasks effectively and overcome difficulties with a one-unit increase in the index found to correspond to a performance difference of at least 20 points (OECD, 2007). PISA 2003 also showed a positive relationship between students' concept of self-efficacy in mathematics and their performance, where a one-unit increase in the index corresponded to a performance increase of 47 points (OECD, 2004). Hocevar (2009) analysed factors relating to achievement of mathematically gifted high school students and showed a positive relationship between self-efficacy and self-regulated learning and achievement in maths and a strong negative relationship between self-efficacy and the level of worry felt by students.

Given these findings it is assumed that teachers' self-efficacy can have numerous implications for school education as it is an indicator not only of aspects of productivity but also of how teachers act in the classroom. Given the many findings on the positive impact of self-efficacy on various organisational factors, teachers' self-efficacy should also affect school culture and the operations of effective schools. Teachers with a high level of self-efficacy in diversified environments may be more likely to adapt to and moderate dynamics in schools whose students come from different environments or present particular challenges. Chapter 4 demonstrates the positive correlation between classroom disciplinary climate and reported self-efficacy.

Estimations of classroom disciplinary climate and teachers' reported self-efficacy

This chapter focuses on two variables in models estimated for each country: teachers' self-efficacy and the quality of the classroom disciplinary climate. Various estimates are made to examine how different features of teachers' working environment are associated with these variables, both of which are taken to be important pre-conditions

for professional success. Estimations were conducted for each country to examine the factors associated with both classroom disciplinary climate and teachers' self-efficacy within each country. For each of these outcome variables, regression analysis was conducted separately. Missing cases in the dependent and independent variables were imputed using a multiple imputation method. The detailed procedure of the multiple imputation and the sample sizes for the estimations for each country are presented in Annex A1.4. On average across TALIS countries, the sample size for the multiple regression analysis in this chapter is 3 200 teachers.

As discussed in Chapter 4, most of the variation in the index of classroom disciplinary climate is between teachers. Among the 23 countries, the minimum *rho* (intraclass correlation coefficient) is 4%, the maximum is 19% and the median is 8%. Similarly, most of the variation in the index of teachers' self-efficacy is between teachers. Among the 23 countries, the minimum *rho* (intraclass correlation coefficient) is 0%, the maximum is 11% and the median is 4%. Since the between-school variance is very small in both the index of classroom disciplinary climate and the index of self-efficacy, it was decided to apply an ordinary least squares regression instead of multilevel regression analysis.

Explanatory variables were selected from each of the previous chapters. These variables were then grouped into six thematic blocs. Table 7.1 presents the list of independent variables in each bloc as well as the teacher and school socio-economic background variables included in the modelling.

Modelling strategy: country-by-country analysis

For each of the six thematic blocs, two sets of estimates were calculated for each dependent variable (classroom disciplinary climate and teacher self-efficacy) for each country.

- ***Bloc modelling:*** Separate estimates were calculated with variables in each of the six blocs detailed in Table 7.1 for each country. Two sets of estimates were analysed in each bloc for each country:
  - *Gross* models which include only the variables in each thematic bloc.
  - *Net* models which include the variables in each thematic bloc *and* the teacher and school background variables identified in Table 7.1. These models allow for better comparisons of teachers with different characteristics and of those teaching in schools with different student populations.
- ***Final modelling:*** For each country, estimates were calculated which include variables from each of the thematic blocs. The variables included from each bloc are those that are statistically significant in the estimates from the bloc modelling. The final models allow for analysis of the relationships between the variables across thematic blocs and classroom disciplinary climate and self-efficacy. As above, two sets of estimations are analysed:
  - *Final gross* models which include significant variables from each of the *gross* models estimated in each of the thematic blocs. These are available on the TALIS website (*www.oecd.org/edu/TALIS*).
  - *Final net* models which include significant variables from each of the *net* models estimated in each of the thematic blocs and the socio-economic background and Bloc 1 variables. The *final net* models are the main focus of the discussion below.

The blocs of variables draw on the analyses in the previous chapters of the report and are detailed in Table 7.1. Bloc 1 focuses on teachers' background characteristics. These are then used as control variables for the *net* models estimated for each country. Bloc 2 focuses on professional development characteristics and Bloc 3 on measures of teachers' beliefs and practices. Bloc 4 includes variables specifying certain aspects of teachers' appraisal and feedback and of school evaluations. Bloc 5 encompasses the school leadership styles analysed in Chapter 6 and Bloc 6 includes a number of school-level variables which measure aspects of school autonomy, school climate and school resources.

Separating each thematic group of variables into modelling blocs facilitates the analysis of the relationships between the variables in each bloc and classroom disciplinary climate and self-efficacy. However, variables in different analytical blocs may be related. For example, teachers who undertook more professional development may be more likely to employ specific teaching practices. This may have an impact on classroom disciplinary climate or self-efficacy which is not captured in the bloc modelling. Therefore, to gain a better understanding of the interaction of the variables in each bloc and the classroom disciplinary climate and self-efficacy, *final* models are estimated which include variables from each thematic bloc. *Final* models are estimated to bring together the variables that are statistically significant in the estimates for the modelling conducted in each of the six blocs. Therefore, for the *gross* and *net* models estimated for each bloc, only the significant variables in those estimations are included in the *final gross* and *final net* models. For example, in the *net* Bloc 1 modelling for Austria, years of teaching was significant in the estimate of teachers' self-efficacy. The *final net* model which estimates teachers' self-efficacy in Austria therefore includes the variable indicating years of teaching. Throughout the analysis, an effect is considered statistically significant if the p-value is below 0.05. Tables 7.10 and 7.11 (available on line) present the results of the *final net* models estimated for each TALIS country (only the significant variables and their coefficients are presented).

This is further discussed in Annex A1.4 which describes the modelling procedure in greater detail.

DESCRIPTIVE STATISTICS FOR TEACHERS' REPORTED SELF-EFFICACY

This chapter focuses on measures of teachers' self-efficacy and classroom disciplinary climate. Both of these measures are analysed as indices compiled from teachers' responses to several questionnaire items regarding these issues. The self-efficacy index and the data used to compile this index are described here to point to country differences in these areas and to provide an initial illustration of teachers' self-efficacy before turning to a discussion of the regression analyses.

Teachers' self-efficacy is measured here with an index that is a composite of four items which measures teachers' reported success in educating the students in their class. This well-established index in education research is discussed in Chapter 4. Teachers reported whether they strongly agreed, agreed, disagreed, or strongly disagreed with the following statements:

- I feel I am making a significant educational difference in the lives of my students.
- If I try really hard, I can make progress with even the most difficult and unmotivated students.
- I am successful with the students in my class.
- I usually know how to get through to students.

Reponses to these questions were compiled and an index of self-efficacy was developed from the corresponding data. In developing the index configural and metric invariance was established and the fit of the models for testing scalar invariance was acceptable. As Table 7.2 shows, the index of teachers' self-efficacy was developed with a mean of zero and a standard deviation of +/- 1 across TALIS countries. Most countries' teacher self-efficacy scores are therefore likely to be close to zero. Teachers in Norway reported considerably higher self-efficacy in their teaching than teachers in other countries, with an average self-efficacy index score of 0.51. This is considerably above the next highest group of countries which includes Italy, Iceland, Australia and Ireland, with scores at or above 0.30. At the other end of the range, teachers in Korea reported substantially lower levels of self-efficacy in their teaching. The average self-efficacy reported by Korean teachers was -0.77 and was well below the next lowest scoring group of countries – Estonia, Hungary and Spain – where teachers' reported average self-efficacy was equal to or below -0.4.

The underlying data in this index are also presented to better illustrate both the concept of self-efficacy discussed here and differences among countries. The average responses of teachers in each TALIS country to each of the four questions that comprise the index are presented in Tables 7.2a-7.2d (available on line). Over 90% of teachers across TALIS countries reported making a significant educational difference in the lives of their students. This is particularly apparent in Belgium (Fl.), Bulgaria, Italy, Malaysia, Mexico and Norway where at least 97% responded positively. While such a positive average response was less common among teachers in Estonia, Hungary, Iceland, Korea and Slovenia, over eight in ten teachers in these countries still gave a positive response to this statement. Clearly teachers in TALIS countries generally believe that they make a difference.

Making progress with students whose learning requirements are more complex or whose motivation is very low is an important aspect of education policy and a critical aspect of teaching in many schools. Some 83% of teachers reported that if they persevere they can make progress with even the most difficult and unmotivated students. While fewer teachers reported success in this area, it is important that over eight in ten reported themselves to be successful with even the most difficult and unmotivated students. This was particularly the case in Italy, Malaysia, Mexico, Norway and Slovenia where more than nine teachers in ten reported that they can make progress with these students. However, in Hungary, Portugal and Spain fewer than three-quarters of teachers reported success in this area.

On average across TALIS countries virtually all teachers considered themselves successful with the students in their class. On average, three-quarters agreed with the statement, "I am successful with the students in my class" and a further 19% strongly agreed (Table 7.2c available on line). Only in Spain and Korea did less than 90% of teachers respond positively. Very similar results are found for teachers' response to the statement, "I usually know how to get through to my students".

These figures show that the majority of teachers consider themselves to be successful in teaching students in their school. The teacher self-efficacy index presented in Table 7.2 brings these four questions together in a single index which allows for a broader analysis of teachers' self-efficacy. Regression analysis was used to disentangle the associations of different teacher and school level variables with this teacher self-efficacy index, especially those relating to the main policy themes of this report: teachers' professional development, teaching practices and beliefs, teacher appraisal and feedback, and school leadership.

DESCRIPTIVE STATISTICS FOR CLASSROOM ENVIRONMENT

As in the case of teachers' reported self-efficacy, the discussion of classroom disciplinary climate focuses on an index constructed from various questionnaire items which record teachers' reports of the climate in a randomly selected class. Classroom disciplinary climate is a multifaceted concept which is better analysed through an index that captures these separate elements. It also facilitates the regression analysis presented later in this chapter. This section examines the items underlying the index to better illustrate the meaning of the classroom disciplinary climate index, its interpretation and implications.

The classroom disciplinary climate index draws on four items in the TALIS teacher questionnaire which reflect the climate in a class taught by the teacher in the school:

- When the lesson begins, I have to wait quite a long time for students to quieten down.
- Students in this class take care to create a pleasant learning atmosphere.
- I lose quite a lot of time because of students interrupting the lesson.
- There is much noise in this classroom.

Teachers reported whether they strongly agreed, agreed, disagreed or strongly disagreed with each of these statements. An index of classroom disciplinary climate was constructed from responses to these questions. It was constructed with a mean of zero and a standard deviation of +/- 1 across TALIS countries. In developing the index configural and metric invariance was established and the fit of the models for testing scalar invariance was acceptable. Table 7.3 presents the average classroom disciplinary climate reported by teachers in each TALIS country. Given that the index was constructed with an average of zero, most countries have scores around this average. Teachers in Estonia reported a substantially more positive classroom environment than other TALIS countries with an index score of 0.45. This is considerably higher than the next highest scoring group of countries, comprising Austria, Ireland, Mexico and Slovenia where, on average, teachers reported a classroom disciplinary climate of between 0.21 and 0.25. At the other end of the range, teachers in Spain reported, on average, a more negative classroom disciplinary climate with a index score of -0.47, considerably below the next lowest scoring countries of Iceland (index score of -0.36) and Portugal (-0.39).

Descriptive statistics of the four items underlying this index are presented in Table 7.3a-7.3d (available on line). On average across TALIS countries, the majority of teachers reported that they did not have to "wait quite a long time for students to quieten down" in their class. However, this was not true of teachers in Iceland and Norway, where the majority of teachers agreed with the statement (77% in Iceland and 51% in Norway). On average, teachers have to wait considerably less for students to quieten down in classes before they can begin teaching in Bulgaria, Estonia, Ireland, Lithuania, Mexico and Poland, where less than one teacher in five reported having to wait quite a long time.

On average across TALIS countries, just fewer than three-quarters of teachers reported that "students in their class take care to create a pleasant learning environment". At least eight in ten teachers reported this to be true in Bulgaria, Italy, Korea, Lithuania and Mexico. However, it was the case for less than two-thirds of teachers in Estonia, Hungary, Iceland, Malta, Spain and Turkey (Table 7.3b available on line).

On average across TALIS countries almost one-third of teachers reported that student interruptions caused the loss of quite a lot of potential teaching time in the classes they teach (Table 7.3c available on line). In Iceland, Norway, Portugal and Spain lost time due to student interruptions was reported by at least four teachers in ten. In contrast, fewer than 20% of teachers in Estonia and Mexico reported this as a problem. Similar results are found in teachers' reports of whether "there is much noise in this classroom", a situation that can be disruptive for teaching and effective learning. On average across TALIS countries, just under one-quarter of teachers agreed with this statement (Table 7.3d available on line). The proportion rises to just fewer than 40% of teachers in Australia, Brazil and Spain but is less than 20% in Austria, Bulgaria, Estonia, Italy, Malaysia, Mexico, Poland and Slovenia.

Classroom disciplinary climate has been shown in previous research to be related to student attainment (OECD, 2007). These items have been used to construct a classroom disciplinary climate index which is used in the regression analyses described below. In the following sections, factors associated with a positive and negative classroom disciplinary climate are presented to better understand how to promote a classroom disciplinary climate that is conducive to student learning.

TEACHERS' CHARACTERISTICS AND CLASSROOM DISCIPLINARY CLIMATE AND TEACHERS' SELF-EFFICACY

As detailed in Table 7.1, the variables included in Bloc 1 are background variables describing teachers' characteristics and the schools in which they teach. They include teachers' demographic characteristics and specific characteristics of teachers' careers such as their employment status. In addition, a number of variables measuring the socio-economic background of the students in teachers' classes and schools are included in the *net* models estimated for each TALIS country.

Table 7.4 presents the variables in this bloc and illustrate whether they are statistically significant in the *gross*, *net* and *final net* models estimated for each country. The table also illustrates the direction of the coefficients for the variables found to be statistically significant for each country. A "+" represents a positive relationship with the dependent variable and a "–" a negative relationship. A number of variables are included in the estimates of classroom disciplinary climate and self-efficacy which describe pertinent aspects of teachers' jobs and their careers. Measures of full-time employment, employment on a permanent contract, and number of years of teaching are significantly associated with both classroom disciplinary climate and teachers' reported self-efficacy in some TALIS countries. Across TALIS countries, the strongest relationships are between classroom disciplinary climate and number of years of teaching and employment on a permanent contract. As these two variables are correlated, caution is warranted in interpreting their relationships with both classroom disciplinary climate and self-efficacy. However, it would appear that characteristics indicating greater job stability are significantly associated with both classroom disciplinary climate and teachers' reported self-efficacy (Table 7.4).

In the *final net* models estimated for each country, the number of years working as a teacher is significantly associated with a positive classroom disciplinary climate in all TALIS countries except Ireland, Korea, Mexico, Portugal and Turkey. A positive relationship with teachers' reported self-efficacy is found for Korea, Malaysia, Malta, the Slovak Republic and Turkey. Teachers employed on a permanent contract are more likely to teach classes with a more positive classroom disciplinary climate in 11 TALIS countries in the *final net* models. A positive relationship was also evident for teachers' reported self-efficacy, which is positively associated with employment on a permanent basis in the *final net* models estimated for Belgium (Fl.), Denmark, Estonia, Korea, Norway, Slovenia and Turkey. Teachers employed on a full-time basis are also significantly more likely to teach classes with a more positive classroom disciplinary climate in the *final net* models estimated for Austria, Estonia, Ireland, Lithuania and Portugal. A positive relationship with teachers' self-efficacy is also evident in the *final net* models estimated for Australia, Austria, Denmark, Italy, Korea and the Slovak Republic (Table 7.4).

This adds to the results presented in Chapter 4 which demonstrate a positive relationship between teachers' years of experience and classroom climate, teachers' reported self-efficacy and a number of teaching practices. There may be a number of explanations for these relationships. First, more experienced teachers may have honed their teaching practices and become more effective in their teaching and in creating a positive classroom climate. Second, experience may be inversely related to expectations of self-efficacy and classroom climate. Younger teachers may have high and perhaps unrealistic expectations about effective teaching and classroom disciplinary climate, which may lead to reports of less self-efficacy and a less positive classroom climate.

The gender distribution of the teacher workforce detailed in Chapter 2 shows a large majority of female teachers in a number of TALIS countries (Table 2.1). There are some significant gender differences in regard to classroom disciplinary climate and teachers' reported self-efficacy, although they are not significant in the *final net* models estimated for many TALIS countries. Female teachers are significantly more likely than male teachers to report teaching in a positive classroom disciplinary climate in Austria, Denmark, the Slovak Republic and Slovenia and significantly less likely to do so in Brazil and Malaysia.

The impact of teachers' initial level of education was estimated with a variable categorising teachers with an education qualification above the Bachelor's degree level. Teachers in Brazil, Malta and Norway with initial education of this level or above were significantly more likely to teach classes with a poorer classroom disciplinary climate in the *final net* models estimated for each country. However, the proportion of teachers with this level of education was small in some countries, particularly Brazil (see Table 2.2). In addition, these teachers reported greater levels of self-efficacy in the *final net* models for Korea, Malaysia, Mexico, Norway and Portugal (Table 7.4a). In some countries there have been concerns that less qualified teachers are working in the more challenging schools that serve either more socio-economically disadvantaged students or those

with specific learning needs (OECD, 2005). If these concerns were evident in teachers' reports of classroom disciplinary climate and self-efficacy, then there would be significant differences between the results of the *gross* and *net* (which controls for socio-economic background characteristics) models estimated for each country. However, the results presented in Table 7.4 show little evidence of this. In most countries, the significance of teachers' education did not change between the estimated *gross* and *net* models.

Teachers' reports of student ability is the most significant socio-economic background variable associated with both classroom disciplinary climate teachers' and reported self-efficacy. It is significant across all TALIS countries, with lower/higher levels of reported student ability associated in the *final net* models estimated for each country with poorer/better classroom disciplinary climate. Student ability is significantly positively related to teachers' reported self-efficacy in all countries but Ireland, Malaysia, the Slovak Republic, Slovenia and Turkey. Teachers' reports of parental education levels are also significant for classroom disciplinary climate but in fewer countries. Classrooms with students with more highly qualified parents are significantly associated with a positive classroom disciplinary climate in 12 TALIS countries, even when controlling for student ability and the other factors included in the *final net* models estimated for each country (Tables 7.10 and 7.11 available on line).

Box 7.1 Classroom disciplinary climate, teachers' reported self-efficacy and the stability of employment

The length and stability of employment appear to be significantly and positively related to teachers' reported self-efficacy and to classroom disciplinary climate. Teachers with relatively less experience and with less stability in their contractual status were less likely to be teaching classes with a positive classroom disciplinary climate and to report high levels of self-efficacy in their success with students.

- Teachers teaching classes with more positive classroom disciplinary climate are those with more experience (significant in 18 TALIS countries), employed on a permanent contract (11 TALIS countries) and on a full-time basis (5 TALIS countries).
- Teachers who are significantly more likely to report higher levels of reported self-efficacy are employed on a permanent contract (significant in 7 TALIS countries), employed on a full-time basis (6 TALIS countries), and have had more experience working as a teacher (5 countries).

Note: All of the results are from the *final net* models estimated for each country unless otherwise specified.

TEACHERS' PROFESSIONAL DEVELOPMENT AND CLASSROOM DISCIPLINARY CLIMATE AND TEACHERS' SELF-EFFICACY

This section presents the first extensions of the regression analyses into the main analytical themes of the previous chapters through the inclusion of the thematic blocs in the modelling. It begins with the inclusion of variables representing teachers' professional development, thus building on Chapter 3. As detailed in Table 7.1, the bloc of variables measuring aspects of teachers' professional development in the estimation include:

- Number of days of professional development in the 18 months prior to the survey.
- School providing formal induction process for teachers.
- School providing mentor for new teachers.

Table 7.5 presents the variables in this bloc that are statistically significant in the *gross*, *net* and *final net* models estimated for each country. The table also illustrates the direction of the coefficients for the variables that are statistically significant for each country.

The amount of professional development undertaken by teachers is significantly associated with classroom disciplinary climate in the *net* models estimated for five countries. In Australia, Korea, Portugal, the Slovak Republic and Slovenia, an increase in the number of days of teachers' professional development is associated with an improved classroom disciplinary climate net of the background characteristics discussed previously (*i.e.* in the *net* models for each country). However, only in Australia is the relationship significant in the *final net* models. The amount of professional development was significantly associated with teachers' self-efficacy in 11 TALIS countries (Table 7.5a). Teachers who undertook more days of professional development were more likely to report increased self-efficacy in Denmark, Estonia, Iceland, Italy, Korea, Lithuania, Malaysia, Malta, Mexico, Portugal and Slovenia in the *final net* models (Table 7.5a). Chapter 4 shows that teachers who engage in professional development tend to use specific teaching practices more often. This may also translate into greater teacher self-efficacy, although the TALIS data do not allow for identifying causal links.

In Hungary, the number of days of teachers' professional development is significant in the *gross* but not the *net* model (Table 7.5). In other words, the greater the amount of professional development undertaken by teachers in Hungary, the greater the likelihood of teaching with a positive classroom disciplinary climate. However, this relationship is not statistically significant once background characteristics are included (the *net* model). This indicates that the amount of professional development undertaken by Hungarian teachers is related to either their personal background characteristics or to the socio-economic background characteristics of the schools in which they teach.

Two further aspects of teachers' professional development are also included in the modelling. Induction and mentoring policies and practices have grown in importance in a number of countries in recent years, with the introduction of methods to assist new teachers and to improve learning and support to teachers within schools (OECD, 2005). Chapter 3 reveals that over two-thirds of teachers work in schools with a formal induction process for teachers new to the school. Moreover, three-quarters of teachers work in schools with a mentoring programme or policy for new teachers (Table 3.6).

Box 7.2 Professional development and classroom disciplinary climate and teachers' reported self-efficacy

- The amount of professional development undertaken by teachers is significantly related to teachers' reported self-efficacy in just under half of TALIS countries. It is significantly related to classroom disciplinary climate in only one TALIS country.
  - The more days of professional development undertaken by teachers the greater the likelihood of higher reported levels of self-efficacy in 11 TALIS countries.
- Teachers working in schools with either mentoring or induction programmes are, in general, not significantly more or less likely to report higher levels of self-efficacy or classroom disciplinary climate.

Note: All of the results are from the *final net* models estimated for each country unless otherwise specified.

In terms of the association with classroom disciplinary climate, these programmes are not as significant as the number of days of professional development undertaken by teachers. The effects of these policies are only significant in a few TALIS countries and the associations are often negative, indicating that these programmes exist in schools with a relatively poorer classroom disciplinary climate. The practice of induction and mentoring programmes in schools also does not have a significant association with teachers' reported self-efficacy with significant relationships found only in Bulgaria and Estonia (Table 7.5a).

TEACHING PRACTICES, BELIEFS AND ATTITUDES AND CLASSROOM DISCIPLINARY CLIMATE AND TEACHERS' SELF-EFFICACY

The next thematic bloc of variables to be included in the estimates of classroom disciplinary climate and teachers' self-efficacy concerns the characteristics of teachers' teaching practices, beliefs and attitudes which are discussed in Chapter 4. This bloc of independent variables includes:

- Index of direct transmission beliefs about instruction.
- Index of constructivist beliefs about instruction.
- Index of classroom teaching practice: structuring.
- Index of classroom teaching practice: student-oriented.
- Index of classroom teaching practice: enhanced activities.
- Index of professional collaboration.
- Index of exchange and co-ordination for teaching.
- Index of teacher-student relations.

The modelling presented here builds upon that of Chapter 4, which, while narrower in focus than the modelling in this chapter, also analyses aspects of classroom disciplinary climate and self-efficacy. However, there are slight differences due to the scope of the variables included and the methods of estimating the models (see Annex A1.4 for further details). Given the greater scope of the objectives of the modelling in this chapter, more variables are included and missing values are imputed to ensure adequate sample size. These changes are made to reflect differences in the scope and purpose of the modelling while ensuring that accurate measures are maintained.

Table 7.6 presents the variables in this bloc that were statistically significant in the *gross*, *net* and *final net* models estimated for each country. The table also illustrates the direction of the coefficients for the variables that are statistically significant for each country.

Teaching practices, beliefs and attitudes and classroom disciplinary climate

As discussed in Chapter 4, two indices are constructed to measure teachers' beliefs: direct transmission and constructivist beliefs about instruction. Both are significantly associated with classroom disciplinary climate in a number of countries but often with opposing effects. In Hungary, Italy, Korea, Poland and Slovenia, teachers with stronger constructivist beliefs about instruction are more likely to teach classes with a positive classroom disciplinary climate in the *final net* models estimated for each of these countries. Given the positive association between classroom disciplinary climate and constructivist beliefs about instruction, it is particularly interesting that direct transmission beliefs about instruction are found to have a negative association with classroom disciplinary climate in nine countries in the *net* models. Teachers with stronger beliefs about the importance of the direct transmission style of instruction are more likely to be teaching in classrooms with a poorer classroom disciplinary climate. In the *final net* models estimated for each country, direct transmission beliefs are significantly associated with a negative classroom disciplinary climate in Belgium (Fl.), Korea, Norway, Poland, Portugal,

Slovenia and Spain. This is particularly important for policy makers, school principals, teachers and other stakeholders in Korea, Poland and Slovenia, where the positive association between constructivist beliefs and classroom disciplinary climate and the negative association with direct transmission beliefs are both significant. Teachers' reports of teacher-student relations are significantly positively associated with classroom disciplinary climate in every TALIS country except Malta in the *final net* models estimated for each country.

Four indices are developed to measure the practices teachers reported using in the classroom. As discussed in Chapter 4, these indices measure different aspects of teaching practices and complement the analysis of teachers' beliefs presented above. Teaching practices emphasising structured classes and learning programmes for students are positively associated with classroom disciplinary climate in the *final net* models estimated for 11 TALIS countries (Australia, Austria, Belgium (Fl.), Bulgaria, Hungary, Ireland, Italy, Korea, Mexico, Portugal, and Spain). In contrast, in Malaysia, teachers who reported greater use of these teaching practices are more likely to teach classes with a poorer classroom disciplinary climate. Again, care must be taken when interpreting this relationship especially in terms of causality. Teachers in Malaysia may utilise more structured techniques in their classrooms that already had a poor classroom disciplinary climate; or, alternatively, structured techniques may have created a poorer classroom disciplinary climate. TALIS does not provide evidence in support of either interpretation.

Student-oriented teaching practices are significantly associated with classroom disciplinary climate in Austria, Brazil, Estonia, Lithuania, Malaysia, Poland, Slovenia and Turkey in the *final net* models estimated for each country (Table 7.6). Teachers in these countries who reported a greater emphasis on student-oriented teaching practices are significantly more likely to have classes with a more positive classroom disciplinary climate. In Denmark and Ireland a significant relationship is also found in the *gross* models (but not the *net* models) but in these countries the association is negative. In other words, teachers are more likely to teach classes with a poor classroom disciplinary climate if they favour student-oriented teaching practices. This indicates that these teaching practices in these countries are significantly associated with various background characteristics but to differing degrees. Extending this analysis, teaching practices engaging students in enhanced activities are also significantly associated with classroom disciplinary climate in four countries. The relationship was negative in Austria, Belgium (Fl.), Lithuania and Malaysia in the *final net* models estimated for these countries.

These findings build on the results in Chapter 4 which present regressions estimating classroom climate with a narrower set of independent variables (Table 4.10). As mentioned, an additional three sets of independent variables are included in the regression results presented in this chapter. These comprise: a broader set of teacher and school background variables; variables from other analytical blocs that measure characteristics discussed in Chapters 3, 5 and 6; and the inclusion of multiple variables measuring teachers' beliefs and practices. This chapter's results confirm that the strength of these relationships with classroom disciplinary climate are not particularly affected by the inclusion of additional independent variables. Characteristics such as school leadership styles, the level and type of appraisal and feedback, and other teaching beliefs and practices do not appear to significantly affect the relationships between these teaching practices and classroom disciplinary climate. Again, this draws attention to the individual nature of teaching practices and the fact that variations in such practices are largely due to individual rather than school-level factors. In addition, the greater significance of the association between structured teaching practices and classroom disciplinary climate as compared to student-oriented and enhanced activities teaching practices still holds in estimates that include a broader set of independent variables and, perhaps of most interest, even when controlling for differences in teachers' beliefs about instruction.

Two measures of teachers' co-operation are developed in the TALIS analysis and discussed in Chapter 4: teachers' professional collaboration and the level of exchange and co-ordination for teaching. Neither of these measures is significantly associated with classroom disciplinary climate to the same extent as teachers' beliefs and practices. Teachers' professional collaboration is significantly positively associated with classroom disciplinary

climate in Bulgaria, Italy and Spain and negatively associated with classroom disciplinary climate in Austria and Malaysia in the *final net* models. The level of exchange and co-ordination for teaching is significantly related to classroom disciplinary climate in Austria, Malaysia and Mexico in the *final net* models (Table 7.6).

Teaching practices, beliefs and attitudes and teachers' self-efficacy

Both direct transmission beliefs and constructivist beliefs about instruction are significantly associated with classroom disciplinary climate in some TALIS countries. Teachers with stronger constructivist beliefs about instruction are also significantly more likely to have higher levels of self-efficacy in all countries except Brazil, Bulgaria, Malaysia and Mexico in the *final net* models. Direct transmission beliefs about instruction are also significantly positively associated with self-efficacy in all countries except Australia, Estonia, Hungary, Iceland, Malaysia and Malta in the *final net* models (Table 7.6a). This reflects results presented in Chapter 4 indicating that the strength of teachers' beliefs about effective instruction are related to their self-efficacy. Previous research adds further support to this finding. Workers who have been successful with particular working methods have been found to show a stronger relationship between such methods and their perceived self-efficacy (Bandura, 1989).

A number of classroom practices that are significantly related to classroom disciplinary climate also have a significant relationship with teachers' reported self-efficacy. Structured teaching practices are positively significantly related to teachers' reported self-efficacy in 11 TALIS countries in the *final net* models. Teachers in Australia, Austria, Belgium (Fl.), Iceland, Ireland, Korea, Malaysia, Mexico, Norway, Portugal and Spain who reported emphasising structured teaching practices in their classroom have higher levels of reported self-efficacy (Table 7.6a). In Poland this relationship is significant but negative so that teachers were less likely to report higher levels of self-efficacy if they reported using structured practices in their classrooms. Student-oriented teaching practices have a significant positive relationship with teachers' reported self-efficacy in Austria, Estonia, Hungary, Korea, Lithuania, Portugal, the Slovak Republic, Slovenia and Turkey in the *final net* models. It should also be noted that, as shown in Chapter 4, there is a significant relationship in most TALIS countries between student-oriented teaching practices and constructivist beliefs about instruction (Table 4.9). This relationship may reduce the significance of that between student-oriented practices and self-efficacy found here given the finding about the significance of constructivist beliefs about instruction in estimations of teachers' reported self-efficacy.

Extending the analysis to teachers' reports of classroom practices that involve engaging students in enhanced activities, as in the case of the findings on the relationship with classroom disciplinary climate, there is a significant relationship with self-efficacy in fewer TALIS countries than for other teaching practices. In Ireland, Italy and Poland teachers who reported engaging their students in enhanced activities in the classroom were more likely to report greater levels of self-efficacy. However, in Austria a greater reported use of enhanced activities in the classroom is associated with a decrease in teachers' reported levels of self-efficacy in the *final net* model (Table 7.6a).

The two measures of teachers' co-operation used in this analysis are an index of teachers' professional collaboration and an index of exchange and co-ordination for teaching. The former is significantly associated with teachers' reported self-efficacy in ten TALIS countries in the *final net* models. The more teachers in Austria, Belgium (Fl.), Bulgaria, Estonia, Hungary, Iceland, Korea, Poland, Portugal and Spain engaged in professional collaboration, the greater their reported levels of self-efficacy. This is also true for Malaysia and Norway for teachers' levels of exchange and co-ordination for teaching in the *final net* models (Table 7.6a).

Teachers' reports about teacher-student relations in their schools is the only measure of teacher practices and beliefs that is found to have a statistically significant relationship with teachers' reported self-efficacy in all TALIS countries in the *final net* models (Table 7.6a). This is also found when modelling the relationship with classroom disciplinary climate (except for Malta), a further sign of the importance of teacher-student relations in school education.

Box 7.3 Disciplinary climate and teachers' reported self-efficacy and teaching practices and beliefs

- Stronger beliefs about instruction are related to stronger self-efficacy regardless of the type of beliefs. Teachers with stronger constructivist beliefs about instruction are significantly more likely to report higher levels of self-efficacy in all TALIS countries except Brazil, Bulgaria, Malaysia and Mexico. Moreover, direct transmission beliefs about instruction are significantly positively associated with self-efficacy in all TALIS countries except Australia, Estonia, Hungary, Iceland, Malaysia and Malta.
- Beliefs about instruction have opposing relationships with classroom disciplinary climate in some countries. Teachers with stronger constructivist beliefs are more likely to teach classes with a positive classroom disciplinary climate in 5 TALIS countries. However, direct transmission beliefs about instruction are found to have a negative association with classroom disciplinary climate in 7 TALIS countries.
  - This is particularly important for policy makers, school principals, teachers and other stakeholders in Korea, Poland and Slovenia where the positive association between constructivist beliefs and classroom disciplinary climate and the negative association with direct transmission beliefs are both significant.
- Teachers' reports of teacher-student relations is the only variable measuring teachers' beliefs and classroom practices that is significantly positively associated with classroom disciplinary climate (except in Malta) and with teachers' reported self-efficacy in every TALIS country.
- A number of teaching practices are significantly related to classroom disciplinary climate and teachers' self-efficacy:
  - Teaching practices emphasising structured classes and learning programmes for students are positively associated with classroom disciplinary climate in 11 TALIS countries and with teachers' reported self-efficacy in 11 TALIS countries.
  - Student-oriented teaching practices are significantly positively associated with classroom disciplinary climate in eight countries and with teachers' reported self-efficacy in 9 TALIS countries.
  - Teachers' professional collaboration is significantly positively associated with teachers' reported self-efficacy in ten countries but with classroom disciplinary climate in only 3 TALIS countries.

Note: All of the results are from the *final net* models estimated for each country unless otherwise specified.

TEACHER APPRAISAL AND FEEDBACK AND CLASSROOM DISCIPLINARY CLIMATE AND TEACHERS' SELF-EFFICACY

The next bloc of variables considered in the analysis includes aspects of school evaluations and teacher appraisal and feedback which are the focus of Chapter 5. A number of issues discussed in Chapter 5 can be considered important in school education and in the careers and working lives of teachers. They include the frequency and criteria of school evaluations, the potential impact of such evaluations, the frequency and criteria of teacher appraisal and feedback, the outcomes and impact of such appraisal and feedback, and various issues relating to the structure of school evaluation that affect teachers and their careers.

Given the breadth of the analysis in Chapter 5 and the restrictions of the modelling, only a subset of variables are included in the bloc of variables depicting school evaluations and teacher appraisal and feedback. The independent variables included in the modelling are:

- Did not have a school evaluation within the previous 5 years.
- Importance of aspect for school evaluations: student test scores.
- School evaluation published.
- Did not receive teacher appraisal or feedback from any source at this school.
- Importance in teacher appraisal and feedback: student test scores.
- Importance in teacher appraisal and feedback: innovative teaching practices.
- Importance in teacher appraisal and feedback: professional development the teacher has undertaken.
- Impact of teacher appraisal and feedback: a change in salary.
- Impact of teacher appraisal and feedback: opportunities for professional development activities.
- Impact of teacher appraisal and feedback: public recognition from the principal and/or your colleagues.
- Impact of teacher appraisal and feedback: changes in the teacher's work responsibilities that make the job more attractive.
- Whether teachers believe that the most effective teachers in their school receive the greatest monetary or non-monetary rewards.

In the same manner as for previous blocs, the bloc of variables concerned with school evaluation and teacher appraisal and feedback are included in *gross*, *net* and *final net* models estimating both classroom disciplinary climate and teachers' reported self-efficacy. Table 7.7 presents the variables in this bloc that are statistically significant in the *gross*, *net* and *final net* models estimated for each country. The table also illustrates the direction of the coefficients for the variables that are statistically significant for each country.

Two sets of estimations were carried out for the analysis of variables of teacher appraisal and feedback. The first estimates the impact of having a school evaluation and teacher appraisal and feedback, and the second estimates the impact of various important aspects and outcomes of school evaluation and teachers' appraisal and feedback. The variables measuring the important aspects and outcomes of school evaluation and teacher appraisal and feedback are only reported by teachers in schools where such activities took place. For this reason, these variables are modelled separately. The results of both sets of estimations are discussed below.

Three variables measuring important aspects of school evaluations of interest for policy makers and stakeholders are included in the modelling. The first identifies whether a school had undergone either an external or a self-evaluation within the last five years. The second measures the importance of student test scores in the school evaluation and thus indicates the role of student outcomes in the evaluations of schools. The third concerns whether or not the results of such an evaluation were published.

School evaluations are found to have little significant impact on classroom disciplinary climate. No significant relationship is found in any TALIS country between classroom disciplinary climate or teacher self-efficacy and whether or not a school had either an external or self-evaluation within the last five years in the *final net* models estimated for each country (Table 7.7a). This is also the case for the emphasis on student test scores in school evaluations and the publication of information on school evaluations. This is a contentious issue in a number of countries but does not show a significant positive or negative relationship with classroom disciplinary climate in any TALIS country.

The lack of significant findings in these relationships does not necessarily mean that the findings themselves are of little importance. These variables are included in the modelling as they are important policy malleable aspects of the evaluative framework of school education. In some countries, the publication of school evaluation results and a strong emphasis on student outcomes in evaluating schools have been contentious practices or policy issues. The finding that these factors are not significantly associated with classroom disciplinary climate may be important for policy makers or administrators considering such policy issues, particularly if, for example, the impact on classroom disciplinary climate is considered a reason for either supporting or opposing such moves.

In Brazil, Denmark, Portugal and the Slovak Republic the practice of teacher appraisal and feedback is significantly associated with classroom disciplinary climate. Teachers in these countries who had received some appraisal and feedback on their work as teachers in their school were significantly more likely to teach classes with a positive classroom disciplinary climate (Table 7.7). However, this was not significant in the *final net* models estimated for these countries. It therefore appears that in these countries, the emphasis on various criteria in appraisal and feedback discussed below (which is, by definition, correlated with whether or not teachers receive appraisal or feedback) had a stronger impact upon classroom disciplinary climate than simply whether that appraisal and feedback existed in the first place. In 11 countries a significant relationship is found between teachers who received appraisal and feedback and their reported self-efficacy. Teachers in Australia, Belgium (Fl.), Brazil, Bulgaria, Hungary, Ireland, Italy, Mexico, Portugal and Spain reported higher levels of self-efficacy if they had received appraisal and feedback on their work as teachers in their school in the *net* models (Table 7.7a). However, these relationships are not significant in the *final net* models estimated for each country. This may be because of the association between the receipt or not of appraisals and feedback and distinct aspects and impacts or outcomes of that appraisal and feedback that are also included as independent variables in the estimations

Three criteria used in teacher appraisal and feedback are included in the analysis to assess whether these are associated with classroom disciplinary climate and teacher self-efficacy. An emphasis on student test scores, innovative teaching practices and teacher professional development are considered in the analysis. Of these, teacher appraisal and feedback emphasising innovative teaching practices is found to have a significant impact in the more TALIS countries (Table 7.7 and Table 7.7a). An emphasis on innovative teaching practices in the appraisal and feedback that teachers received about their work is significantly associated with classroom disciplinary climate in seven TALIS countries in the *net* models estimated for each country (Table 7.7). Teachers in Brazil, Hungary, Lithuania, Mexico, Portugal, the Slovak Republic and Slovenia who received appraisal and feedback emphasising innovative teaching practices were more likely to report teaching classes with a more positive classroom disciplinary climate. However, once variables from other analytical blocs are included in the *final net* models, they are significantly associated with classroom disciplinary climate only in Lithuania, Portugal, the Slovak Republic and Slovenia. Teacher appraisal and feedback that emphasised innovative teaching practices is significantly associated with increased teacher self-efficacy in 11 TALIS countries in the *net* models (Table 7.7a). It is clear however, that this is also correlated with other analytical variables as it is only significant in the *final net* models estimated for Brazil, Iceland and Portugal. The link between an emphasis on innovative teaching practices and self-efficacy is an important finding in its own right. But it is also important considering the discussion in Chapter 5 shows that teachers report receiving little or no recognition for being innovative in their work. This may need to be addressed to better encourage innovative teaching practices and possibly thereby encourage greater teacher self-efficacy.

An important element of Chapter 5 concerns the linkages between teachers' professional development and teacher appraisal and feedback. The discussion emphasised the extent to which teacher appraisal and feedback is used to identify and then plan teachers' professional development activities. Once teachers have completed professional

development, the impact and value of that professional development, and the changes resulting from it, can be incorporated into teachers' appraisal and feedback. The emphasis on teachers' professional development is positively associated with classroom disciplinary climate in the *net* models for Italy and Korea (Table 7.7). In addition, in the *net* models for Austria, Ireland, Korea, Lithuania, Mexico and Slovenia, teachers who received appraisal and feedback which emphasised the professional development they had undertaken reported greater levels of self-efficacy (Table 7.7a). However, this was not significant in the *final net* models for these countries. Teacher appraisal and feedback which emphasised student test scores was positively associated with classroom disciplinary climate only in Denmark and was negatively associated with teachers' self-efficacy in Estonia.

The impact and outcomes of teacher appraisal and feedback provide an indication of the role it plays in teachers' careers and their working lives. Four specific outcomes were identified and included in the estimations of classroom disciplinary climate and self-efficacy: whether a teacher had received a change in salary following appraisal and feedback; opportunities for professional development; public recognition from the school principal or school colleagues; and changes in work responsibilities that make a teacher's job more attractive. Of these, public recognition is significantly associated with classroom disciplinary climate and teachers' reported self-efficacy in the greatest number of TALIS countries (Table 7.7a).

A positive classroom disciplinary climate is more likely to exist for teachers who receive public recognition from their school principal or other colleagues in their school. In the *net* models estimated for each country, this relationship is significant in Australia, Belgium (Fl.), Brazil, Bulgaria, Estonia, Korea and Slovenia (Table 7.7). However, in the *final net* models these relationships are not significant in Australia and Slovenia; this points to correlation with variables from other analytical blocs. Associations between teachers' reported self-efficacy and public recognition from the school principal or school colleagues are significant in 11 countries in the *final net* models. Teachers in Austria, Belgium (Fl.), Estonia, Hungary, Ireland, Italy, Korea, Lithuania, Malta, Norway and Spain are significantly more likely to report greater levels of self-efficacy if they received public recognition from the school principal or school colleagues as a consequence of the appraisal and feedback they received about their work (Table 7.7a). Public recognition was the most frequent outcome following teacher appraisal and feedback (Table 5.5) so it is important that it is found to have an impact. It indicates that if the outcomes of appraisal and feedback are strengthened then it may have a greater impact upon teachers and their self-efficacy. Public recognition, while being the most frequent outcome, was only an outcome of appraisal and feedback to a moderate or large degree for 36% of teachers so there is scope to strengthen these links. Moreover, only 9% or teachers reported a moderate or large change in salary and only 16% reported a moderate or large change in career opportunities following appraisal and feedback (Table 5.5). Given that stronger outcomes of appraisal and feedback can have an impact on teacher self-efficacy, this may be an additional argument for strengthening the outcomes of teacher appraisal and feedback.

Changes in work responsibilities that make teachers' jobs more attractive have a significant relationship with teachers' reported self-efficacy in Brazil, Bulgaria, Estonia, Portugal and Slovenia in the *final net* models (Table 7.7a). Significant relationships between these variables may indicate that teacher appraisal and feedback plays a proactive and important role in school development and the organisation of teaching in schools. It may be that effective schools appraise teachers' work and fashion their teaching responsibilities to best utilise the aspects of teachers' skills and abilities that are identified in the appraisal of their work. A change in work responsibilities as a result of teacher appraisal and feedback is not significantly associated with classroom disciplinary climate in the *final net* models for any TALIS country (Table 7.7).

Chapter 5 reports that the majority of teachers do not work in schools where they believe the most effective teachers receive the greatest recognition. Similarly, approximately three-quarters of teachers reported that they would receive no recognition for increasing either the effectiveness or level of innovation in their teaching.

A similar proportion of teachers disagreed with the statement that the most effective teachers in their school receive the greatest monetary or non-monetary rewards. It is important therefore that, even given a relatively small number of teachers in a number of countries agreeing with this statement, it has a significant and positive impact upon teachers' self-efficacy in the *net* models in Brazil, Iceland, Italy, Korea, Malaysia, Portugal, Spain, and Turkey. However, this was only significant in the *final net* models in Brazil (Table 7.7a).

Box 7.4 Classroom disciplinary climate and teachers' reported self-efficacy and teachers' appraisal and feedback

- Teachers who received no appraisal and feedback were less likely to have higher levels of reported self-efficacy. Yet, this relationship was not significant in the final models indicating that it is related with other factors. There are no significant findings linking classroom disciplinary climate or teachers' self-efficacy with whether or not teachers worked in schools that had conducted school evaluations.
- Teacher appraisal and feedback that focuses on innovative teaching practices was more likely to be related to higher levels of self-efficacy in 3 TALIS countries and of classroom disciplinary climate in 4 TALIS countries. This is potentially important given that the majority of teachers reported that they received little or no recognition for being innovative in their work and that it was significant in a greater number of countries in the bloc models estimated for each country.
- Teachers who received public recognition from the school principal or their colleagues as a consequence of their appraisal and feedback were more likely to have higher levels of classroom disciplinary climate in 5 TALIS countries and reported self-efficacy in 11 TALIS countries.
- Changes in work responsibilities that make teachers' jobs more attractive are found to have a significant positive relationship with teachers' reported self-efficacy in 5 TALIS countries. This may indicate that teacher appraisal and feedback plays a proactive and important role in school development and the organisation of teaching in schools. It may be that effective schools appraise teachers' work and fashion their teaching responsibilities to make the best use of the skills and abilities identified in the appraisal of teachers' work.

Note: All of the results are from the *final net* models estimated for each country unless otherwise specified.

SCHOOL LEADERSHIP AND CLASSROOM DISCIPLINARY CLIMATE AND TEACHERS' SELF-EFFICACY

A final analytical bloc of variables is added to analyse the association between classroom disciplinary climate and teachers' reported self-efficacy and the specific school leadership styles discussed in Chapter 6. This bloc of school leadership variables includes:

- School leadership index: Management-school goals.
- School leadership index: Instructional management.
- School leadership index: Direct supervision of instruction in the school.
- School leadership index: Accountable management.
- School leadership index: Bureaucratic management.

Table 7.8 presents the variables in this analytical bloc that are statistically significant in the *gross*, *net* and *final net* models estimated for each country. The table also illustrates the direction of the coefficients for the variables that are statistically significant for each country.

Overall, school leadership styles are not significantly associated with teachers' reported self-efficacy or classroom disciplinary climate. For each school leadership style, significant relationships were only found in a few TALIS countries. Two important factors should be considered when interpreting these findings. First, as shown in Chapter 6, various aspects of school leadership are significantly associated with specific teaching beliefs and practices that are significantly associated with classroom disciplinary climate and teachers' reported self-efficacy. The linkages between school leadership styles and classroom disciplinary climate and teacher self-efficacy may therefore be indirect. Second, given that this is a cross-sectional study, caution must be used in inferring causality (or a lack of it). For example, if an indirect effect exists for school leadership it may be better analysed with longitudinal data which can better track impacts on classroom disciplinary climate and teachers' reported self-efficacy.

Table 7.8 shows some significant findings for school leadership styles in the *final net* models estimating classroom disciplinary climate and teacher self-efficacy. The school leadership style of framing and communicating school goals is significantly and positively related to classroom disciplinary climate in Malta and significantly and positively related to both classroom disciplinary climate and teachers' reported self-efficacy in Portugal. Promoting instructional improvements and professional development is significantly related to classroom climate only in Slovenia and the relationship is negative. But it should be emphasised that irrespective of this, teacher professional development is significantly related to both classroom disciplinary climate and teacher self-efficacy in a number of TALIS countries. School leadership emphasising the supervision of instruction in schools is also negatively related to classroom disciplinary climate in Malta. Teachers' reported self-efficacy and the accountability role of a school leader are significantly related in Ireland. The index measuring the bureaucratic role of a school leader is significantly related to classroom disciplinary climate in Estonia, Italy and Norway.

Box 7.5 Classroom disciplinary climate and teachers' reported self-efficacy and school leadership

In general school leadership styles are not found to have a significant effect on teachers' reported self-efficacy or classroom disciplinary climate. For each school leadership style, significant relationships are only found in a few TALIS countries. However, as shown in Chapter 6, various aspects of school leadership are significantly associated with specific teaching beliefs and practices that are significantly associated with classroom disciplinary climate and teachers' reported self-efficacy. The linkages between school leadership styles and classroom disciplinary climate and teacher self-efficacy may therefore be indirect.

SCHOOL AUTONOMY AND SCHOOL CLIMATE AND CLASSROOM DISCIPLINARY CLIMATE AND TEACHERS' SELF-EFFICACY

A final bloc of variables is included in the modelling to capture the relationships between certain school characteristics and teachers' self-efficacy and classroom disciplinary climate. It draws on the data first described in Chapter 2 and focuses on aspects such as the level of autonomy enjoyed by schools and specific measures of school resources. It provides a more complete estimate of classroom disciplinary climate and teachers' self-efficacy and therefore permits a more thorough analysis of the magnitude of the association with the independent variables. The following bloc of independent variables is added to the modelling:

- Index of school climate: student delinquency.
- Index of school climate: teachers' morale.
- Index of lack of personnel (teachers, technicians, instructional support personnel, other support personnel).
- Index of shortage of materials (instructional materials, computers, equipment, library materials).
- Index of school autonomy in hiring teachers, determining salaries.
- Index of school autonomy in budgeting (formulating and allocating the school budget).
- Index of school autonomy in student policy and textbooks.
- Index of school autonomy in curriculum (courses offered, course content).
- School average class size.
- Public school.

Table 7.9 presents the variables in this analytical bloc that are statistically significant in the *gross*, *net* and *final net* models estimated for each country. The table also illustrates the direction of the coefficients for the variables that are statistically significant for each country. Few significant relationships are found between these variables and classroom disciplinary climate or teachers' self-efficacy. There is a significant negative relationship between class size and classroom disciplinary climate in 19 countries in the *final net* models. However, this is not the case for teachers' reported self-efficacy. Few significant findings are evident for measures of school autonomy or school principals' reports of the extent to which a lack of school resources hinders instruction in their school.

Indices of school resources are significantly associated with teachers' reported self-efficacy only in the *final net* model estimated for Austria (Table 7.9a). However, a lack of school personnel has a positively significant relationship to classroom disciplinary climate in Iceland and Lithuania and a shortage of materials for instruction is significantly associated with classroom disciplinary climate in Poland in the *final net* models. School sector is significantly associated with classroom disciplinary climate and teachers' reported self-efficacy in four countries. A more negative classroom disciplinary climate is more likely in public schools in Denmark and Malta. In Ireland, lower levels of teachers' reported self-efficacy are also more likely to be found in public schools. However, in Norway, public school teachers are more likely to have reported higher levels of self-efficacy in the *final net* model.

School autonomy is significantly related to classroom disciplinary climate and teacher self-efficacy in a few TALIS countries (Table 7.9 and Table 7.9a). The index of school autonomy for hiring teachers and determining salaries is significantly associated with classroom disciplinary climate in Australia, Austria (where the relationship is negative) and Poland, and significantly associated with teacher self-efficacy in Belgium (Fl.) (where the relationship is negative) in the *final net* models. The index of school autonomy for school budgeting is significantly negatively related to teachers' reported self-efficacy in Poland and Portugal.

Box 7.6 Classroom disciplinary climate and teachers' reported self-efficacy and various school-level factors

In general, school-level factors measured here are not significantly associated with classroom disciplinary climate or teachers' self-efficacy. A significant negative relationship is found between class size and classroom disciplinary climate for most TALIS countries but not for teachers' reported self-efficacy.

Note: All of the results are from the *final net* models estimated for each country unless otherwise specified.

CONCLUSIONS AND IMPLICATIONS FOR POLICY AND PRACTICE

A number of variables are significantly associated with classroom disciplinary climate and teachers' self-efficacy. There is also substantial variation in the variables that are significant across TALIS countries, indicating that structural and school-level factors operate differently in different countries. For example, the relationships between teachers' reported self-efficacy and teachers' professional collaboration and structured teaching practices are significant in the *final net* models estimated for just over half of TALIS countries but, in the main, countries with a significant relationship between self-efficacy and professional collaboration do not exhibit a significant relationship between self-efficacy and structured teaching practices.

There are some commonalities in the findings across countries. Characteristics that are more closely related to the dependent variables of classroom disciplinary climate and teacher self-efficacy are more likely to be significant. Teachers' beliefs are significantly associated with classroom disciplinary climate across virtually all TALIS countries and other classroom factors such as student ability and class size also have significant associations in most TALIS countries. Given the connection between teaching practices and beliefs and classroom disciplinary climate and self-efficacy, it is perhaps not surprising that these variables are of greater significance. The greater proximity of these independent variables to the dependent variables is evident in their statistical significance and quantitative importance in a greater number of TALIS countries.

With regard to associations with classroom disciplinary climate, the variables that are significant in the *final net* models for over two-thirds of TALIS countries are the number of years working as a teacher, teaching practices emphasising teacher-student relations, school average class size, and lower and higher average student ability. In the *final net* models estimated for teachers' reported self-efficacy, the variables that are significant in at least two-thirds of countries are: constructivist beliefs about instruction, direct transmission beliefs about instruction and higher average student ability.

The significance of the above variables does not mean that issues such as the type of professional development, school evaluation, school leadership and other school-level variables are not important. Their effect may be indirect and more easily measured in longitudinal studies which can more readily track longer-term and indirect associations. A number of these factors are associated in the *gross* and *net* models estimated for each country but are not significant in the *final net* models which find mainly teaching beliefs and practices variables to be significant. In addition, Chapter 6 discusses significant associations between specific leadership styles and some of the teaching beliefs and practices that are significant in the *final net* models estimated for each country. This may be seen as stronger evidence of an indirect link with classroom disciplinary climate and teacher self-efficacy. It is also worth noting that the dependent variables of teachers' self-efficacy and classroom disciplinary climate can be used as independent variables in other modelling to emphasise, for example, the role of school leadership and school evaluation and teacher appraisal and feedback. Further analysis of the TALIS data may yield more findings of these relationships.

ADDITIONAL MATERIAL

The following additional material relevant to this chapter is available on line at:

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.2a Self-efficacy: Making a significant educational difference (2007-08)

Table 7.2b Teacher self-efficacy: Making progress with students (2007-08)

Table 7.2c Teacher self-efficacy: Successful with students (2007-08)

Table 7.2d Teacher self-efficacy: Getting through to students (2007-08)

Table 7.3a Classroom disciplinary climate: Waiting for students to quieten down (2007-08)

Table 7.1

List of independent variables

Blocs of independent variables	Variable name
School socio-economic background	Teacher level: ability of students in class lower than the average at the same grade level
	Teacher level: ability of students in class higher than the average at the same grade level
	Teacher level: percentage of students in class speaking instruction language
	Teacher level: percentage of students in class with at least one parent with completed ISCED 5 or higher
	School level: percentage of students in school speaking instruction language
	School level: percentage of students in school with at least one parent with completed ISCED 5 or higher
	School level: ability of students in class lower than the average
	School level: ability of students in class higher than the average
Bloc 1: Teacher characteristics	Female teacher
	Teacher employed full-time
	Teacher employed on a permanent contract
	Teacher's education: above bachelor degree
	Number of years for teaching
Bloc 2: Teacher professional development	Number of days for professional development
	School providing induction process for teachers
	School providing mentor for new teachers
Bloc 3: Teacher beliefs and practices	Index of teacher-student relations
	Index of classroom teaching practice: structuring
	Index of classroom teaching practice: student-oriented
	Index of classroom teaching practice: enhanced activities
	Index of direct transmission beliefs about instruction
	Index of constructivist beliefs about instruction
	Index of exchange and co-ordination for teaching
	Index of professional collaboration
Bloc 4: Teacher appraisal and feedback	Never received appraisal or feedback from any source
	Never received a school evaluation within the last 5 years
	Teacher percieves that effective teachers receive more monetary or non-monetary rewards in the school
	Important aspect for teacher appraisal: student test scores
	Important aspect for teacher appraisal: innovative teaching practices
	Important aspect for teacher appraisal: professional development the teacher has undertaken
	Teacher appraisal and feedback impact: a change in salary
	Teacher appraisal and feedback impact: opportunities for professional development activities
	Teacher appraisal and feedback impact: public-private recognition from the principal and/or your colleagues
	Teacher appraisal and feedback impact: changes in the teacher's work responsibilities that make the job more attractive (1=moderate or large change; 0=others)
	School evaluation published
	Important aspect for school evaluations: student test scores
Bloc 5: School leadership	Index of management-school goals
	Index of instructional management
	Index of direct supervision of instruction in the school
	Index of accountable management
	Index of bureaucratic management
Bloc 6: School autonomy and resources	Index of school climate: student delinquency
	Index of school climate: teachers' working morale
	Index of a lack of personnel
	Index of school resources: shortage of materials
	Index of school autonomy in hiring teachers, determining salaries
	Index of school autonomy in budgeting (formulating and allocating the school budget)
	Index of school autonomy: student policy and textbooks
	Index of school autonomy in curriculum (courses offered, course content)
	School average class size
	Public school

Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

Table 7.2

Index of self-efficacy (2007-08)

In lower secondary schools

	Self Efficacy index	
	Mean	(S.E.)
Australia	0.30	(0.03)
Austria	0.24	(0.02)
Belgium (Fl.)	0.05	(0.02)
Brazil	-0.10	(0.03)
Bulgaria	0.22	(0.03)
Denmark	0.28	(0.03)
Estonia	-0.40	(0.01)
Hungary	-0.42	(0.02)
Iceland	0.34	(0.03)
Ireland	0.30	(0.03)
Italy	0.36	(0.02)
Korea	-0.77	(0.02)
Lithuania	0.06	(0.02)
Malaysia	0.01	(0.03)
Malta	-0.05	(0.03)
Mexico	0.08	(0.03)
Norway	0.51	(0.03)
Poland	-0.14	(0.02)
Portugal	-0.08	(0.02)
Slovak Republic	-0.30	(0.02)
Slovenia	0.01	(0.01)
Spain	-0.45	(0.02)
Turkey	0.00	(0.04)
TALIS average	0.00	(0.01)

Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

Table 7.3

Classroom disciplinary climate index (2007-08)

In lower secondary schools

	Classroom disciplinary climate index	
	Mean	(S.E.)
Australia	0.05	(0.03)
Austria	0.25	(0.02)
Belgium (Fl.)	0.08	(0.03)
Brazil	-0.25	(0.02)
Bulgaria	0.15	(0.04)
Denmark	-0.08	(0.04)
Estonia	0.45	(0.02)
Hungary	0.13	(0.04)
Iceland	-0.36	(0.03)
Ireland	0.21	(0.03)
Italy	0.09	(0.02)
Korea	-0.12	(0.02)
Lithuania	0.15	(0.02)
Malaysia	-0.06	(0.03)
Malta	-0.19	(0.03)
Mexico	0.25	(0.02)
Norway	-0.13	(0.04)
Poland	0.14	(0.02)
Portugal	-0.39	(0.03)
Slovak Republic	-0.11	(0.03)
Slovenia	0.24	(0.03)
Spain	-0.47	(0.03)
Turkey	-0.07	(0.05)
TALIS average	0.00	(0.01)

Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

Table 7.4

Significant variables and the direction of coefficients of Bloc 1 variables in the *gross*, *net* and *final net* models estimating classroom disciplinary climate (2007-08)[1]

Significant variables in the multiple regression of the index of classroom disciplinary climate that include the following lower secondary education teachers' characteristics[2]

Example: In Austria, teachers employed on a full-time basis are more likely to teach classes with a better classroom disciplinary climate.

	>ISCED5 (Bachelor degree)			Female			Full-time employment			Permanent Contract			Years of teaching		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia							+	+		+	+		+	+	+
Austria		–		+	+	+	+	+	+				+	+	+
Belgium (Fl.)										+	+	+	+	+	+
Brazil	–	–	–	–	–	–							+	+	+
Bulgaria													+	+	+
Denmark	+			+	+	+							+	+	+
Estonia					+				+	+	+	+	+	+	+
Hungary										+	+	+	+	+	+
Iceland													+	+	+
Ireland				+	+			+	+	+	+	+			
Italy	+	+	+								+	+	+	+	+
Korea															
Lithuania	+			+	+		+	+	+	+	+	+	+	+	+
Malaysia						–				–			+	+	+
Malta			–							+	+	+	+	+	+
Mexico													+		
Norway	–	–	–							+	+	+	+	+	+
Poland										+	+	+	+	+	+
Portugal							+	+	+						
Slovak Republic				+	+	+							+	+	+
Slovenia				+	+	+				+	+	+	+	+	+
Spain										+		+	+	+	+
Turkey							+	+							

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

Table 7.4a

Significant variables and the direction of coefficients of Bloc 1 variables in the *gross, net* and *final net* models estimating teachers' reported self-efficacy (2007-08)[1]

Significant variables in the multiple regression of the index of teachers' self-efficacy that include the following lower secondary education teachers' characteristics[2]

Example: In Australia, teachers employed on a full-time basis are more likely to have higher levels of reported self-efficacy.

	>ISCED5 (Bachelor degree)			Female			Full-time employment			Permanent Contract			Years of teaching		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia							+	+	+	+	+				
Austria		–		+	+		+	+	+				–	–	–
Belgium (Fl.)	–	–	–				+	+		+	+	+			
Brazil	–	–		–						–	–	–			
Bulgaria						–							+	+	
Denmark							+	+	+	+	+	+			
Estonia										+	+	+			
Hungary															
Iceland															
Ireland															
Italy							+	+	+						
Korea	+	+	+	–	–	–		+	+	+	+	+	+	+	+
Lithuania				+	+										
Malaysia		+	+	–	–	–							+	+	+
Malta													+	+	+
Mexico			+				+	+							
Norway	+	+	+					+		+	+	+			
Poland						–							+	+	
Portugal	+	+	+										–	–	
Slovak Republic							+	+	+				+	+	+
Slovenia												+			–
Spain															
Turkey							+	+				+	+	+	+

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.

2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.5

Significant variables and the direction of coefficients of Bloc 2 variables in the *gross, net* and *final net* models estimating classroom disciplinary climate[1]

Significant variables in the multiple regression of the index of classroom disciplinary climate that include the following professional development variables for lower secondary education teachers[2]

Example: In Malta, teachers who work in schools with a mentoring programme are more likely to teach classes with a more positive disciplinary climate.

	Number of days of professional development			School providing induction process for teachers			School providing mentor for new teachers		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia	+	+	+				+		
Austria									
Belgium (Fl.)									
Brazil								–	–
Bulgaria									
Denmark							+		
Estonia									
Hungary	+								
Iceland									
Ireland									
Italy									
Korea	+	+							
Lithuania									
Malaysia							+		
Malta				–	–	–	+	+	+
Mexico									
Norway									
Poland				–	–				
Portugal	+	+							
Slovak Republic	+	+							
Slovenia		+		–	–	–			
Spain									
Turkey									

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

Table 7.5a

Significant variables and the direction of coefficients of Bloc 2 variables in the *gross, net* and *final net* models estimating teachers' reported self-efficacy[1]

Significant variables in the multiple regression of the index of teachers' self-efficacy that include the following professional development variables for lower secondary education teachers[2]

Example: In Denmark, teachers are more likely to have higher levels of self-efficacy if they have undertaken more days of professional development.

	Number of days of professional development			School providing induction process for teachers			School providing mentor for new teachers		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia									
Austria	+	+							
Belgium (Fl.)									
Brazil									
Bulgaria	+	+					+	+	+
Denmark	+	+	+						
Estonia	+	+	+				+	+	+
Hungary	+	+		–					
Iceland	+	+	+						
Ireland									
Italy	+	+	+						
Korea	+	+	+						
Lithuania	+	+	+						
Malaysia	+	+	+				+	+	
Malta	+	+	+				+	+	
Mexico		+	+						
Norway	+	+							
Poland									
Portugal	+	+	+						
Slovak Republic				+					
Slovenia	+	+	+						
Spain									
Turkey				–					

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

Table 7.6

Significant variables and the direction of coefficients of Bloc 3 variables in the *gross, net* and *final net* models estimating classroom disciplinary climate[1]

Significant variables in the multiple regression of the index of classroom disciplinary climate that include the following indices of teachers' beliefs and practices in lower secondary education[2]

Example: In Italy, teachers reporting more frequent use of structured teaching practices are more likely to teach classes with a more positive disciplinary climate.

	Index of teacher-student relations			Index of classroom teaching practice: structuring			Index of classroom teaching practice: student-oriented			Index of classroom teaching practice: enhanced activities		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia	+	+	+	+	+	+						
Austria	+	+	+	+	+	+	+	+	+	–	–	–
Belgium (Fl.)	+	+	+	+	+	+				–	–	–
Brazil	+	+	+				+	+	+			
Bulgaria	+	+	+	+	+	+						
Denmark	+	+	+	+			–			+		
Estonia	+	+	+				+	+	+			
Hungary	+	+	+		+	+						
Iceland	+	+	+									
Ireland	+	+	+	+	+	+	–					
Italy	+	+	+	+	+	+						
Korea	+	+	+	+	+	+						
Lithuania	+	+	+	+				+	+	–	–	–
Malaysia	+	+	+	–	–	–	+	+	+	–	–	–
Malta	+			+								
Mexico	+	+	+	+	+	+						
Norway	+	+	+									
Poland	+	+	+	–			+	+	+			
Portugal	+	+	+	+	+	+		+				
Slovak Republic	+	+	+				+					
Slovenia	+	+	+				+	+	+		–	
Spain	+	+	+	+	+	+						
Turkey	+	+	+				+	+	+			

	Index of direct transmission beliefs about instruction			Index of constructivist beliefs about instruction			Index of exchange and co-ordination for teaching			Index of professional collaboration		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia												
Austria							+	+	+	–	–	–
Belgium (Fl.)		–	–									
Brazil												
Bulgaria	–	–									+	+
Denmark												
Estonia	–	–										
Hungary				+	+	+						
Iceland												
Ireland												
Italy				+	+	+				+	+	+
Korea	–	–	–	+	+	+						
Lithuania										+		
Malaysia							+	+	+		–	–
Malta												
Mexico								+	+			
Norway	–	–	–									
Poland	–	–	–	+	+	+						
Portugal	–	–	–									
Slovak Republic	–									+		
Slovenia	–	–	–	+	+	+						
Spain	–	–	–							+	+	+
Turkey												

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.6a

Significant variables and the direction of coefficients of Bloc 3 variables in the *gross, net* and *final net* models estimating teachers' reported self-efficacy[1]

Significant variables in the multiple regression of the index of teachers' self-efficacy that include the following indices of teachers' beliefs and practices in lower secondary education[2]

Example: In Hungary, teachers reporting more frequent use of student-oriented teaching practices are more likely to report a higher level of self-efficacy.

	Index of teacher-student relations			Index of classroom teaching practice: structuring			Index of classroom teaching practice: student-oriented			Index of classroom teaching practice: enhanced activities		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia	+	+	+	+	+	+						
Austria	+	+	+	+	+	+	+	+	+	–	–	–
Belgium (Fl.)	+	+	+	+	+	+	+					
Brazil	+	+	+				+					
Bulgaria	+	+	+							+		
Denmark	+	+	+	+								
Estonia	+	+	+				+	+	+			
Hungary	+	+	+					+	+			
Iceland	+	+	+	+	+	+						
Ireland	+	+	+	+	+	+				+	+	+
Italy	+	+	+				–			+	+	+
Korea	+	+	+	+	+	+	+	+	+			
Lithuania	+	+	+				+	+	+			
Malaysia	+	+	+	+	+	+						
Malta	+	+	+	+								
Mexico	+	+	+	+	+	+						
Norway	+	+	+	+	+	+						
Poland	+	+	+	–	–	–	+			+	+	+
Portugal	+	+	+		+	+	+	+	+			
Slovak Republic	+	+	+				+	+	+			
Slovenia	+	+	+				+	+	+			
Spain	+	+	+	+	+	+						
Turkey	+	+	+				+	+	+			

	Index of direct transmission beliefs about instruction			Index of constructivist beliefs about instruction			Index of exchange and co-ordination for teaching			Index of professional collaboration		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia				+	+	+	+					
Austria	+	+	+	+	+	+				+	+	+
Belgium (Fl.)	+	+	+	+	+	+				+	+	+
Brazil	+	+	+									
Bulgaria	+	+	+	+						+	+	+
Denmark		+	+	+	+	+						
Estonia				+	+	+		–		+	+	+
Hungary				+	+	+				+	+	+
Iceland				+	+	+					+	+
Ireland	+	+	+	+	+	+						
Italy	+	+	+	+	+	+						
Korea	+	+	+	+	+	+				+	+	+
Lithuania	+	+	+	+	+	+						
Malaysia								+	+			
Malta				+	+	+						
Mexico	+	+	+									
Norway	+	+	+	+	+	+	+	+	+			
Poland	+	+	+	+	+	+				+	+	+
Portugal	+	+	+	+	+	+				+	+	+
Slovak Republic	+	+	+	+	+	+				+		
Slovenia	+	+	+	+	+	+						
Spain	+	+	+	+	+	+				+	+	+
Turkey	+	+	+		+	+						

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.7 (1/2)

Significant variables and the direction of coefficients of Bloc 4 variables in the *gross, net* and *final net* models estimating classroom disciplinary climate[1]

Significant variables in the multiple regression of the index of classroom disciplinary climate that include the following appraisal and feedback variables for teachers in lower secondary education[2]

Example: In Italy, teachers who work in schools where effective teachers are better rewarded are more likely to teach classes with a better disciplinary climate.

	Never received appraisal or feedback from any source			Work in schools that did not have an evaluation within the last 5 years			Effective teachers receive more monetary or non-monetary rewards in the school.			Important aspect for teacher appraisal: student test scores[3]		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia												
Austria					+							
Belgium (Fl.)												
Brazil	–	–		+	+							
Bulgaria	–						+					
Denmark		–								+	+	+
Estonia												
Hungary							+					
Iceland												
Ireland												
Italy							+	+	+			
Korea												
Lithuania												
Malaysia	–											
Malta				+						+		
Mexico												
Norway							–	–	–	+		
Poland	–											
Portugal	–	–										
Slovak Republic	–	–					+	+				
Slovenia	–											
Spain												
Turkey												

	Important aspect for teacher appraisal: innovative teaching practices[3]			Important aspect for teacher appraisal: professional development undertaken[3]			Appraisal impact: a change in salary[3]			Appraisal impact: opportunities for professional development activities[3]		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia												
Austria												
Belgium (Fl.)												
Brazil	+	+										
Bulgaria												
Denmark												
Estonia												
Hungary	+	+								+	+	+
Iceland												
Ireland												
Italy				+	+		–					
Korea				+	+		–	–	–	+		
Lithuania	+	+	+									
Malaysia				+								
Malta							–	–	–			
Mexico	+	+										
Norway												
Poland	+											
Portugal	+	+	+							+	+	+
Slovak Republic	+	+	+	+			+	+	+			
Slovenia	+	+	+									
Spain												
Turkey												

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
3. Due to high rates of missing values for some variables in this analytic bloc, a substantial degree of bias may exist in the results for particular variables included in the estimations for each country. Caution should therefore be taken in any interpretation of the results.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.7 (2/2)

Significant variables and the direction of coefficients of Bloc 4 variables in the *gross*, *net* and *final net* models estimating classroom disciplinary climate[1]

Significant variables in the multiple regression of the index of classroom disciplinary climate that include the following appraisal and feedback variables for teachers in lower secondary education[2]

Example: In Korea, teachers who received public recognition following an appraisal.

	Appraisal impact: public recognition from the principal and/or your colleagues[3]			Appraisal impact: changes in teachers' work responsibilities that make the job more attractive[3]			School evaluation published[3]			Important aspect for school evaluations: student test scores[3]		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia	+	+										
Austria												
Belgium (Fl.)	+	+	+									
Brazil	+	+	+								–	
Bulgaria	+	+	+									
Denmark										–	–	
Estonia	+	+	+									
Hungary												
Iceland												
Ireland												
Italy										+	+	
Korea	+	+	+									
Lithuania	+											
Malaysia	+									+		
Malta							–					
Mexico				+	+							
Norway												
Poland	+											
Portugal												
Slovak Republic												
Slovenia	+	+										
Spain												
Turkey	+											

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.

2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.

3. Due to high rates of missing values for some variables in this analytic bloc, a substantial degree of bias may exist in the results for particular variables included in the estimations for each country. Caution should therefore be taken in any interpretation of the results.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.7a (1/2)

Significant variables and the direction of coefficients of Bloc 4 variables in the *gross, net* and *final net* models estimating teachers' reported self-efficacy[1]

Significant variables in the multiple regression of the index of teachers' self-efficacy that include the following appraisal and feedback variables for teachers in lower secondary education[2]

Example: In Mexico, teachers who have never received appraisal or feedback in their school are more likely to have lower levels of reported self-efficacy. However, this was not found to be true when including the significant variables from each analytic bloc in the final net estimation.

	Never received appraisal or feedback from any source			Work in schools that did not have an evaluation within the last 5 years			Effective teachers receive more monetary or non-monetary rewards in the school.			Important aspect for teacher appraisal: student test scores[3]		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia		–										
Austria	–	–										
Belgium (Fl.)	–	–										
Brazil	–	–	+	+			+	+	+			
Bulgaria	–	–										
Denmark												
Estonia				–	–					–	–	–
Hungary	–	–					+					
Iceland	–	–					+	+				
Ireland												
Italy	–	–					+	+				
Korea	–						+	+				
Lithuania	–											
Malaysia							+	+				
Malta												
Mexico	–	–					+					
Norway												
Poland												
Portugal	–	–					+	+				
Slovak Republic										+	+	
Slovenia												
Spain	–	–					+	+				
Turkey							+	+				

	Important aspect for teacher appraisal: innovative teaching practices[3]			Important aspect for teacher appraisal: professional development undertaken[3]			Appraisal impact: a change in salary[3]			Appraisal impact: opportunities for professional development activities[3]		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia	+	+										
Austria	+	+		+	+							
Belgium (Fl.)												
Brazil	+	+	+									
Bulgaria	+	+										
Denmark												
Estonia	+	+										
Hungary											+	
Iceland	+	+	+									
Ireland				+	+							
Italy	+	+										
Korea				+	+					+		
Lithuania	+	+			+							
Malaysia										+	+	
Malta				+								
Mexico	+			+	+					+		
Norway												
Poland	+	+										
Portugal	+	+	+									
Slovak Republic	+											
Slovenia	+	+		+	+							
Spain				+						+		
Turkey							+					

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
3. Due to high rates of missing values for some variables in this analytic bloc, a substantial degree of bias may exist in the results for particular variables included in the estimations for each country. Caution should therefore be taken in any interpretation of the results.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.7a (2/2)

Significant variables and the direction of coefficients of Bloc 4 variables in the *gross, net* and *final net* models estimating teachers' reported self-efficacy[1]

Significant variables in the multiple regression of the index of teachers' self-efficacy that include the following appraisal and feedback variables for teachers in lower secondary education[2]

Example: In Portugal, teachers who have changes in their work responsibilities following an appraisal are more likely to have higher levels of reported self-efficacy.

	Appraisal impact: public recognition from the principal and/or your colleagues[3]			Appraisal impact: changes in teachers' work responsibilities that make the job more attractive[3]			School evaluation published[3]			Important aspect for school evaluations: student test scores[3]		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia	+	+										
Austria	+	+	+									
Belgium (Fl.)	+	+	+	+	+		+					
Brazil	+	+		+	+	+					-	
Bulgaria	+	+		+	+	+						
Denmark												
Estonia	+	+	+	+	+	+		+				
Hungary	+	+	+									
Iceland												
Ireland	+	+	+							-		
Italy	+	+	+	+	+							
Korea	+	+	+									
Lithuania	+	+	+									
Malaysia				+	+							
Malta	+	+	+							+	+	
Mexico	+	+		+								
Norway	+	+	+									
Poland	+	+		+	+							
Portugal	+			+	+	+						
Slovak Republic	+	+										
Slovenia				+	+	+						
Spain	+	+	+									
Turkey												

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.

2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.

3. Due to high rates of missing values for some variables in this analytic bloc, a substantial degree of bias may exist in the results for particular variables included in the estimations for each country. Caution should therefore be taken in any interpretation of the results.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.8

Significant variables and the direction of coefficients of Bloc 5 variables in the *gross, net* and *final net* models estimating classroom disciplinary climate[1]

Significant variables in the multiple regression of the index of classroom disciplinary climate that include the following indices for school leadership in lower secondary education[2]

Example: In Portugal, teachers whose school principal reported more frequent framing and communicating school goals and curricular development were more likely to teach classes with a better disciplinary climate.

	Index of framing and communicating the school goals and curricular development			Index of promoting instructional improvements and professional development			Index of supervision of instruction in the school			Index of accountability role of the principal			Index of bureaucratic rule-following		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia	+														
Austria															
Belgium (Fl.)				+											
Brazil															
Bulgaria													+		
Denmark[3]										–					
Estonia														+	+
Hungary															
Iceland[3]															
Ireland[3]															
Italy							–						+	+	+
Korea[3]															
Lithuania										–	–				
Malaysia															
Malta		+	+	+			–	–	–	–	–				
Mexico															
Norway										–			+	+	+
Poland															
Portugal	+	+	+												
Slovak Republic															
Slovenia				–	–	–									
Spain													–		
Turkey										+	+	+	–	–	

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
3. Due to higher rates of missing values for these variables in these countries, the results should be treated with considerable caution.
Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

Table 7.8a

Significant variables and the direction of coefficients of Bloc 5 variables in the *gross, net* and *final net* models estimating teachers' reported self-efficacy[1]

Significant variables in the multiple regression of the index of teachers' self-efficacy that include the following indices for school leadership in lower secondary education[2]

Example: In Lithuania, teachers whose school principal reported more frequent supervision of instruction were more likely to report higher levels of self-efficacy.

	Index of framing and communicating the school goals and curricular development			Index of promoting instructional improvements and professional development			Index of supervision of instruction in the school			Index of accountability role of the principal			Index of bureaucratic rule-following		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia															
Austria	+	+													
Belgium (Fl.)															
Brazil							+								
Bulgaria															
Denmark[3]															
Estonia															
Hungary							+	+							
Iceland[3]															
Ireland[3]										+	+	+			
Italy										–	–		+	+	
Korea[3]															
Lithuania							+	+	+	–	–				
Malaysia															
Malta															
Mexico															
Norway															
Poland															
Portugal	+	+	+												
Slovak Republic															
Slovenia															
Spain															
Turkey															

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
3. Due to higher rates of missing values for these variables in these countries, the results should be treated with considerable caution.
Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

Table 7.9

Significant variables and the direction of coefficients of Bloc 6 variables in the *gross, net* and *final net* models estimating classroom disciplinary climate[1]

Significant variables in the multiple regression of the index of classroom disciplinary climate that include the following indices of school autonomy and resources in lower secondary education[2]

Example: In Australia, teachers whose school principals reported higher levels of student delinquency are more likely to teach classes with a worse disciplinary climate.

	Index of school climate: student delinquency			Index of school climate: teachers' working morale			Index of a lack of personnel			Index of school resources: shortage of materials			Index of school autonomy in hiring teachers and determining salaries		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia	–	–	–	+			–			+			+	+	+
Austria							–	–	–					–	–
Belgium (Fl.)															
Brazil	–									+	+				
Bulgaria	–	–	–												
Denmark[3]													–		
Estonia															
Hungary	–	–	–												
Iceland[3]	–						+	+	+						
Ireland[3]	–	–	–												
Italy	–														
Korea[3]															
Lithuania								+	+						
Malaysia															
Malta							–	–					+		
Mexico															
Norway															
Poland	–										+	+		+	+
Portugal															
Slovak Republic															
Slovenia															
Spain															
Turkey															

	Index of school autonomy in budgeting (formulating and allocating the school budget)			Index of school autonomy: student policy and textbooks			Index of school autonomy in curriculum (courses offered, course content)			School average class size			Public school		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia											–				
Austria				+						–	–	–			
Belgium (Fl.)											–	–			
Brazil	–	–	–	+	+	+				–	–	–			
Bulgaria					+	+				–	–	–			
Denmark[3]										–	–	–	–	–	–
Estonia										–	–	–			
Hungary											–	–			
Iceland[3]											–	–			
Ireland[3]										+	–	–	–		
Italy										–	–	–			
Korea[3]										–	–	–			
Lithuania											–	–			
Malaysia										–	–	–			
Malta							–	–	–		–	–	–	–	–
Mexico															
Norway	–	–								–	–	–			
Poland	–														
Portugal											–	–			
Slovak Republic	+	+	+								–				
Slovenia										–	–	–	–	–	
Spain										–	–	–			
Turkey										–	–	–			

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
3. Due to higher rates of missing values for these variables in these countries, the results should be treated with considerable caution.

Source: OECD, *TALIS Database*.

StatLink http://dx.doi.org/10.1787/608030545172

Table 7.9a

Significant variables and the direction of coefficients of Bloc 6 variables in the *gross, net* and *final net* models estimating teachers' reported self-efficacy[1]

Significant variables in the multiple regression of the index of teachers' self-efficacy that include the following indices of school autonomy and resources in lower secondary education[2]

Example: In Norway, teachers who work in public schools are more likely to report higher levels of self-efficacy.

	Index of school climate: student delinquency			Index of school climate: teachers' working morale			Index of a lack of personnel			Index of school resources: shortage of materials			Index of school autonomy in hiring teachers and determining salaries		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia													+	+	
Austria				–	–	–				+	+	+			
Belgium (Fl.)													–	–	–
Brazil															
Bulgaria					–										
Denmark[3]															
Estonia															
Hungary	–	–													
Iceland[3]															
Ireland[3]														–	
Italy															
Korea[3]										+	+				
Lithuania															
Malaysia															
Malta															
Mexico															
Norway										–					
Poland															
Portugal	–														
Slovak Republic				–	–	–					+				
Slovenia															
Spain													+	+	
Turkey															

	Index of school autonomy in budgeting (formulating and allocating the school budget)			Index of school autonomy: student policy and textbooks			Index of school autonomy in curriculum (courses offered, course content)			School average class size			Public school		
	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net	Gross	Net	Final net
Australia										+					
Austria															
Belgium (Fl.)															
Brazil				+	+										
Bulgaria										+					
Denmark[3]															
Estonia													–		
Hungary				–	–	–		+					–		
Iceland[3]		+											–		
Ireland[3]													–		–
Italy															
Korea[3]															
Lithuania										+			–		
Malaysia															
Malta															
Mexico															
Norway	–	–								+					+
Poland	–	–	–							+					
Portugal	–	–	–												
Slovak Republic								+		+					
Slovenia													–		
Spain							–								
Turkey							+						–		

1. Gross model includes only the variables in this analytic bloc. Net model includes the variables in this analytic bloc and socio-economic background variables (see Table 7.1) and final net model includes the variables found to be statistically significant in the net model in each analytic bloc and socio-economic background and Bloc 1 variables.
2. Variables where a significant positive relationship was found are indicated by a "+" while those where a significant negative relationship was found are shown with a "–". Cells are blank where no significant relationship was found. Significance was tested at the 5% level.
3. Due to higher rates of missing values for these variables in these countries, the results should be treated with considerable caution.
Source: OECD, *TALIS Database*.
StatLink http://dx.doi.org/10.1787/608030545172

