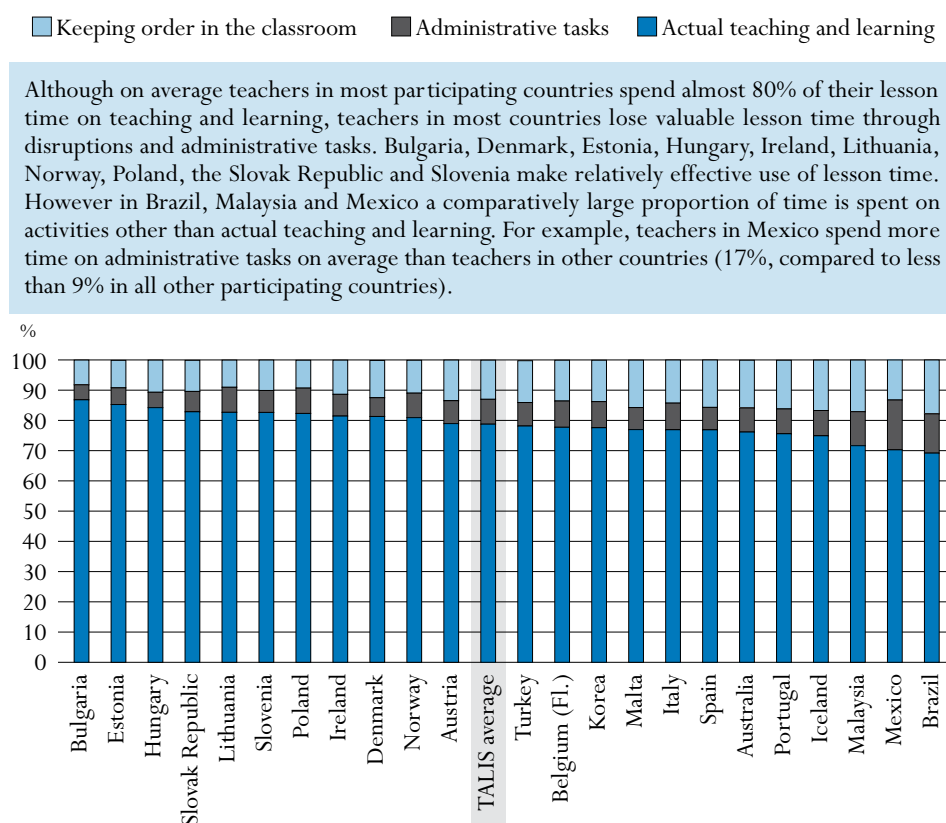


HOW DO TEACHER PRACTICES, BELIEFS AND ATTITUDES MEASURE UP?

This indicator focuses on teacher practices, beliefs, and attitudes. They are closely linked to teachers' strategies for coping with challenges in their daily professional life and to their general well-being. They also shape the learning environment and influence student motivation and achievement. Furthermore they can be expected to mediate the effects of job-related policies – such as changes in curricula for teachers' initial education or professional development – on student learning. Data were collected from teachers in TALIS (Teaching and Learning International Survey) on teacher practices, beliefs and attitudes, and related issues such as classroom management practices, teacher professional activities, and job satisfaction. Analysis of this data has produced a number of important findings.

Key results

Chart D6.1. Distribution of time spent in the classroom during an average lesson (2007-08)



Countries are ranked in descending order of the percentage of actual teaching and learning time.

Source: OECD, TALIS Database.

StatLink <http://dx.doi.org/10.1787/665115410485>

Other highlights of this indicator

- Teachers are more inclined to regard students as active participants in the process of acquiring and constructing knowledge than to see the teacher's main role as the transmission of information and demonstration of "correct solutions". This is most true in Australia, Korea, north-western Europe and Scandinavia, and least true in Brazil, Malaysia and southern Europe where teachers fall between the two views.
- In the classroom, teachers in all countries put greater emphasis on ensuring that learning is well structured than on student-oriented activities which give them more autonomy. Both of these teaching practices are emphasised more than enhanced learning activities such as project work. This pattern is true in every country.
- Co-operation by teachers in all countries more commonly takes the form of exchanging and co-ordinating ideas and information than direct professional collaboration such as team teaching.
- The average levels of job satisfaction and of teachers' belief in their own effectiveness are fairly similar across countries, although teachers in Norway stand out as well above average in both respects. Most differences in these job-related attitudes entail differences among teachers within countries and within schools.

INDICATOR D6

TALIS

TALIS is the new OECD Teaching and Learning International Survey. It is the first international survey to focus on the learning environment and the working conditions of teachers in schools and it aims to fill important information gaps in the international comparisons of education systems. TALIS surveyed teachers of lower secondary education and the principals of the schools in which they work across 23 countries*, *i.e.* among OECD countries, Australia, Austria, Belgium (Flemish Community), Denmark, Hungary, Iceland, Ireland, Italy, Korea, Mexico, Norway, Poland, Portugal, the Slovak Republic, Spain and Turkey, and among partner countries, Brazil, Bulgaria, Estonia, Lithuania, Malaysia, Malta and Slovenia. Within participating countries, schools (as well as teachers within schools) were randomly selected to take part in TALIS. Countries participating in TALIS chose to focus the survey on the following key aspects of the learning environment, which can influence the quality of teaching and learning in schools: teacher professional development; teaching practices, beliefs and attitudes, teacher appraisal and feedback, and school leadership.

For more information see: www.oecd.org/edu/TALIS

* Because the sampling standards were not achieved in the Netherlands, their data are not shown in the international comparisons from TALIS.

Policy context

It has been demonstrated that quality of instruction is fundamental to student learning. For instance, Wang, Haertel and Warburg (1997) showed that classroom management and classroom interactions had effects similar in size to students' cognitive competencies and their home environment. Likewise, when reviewing contemporary research on school effectiveness, Scheerens and Bosker (1997) concluded that characteristics of instruction have a greater effect on student achievement than those of the school environment. Characteristics of instruction include teacher beliefs and attitudes, practices and classroom environment. These in turn are related to the kinds of professional activities teachers engage in and their reported job satisfaction and self-efficacy.

However, there is no single, well-defined best way of teaching. Teachers' professional knowledge and practices may differ not only among countries but also among teachers within a country. It is important to know more about how teacher practices and beliefs interact, as the quality of the learning environment is the factor affecting student learning and outcomes that is most readily under the teacher's control. In addition, classroom discipline is a core element of instructional quality and an important part of the quality of the learning environment. In PISA, classroom discipline is positively related to the school's mean student achievement in many participating countries (Klieme and Rakoczy, 2003). Also, unlike other features of classroom instruction, there is a high level of agreement about this indicator among teachers, students and observers (Clausen, 2002).

Teachers do not act only in the classroom where they instruct students more or less in isolation from other classes and teachers. A modern view of teaching also includes professional activities on the school level, such as co-operating in teams, building professional learning communities, participating in school development, and evaluating and changing working conditions (Darling-Hammond *et al.*, 2005). These activities shape the learning environment on the school level, *i.e.* the school climate, ethos and culture, and thus directly and indirectly (via classroom-level processes) affect student learning. They also have an effect on reports of job satisfaction and self-efficacy. This indicator provides an overview of TALIS data on these issues.

Evidence and explanations

Teacher beliefs about the nature of teaching and learning

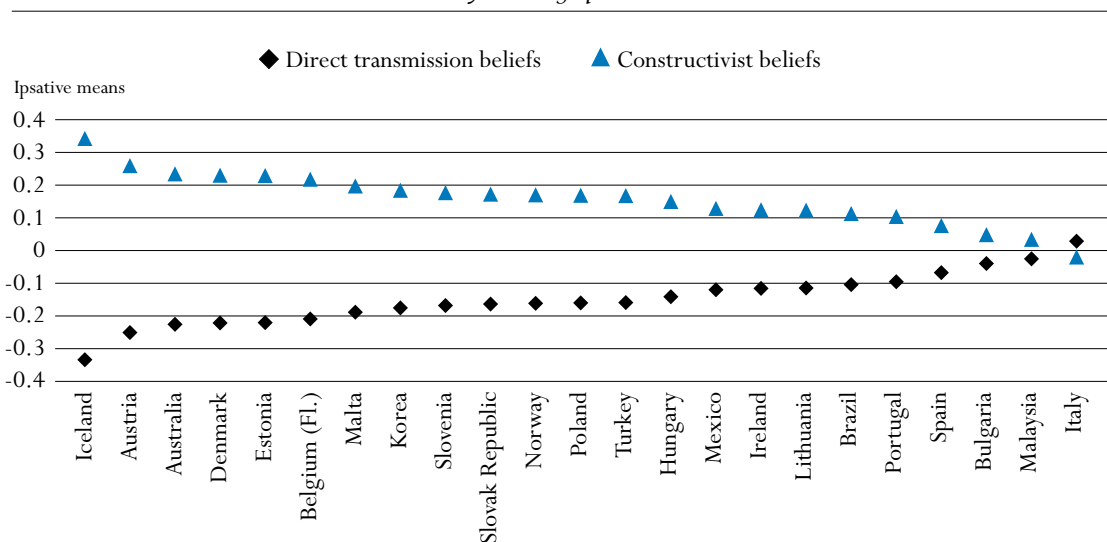
Teacher beliefs about learning and teaching have an important impact on classroom styles and teacher practices. The TALIS report distinguishes between two types of teacher profiles. The **direct transmission** view of student learning implies that a teacher's role is to communicate knowledge in a clear and structured way, to explain correct solutions, to give students clear and resolvable problems, and to ensure calm and concentration in the classroom. In contrast, a **constructivist** view focuses on students not as passive recipients but as active participants in the process of acquiring knowledge. Teachers holding this view emphasise facilitating student inquiry, prefer to give students the chance to develop solutions to problems on their own, and allow students to play active role in instructional activities. Here, the development of thinking and reasoning processes is stressed more than the acquisition of specific knowledge (Staub and Stern, 2002).

There is an ongoing debate about the effects of direct transmission versus constructivist approaches on student achievement, and about the appropriateness of constructivist approaches in non-European countries. TALIS data make it possible to conduct exploratory comparative analysis to learn whether countries differ with regard to profiles of teachers' beliefs. (See Definitions and methodologies section at the end of this indicator for the questionnaire items from which the two indices for teachers' beliefs about teaching were constructed).

Chart D6.2 presents the strength of preference among teachers for one belief (constructivist/direct transmission) over the other. It shows that in all countries but Italy the average endorsement of constructivist beliefs is stronger than that of direct transmission beliefs. In most countries, therefore, teachers believe that their task is not simply to present facts and give their students the opportunity to practice, but rather that they should support students in their active construction of knowledge.


Chart D6.2. Country profiles of beliefs about the nature of teaching and learning (2007-08)

Country mean of ipsative scores



Countries are ranked by the strength of preference among teachers in each country between direct transmission beliefs about teaching and constructivist beliefs about teaching. So, teachers in Iceland show the strongest preference for constructivist beliefs, over direct transmission beliefs.

Source: OECD, TALIS Database.

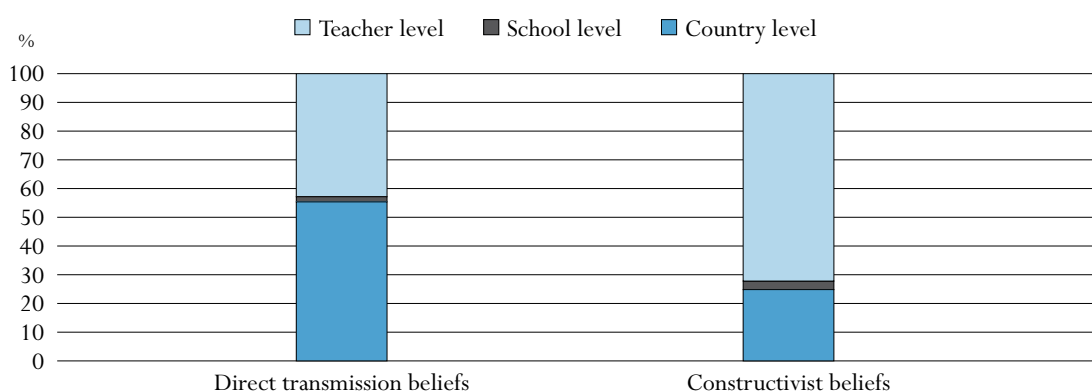
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Besides this general agreement on beliefs about instruction, countries differ in the strength of teachers' endorsement of each of the two approaches. The preference for a constructivist view is especially pronounced in Austria, Australia, Belgium (FL), Denmark, Estonia and Iceland. Differences in the strength of endorsement are small in Brazil, Bulgaria, Italy, Malaysia, Portugal and Spain. In general, then, teachers in Australia, Korea, north-western Europe and Scandinavia show a stronger preference for a constructivist view than teachers in Malaysia, Mexico/South America and southern Europe. Teachers in eastern European countries lie in between.

Variance across individual, school, and country levels


The question raised by the above data is: to what extent are teachers within schools and within countries similar as a result of their shared socialisation? This was examined by analysing how much of the total variation in teachers' beliefs about teaching lies between countries, between schools and between teachers within schools. Results show that 25% of the variation in teachers' constructivist beliefs and more than 50% of the variation in teachers' direct transmission beliefs are accounted for by variance between countries (Chart D6.3). These are high percentages compared with other TALIS indices measuring teachers' beliefs and practices. This suggests that these variables are very strongly influenced by national school systems, culture and pedagogical traditions.

Chart D6.3. Distribution of total variance across the three levels of analysis for teachers' beliefs about instruction (2007-08)



The chart analyses the variation in teachers' beliefs about instruction and indicates how much of this variation can be attributed to country characteristics (country level), school level characteristics (school level) and individual teacher characteristics.

Source: OECD, TALIS Database.

StatLink  <http://dx.doi.org/10.1787/665115410485>

The variance that exists between schools represents only a small proportion of the total variance for both indices. Thus, beliefs about instruction seem to be relatively unaffected by socialisation within the school, the influence of colleagues and superiors, and other school-level factors. This may indicate that these beliefs are formed relatively early during initial education or before and remain stable over time. Stability of teachers' attitudes has been observed before (*e.g.* Nettle, 1998) and is coherent with general findings from psychology that attitudes can be quite resistant to change. It may also be that school-level variables have different effects on individual teachers depending on other personal characteristics. The large within-school variance also suggests that teachers with varying beliefs about instruction may well work side by side in the same school.

Throughout the world educationalists and teacher instructors promote constructivist views about instruction. While most teachers agree, their preferences, influenced by individual characteristics, vary greatly within each country and school. In order to bring teacher beliefs and practices more into line, then, a promising strategy might be to enhance the systematic construction of knowledge about teaching and instruction in teachers' initial education and professional development.

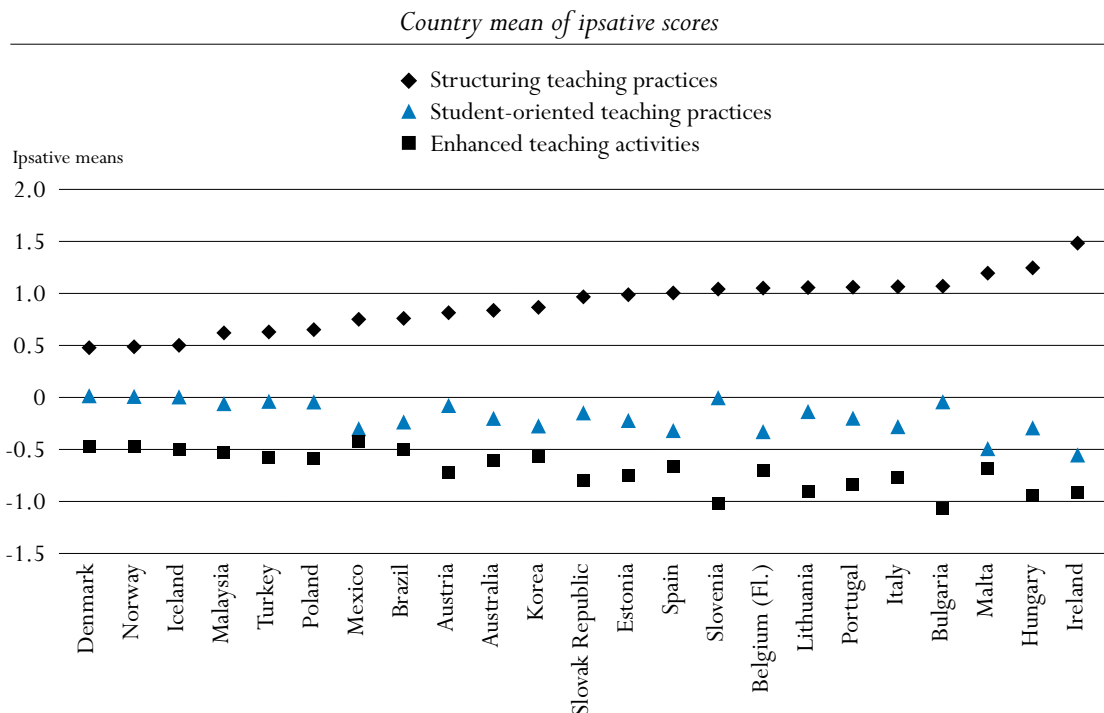
Classroom teaching practices

As previously discussed, teacher beliefs about learning and teaching have an important impact on classroom styles and teacher practices. Do countries differ with regard to the profiles of their teaching practices? According to previous research in comparative education (including TIMSS, PIRLS and PISA), countries have quite different profiles in terms of “alternative” teaching practices. Groups of countries with similar cultural backgrounds and pedagogical traditions are likely to have similar profiles. In order to compare teaching practices, three indices of teacher profiles were established. These indices distinguished between three types of practices (see Definitions and methodologies section for the list of questions asked for these indices):

- **Structuring practices**, such as explicitly stating learning goals, summary of earlier lessons, and homework review.
- **Student-oriented practices**, such as working in small groups, ability grouping, student self-evaluation and student participation in classroom planning.
- **Enhanced activities**, such as working on projects that require at least one week to complete, making a product, writing an essay, and debating arguments.


Chart D6.4 presents the strength of reported preference among teachers for one profile of practice (structuring/student-oriented/enhanced activities) over the other. It shows that structuring practices are the most frequently employed practices across all participating countries.

Chart D6.4. Country profiles of classroom teaching practices (2007-08)



Countries are ranked by the relative frequency with which they engage in structuring teaching practices, student-oriented teaching practices and enhanced activities. So, teachers in Denmark adopt the different practices to a fairly similar degree, while teachers in Ireland use structuring teaching practices much more than they do either student-oriented practices and enhanced activities.

Source: OECD, TALIS Database.

StatLink  <http://dx.doi.org/10.1787/665115410485>

The relative country means for this index are higher than those for student-oriented practices and enhanced activities in all of the countries. The predominance of structuring practices is most pronounced in Hungary, Ireland and Malta, while teachers in Denmark, Iceland and Norway report using structuring practices only slightly more frequently than the other two practices.

Enhanced activities are less frequently used than student-oriented practices in all participating countries. This implies that teachers in different regions of the world on average allow student co-determination of the lesson, employ ability grouping and give students individually adapted tasks more often than they assign their student projects, debates, essays and the creation of products. Again, a general pattern of relative frequencies is observed but also cross-country differences. In Brazil, Korea, Malta and Mexico the relative average frequencies of enhanced activities and student-oriented practices are very similar. Hence, in these countries the relative frequency of enhanced activities is high compared with other countries. Relatively large differences between student-oriented and enhanced activities are found in Bulgaria and Slovenia.

In summary, in no country on average are student-oriented practices reported to be more frequently used than structuring practices, or in which enhanced activities are reported to be more frequently used than student-oriented practices. It is thus possible to identify culture-general categories for instructional practices and routines. These data indicate that across all countries, the use of student-oriented and enhanced activities could be more encouraged.

Teacher's professional activities: co-operation among teaching staff

A modern view of teaching looks at not just teaching behaviours and practices, but also includes professional activities on the school level, such as co-operating in teams and participating in school development (Darling-Hammond *et al.*, 2005). These activities shape the school climate and thus directly and indirectly (via classroom-level processes) affect student learning. Improving the quality of education and school development requires common goals and co-operation among staff in order to facilitate the co-ordination of resources and strategies of individual teachers. Co-operation among staff also creates opportunities for social and emotional support, exchange of ideas and practical advice. It can thus enhance professionalism and feelings of self-efficacy and prevent stress and “burnout” (*e.g.* Rosenholtz, 1989; Clement and Vandenberghe, 2000).

TALIS used two indices to measure teachers' participation in co-operation with other staff (see Definitions and methodologies section for the list of questions asked for these indices):

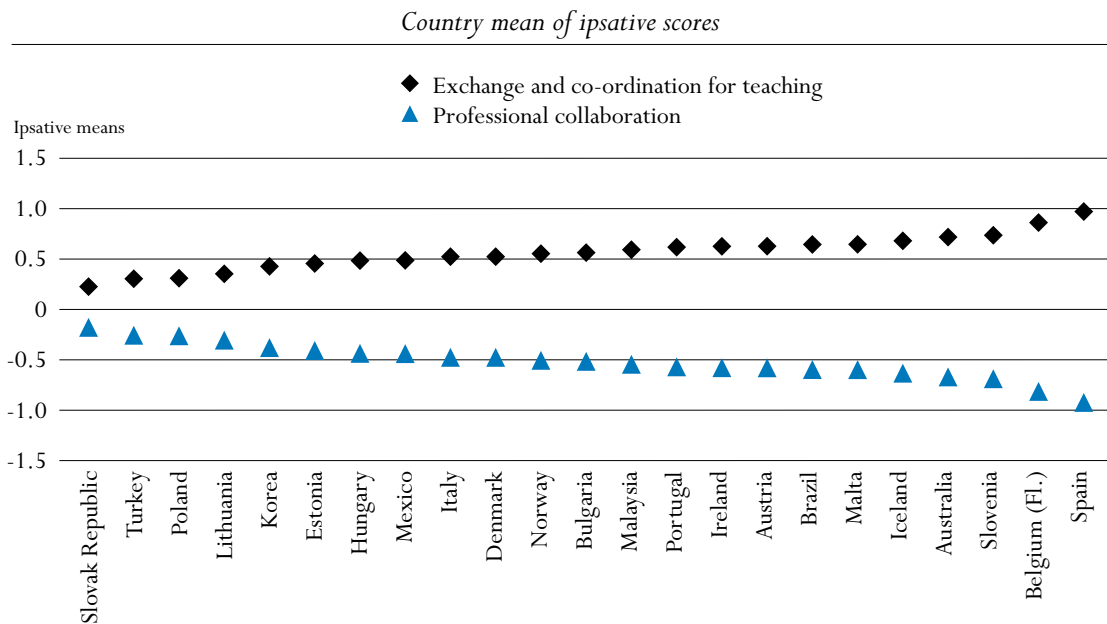
- **exchange and co-ordination for teaching:** discussion of teaching material, discussion of student development, team conferences, and ensuring common standards;
- **professional collaboration:** team teaching, observing other teachers to provide feedback, co-ordinating activities across classes, and engaging in professional learning activities.

Chart D6.5 presents the strength of reported participation among teachers for one type of co-operation with other staff (exchange and coordination/professional collaboration) over the other. It shows that a majority of teachers across and within countries report exchanging and co-ordinating information and ideas on teaching and administrative issues more often than they engage jointly in professional collaboration activities and projects across subjects and age groups. However there are also cross-country differences. In Estonia, Hungary, Korea, Lithuania, Mexico, Poland, the Slovak Republic and Turkey, differences in the relative frequencies of both forms of

co-operation are comparatively small. In contrast, teachers in Australia, Belgium (Fl.), Iceland, Malta, Slovenia and Spain report the basic forms of exchange and co-ordination of teaching to be noticeably more common than professional collaboration.


Both kinds of co-operation are important practices which can enhance school development and effectiveness and ensure the professionalism and the well-being of teachers. However these data show that professional collaboration practices are still relatively rare compared with practices that focus on co-ordination and exchange of information and material. It may be useful to enhance and support such practices, especially in the countries with the lowest reported presence of these opportunities.

Chart D6.5. Country profiles of co-operation among staff (2007-08)



Countries are ranked in ascending order of the degree to which teachers engage in exchange and co-ordination for teaching more than professional collaboration. For example, for teachers in the Slovak Republic both types of co-operation are reported almost equally frequently, while teachers in Spain report a more common practice of exchange and co-ordination for teaching over professional collaboration.

Source: OECD, TALIS Database.

StatLink  <http://dx.doi.org/10.1787/665115410485>

Classroom environment, discipline, and time on task

Studies conducted in different regions of the world have shown that classroom climate is one of the most important predictors of student achievement (*e.g.* Brophy and Good, 1986; Mortimore *et al.*, 1988; Wang, Haertel and Walberg, 1997). TALIS focuses on the disciplinary climate because it has a strong impact on student learning in various subjects (Klieme and Rakoczy, 2003; Rakoczy *et al.*, 2007), and because it has been shown that – unlike other features of classroom climate – there is a high level of agreement about this indicator among teachers, students and observers.

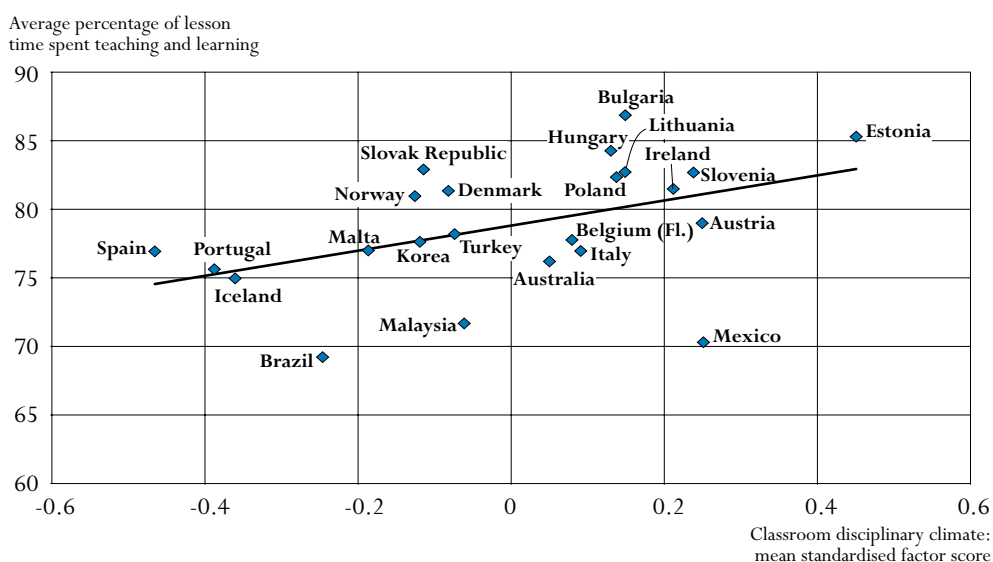
To measure classroom disciplinary climate, TALIS asked teachers whether they had to cope with a lot of noise and interruptions during lessons and whether they find the learning atmosphere

D6

pleasant (see Definitions and methodologies section). This measure is adapted from the PISA student questionnaire. An additional measure of the environment at the classroom level derived from TALIS data is an index for “time on task”. Teachers were asked about the percentage of time they typically spend on actual teaching and learning in the target class. Time on task is a central aspect of instructional effectiveness because it provides students with a maximum opportunity to learn.


As Chart D6.1 demonstrates, teachers in most participating countries spend almost 80% of their lesson time on teaching and learning. However, valuable lesson time is lost through disruptions and administrative tasks. Analysis of teacher responses indicates that one in four teachers in most countries lose at least 30% of their lesson time to these factors. In addition, Chart D6.6 and Table D6.1 show that, as expected, classroom disciplinary climate and time on task are related both within and between countries. The better the classroom disciplinary climate, the more time spent on actual teaching and learning.

Chart D6.6. Country means for two indicators of the quality of the classroom environment (2007-08)



Factor scores are standardised, so that the international mean equals zero and the international standard deviation equals one (see TALIS Technical Report, forthcoming). Thus a negative score indicates a score for classroom disciplinary climate that is below the international average. This may not necessarily indicate a poor classroom disciplinary climate.

Source: OECD, TALIS Database.

StatLink  <http://dx.doi.org/10.1787/665115410485>

Within-country correlations between these aspects are significant in all countries, and they are 0.5 or more in many. At the country level, countries in which teachers report spending a comparatively small percentage of time on teaching and learning also have a low mean score for classroom disciplinary climate. This mainly concerns Brazil, Iceland, Korea, Malaysia, Malta, Portugal, Spain and Turkey. Likewise, countries with a high mean score for classroom disciplinary

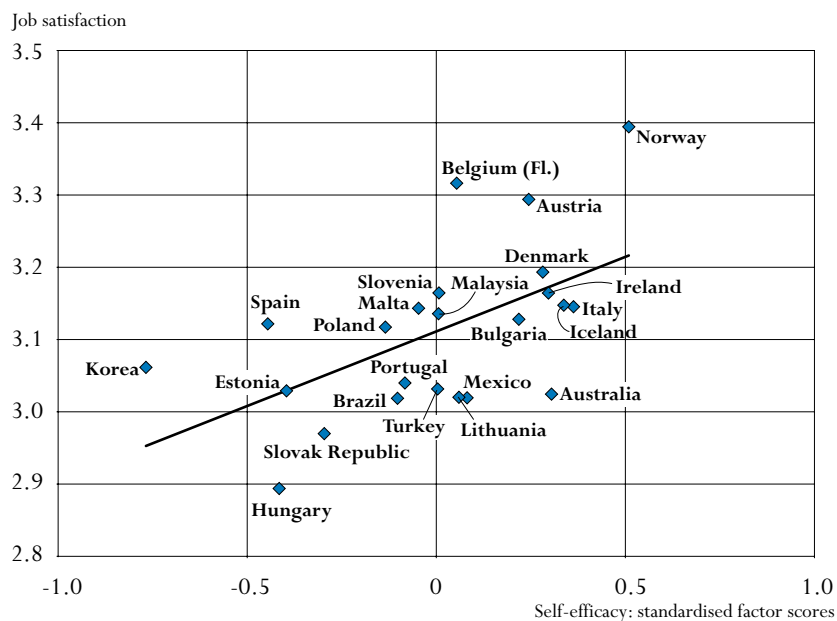
climate also have comparatively high mean scores for time on task. This is the case for Estonia and to a lesser extent for Austria, Bulgaria, Hungary, Ireland, Lithuania, Poland and Slovenia. Mexico is a notable exception in that teachers view the classroom disciplinary climate quite positively despite the low average score for time on task.

Overall, a majority of teachers in all participating countries report using lesson time effectively. Nevertheless, a considerable percentage of teachers in each of the countries, and especially in Brazil, Malaysia and Mexico, are not able to provide their students with adequate time for learning. Generally, time loss is largely due to disciplinary problems, although administrative issues also distract from actual teaching and learning, especially in Mexico.

Job-related attitudes: self-efficacy and job satisfaction


In addition to pedagogical beliefs and attitudes, TALIS addresses job-related attitudes, namely job satisfaction and teacher self-efficacy. Job satisfaction is a central concept in organisational and work psychology. It is assumed that job satisfaction is both affected by the work situation and influences work-related behaviour, including performance, absenteeism and turnover (Dormann and Zapf, 2001). Strong self-efficacy beliefs can prevent stress and burnout and teachers' self-efficacy beliefs and their job satisfaction are linked to instructional practices and student achievement (*e.g.* Ashton and Webb, 1986; Ross, 1998).

Chart D6.7. Country means of teacher self-efficacy and job satisfaction (2007-08)



Factor scores are standardised, so that the international mean is zero and the international standard deviation equals one (see TALIS Technical Report, forthcoming). Thus a negative score indicates a score for self-efficacy that is below the international average. This may not necessarily indicate a low level of self-efficacy. The score for job satisfaction represents the extent of agreement on average with the statement "All in all I am satisfied with my job", where strongly agree = 4 points, agree = 3 points, disagree = 2 points and strongly disagree = 1 point.

Source: OECD, TALIS Database.

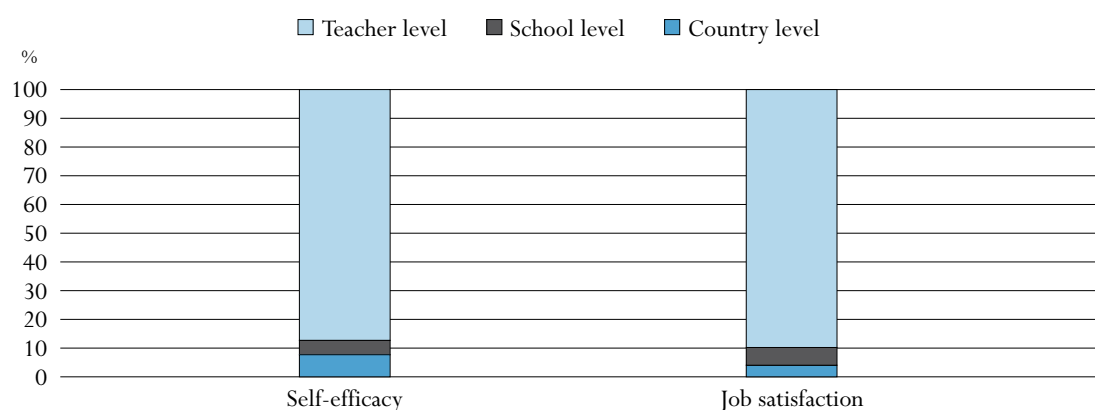
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In TALIS, the teacher self-efficacy index was constructed from four items of the teacher questionnaire which asked teachers, for instance, how strongly they felt that they made an educational difference in students' lives and how well they were able to make progress with the most difficult and unmotivated students (see Definitions and methodologies section for the list of items). Country means for the self-efficacy index and for the single item measuring job satisfaction are illustrated in Chart D6.7.

Generally there are small country differences in self-efficacy and job satisfaction. Norway has an exceptionally high mean score for both self-efficacy and job satisfaction. Teachers in Austria and Belgium (Fl.) are also relatively satisfied with their job. For Hungary and the Slovak Republic, however, average job satisfaction is low compared to that of the other participating countries. Comparatively weak self-efficacy beliefs are reported by teachers in Estonia, Hungary, Korea and Spain and to a lesser extent the Slovak Republic. However these data are country means, and an analysis of the variance (between country, school, and individual levels) indicates that the most variance (87% and 90%, respectively) is at the teacher level.

Chart D6.8. Distribution of total variance across the three levels of analysis for self efficacy and job satisfaction (2007-08)



Source: OECD, TALIS Database.

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Only 5% and 6% (self-efficacy and job satisfaction respectively), of the total variance is between schools and only 8% and 4%, respectively, is variance between countries. Thus, teachers within a school vary markedly in their levels of self-efficacy and job satisfaction, while differences between schools and between countries are rather small. Furthermore, variance at the school level is relatively similar across countries. These results emphasise the psychological nature of the constructs and the fact that across countries, teachers' self-efficacy and job satisfaction depend on and interact with their personality, personal experiences, competencies and attitudes. This should be considered in interventions aiming at enhancing teachers' self-efficacy, as these results suggest that individualised interventions may be more effective than school or system level policies.

Definitions and methodologies

Data are from the first OECD-TALIS Teaching and Learning International Survey and refer to the school year 2007/08. TALIS collected data from school principals and teachers. For this indicator, the data from teachers includes reports of their teaching practices, beliefs, attitudes, and professional activities. They also cover classroom disciplinary climate, job satisfaction, feelings of self-efficacy, and relations with students.

The focus of TALIS was lower secondary education as defined by level 2 of the International Standard Classification for Education (ISCED).

Analysis and computation of scores

Analysis was conducted to test for cross-cultural consistency of the indices on teaching practices, teachers' beliefs and attitudes (see Annex A1.1 in OECD [2009e] and *TALIS Technical Report*, forthcoming, for full details). This analysis indicated that countries' mean scores on these indices are not directly comparable. The analysis in this section therefore focuses on profiles within countries and in particular on the extent to which teachers endorse one belief over the other. To do this, teachers' responses are standardised and presented as *ipsative scores*, which describe the relative endorsement of the two indices (see Box D6.1).

Box D6.1. Computation of ipsative scores

Calculating ipsative scores is an approach to standardising individual responses to express them as preferences between two or more options and thus helps reduce the effects of response bias (Fischer, 2004). For teachers' beliefs about instruction, ipsative scores were computed by subtracting the individual mean across all of the eight items measuring teachers' beliefs from the individual mean across the four items belonging to the index direct transmission beliefs about instruction and also from the four items measuring constructivist beliefs about instruction. Thus, mean scores were calculated for both indices and corrected for the overall tendency to accept any of the belief items. The means across both indices average zero for each teacher, and therefore the country means across both indices also equal zero. The resulting score of an individual teacher is the relative endorsement of this index or the relative position of the individual on one index in relation to the other index. Positive score values indicate that one set of beliefs receives a relatively stronger support than the other. The standard deviation describes the variability of the relative endorsement. Given that the variable follows a Normal distribution, about two-thirds of teachers have an ipsative score that lies in the range of the mean score plus or minus one standard deviation.

Questionnaire items

The following boxes provide the questionnaire items that comprise the indices that are covered this indicator.

Teacher beliefs

The two indices for teachers' beliefs about teaching comprise the following questionnaire items:

Direct transmission beliefs about teaching

- Effective/good teachers demonstrate the correct way to solve a problem.
- Instruction should be built around problems with clear, correct answers, and around ideas that most students can grasp quickly.
- How much students learn depends on how much background knowledge they have; that is why teaching facts is so necessary.
- A quiet classroom is generally needed for effective learning.

Constructivist beliefs about teaching

- My role as a teacher is to facilitate students' own inquiry.
- Students learn best by finding solutions to problems on their own.
- Students should be allowed to think of solutions to practical problems themselves before the teacher shows them how they are solved.
- Thinking and reasoning processes are more important than specific curriculum content.

Analysis was conducted to test for cross-cultural consistency of the indices on teaching practices, teachers' beliefs and attitudes (see Annex A1.1 in OECD [2009e] and the *TALIS Technical Report*, [forthcoming]).

Teaching practices

The questionnaire items comprising the three teaching practice indices are as follows:

Index of structuring practices

- I explicitly state learning goals.
- I review with the students the homework they have prepared.
- At the beginning of the lesson I present a short summary of the previous lesson.
- I check my students' exercise books.
- I check, by asking questions, whether or not the subject matter has been understood.

Index of student oriented practices

- Students work in small groups to come up with a joint solution to a problem or task.
- I give different work to the students that have difficulties learning and/or to those who can advance faster.
- I ask my students to suggest or to help plan classroom activities or topics.
- Students work in groups based upon their abilities.

Index of enhanced activities

- Students work on projects that require at least one week to complete.
- Students make a product that will be used by someone else.
- I ask my students to write an essay in which they are expected to explain their thinking or reasoning at some length.
- Students hold a debate and argue for a particular point of view which may not be their own.

In the analysis to test the cross-cultural validity of these indices, configural and metric invariance was achieved but scalar invariance was not. Country means on the index are therefore not directly comparable. The analysis therefore focuses more on the pattern of cross-cultural differences than on specific country-by-country comparisons of the index scores (see Annex A1.1 in OECD [2009e] and the *TALIS Technical Report*, [forthcoming]).

Co-operation among teachers

The questionnaire items comprising these two indices are as follows:

Index of exchange and co-ordination for teaching

- Discuss and decide on the selection of instructional media (*e.g.* textbooks, exercise books).
- Exchange teaching materials with colleagues.
- Attend team conferences for the age group I teach.
- Ensure common standards in evaluations for assessing student progress.
- Engage in discussion about the learning development of specific students.

Index of professional collaboration

- Teach jointly as a team in the same class.
- Take part in professional learning activities (*e.g.* team supervision).
- Observe other teachers' classes and provide feedback.
- Engage in joint activities across different classes and age groups (*e.g.* projects).
- Discuss and coordinate homework practice across subjects.

In the analysis to test the cross-cultural validity of these indices, configural and metric invariance was achieved but scalar invariance was not. Country means on the index are therefore not directly comparable. The analysis therefore focuses more on the pattern of cross-cultural differences than on specific country-by-country comparisons of the index scores (see Annex A1.1 in OECD [2009e] and the *TALIS Technical Report*, [forthcoming]).

Classroom environment, discipline, and time on task**Index of classroom disciplinary climate**

The questionnaire items comprising this index are as follows:

- 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.

This index was correlated with ratings of time on task in order to get a measure of the quality of the classroom environment. In the analysis to test the cross-cultural validity of this index, configural and metric invariance was achieved. Although full scalar invariance was not established, the fit of the models for testing this was sufficiently close to allow an examination of the global picture of mean score differences, though direct comparisons of country means should be avoided (see Annex A1.1 in OECD [2009e] and the *TALIS Technical Report*, [forthcoming]).

Job-related attitudes: self-efficacy and job satisfaction**Index of teachers' self-efficacy**

The questionnaire items comprising this index are as follows:

- I feel that 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.

This index was combined with mean scores for the single item measuring job satisfaction in order to get a measure of job-related attitudes. In the analysis to test the cross-cultural validity of this index, configural and metric invariance was achieved. Although full scalar invariance was not established, the fit of the models for testing this was sufficiently close to allow an examination of the global picture of mean score differences, though direct comparisons of country means should be avoided (see Annex A1.1 in OECD [2009e] and the *TALIS Technical Report*, [forthcoming]).

Further references

The following additional material relevant to this indicator is available through TALIS (Teaching and Learning International Survey) on line at www.oecd.org/edu/TALIS/.


Table D6.1.
Correlation between time on task¹ and classroom disciplinary climate (2007-08)
Teachers of lower secondary education

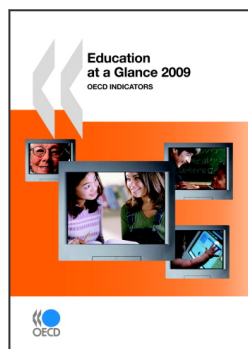
	Correlation coefficient (r_{xy}) ²	(S.E.)
TALIS countries		
Australia	0.63	(0.019)
Austria	0.56	(0.014)
Belgium (Fl.)	0.54	(0.018)
Brazil	0.31	(0.022)
Bulgaria	0.50	(0.021)
Denmark	0.57	(0.024)
Estonia	0.62	(0.017)
Hungary	0.61	(0.020)
Iceland	0.48	(0.029)
Ireland	0.65	(0.015)
Italy	0.46	(0.018)
Korea	0.21	(0.018)
Lithuania	0.35	(0.018)
Malaysia	0.36	(0.024)
Malta	0.58	(0.026)
Mexico	0.20	(0.027)
Norway	0.56	(0.018)
Poland	0.46	(0.024)
Portugal	0.59	(0.016)
Slovak Republic	0.49	(0.020)
Slovenia	0.51	(0.019)
Spain	0.61	(0.014)
Turkey	0.41	(0.029)

1. Percentage of classroom time spent on teaching and learning.

2. Statistically significant at the 5% level.

Source: OECD, *TALIS Database*.

StatLink  <http://dx.doi.org/10.1787/665115410485>



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