



3

Teacher professionalism and policy-relevant outcomes

This chapter examines the relationship between the status of teaching and key policy-relevant outcomes. In this chapter, four key outcomes are examined, namely: i) perceptions of the status of teaching; ii) satisfaction with current work environment; iii) satisfaction with the teaching profession; and iv) perceptions of self-efficacy. Variations in the relationship between teacher professionalism and teachers' perceptions and satisfaction are also examined.



Highlights

- There are many differences across countries and economies in terms of the extent to which teacher professionalism is associated with teacher outcomes.
- In general, teacher professionalism is an important factor in teachers' job satisfaction. Supporting teachers' knowledge base and the formation of peer networks have the strongest relationship with teachers' perceptions and satisfaction.
- Teacher professionalism is also associated with greater perceptions of the status of the teaching profession in the society and self-efficacy. Teachers in schools that adopt more of the identified practices related to improving teachers' knowledge base and expanding peer networks of support and information exchange feel more capable, and perceive themselves to have higher status.
- There are differences across education levels. Among the countries and economies participating in the Teaching and Learning International Survey (TALIS) at primary and upper secondary education, teacher professionalism is likely a more important predictor of the teacher satisfaction and perceptions of the status of the teaching profession at the lower and upper secondary level than the primary level of education.

INTRODUCTION

The chapter focuses on the link between teacher professionalism and a number of policy relevant outcomes. Throughout the analyses, the primary predictors are indices of teacher professionalism, as discussed in Chapter 1 and described in-depth in Chapter 2. Drawing on the literature on teacher professionalism, the primary predictor is an index of overall of teacher professionalism and three domain-specific indices: *knowledge base*, *autonomy*, and *peer networks* (see Box 3.1).

Box 3.1 **Teacher professionalism indices**

Knowledge base – The knowledge and skills teachers need to teach effectively

Autonomy – Teachers' level of decision making over their work

Peer networks – Access to networks of peers who support the exchange of information and expertise

The analysis consists of multilevel regression analyses (detailed in Annex A), which are used to estimate the relationship between higher levels of teacher professionalism and identified outcomes. Strong support is found for the idea that teacher professionalism is linked to all four policy-relevant outcomes of interest. Teachers benefiting from two-thirds of all identified best practices (i.e. with a value of roughly ten on the final index) tend to express more positive perceptions of their work environment, status and satisfaction (they rank in the top half of the distribution of all teachers on outcomes of interest). In contrast, teachers who benefit from only one or two of the identified best practices express much lower rates of satisfaction, self-efficacy and status.



The analyses find that practices that both develop teachers' knowledge base and support collective peer networks have a large and consistently positive association with teachers' perceptions in nearly every surveyed country and economy. In contrast, the effect of autonomy varies substantially – it tends to have minimal association with teachers' perceptions in most countries and economies and is rarely statistically significant. From the policy perspective, this suggests that resources may be better utilised if devoted to ongoing teacher professionalism and developing peer networks more than granting teachers more autonomy.

The analysis of teacher professionalism at different education levels suggests that teacher professionalism may be more important after primary school – the relationship between teacher professionalism and various aspects of teacher job satisfaction is stronger at the lower and upper secondary levels than primary level. At the same time, it is important to keep in mind that the comparisons across education levels need to be treated with caution due to the limited number of countries participating at the primary education level (6 countries) and the upper secondary level (11 countries). Given the link between teacher professionalism and important policy-relevant outcomes, the analysis suggests that policy interventions to support teachers – particularly those that support their knowledge base and networks of peer communities – have important effects on teachers' perceptions and job satisfaction. Overall, this means that supporting teachers in these ways may help education systems recruit and retain teachers who are more satisfied, confident in their abilities and committed to teaching.

TEACHER PERCEPTIONS OF STATUS, SATISFACTION AND SELF-EFFICACY

This study investigates four policy outcomes: teachers' perceived status, satisfaction with the work environment, satisfaction with the teaching profession and self-efficacy. Each of these outcomes comes from a specific survey item or a complex scale produced by TALIS 2013 (OECD, 2014b). Table 3.1 outlines the survey items included in each outcome; each item was answered on a Likert scale of agreement (1-4), with one indicating strong disagreement and four indicating strong agreement.

Because TALIS complex scales do not reach the level of scalar invariance, caution is needed in comparing national means on the scales. The results are replicated with composite indices calculated from the mean of teacher responses on each of the items in the scales and find very similar results, which suggests that teacher professionalism seems to have an important effect on outcomes, even when those outcomes are operationalised and measured in slightly different ways.

Overview of the TALIS questions used in the teacher perceptions of status, satisfaction and self-efficacy

Table 3.1

Concept	Indicators
Status	I think that teaching is valued in society
Satisfaction with profession	The advantages of being a teacher clearly outweigh the disadvantages. I regret that I decided to be a teacher. If I could decide again, I would still choose to work as a teacher. I wonder whether it would have been better to choose another profession.
Satisfaction with work environment	I would recommend my school as a good place to work. I would like to change to another school if that were possible. I enjoy working at this school. All in all, I am satisfied with my job.
Self-efficacy	To what extent do you believe that you can: <ul style="list-style-type: none"> ▪ Control disruptive behaviour in the classroom ▪ Make my expectations about student behaviour clear ▪ Get students to follow classroom rules ▪ Calm a student who is disruptive or noisy ▪ Craft good questions for my students ▪ Use a variety of assessment strategies ▪ Provide an alternative explanation or example when students are confused ▪ Implement alternative instructional strategies in my classroom ▪ Get students to believe they can do well in school work ▪ Help my students value learning ▪ Motivate students who show low interest in school work ▪ Help students think critically



Because the four outcomes have different scales, we standardise the variables to a mean of zero and standard deviation of one for the regression analyses. This allows for comparison across all four dependent variables and also simplifies the interpretation of the coefficients – the coefficients can be interpreted as finding that each one-unit increase on the professionalism indices, which corresponds to an additional best practice on the autonomy and peer networks scale or two best practices on the knowledge base scale, is associated with a *B* standard deviation change in the dependent variable.

Box 3.2 **Technical notes on regression analysis**

Predictor variable: The primary predictor variable is a teacher's value on the overall teacher professionalism index, which ranges from 0-15. The unit of analysis is the teacher.

Regression model: Pooled two-level random intercepts model, with teachers grouped within schools and random intercepts for each school. All countries and economies are combined.

Survey weights: The analysis takes into account the complex survey design of TALIS 2013, employing final teacher weights for the fixed part of the model and final school weights at the school level. The dataset is set to use balanced repeated replicate weights.

Controls: At the individual teacher level, controls include teacher gender, years of teaching experience and subject taught. At the school level, controls include whether the school is public or private, the percentage of students who are socio-economically disadvantaged and an index of school climate, created by TALIS 2013, which captures the nature of student-teacher relations.

The analysis consists of multilevel regression models (detailed in Annex A) to estimate the relationship between increases in teacher professionalism and identified outcomes, with teachers nested within schools (see Box 3.2). Recognising that within the same system, teachers' own perceptions vary significantly based on where they work, what subject they teach and their school cultures, we control for key individual- and school-based characteristics to isolate the independent role of teacher professionalism. The analysis finds that teacher professionalism is a robust predictor of teachers' perceptions and satisfaction, even after controlling for other individual and school-level characteristics. The next section provides an overview of the findings.

OVERALL TEACHER PROFESSIONALISM

Overall teacher professionalism shows a positive and statistically significant relationship to each of the four outcome variables. Table 3.2 shows coefficients on regression models at the lower secondary level of education, with a teacher's total professionalism index as the key predictor. The table indicates that as a teacher's value on the overall professionalism index increases by one unit, his or her perceived status will increase by 6.1% of a standard deviation, satisfaction with work environment will increase by 11.3% of a standard deviation, satisfaction with the teaching profession by 9.6% of a standard deviation and perceived self-efficacy by 9.7%. This finding suggests that even after accounting for important factors, such as a teachers' gender, years of experience and the school context, teacher professionalism has an independent effect on teachers' perceived status, satisfaction and efficacy.

**Table 3.2 Relationship between teacher professionalism and teacher outcomes (ISCED 2)**

Teacher professionalism	Perceived status	Satisfaction with profession	Satisfaction with work environment	Perceived self-efficacy
	6.1% ***	9.6% ***	11.3% ***	9.7% ***

Notes:

1. Cell entries represent the change in standard deviation associated with one unit increase on the teacher professionalism scale. Regression models include controls for teacher gender, years of experience, subject taught, school sector and school climate.

2. Statistical significance: *** = $p < 0.001$.

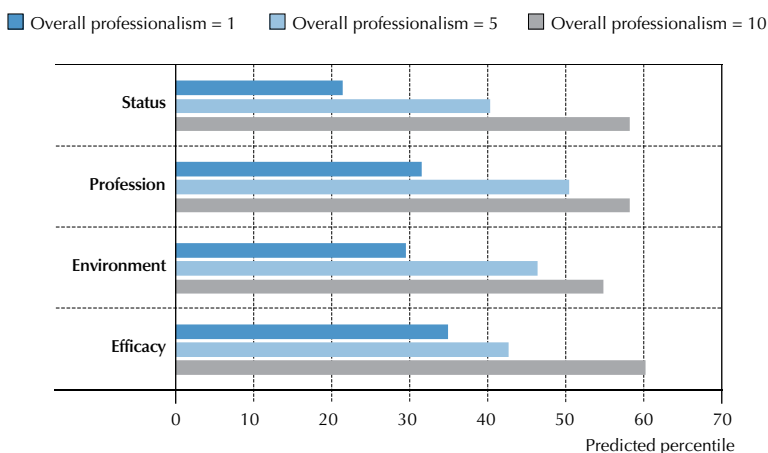
Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

To make the findings interpretable, the regression coefficients are translated into the predicted percentile rank on each of the outcome variables (i.e. satisfaction, self-efficacy, perceived status) depending on the number of best practices to which the teacher has access. The regression output is used to predict where a given teacher would fall in the overall distribution of teachers in terms of their satisfaction or perceived self-efficacy or status. Because the distributions of each outcome differ somewhat, higher regression coefficients between outcomes does not necessarily indicate a higher predicted percentile.

Figure 3.1 shows a teacher's predicted percentile in the distribution of all teachers, estimated by his or her overall score on the teacher professionalism index. The figure indicates where in the distribution of all teachers a given teacher would be expected to rank if she benefited from only one support, compared to those benefiting from five or ten best practices. As the figure shows, teachers with a value on the overall index of only one are expected to fall in the bottom third of all teachers in terms of their perceived status and self-efficacy and their satisfaction with their profession and work environment. In contrast, teachers with a value of five on the overall professionalism index are in the 40-51st percentile of all teachers in terms of all outcomes. At the top end of the spectrum, teachers with values of ten on the overall index, which corresponds to benefiting from two-thirds of the identified best practices, are likely to rank in the top half of the distribution of all teachers.

In concrete terms, it appears that gains in support for teacher professionalism matter more at the lower end of the spectrum, such that implementing a few additional best practices matters more for teachers' perceptions of status and self-efficacy and satisfaction with profession and work environment if they are not benefiting from any. At the top end, additional best practices do not have the same additional effect on teachers' perceptions and satisfaction. As Figure 3.1 shows, teachers benefiting from less than two best practices for teacher professionalism are likely to rank in the bottom third of all teachers in terms of their perceived status and satisfaction – they are much less likely to state that they believe teaching is valued in society and that they are satisfied in their work environment and with their profession in general. Additionally, they are less likely to be confident about their teaching (self-efficacy), although the impact is less pronounced, as even teachers in schools with less than two best practices fall in roughly the 40th percentile of all teachers. In contrast, those benefiting from roughly two-thirds of all practices are likely to be in the top half of the distribution, all other factors held constant.

Figure 3.1
The relationship between overall teacher professionalism and teacher outcomes (ISCED 2)



Note: The baseline is set as one best practice on the total professionalism index because very few teachers in the dataset had a value of 0 on the overall index. The small sample made predictions on that population unreliable. In subsequent domain-specific analyses with sub-indices, the baseline is set at 0.

Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

TEACHER PROFESSIONALISM, BY DOMAIN

Recognising that teachers' professionalism is composed of three domains – knowledge base, autonomy and peer networks – and that teachers may have different levels of support for each, it is important to examine whether teachers' perceptions and satisfaction are associated more strongly with one domain than the others. This section presents results from regression models examining the relationship between each of the three domains separately and teachers' perceptions and satisfaction (see details in Box 3.3). Teacher professionalism is measured at the level of the individual teacher for the knowledge base and peer networks scales and as a school mean, reported by the principal, for the autonomy scale. This means that for the knowledge base and peer networks analyses, the findings link the individual teachers' experiences with their perceptions and satisfaction, whereas for the analyses for autonomy, it links the principal's reports of teachers' level of decision-making at the school level to individual teachers' perceptions and satisfaction.

Table 3.3 shows the coefficients from the models on each teacher professionalism domain – the coefficients indicate the size of the relationship between a teacher's value on each of the domain scales and the teachers' perceptions and satisfaction, in terms of a standard deviation. The table shows that the coefficients are positive and statistically significant for the knowledge base and peer networks indices, ranging from a low of 5.6% of a standard deviation for the change in the knowledge base scale to a high of 14.5% of a standard deviation when examining the change in a teacher's satisfaction with the work environment associated with each additional support for peer networks.



Box 3.3 Technical notes on domain specific analyses

Predictor variables: The domain-specific analyses utilise three primary predictor variables: the knowledge base index (0-5) and peer networks index (0-5) are measured at the individual teacher level, and the autonomy index (0-5) is measured at the school level.

Regression models: Pooled two-level random intercepts model, with teachers grouped within schools and random intercepts generated for each school. All countries and economies are pooled.

Survey weights: The analysis takes into account the complex survey design of TALIS 2013, employing final teacher weights for the fixed part of the model and final school weights at the school level. The dataset is set to use balanced repeated replicate weights.

Controls: At the individual teacher level, controls include teacher gender and years of teaching experience. At the school level, controls include whether the school is public or private, the percentage of students who are socio-economically disadvantaged and an index of school climate, created by TALIS 2013, which captures the nature of the relations.

The coefficients on the autonomy scale are much smaller in all four analyses than are those on the overall teacher professionalism index – the coefficients on models of autonomy are close to zero and not consistently statistically significant. This means that, as teachers benefit from more areas of decision making in their schools, they do not necessarily experience higher levels of satisfaction or perceive greater status or self-efficacy. In fact, results show that, across the entire sample, the coefficient on the autonomy scale is actually negative when modelling perceived status and self-efficacy, suggesting that more decision making at the school level may actually make teachers feel less capable in their abilities to do their job. This relationship combines teachers from all countries and economies and may be different within each education system; however, it also suggests that more autonomy does not necessarily lead to greater perceived self-efficacy – in fact, it might indicate that teachers need other forms of support, such as time release, in order to feel empowered by opportunities for decision making. Additionally, the table shows that the coefficient is positive for both of the satisfaction indices, suggesting a positive relationship between teachers' level of autonomy and their satisfaction with both the teaching profession and their work environment; however, the size of the relationship is very small, ranging from less than 0.3% - 2.8% of a standard deviation change for each additional area of school-based decision making.

In terms of variations across teachers' perceptions and satisfaction, the analysis finds that teacher professionalism is least associated with teachers' beliefs about the status of teaching in society, and more strongly linked to their perceptions of their own teaching and their satisfaction. As the table shows, the coefficients on status are only 0.06 of a standard deviation for the knowledge base scale – while coefficients for all other outcomes are above 0.10. The status outcome specifically asks teachers to what extent they believe that teaching is a valued profession in society, which may reflect larger structures of educational requirements and pay than the other three outcomes, which are more personal perceptions of satisfaction and teaching abilities. Nonetheless, we do find that higher values on the knowledge base and peer networks indices are both positively associated with perceived status.

However, we do not know the directionality of this relationship – it may be that as teachers engage in a greater number of best practices, the higher they perceive the status of their profession. Alternatively, it may be that the more status the teaching profession enjoys in society, the more support exists for investing in practices that support teachers.

Table 3.3 Table of coefficients on teacher professionalism indices (ISCED 2)

Domain	Perceived status	Satisfaction with profession	Satisfaction with work environment	Perceived self-efficacy
Knowledge base	0.056***	0.123***	0.121***	0.128***
Autonomy	-0.028***	0.003	0.011***	-0.020***
Peer networks	0.084***	0.112***	0.145***	0.112***

Notes: Regression analyses are run for each domain separately.

Significance stars: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Controls for teacher gender, years of experience, subject taught, school SES, school sector and school climate.

Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

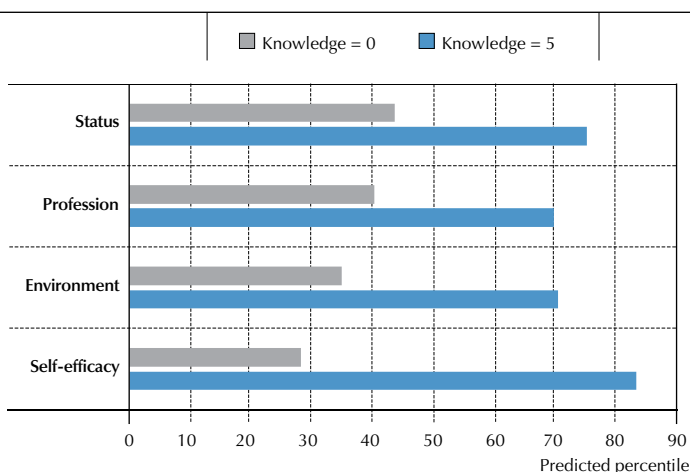
Meanwhile, the knowledge base scale is most strongly linked to perceived self-efficacy, which suggests that supporting teachers' professional development and learning is associated with higher levels of confidence in their teaching abilities. In contrast, practices supporting peer networks are more strongly linked to teachers' satisfaction with their current work environment, which suggests that the collaborative and mentoring practices that provide supportive communities in which teachers can learn and refine their teaching has a positive relationship with their satisfaction with their jobs.

Figure 3.2 shows the predicted percentile of teachers for each outcome based on whether they are in a school with zero best practices identified, or a school with all ten included (a value of 5 on the scale). As with the overall index, we present results in terms of a teachers' percentile rank, using regression coefficients to predict how a given teacher would compare with other teachers on each of the four outcomes.

It is clear that teachers in schools with a high level of support for knowledge are much more likely to state that they are satisfied in their jobs and able to be effective teachers. For example, Figure 3.2 shows that teachers' mean predicted percentile ranks are in the bottom 44% in terms of all outcomes when they do not benefit from any of the best practices identified in the literature.

■ Figure 3.2 ■

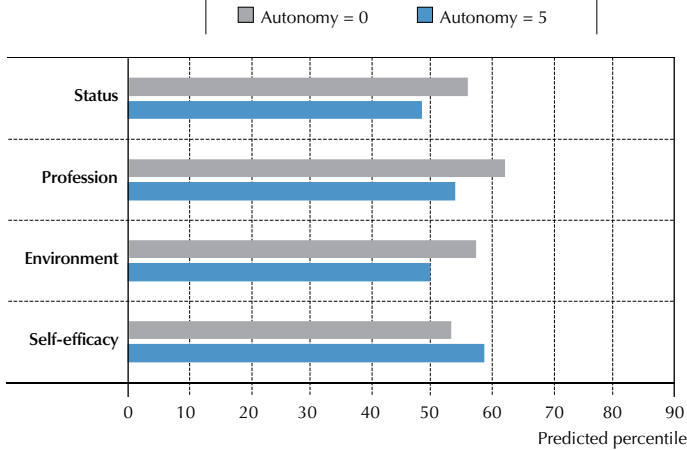
The role of the knowledge base on teachers' perceptions and satisfaction (ISCED 2)



Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.



■ Figure 3.3 ■
The role of autonomy on teachers' perceptions and satisfaction (ISCED 2)



Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

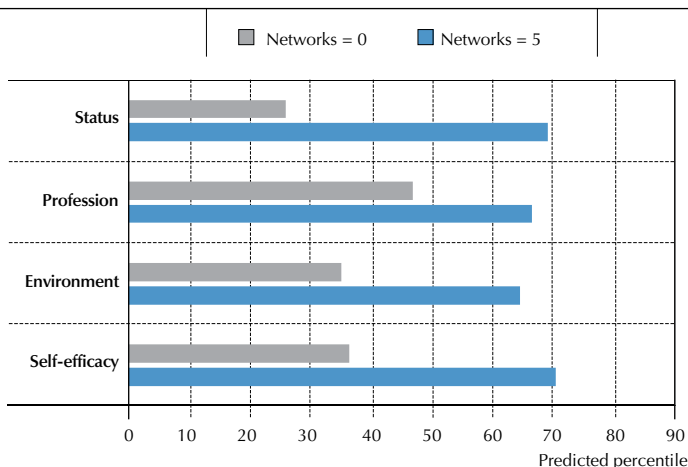
Figure 3.3 shows mean predicted percentiles for teachers based on their value on the autonomy scale. As the figure shows, teachers' predicted satisfaction and perceptions on each of the outcomes are relatively unaffected – mean percentile ranks range between the 48th and 62nd percentile of the distribution regardless of whether the teachers in the school participate in zero or five areas of decision making.

The weak coefficients on the autonomy scale suggest that giving teachers more decision-making power is not strongly linked to improved outcomes. It is unclear why autonomy is not more positively linked to outcomes of interest. Measurement error may play a role: the measure for autonomy is reported by principals at the school-wide level and not by teachers. This could introduce error, as principals' ideas about decision making may not reflect the experiences of their teachers precisely enough. In addition, we may need more alternate measures of what autonomy looks like for teachers, apart from domains of decision making. Prior studies suggest that teachers vary in their desire to participate in school-based management, yet most want to retain autonomy over classroom affairs (Fraser and Sorenson, 1992). If teachers are not interested in taking on management responsibilities in schools, then measures of autonomy may need to approximate teachers' perceptions of choice, rather than decision making.

Figure 3.4 shows the mean predicted percentile of the distribution of teachers based on their value on the peer networks index. Similar to the findings related to the knowledge base scale, as depicted in Figure 3.2, it is clear that higher values on the peer networks scale are associated with an average percentile rank above the 60th percentile of the distribution for all four outcomes, while those with lower scores on the peer networks scale have mean percentiles lower than the 47th percentile. This suggests that teachers who benefit from more of the best practices related to peer networks, including induction and mentoring programmes, tend to place in the upper half of the distribution in terms of satisfaction with both their work environment and profession in general, perception of status and self-efficacy, while those benefitting from none of the best practices place between the 26th and 47th percentiles, on average. This finding holds true for all four outcomes.



■ Figure 3.4 ■
The role of peer networks on outcomes (ISCED 2)



Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

In sum, the domain-specific analyses suggest that across the entire sample of countries and economies, policies to support the development of teachers' knowledge base and the formation of peer networks are most predictive of policy-relevant outcomes, while autonomy is not strongly related to the outcomes of interest. Chapter 2 showed that education systems' models of teacher professionalism vary quite a bit in terms of how teacher professionalism is expressed. The chapter found that there is significant cross-system variation in both the extent of teacher professionalism and the domain that systems emphasise. The chapter identified various models of teacher professionalism, including some countries and economies that have high levels of professionalism on all three domains, in contrast to other nations that tend to emphasise one domain. As such, we recognise that due to differences in country contexts and teaching policies, teacher professionalism may also affect outcomes differently across systems. In the next section, we examine how teacher professionalism varies across countries and economies.

VARIATION ACROSS EDUCATION SYSTEMS

This section examines the extent to which the relationship between teacher professionalism and outcomes of interest varies cross-nationally. The analysis technique consists of country specific regressions (detailed in Box 3.4), carried out for all four outcomes, with overall teacher professionalism and each of the domains as the predictor variables.

Findings indicate that there is substantial cross-system variation: in certain countries and economies, teacher professionalism generally seems to have a small effect on all four outcomes; in others, its impact on outcomes is very strong. Figure 3.5 shows regression coefficients for each dependent variable for selected countries and economies – these education systems show different models for the effects of teacher professionalism on outcomes. It is important to note that coefficients for all countries and economies are positive – suggesting that in every participating country, teacher professionalism is positively associated with policy-relevant outcomes. Nonetheless, there are significant cross-national



differences – for example, the coefficient on teacher professionalism when predicting a teacher's perceived self-efficacy is below 0.047 in the Netherlands and France, while it is almost three times as large, at 0.139, in Malaysia. Coefficients for status range from 0.020 to 0.115 – indicating that teacher professionalism has a much greater impact on how teachers perceive their status in some countries or economies than in others.

Box 3.4 Analysis of system variation

Predictor variables: Four predictor variables are used: overall teacher professionalism index, scaled (0-15) and the three domain-specific indices: the knowledge base index (0-5), the peer networks index (0-5), and the autonomy index (0-5). The overall teacher professionalism index and the knowledge base and peer networks indices are all measured at the individual teacher level. The autonomy index is measured at the school level.

Regression model: The country-specific analysis employs two-level country-specific models, which group teachers within schools, creating separate intercepts for each school. The analyses generate country-specific coefficients for each outcome.

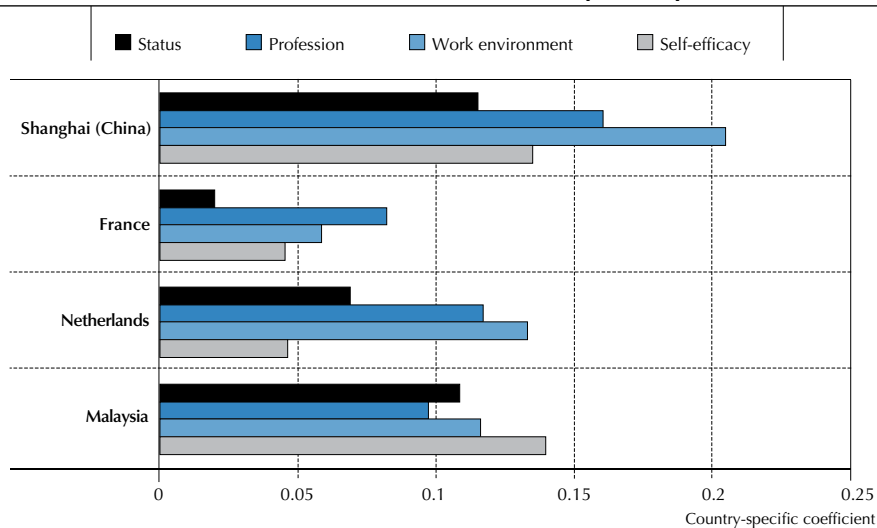
Survey weights: The analysis takes into account the complex survey design of TALIS 2013, employing final teacher weights for the fixed part of the model and final school weights at the school level. The dataset is set to use balanced repeated replicate weights.

Controls: At the individual teacher level, controls include teacher gender and years of teaching experience. At the school level, controls include whether the school is public or private, the percentage of students who are socio-economically disadvantaged and an index of school climate, created by TALIS 2013, which captures the nature of the relationships between teachers.

As the figure shows, some countries and economies, such as Shanghai, China have relatively high coefficients (above 0.115) on all four dependent variables. In contrast, others, such as France, Japan, and the Slovak Republic, have relatively low coefficients on all four outcomes, suggesting that teacher professionalism is simply not as important a predictor of teachers' satisfaction and perceptions in those education systems as it is in other contexts. It is possible that other factors of national labour markets may be mediating the role that teacher professionalism has on teachers' perceptions and satisfaction.

In addition, there are other patterns among countries and economies – for example, in some countries, like Australia and the Netherlands, teacher professionalism seems to have a significant and relatively large impact on satisfaction with the profession and current work environment, but it has only a small association with perceptions of self-efficacy or status. In contrast, there are countries like Korea and Malaysia, where, when compared to other contexts, teacher professionalism seems to have a significant impact on perception outcomes – status and self-efficacy – but a more moderate impact on the satisfaction outcomes.

Figure 3.5
**Patterns of relationships between professionalism and outcomes
 in select countries and economies (ISCED 2)**



Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

The country/economy-specific patterns identified in Figure 3.5 are not necessarily linked to the various models of teacher professionalism identified in Chapter 2.

To further examine the nature of cross-system variation, Figure 3.6 and Figure 3.7 present the size and significance of system-specific regression coefficients. The coefficients are a measure of how much the adoption of an additional best practice is associated with a change in outcomes, measured as a standard deviation. Figure 3.6 and Figure 3.7 show the size of the relationship between teacher professionalism and two outcomes of interest. The report focuses on the coefficients for self-efficacy and satisfaction with work environment, because these two seem to have the most immediate policy relevance – job satisfaction as it pertains to retention and turnover, and self-efficacy as it pertains to teacher quality.

As can be seen, coefficients for self-efficacy range from a low of about 0.045 in France to highs of about 0.139 in Malaysia and 0.135 in England, United Kingdom. In these latter two systems there is a pronounced relationship between professionalism and the degree to which teachers feel able to carry out their jobs. The coefficient on teacher perceptions of satisfaction with their work environment tends to be higher across the board, with Abu Dhabi, United Arab Emirates; England, United Kingdom; and Shanghai, China standing out as having the strongest relationship. Compared to self-efficacy, the impact of measures of professionalism on satisfaction with work environment is much stronger.

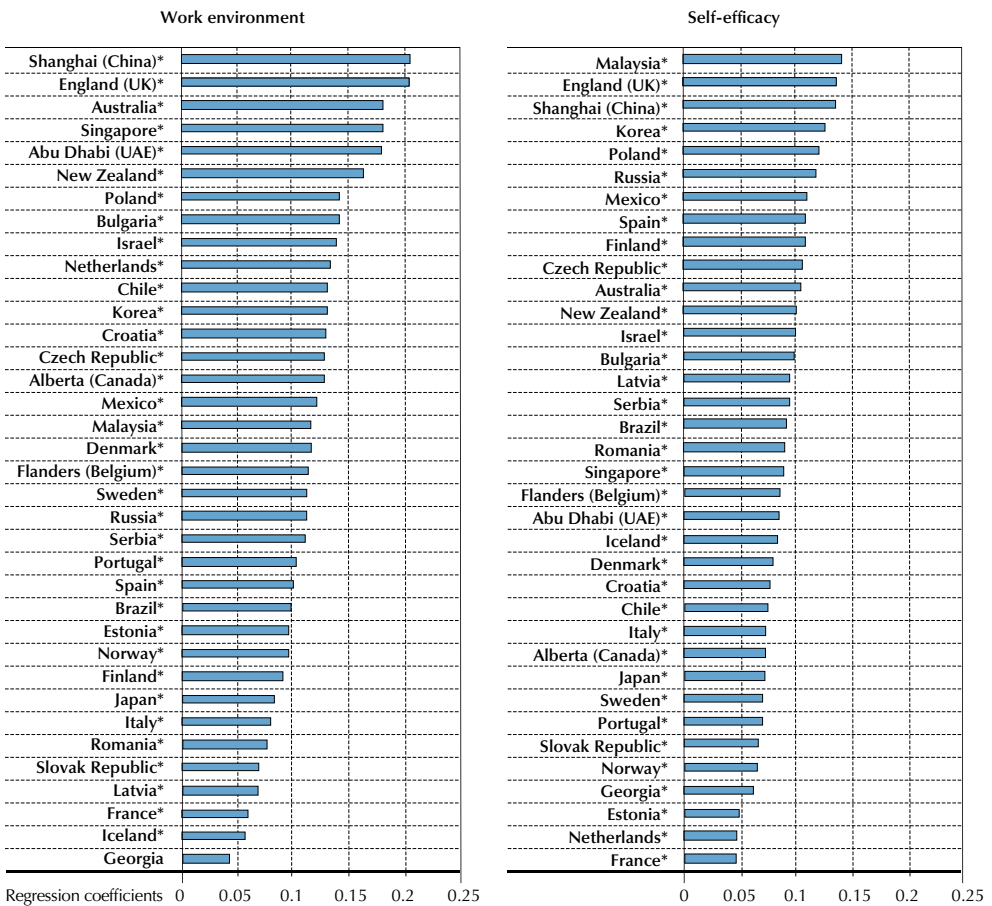
Additionally, the analysis finds positive and statistically significant coefficients on the scales for knowledge and peer networks – in most surveyed systems, these two indicators are positively associated with all four outcomes. In contrast, Figure 3.7 shows coefficients on regressions with autonomy as the predictor. The coefficients on the index of autonomy are both negative and positive and most are actually not statistically significantly different from zero – suggesting no relationship. The figure shows that coefficients across all TALIS countries and economies range from about 0.036 to 0.034 of a standard deviation for the self-efficacy outcome and range from -0.027 to 0.072 for the work environment outcome.



For example, in Abu Dhabi, United Arab Emirates, it is clear that teacher professionalism is strongly linked to certain outcomes of interest, even while its education system has comparatively moderate levels of teacher professionalism. Additionally, countries and economies with both the highest (i.e. England, United Kingdom) and lowest levels (i.e. Mexico) of overall professionalism show up among the countries and economies with the strongest relationships between professionalism and outcomes. The lack of systematic relationships suggests that it is not only those systems with high levels of teacher professionalism where professionalism matters for teacher outcomes. Instead, the findings suggest that teacher professionalism might interact with other system-level factors or specific educational cultures such that professionalism matters more in terms of predicting outcomes in certain contexts than others.

■ Figure 3.6 ■

Country/economy-specific regression coefficients – overall professionalism index (ISCED 2)



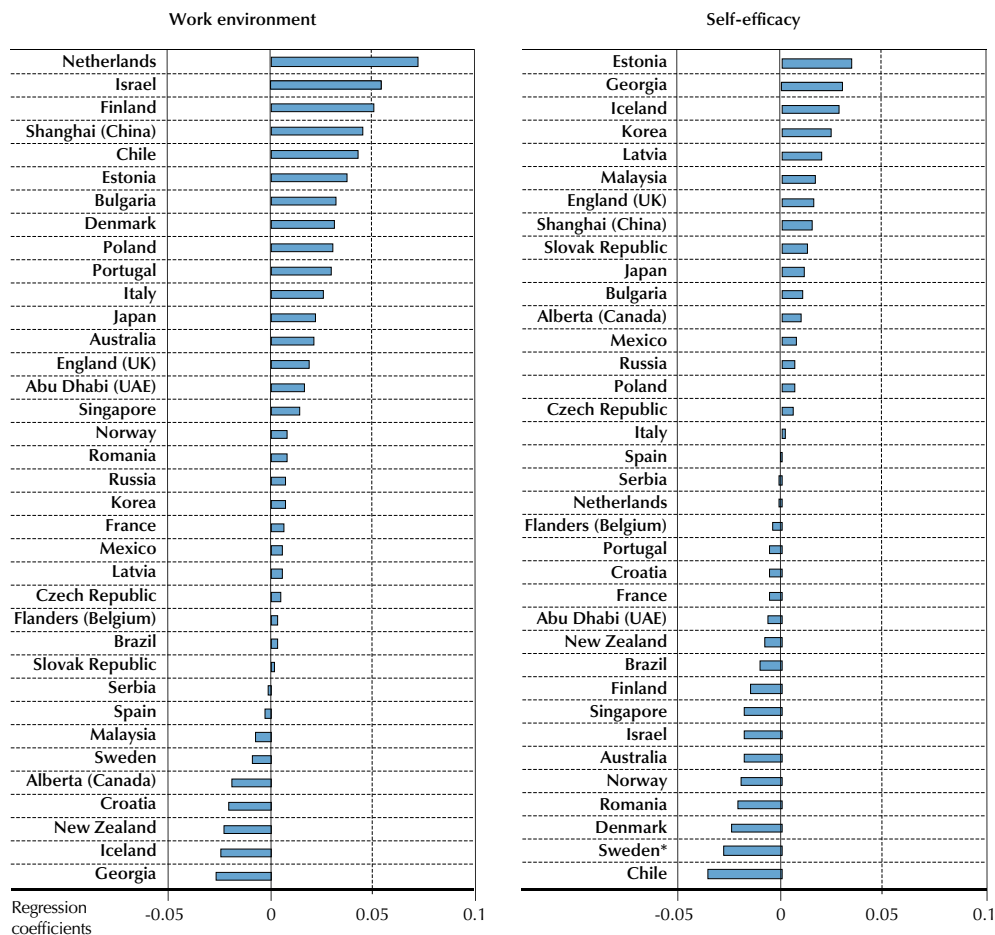
Notes:

1. * Designates coefficient is statistically significantly different than zero ($p < 0.05$).
2. Countries/economies listed in descending order by the size of the coefficient.

Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

Figure 3.7

Country/economy-specific regression coefficients for autonomy scale (ISCED 2)



Notes:

- * Designates coefficient is statistically significantly different from zero ($p < 0.05$).
- Countries/economies listed in descending order by the size of the coefficient.

Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

Nonetheless, there are also exceptions. In five of the surveyed countries and economies – Finland; Israel; the Netherlands; Poland; and Shanghai, China – autonomy is positive and a statistically significant predictor of satisfaction with the current work environment. Autonomy also seems to be a statistically significant and positive predictor of status in Estonia and satisfaction with the teaching profession in Israel. It is possible that in these countries and economies, many of which have high values on teacher professionalism overall (e.g. Estonia and Poland), there is a virtuous cycle whereby autonomy is an important part of teacher professionalism and contributes to enhanced satisfaction and status. Additionally, Estonia; Poland; the Netherlands and Shanghai, China also tend to have high values on



the knowledge base scale and peer networks scale. It is possible that autonomy may be important in teachers' satisfaction with their work environment, but only when supported by a strong knowledge base and peer networks. This would suggest that the role of autonomy requires a foundation of other supports for it to translate into outcomes. However, more research is needed to fully understand the effect of autonomy in these systems.

Nonetheless, these are the only contexts for which autonomy seems to affect outcomes. Additionally, although coefficients on the pooled regressions are negative, there are no statistically significant negative coefficients in the country-specific analyses. This suggests that although the analysis does not find a strong positive relationship for autonomy on outcomes, there is no reason to believe that additional autonomy negatively impacts teachers' satisfaction, status or self-efficacy either. Moreover, across all countries, autonomy seems to have the strongest relationship with teachers' perceptions of their current work environments and much less with status or satisfaction.

THE ROLE OF SYSTEM-LEVEL FACTORS

This report has found that teacher professionalism is positively associated with teachers' perceptions and satisfaction with their work environment and profession. However, teachers' perceptions and satisfaction may also vary based on other system-wide characteristics, such as relative salaries and accountability systems. For example, education systems may adopt policies such as attempting to attract better teachers through higher pay, or by making teachers accountable for student outcomes as a way of improving teaching. System-level policies such as these may bias the analysis of teacher professionalism if they are associated with both teacher professionalism and teacher-level outcomes. As such, the chapter also examines the role of other important system-level factors in a subsequent section to understand how and whether teacher professionalism is associated with other policies aimed at improving teacher quality (see Box 3.5 for more details).

Box 3.5 Technical notes on system-level analysis

Predictor variables: The primary predictor variable is a teacher's value on the overall teacher professionalism index, which ranges from 0-15. The unit of analysis is the teacher.

Regression model: The country-specific analysis employs two-level country-specific models, which group teachers within schools, creating separate intercepts for each school. The analyses generate country-specific coefficients for each outcome.

Survey weights: The analysis takes into account the complex survey design of TALIS 2013, employing final teacher weights for the fixed part of the model and final school weights at the school level. The dataset is set to use balanced repeated replicate weights.

Control variables: At the system level, the regression models include an indicator variable in regression models for whether a country has a testing-for-accountability policy and a continuous variable indicating average teacher salary relative to the salaries of tertiary educated individuals in the labour force.

At the individual teacher level, controls include teacher gender and years of teaching experience. At the school level, controls include whether the school is public or private, the percentage of students who are socio-economically disadvantaged and an index of school climate, created by TALIS 2013, which captures the nature of the relations.



This section examines whether the relationships noted between policy-relevant outcomes and teacher professionalism, as measured by implementation of best practices, hold after other measures of teacher professionalism are taken into consideration. Specifically, it explores two system-level factors that can be considered alternative ways of professionalising teaching – relative pay and policy frameworks that pay teachers for students’ performance. Teacher pay can be considered one policy designed at recruiting and retaining high-quality teacher labour, with the goal of improving teacher quality. Cross-national research into teacher recruitment and retention has found that in countries such as the United States, where teachers’ salary ladders are relatively flat, leading to only small increases over time, “...teaching is not a financially attractive profession...”, and that low relative salaries are one reason many teachers leave the profession (Akiba and LeTendre, 2009: 22). As such, policies that pay teachers well can be considered one approach to improving the recruitment and retention of high-quality teachers.

Second, in some education systems, policies tying formal evaluations, pay or sanctions to student performance as a form of test-based accountability have been adopted on the grounds that they would incentivise good teaching. There has been a large increase in testing for accountability over the past three decades around the world, including in those countries and economies participating in TALIS (Smith, forthcoming). When testing for accountability, education systems aggregate student scores to the level of the teacher or school, and use these aggregates for assessing teacher quality. The adoption of testing for accountability policies has been one of the most powerful and pervasive trends in global educational policy in the past two decades (Smith, forthcoming: 13). Nonetheless, such policies can be controversial, as they hold teachers accountable for student performance when aspects of performance are outside their control (Smith, forthcoming).

This section also examines whether teacher pay, or testing for accountability affect the relationship between teacher professionalism and outcomes. Because these policies are system-level factors, the analysis uses three-level models that account for the fact that teachers are grouped in schools in education systems, which share the same pay and accountability policies. Table 3.4 shows coefficients for these models. As in previous analyses, the coefficients can be interpreted as indicating the change in the standard deviation of the outcome – teachers’ perceptions and satisfaction – resulting from implementing one additional best practice. The first row of the table shows teacher professionalism coefficients without the system controls, as a basis of comparison. The second row includes a model with the two system controls – as is clear, the coefficients change only slightly. Their sign, significance and magnitude change very little for most outcomes. This suggests that the inclusion of these other system-level controls does not substantively alter the relationship noted between teacher professionalism and outcomes. This means that teacher professionalism is positively associated with teachers’ perceptions and satisfaction, even after accounting for teachers’ relative salary and whether they work in a system of high accountability.

The third and fourth rows of the table show that other measures of teacher professionalism also seem to be important predictors of teachers’ perceptions and satisfaction and should be studied in their own right, although they are outside the scope of the analysis. The table shows that, in general, teachers that work in countries with evaluative or incentive-based environments tend to have lower satisfaction and perceived efficacy, although they may also perceive higher status. Additionally, not unexpectedly, teachers who are paid higher salaries tend to state that teaching is more highly valued in society than those with lower relative salaries.



Table 3.4 The relationship between outcomes and alternate educational policies

	Perceived status	Satisfaction with profession	Satisfaction with work environment	Perceived self-efficacy
Standardised coefficients on teacher professionalism				
Teacher professionalism – without system-level factors	0.061***	0.096***	0.113***	0.097***
Teacher professionalism – with system level factors	0.059***	0.098***	0.117***	0.090***
Standardised coefficients on selected system-level teacher professionalism factors				
High stakes testing policy (0/1)	0.034*	-0.336***	-0.197***	-0.167***
Higher relative salary	0.248***	0.091***	0.070*	0.034

Notes:

1. All regression models control for teacher gender, years of experience, subject taught, school SES, school sector and school climate.

2. Significance stars: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Source: Smith, W. (forthcoming), “Exploring educator based testing for accountability: National testing policies and student achievement”, in T. Burns (ed.), *Modern Governance in Education: The Challenge of Complexity*, OECD Publishing, Paris; OECD (2014a), *Education GPS*, <http://gpseducation.oecd.org/>.

These findings suggest that teacher professionalism is an important predictor of outcomes, above and beyond other policies to promote professionalism – pay and testing. This finding supports arguments for the importance of investing in teachers and their professionalism as a preferred approach to educational reform.

DIFFERENCES BY SCHOOL LEVEL

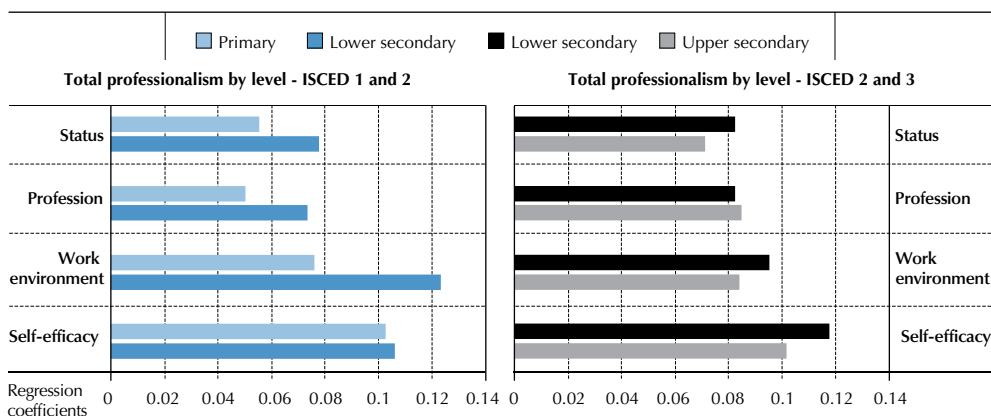
As we noted in Chapter 2, teacher professionalism differs by school level. This section examines differences across school levels. In order to maximise the number of observations, the analysis compares countries with data on two school levels at a time – comparing primary to lower secondary and lower secondary to upper secondary. This method allows us to look into potential differences across levels, but it applies only to the specific subset of countries that participated in the data collection at particular comparison levels. This means that generalisations to other countries should be made with care.

Figure 3.8 shows the coefficient on regression models predicting total professionalism on outcomes of interest at each level of schooling. The bars represent the change in the outcome, measured as a percent of a standard deviation, resulting from implementing one additional best practice. The figure suggests that teacher professionalism might matter more in the secondary levels than in primary – at least with respect to teachers’ perceived status, their satisfaction with the teaching profession and their current work environment. In contrast, the coefficients modelling the effect of professionalism on self-efficacy appear to be both large and similar at all levels of schooling.

Increasing support for teacher professionalism appears to have a stronger and larger association with teachers’ perceptions and satisfaction at higher levels of schooling – this may reflect differences in the nature of teaching at different educational levels, such that teachers may need more or different types of supports at higher levels of schooling. For example, it is possible that environmental factors not related to teacher professionalism – such as the composition of the student body or administrative decisions – may be more important predictors of teachers’ satisfaction and self-efficacy at the primary level due to less curricular specialisation and other factors.

It is also important to note that descriptive analysis in Chapter 2 found that teachers at the primary level enter the profession with more exposure to pedagogy and practice prior to teaching. In contrast, teachers at the upper secondary level were the most likely to have no exposure to pedagogy and practice prior to entering teaching, and simultaneously were granted the most autonomy.

■ Figure 3.8 ■
Teacher professionalism and outcomes by educational level



Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 complete database*, http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

The findings concerning the relationship between teacher professionalism and outcomes are robust to various robustness checks, including checks for biases due to missing variables, and various samples. Additionally, school-level means for the knowledge base and peer networks indices are also used as predictor variables; the models find similarly large and significant coefficients for most outcomes (see Annex A for more information on robustness checks). These robustness checks all find strong statistically significant coefficients on overall teacher professionalism, as well as the knowledge base scale and the peer networks index, even after testing for various possible biases and model specifications.

DISCUSSION

Teacher professionalism linked with perceptions of status and job satisfaction. The findings suggest that teacher professionalism is an important factor in teachers' job satisfaction and their perceptions of status and self-efficacy. More specifically, supporting teachers' knowledge base and the formation of their peer networks have the strongest relationship with their perceptions and satisfaction. In contrast, teacher autonomy, as measured by opportunities for decision making, seems to have little impact in most systems. In general, the findings indicate that teachers in schools that adopt more of the identified best practices related to improving teachers' knowledge base and expanding peer networks of support and information exchange tend to be more satisfied, feel more capable and perceive themselves to have higher status. This suggests that schools will benefit from implementing identified best practices, as well as by designing novel approaches to supporting teachers' knowledge base and peer networks.



Results consistent with prior research. These findings build on previous studies that find best practices are important predictors of teacher quality and satisfaction. Prior research has found that teachers desire feedback on their teaching, and that this feedback is a strong predictor of their job satisfaction (Frase and Sorenson, 1992). The large and statistically significant relationship between teachers' job satisfaction and their participation in peer networks, which includes a measure of whether teachers receive feedback, supports this finding. Moreover, this study finds that participation in peer networks is linked not only to satisfaction, but also to other important teacher-level outcomes, including their perceived status and self-efficacy.

Additionally, with respect to teachers' self-efficacy, the findings suggest that supporting teacher professionalism is positively linked to teachers' perceptions of their own abilities. This finding can be interpreted in light of prior research, which has found that participation in professional development is linked to improved teacher practice (Cohen and Hill, 2008; Wallace, 2009). In other words, teachers think that they are more capable teachers because through their knowledge requirements and participation in peer networks, they actually are more knowledgeable of best practices, making them more capable overall.

In terms of teachers' perceived status, the findings suggest that teachers perceive their profession to have higher status not only when they enjoy higher relative salaries, but also when they receive more support for professionalism.

Findings on teacher autonomy are inconclusive. Although the analyses suggest there is no clear or systematic relationship between autonomy and teacher perception and satisfaction, a couple of caveats are necessary. While teacher decision making is not related to teacher overall satisfaction in most countries, there is a subset of countries for which autonomy is an important part of overall professionalism. Prior studies have also found mixed findings with respect to autonomy, many of which stem from a lack of clear interpretation of the meaning of autonomy. For example, one survey of teachers in the United States found that autonomy "...means different things to different people. Some see it as the chance to have substantial freedom and independence in the classroom..." while others "...view autonomy as the freedom to develop collegial relations to accomplish tasks that extend beyond the classroom." (Frase and Sorenson, 1992: 40) Similarly, others have explained that the concept of teacher empowerment "...has been elusive as both a theoretical and empirical construct..." (Hoy and Sweetland, 2001: 710) As such, this study is not the first to find little conclusive evidence supporting the importance of autonomy in teachers' satisfaction, status and self-efficacy.

Nonetheless, more research – with different measures and specifications of autonomy – is needed, particularly research that asks teachers directly about their experiences with decision making in and out of the classroom. In particular, Hoy and Sweetland suggest that teacher autonomy should capture not only objective domains of decision making, but also teachers' attitudes and perceptions of their level of decision-making power, stating that teacher empowerment is "...not simply to the amount of teacher participation in classroom decisions but to the extent to which teachers believe they are involved in important instructional and classroom decisions." (2001: 711)

Cross-system differences. In addition to differences by domain of teacher professionalism, system differences also exist. The findings point to significant differences between countries – both in terms of what professionalism looks like, and how it affects outcomes. The descriptive analysis conducted in Chapter 2 shows that the nature and extent of teacher professionalism varies significantly

across systems. The findings in Chapter 3 extend those in Chapter 2 to suggest that teacher professionalism matters more in terms of predicting outcomes in some countries and economies than in others, indicating the need for additional research into how specific contexts mediate the relationship between professionalism practices and outcomes.

While the analysis finds less support for autonomy on its own, it is important to note that some education systems that are recognised as particularly effective (Scandinavian countries) also rate highly on teacher autonomy, and it may be the way that this factor interacts with knowledge and peer networks that produces the desired outcomes in these countries. Additionally, the system-specific analysis finds that autonomy matters for teachers' outcomes in a few select contexts, meaning that country- or economy-specific teacher labour markets are important mediators of whether professionalism affects outcomes.

Differences by level of education. The analyses also find that education level may matter: teacher professionalism is likely a more important predictor of teacher satisfaction and perceptions at the lower and upper secondary level than the primary level of education. We do not know whether this is related to the nature of secondary schooling or the teachers recruited at the secondary level; however, it does suggest that secondary teachers may benefit more from investments in teacher professionalism. This is important as governments have the incentive to invest resources more heavily where they are most needed. While it would be a mistake to abandon the idea of support for professionalism at the primary level, this research suggests that it is at the point at which curricula become more specialised and teachers need more subject-specific knowledge that support for professionalism becomes more crucial. We also note that secondary teachers tend to have less exposure to pedagogy and practice than teachers at lower levels – this may be one area where secondary teachers could benefit.

A note regarding Israel

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

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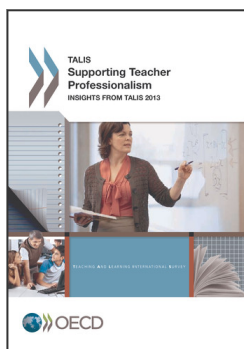
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