Governing Board

TEACHING AND LEARNING INTERNATIONAL SURVEY (TALIS) 2018: DRAFT CONCEPTUAL FRAMEWORK - DRAFT 4

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Teaching and Learning International Survey (TALIS) 2018

Conceptual Framework

Draft 4, 23 August 2016

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TALIS 2018 CONCEPTUAL FRAMEWORK

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INTRODUCTION

More than a decade ago, the report titled *Teachers Matter* (OECD, 2005) highlighted that attracting, developing and retaining effective teachers was a priority for school systems worldwide and documented examples of policies that appeared to contribute to the achievement of these priorities. The systematic Teaching and Learning International Surveys (TALIS) that flowed from this work provide means of monitoring trends in the quality of the teaching workforce by generating cross-sectional and time series data. TALIS addresses five broad policy areas: school policies supporting effectiveness, developing teachers within the profession, effective teachers and teaching, attracting teachers to the profession, and retaining teachers in the profession. The first two cycles of TALIS generated many policy-relevant findings concerning teacher education, continuing professional development, the extent to which school environments encouraged connections with colleagues and greater job satisfaction among others important outcomes.

TALIS is an international large-scale survey programme of the teaching workforce, conditions of teaching, and learning environments in schools in participating OECD countries, partner countries and economies (jointly referred to as “TALIS participants”). The first cycle of TALIS in 2008 (TALIS 2008) focussed on lower secondary education (ISCED Level 2) and involved 24 countries and economies. The second cycle of TALIS, which took place in 2013 (TALIS 2013) included additional countries and economies, adding to a total of 34 participating entities. The number increased to 38, when four additional countries decided to participate in 2014. Although lower secondary education (ISCED Level 2) remained at its core, the TALIS 2013 scope was broadened to include options for participants to survey teachers and leaders in primary schools (ISCED Level 1) and upper secondary schools (ISCED Level 3). In TALIS 2013, eight countries additionally conducted the survey in schools that had participated in the 2012 cycle of the Programme for International Student Assessment (PISA), an option that was referred to as the TALIS-PISA link.

TALIS 2018 is the third cycle of this programme. It involves a larger number of participants but it retains its core focus on lower secondary education and the same range of options as were implemented in TALIS 2013. It continues to focus on providing useful and relevant information about teachers, teaching conditions and learning environments. As a consequence TALIS 2018 will generate data covering issues that have endured over the three cycles covering a ten-year period as well as data concerning issues that have emerged since 2008.

TALIS 2018 examines teachers’ qualifications and initial education as well as their experience in the context of human resource policies adopted by education systems and schools. It also investigates key attributes of teachers including their beliefs about, and attitudes towards, teaching, their motivations and their self-efficacy as teachers in terms of classroom management, student engagement, and instruction. TALIS investigates the development of teacher expertise through feedback and professional learning including the type of professional learning that is built through collaboration with other teachers. It examines two important aspects of the environment that are believed to promote effective teaching: school climate and school leadership. In this context, TALIS 2018 also examines aspects of climate concerned with innovation and teaching in diverse settings (with an emphasis on cultural and ethnic diversity, and to a lesser extent also gender and socio-economic diversity). Most importantly TALIS provides information about what teachers do; their teaching practices and their beliefs about effective practices. Finally TALIS examines teacher job satisfaction in relation to their teaching as well as other aspects of their employment.
TALIS 2018 combines aspects from 2013 and 2008 with new aspects developed for 2018. In that sense, the 2018 cycle is an important refinement rather than a major re-development. Using the priorities agreed upon by the TALIS Governing Board (TGB) as the basis for this refinement, the majority of themes are retained and the general blend of indicators remains relatively constant. However, some themes and indicators have been re-oriented or re-scope and some additional aspects have been included. Over and beyond, TALIS 2018 needed to take into account changes in the contexts of teaching and learning that have occurred during the past five years as well as new developments in the academic and public debate about the teaching and educational policies, in particular in light of the policy discourse as part of the International Summit of the Teaching Profession (ISTP). In addition, research evidence and thinking about teaching practices has developed and need to be reflected upon. The TALIS 2018 approach aims at refinement rather than re-development. Balancing stability with new elements offers the basis for the analysis of trends on key topics and also incorporates provision for the investigation of contemporary issues in teaching.

TALIS 2018 has extended the links introduced in 2013 in the context of PISA 2012. Then, some countries also administered the TALIS 2013 survey in schools that participated in PISA 2012. For TALIS 2018 there has been a review of common themes and some questions have been developed that are common to the TALIS 2018 and PISA 2018 teacher and principal questionnaires (Jensen and Cooper, 2015; OECD, 2015). This includes, amongst others, questions about initial teacher education, teacher self-efficacy, school climate and job satisfaction but also aspects of teaching and learning in diverse settings specifically targeted in PISA 2018 as part of the notion of global competence (OECD, 2015).

Although the core focus of TALIS 2018 remains ISCED Level 2, it provides international options for ISCED Level 1 and ISCED Level 3 again. This is a consideration shaping the development of the conceptual framework and the instruments alike. Themes are intentionally kept constant across ISCED levels but items might be tailored to ISCED Level 1 and 3 where appropriate, e.g. with respect to the organisation of ISCED Level 1 curricula or upper-secondary specialisation such as Vocational Education and Training (VET). This maximises the analytical potential for comparisons and reporting across levels. The TALIS 2018 survey also needed to reflect activities in the larger TALIS programme of work and elsewhere, most importantly efforts with respect to initial teacher preparation, a teacher knowledge survey, and the continuing development of a video study. Finally, TALIS 2018 is mindful of the advent of the OECD survey of staff in Early Childhood Education and Care (ECEC) and links between TALIS and the ECEC staff survey will be built at the level of conceptual framing and instruments.

The purpose of the TALIS 2018 Conceptual Framework is to provide an integrated theoretical and policy underpinning to the study and thereby articulate its research focus and links to existing knowledge and evidence. It also identifies the methods to be used to guide the development of instruments and operations. Therefore, TALIS 2018 will gather information about teacher characteristics, teaching conditions, practices and learning environments that research evidence, and the experience of practitioners, suggests, contribute to positive student learning. Of course, the framework will recognise that positive student learning may be influenced by other factors that cannot be examined through surveys such as TALIS that are predominantly based on teacher self-report instruments.

The original conceptual framework for TALIS 2008 was developed by a joint taskforce comprised of experts from the Indicators of Education Systems (INES) Network A (learning outcomes) and Network C (learning environment and school organisation). For TALIS 2013, the conceptual framework was developed further so that current theories and research on teaching and learning environments were used to develop the dimensions, themes and indicators to provide the conceptual underpinning. The TALIS 2018 Conceptual Framework is the result of an iterative process in which concepts formulated by the

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1 Known as the TALIS Board of Participating Countries (BPC) at the time when TALIS 2018 commenced.
The concepts developed through the QEG took into account country priorities, theoretical background, key developments and discussions in the area, and the analytical potential of indicators. The QEG includes education, policy, and survey experts as well as ex-officio members from the international research Consortium, the OECD Secretariat and the Technical Advisory Group (TAG). The resultant Conceptual Framework will guide the development of the TALIS 2018 survey instruments and operations.

The document is organised into three main sections. The content of each section is briefly mentioned here:

- **Section I** discusses the purpose and goals of TALIS. The purpose of TALIS is to describe teaching and learning conditions, and the relationships among components of those conditions. Its purpose is to describe how teaching and learning conditions and relations vary within and across TALIS participants and over time. The teaching and learning conditions addressed by TALIS are those that are believed to be educationally effective in that they contribute to student learning. The goals of TALIS are to inform policies (principles, rules, and guidelines) that could be adopted by education systems to support their long-term goals. This implies a focus on factors that are amenable and malleable to change at the system, school, and teacher levels.

- **Section II** examines the themes concerned with teaching and learning environments that were prioritised by the participants. The nine key themes are: teachers’ instructional practices and beliefs, school leadership, teachers’ professional practices (including mobility), teacher education and initial preparation, teacher feedback and development, school climate, job satisfaction, teacher human resource issues, and teacher self-efficacy. In addition there are two themes of innovation and teaching in diverse communities and settings which overlap with many of the initial nine themes. The themes are examined in a way that is relevant to the evaluation of the main policy goals. The TALIS questionnaires are designed to allow for some trend analysis between TALIS 2008, TALIS 2013 and TALIS 2018, while permitting for additional inquiry into areas identified as high priority by TALIS participants.

- **Section III** provides a general overview of the design of TALIS 2018. As part of this description, the overarching sample and operational designs of the field trial and main survey are discussed. The ISCED (International Standard Classification of Education)\(^2\) Levels 1, 2 and 3 teachers are detailed. In support of the goal of establishing valid, reliable and comparable cross-sectional measures, trend information and effectively using information, the measures used in TALIS are further described in terms of their relevance and quality.

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SECTION I – GENERAL PURPOSE AND POLICY RELEVANCE OF TALIS

TALIS is a large-scale international survey of teachers, teaching, and learning environments, flanked by other activities and studies in the larger OECD programme of work. It is based on data gathered by questionnaires to which teachers and their school principals respond. Its main goal is to generate internationally comparable information that is relevant to policy about teachers and teaching with an emphasis on those aspects that impact on student learning. TALIS 2008 and 2013 significantly contributed to the international evidence base on the teaching workforce and the conditions of teaching. TALIS 2008 resulted in the publication of a report titled Creating Effective Teaching and Learning Environments: First Results from TALIS in 2009 (OECD, 2009a). TALIS 2013 resulted in a report entitled TALIS 2013 Results: An International Perspective on Teaching and Learning (OECD, 2014). The surveys have also resulted in many other publications including reports on specific and thematic issues such as Teaching Practices and Pedagogical Innovation (Vieluf et al, 2012), the Experience of New Teachers (Jensen et al, 2012) and Supporting Teacher Professionalism (OECD, 2016). A publication oriented to the teaching profession (A Teacher’s Guide to TALIS) was also published with the intent to widen the reach of TALIS publications (OECD, 2014e). In addition, there have also been working papers on substantive matters such as the promotion of positive student behaviour and methodological matters such as data comparability and measurement invariance. Teaching in Focus briefs provide succinct summaries of evidence from TALIS on issues surrounding teaching and learning environments in schools and teachers’ working conditions.

Selected TALIS findings

Among the important findings from TALIS 2008 were the following:

- According to school leaders, a shortage of qualified well-performing teachers hindered the capacity to provide quality instruction in approximately one third of schools.
- In addition, induction programmes were not universally available.
- Teachers indicated that they needed more training in information and communication technology (ICT), special needs education and teaching in diverse settings.
- School leaders regarded resources, regulatory frameworks and school environments were critical factors for effective school management.
- Experienced teachers, on average, were confident in their teaching ability but had lower levels of job satisfaction than teachers in the early stages of their careers.
- Teachers’ self-efficacy and job satisfaction were associated with opportunities to participate in school decisions and collaborative learning but lower for those faced with challenging classroom environments.

Additionally, TALIS 2008 indicators were used in other studies conducted by the OECD. Two examples of indicators based on TALIS data in the OECD’s Education at a Glance reports (OECD, 2009b) were: 1) How much appraisal and feedback do teachers receive, and what is the self-reported impact of this feedback? (D5); and 2) how do teacher practices, beliefs and attitudes measure up? (D6)

Similarly, TALIS 2013 generated an array of policy-relevant findings. Some findings concerned initial teacher education and continuing professional learning. Even though a majority of teachers had
completed university (or equivalent) education and a programme of initial teacher education, those whose formal training included the content, pedagogy and classroom practice of the subjects they teach felt better prepared for teaching. Moreover, participation in formal induction programmes appeared to be associated with participation in professional development in later years. Other findings concerned the extent to which school climates encouraged work-focused connections with colleagues and school leaders. TALIS 2013 indicated that most teachers taught largely in isolation. More than half rarely team-taught with colleagues and two-thirds rarely observed their colleagues teach. Despite this, teachers who did work with their colleagues frequently, or who participated in collaborative professional learning more frequently, had a stronger belief in their ability to teach.

Furthermore, when appraisal and feedback related to changes in teaching practice teachers reported greater job satisfaction and a sense that teaching is valued in their society (even though less than one third of teachers believed that teaching was a valued profession in their country). However, almost half of teachers felt that appraisal and feedback were undertaken mainly to fulfil administrative requirements (e.g. compliance and accountability) and when teachers believed that appraisal and feedback was performed only for administrative purposes they reported lower job satisfaction.

Objectives and purposes

The overall objective of the TALIS surveys is to provide robust international indicators and policy-relevant analysis on teachers and teaching in order to help countries review and develop policies that promote conditions for effective teaching and learning. The guiding principles underlying the TALIS surveys are:

- **Policy relevance.** Clarity about key policy issues and a focus on the questions that are most relevant for participating countries are both essential.
- **Value adding.** International comparisons should be a significant source of the study’s benefits.
- **Indicator-orientation.** The results should yield information that can be used to develop indicators of aspects of teaching and learning in education systems.
- **Validity, reliability, comparability and rigor.** Based on a rigorous review of the knowledge base, the survey should yield information that is as valid, reliable, and comparable as possible across participating countries.
- **Interpretability.** Participating countries should be able to interpret the results in a meaningful way.
- **Efficiency and cost-effectiveness.** The work should be carried out in a timely and cost-effective way.

TALIS serves a variety of policy and research purposes including the ongoing validation of TALIS indicators over successive cycles. These may be clustered in the following four statements of purpose:

- **TALIS is a monitoring structure that provides reliable comparative information on teachers and schools in participating educational systems.** TALIS serves as a means of describing the conditions of teaching and learning, as well as the functioning of educational structures, thus offering a means of comparing approaches to teaching and school leadership.
TALIS is an international survey contributing to our knowledge base on conditions of teaching and learning and thus, it helps to contextualise the ways in which educational outcomes at multiple levels are developed and uses valid tools for comparing these contexts cross-culturally. Large, carefully selected, representative samples and modern quantitative methods allow for broad population inferences and for conclusions about important relationships within and across countries to be formulated. Based on common measurement tools, TALIS can utilise the greater variation in practice that exists among countries than within each country.

TALIS provides time-series data to generate information about trends in key aspects of teachers and teaching. Changes over time in relevant indicators, and in the relationships between indicators, can be reported in each country and across countries. The addition of data from TALIS 2018 will provide the basis for analysing these changes over ten years.

TALIS has produced, and will continue to produce, three types of product:

- **Indicators** that monitor educational systems at the levels of teachers and schools (including that related to school principals).
- **Information** about factors that characterise teaching and learning environments nationally and internationally.
- A reliable, comparative **database** that allows secondary researchers worldwide to study a variety of basic and policy-oriented lines of inquiry at the national and international levels and over time.

**Indicators for system monitoring**

A central goal of TALIS is to monitor and compare education systems in terms of the conditions of teaching and learning. TALIS describes systems through their components with reliable and valid scales and items with the intent of understanding the context and correlates of teaching and learning environments. In this way, TALIS provides indicators on school context variables, management variables, teacher professional development, appraisal and feedback systems, and pedagogical approaches, among other elements. Most importantly, TALIS results provide a source of information for OECD’s education indicators program, which in turn provides substance for public debate, shapes public policy internationally, and informs decision making at multiple levels of participating education systems.

TALIS data and indicators are used in OECD’s Education at a Glance reports and especially those concerned with instructional settings and learning environments (OECD, 2015a, pp. 15-16). Two examples of indicators in the 2015 edition of the OECD’s Education at a Glance reports (OECD, 2015a) that have used TALIS data are shown in Box 1.
Box 1: Examples of TALIS data and indicators in Education at a Glance

To what extent is information and communication technology used in teaching and learning? (D8)

- Teachers who participated in the 2013 OECD Teaching and Learning International Survey (TALIS) reported that the areas in which they most need professional development are in teaching students with special needs and developing ICT skills for teaching. (OECD, 2015, p. 515).

An average of only 40% of lower secondary teachers who participated in TALIS reported that students frequently use ICT for projects or class work. (OECD, 2015a, p. 515).

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What is the student-teacher ratio and how big are classes? (D2);

Larger classes are correlated with less time spent on teaching and learning, and more time spent on keeping order in the classroom. One additional student added to an average-size class is associated with a 0.5 percentage-point decrease in time spent on teaching and learning activities. (OECD, 2015a, pp. 418-419).

A priority of TALIS participants is that the surveys should ensure that some indicators can be compared across cycles. For TALIS 2018, this means striking a balance between maintaining existing questions in light of the growing legacy of TALIS 2013 and TALIS 2008, revising questions so as to improve or expand the measurement of existing constructs, and introducing questions that address topics that have emerged within the nominated themes. The possibility of improving the measurement of existing constructs will most often have arisen from reflections on the analyses of data from TALIS 2013. The possibility of introducing questions about new topics within themes could have arisen from reflections on recent research literature, or from interests expressed by TALIS participants, often in relation to prior findings. The inclusion of core questions held constant for the purpose of trend and time series analyses reflects those priorities that endure as key indicators of the functioning of education systems. The TALIS framework serves to structure the constructs and instruments to facilitate decisions regarding those constructs and measures to be included.

The policy relevance of this system monitoring enterprise is based on the following:

- Using well-established research to define and operationalise the relevant constructs of interest. These constructs are based on the priorities and educational goals of participating countries.

- Examining and reporting factors that may be subject to control by policy and professional practice. These factors are considered malleable.

- Providing international benchmarks that allow policy makers to ascertain what they may learn about teaching and learning environments from other countries that participate in TALIS.
Indicators serve to direct attention to facts, occurrences, or trends of interest. In one sense these indicators are descriptive and it is important that they provide information about the unit of interest (e.g. the school system) concerning the central tendency (e.g. mean or median), the precision of the estimate (e.g. the standard error) and the variability (e.g. the standard deviation) of the value of the indicator within the unit of interest. However, descriptive information about the state of educational systems and teaching and learning environments only becomes useful when data can be compared with that for other systems or over time. Moreover, those comparisons only become useful when the policy maker or policy analyst comes to the conclusion that any apparent difference was unlikely to have arisen by chance. At that point it becomes reasonable to seek reasons for the differences that have been observed.

Policy makers are also interested in the conditions that explain variability in teaching and learning environments within and across educational systems. Therefore, the TALIS instruments should cover the most important inputs and processes of teaching and learning at the teacher and school levels. An important goal of a high-quality indicator is to provide information that can help guide priority-setting and decision-making in educational policy. Using statistical models that account for the inherent multilevel structure of the TALIS data is a useful means of understanding and explaining differences within and across schools and within and across countries.

Although the analysis of TALIS data has the potential to make important contributions to the knowledge base for educational policy and practice, a number of limitations must be considered. First, TALIS is primarily a cross-sectional study that examines the context and conditions of teaching and learning environments. Only for those measures that have been measured consistently with the same instruments over successive cycles will it be possible examine changes in conditions over time. Even then it is not possible to make inferences about changes for individual teachers that result from changes in their environments. These sorts of inferences would require a longitudinal study in which the same teachers would be followed over time to track changes in variables of interest.

In addition, because TALIS, at present, does not connect directly with student outcomes (except through the linkage at school level in the TALIS-PISA link), teacher quality and its relationship to student performance cannot be judged. To analyse the relationship between teacher characteristics and student outcomes, it would be necessary that TALIS link data about teaching practices and related variables with individual student outcomes³.

Finally, because TALIS is a self-report survey and does not engage in direct observation of teaching practices, inferences are also limited to the degree that teacher responses may vary from what would be observed in practice. However, the survey method does provide information about issues (especially perceptions) that would not be possible to study by other methods. In addition, the TALIS video study will provide important perspectives on the validity of self-report data as it also includes both survey and video data.

Policy considerations

TALIS was developed as part of the OECD Indicators of Education Systems (INES) project which was intended to “create a coherent set of indicators” to enable comparisons of education systems in OECD and partner countries. The focus of TALIS was strongly influenced by the OECD review of teacher policy, which generated the report Teachers Matter: Attracting, Developing and Retaining Effective Teachers (OECD, 2005a). That review argued for better national and international information on teachers.

³ However the TALIS-PISA link presents limitations of its own regarding the association of teachers’ practices with student outcomes. Since the database does not allow identifying classrooms, is not possible to link teachers with their class students. Thus student outcomes can only be associated to school aggregated indicator of teachers.
The original conceptual framework for TALIS was based on the policy issues that had been studied in the OECD teacher policy review: attracting, developing and retaining effective teachers; school policies and effectiveness; and quality teachers and teaching. This framework (OECD, 2005b, pp. 25-27) identified five main policy issues together with broad indicator domains for each:

1. Attracting teachers to the profession
   a. Adequacy of teacher supply and teacher shortages
   b. Profile of new teachers
   c. Motivations and early career experience of new teachers
   d. Effectiveness of recruitment and selection procedures and incentives

2. Developing teachers within the profession
   a. Profile of teachers’ education and training
   b. Frequency and distribution of education and training
   c. Satisfaction and effectiveness of education and training

3. Retaining teachers in the profession
   a. Teacher attrition and turnover
   b. Job satisfaction and human resource measures
   c. Recognition, feedback, reward and evaluation of teachers

4. School policies and effectiveness
   a. School leadership
   b. School climate

5. Quality teachers and teaching
   a. Teaching practices, beliefs, and attitudes
   b. Quality of teachers (experience, qualifications, responsibilities)
   c. Division of working time

To provide guidance for developing the initial TALIS survey in 2008, a priority rating exercise was conducted with TALIS participants. For TALIS 2013 a similar exercise was conducted with OECD countries to assign priorities to the proposed themes (a term that superseded the term “indicator domain”) and associated indicators across the five policy areas (OECD, 2014b, pp. 33-35). In addition, since this was the second cycle of TALIS, participants indicated which of the indicators from TALIS 2008 should be carried forward into TALIS 2013. Thus, each cycle of TALIS addresses the five policy areas determined initially but the selection of themes and indicators for any cycle is shaped by current priorities based on inputs from TALIS participants. Details surrounding the TALIS 2018 priority rating exercise are described below.

The development of the priority themes for TALIS 2018 has been described in the document entitled “Guiding the policy and content focus of TALIS 2018”, prepared for the TALIS BPC (now the TGB) by the OECD Secretariat (OECD, 2015b; EDU/INES/TALIS(2015)3). That document was based on BPC (now the TGB) deliberations, additional inputs from the on-going policy dialogs and networks, and a

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4 This is now referred to as “effective teachers and teaching” (OECD, 2015b, p. 16)
priority rating exercise in 2015, during which countries were asked to respond to questions and provide a rating that would help to determine the structure to be used for the TALIS 2018 questionnaires and the themes and indicators to be included.

Further guidance regarding the issues that are of high priority to education systems was provided through the deliberations of the 2014 OECD Informal Meeting of Ministers of Education. These deliberations focused on “how to reflect changes in the demand for skills in the design of educational systems and teacher professional development, how to raise teacher effectiveness, and how to build rewarding career structures that advance the profession and attract the most talented teachers into the most challenging classrooms” (OECD, 2015b; EDU/INES/TALIS(2015)3; p. 4). The summary highlighted the role of innovation to foster more effective learning environments and creating environments in which innovation could take place. It also identified the need for work on fostering effective pedagogical practices and generating collaborative practices as well as mobilising resources to ensure that every student benefits from excellent teaching. A similar need was identified in the fourth International Summit on the Teaching Profession (ISTP) held in 2014 which focussed on school leadership (including teacher leadership), collaboration, teacher self-efficacy, and innovation. Three of these were fostering the conditions for innovation, fostering deeper forms of collaboration and strengthening relations between stakeholders.

Other discussions at the ministerial level have highlighted some questions that could be addressed by TALIS and related studies (OECD, 2015b; EDU/INES/TALIS(2015)3, p. 5). These included questions concerning: teachers preferences about the distribution of resources in education systems to support effective teaching and learning in schools; teachers views of the conditions that would enable innovation in the classroom and in schools; teachers views of their role should be in educational reforms and the extent of their involvement in educational reforms; the mechanisms that teachers see as essential to ensure the professionalisation of teaching; the views of teachers regarding the ingredients to foster collaboration in schools, between schools, and between schools and the wider community; and the types of incentives (including horizontal and vertical career structures) valued by teachers.

**Priority themes for TALIS 2018**

In order to further guide the policy focus of TALIS 2018, OECD members, partner countries and economies that had expressed interest in taking part in the survey, as well as the European Commission were given the opportunity to complete a priority rating exercise (see Table 1). The exercise was conducted between February and April 2015, with 20 OECD countries and five partner countries and economies completing the exercise. Countries were asked to respond to questions and provide a rating that would help to determine: 1) the structure to be used for the TALIS 2018 questionnaires; 2) the themes and indicators to be included in TALIS 2018; 3) the repeated indicators from the first two cycles of the survey to be considered for inclusion in TALIS 2018 in order to develop trend data; and 4) the preferred cycle frequency for future TALIS cycles. Responses to these issues were sought in relation to ISCED level 1, 2 and 3. All countries provided ratings for ISCED level 2. Six countries completed this exercise for ISCED level 1 and five countries completed the exercise for ISCED 3 level.

Overall respondents indicated a preference for maximising international comparability and therefore minimising optional modules for individual countries or group of countries. Respondents also endorsed a reduction in the number of themes covered to be covered by TALIS 2018 compared to the number encompassed by TALIS 2013 and TALIS 2008 (encompassed approximately 15 themes). The highest rating was for the proposition that the questionnaires should cover between 10 and 13 themes.

In the priority rating exercise countries were asked to allocate 100 rating points amongst 20 proposed themes, with higher points representing a higher priority. Ratings were generated by an
aggregation of the points allocated by countries to each theme. Countries were then asked to indicate, for those themes that had been assigned points, which indicators were considered most important to include. A total of 94 indicators were divided amongst the 20 themes.

The results of the thematic priority rating exercise are included in Table 1. From Table 1 it is evident that some themes were regarded as very high priorities (e.g. school leadership and teachers’ instructional practices and beliefs), while other themes were considered to be of less importance (e.g. teacher attrition and turnover rates and sociological composition of teachers).

Table 1: Country priority rating of themes for ISCED 2

<table>
<thead>
<tr>
<th>Theme</th>
<th>Average (OECD)</th>
<th>Average (all countries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School leadership</td>
<td>6.9</td>
<td>6.3</td>
</tr>
<tr>
<td>Teachers’ instructional practices and beliefs</td>
<td>6.7</td>
<td>9.0</td>
</tr>
<tr>
<td>Teachers’ professional practices</td>
<td>6.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Job satisfaction and teacher human resource measures</td>
<td>6.5</td>
<td>6.4</td>
</tr>
<tr>
<td>Profile of teachers’ continuing learning and training</td>
<td>6.2</td>
<td>6.5</td>
</tr>
<tr>
<td>School climate and ethos</td>
<td>6.1</td>
<td>6.4</td>
</tr>
<tr>
<td>Attracting good students into teaching</td>
<td>5.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Frequency of in-service education and training</td>
<td>5.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Recognition, reward and evaluation of teachers</td>
<td>5.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Motivations and early career experience of teachers</td>
<td>5.2</td>
<td>4.3</td>
</tr>
<tr>
<td>Satisfaction and effectiveness of in-service education and training</td>
<td>5.1</td>
<td>5.3</td>
</tr>
<tr>
<td>Teachers’ working time</td>
<td>4.6</td>
<td>4.5</td>
</tr>
<tr>
<td>Education and qualifications of teachers</td>
<td>4.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Initial teacher education and pathways into the profession</td>
<td>4.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Teacher self-efficacy</td>
<td>4.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Innovation</td>
<td>4.1</td>
<td>4.3</td>
</tr>
<tr>
<td>ICT in teaching</td>
<td>3.9</td>
<td>4.0</td>
</tr>
<tr>
<td>Adequacy of teacher supply and teacher shortages</td>
<td>3.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Teacher attrition and turnover rates</td>
<td>2.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Sociological composition of teachers</td>
<td>2.5</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Source: OECD, 2015b; EDU/INES/TALIS(2015)3

There was significant between-country variation in these rankings, and the highest rated themes overall match the priorities of some countries more closely than others. For example, one third of countries rated the theme teachers’ professional practices rather low.

Respondents to the priority rating survey also indicated which indicators were considered most important to include. A total of 94 indicators were included in the full list. Respondent were also asked to indicate which of the indicators used in TALIS 2013 should be maintained in TALIS 2018 to permit analysis of change between these two cycles.

It was intended to proceed with no more than about ten themes that in combination would inform all five policy issues: school policies supporting effectiveness, developing teachers within the profession, effective teachers and teaching, attracting teachers to the profession, retaining teachers in the profession. Within the selected themes there was to be a slight emphasis on those that addressed policies related to school and teacher effectiveness. This reflected the result that the highest rated themes were those concerned with “school policies supporting effectiveness”. In addition to the policy rating exercise some
themes were highlighted by ministers as key areas of interest. Furthermore, some of the initially proposed themes were combined with others to result in variations to the initial list. For example, theme 5 incorporated the two elements of teacher feedback and teacher development from the original list.

Finally, nine themes were agreed even though the relative importance accorded to each those themes varied among countries. Those nine themes, together with the most frequently nominated indicators from TALIS 2013 within those themes were:

1. Teachers’ instructional practices and beliefs
   a. Beliefs about teaching
   b. Classroom climate in target class
   c. Pedagogical practices in target class
   d. Classroom management in target class
   e. Individualised/differentiated teaching (including gifted students) in target class
   f. Teachers’ views regarding barriers to implementing a variety of practices
   g. Classroom composition and class size in target class
   h. Lesson time distribution in target class

2. School leadership
   a. Role and function of the school leader (administrative and pedagogical leadership)
   b. Distributed leadership (team leadership in the school)
   c. Qualifications and experience of school leaders
   d. Principal job satisfaction
   e. Perception of school leadership (teacher responses)
   f. Principal workload
   g. Principal working hours
   h. Principal autonomy in key areas (hiring and dismissing teachers, career ladders, pay, etc.)
   i. Training and development of school leaders
   j. Principal self-efficacy

3. Teachers’ professional practices
   a. Collaboration among staff in school
   b. Teachers’ participation in decision making at the school
   c. Role, profile and participation in wider professional community
   d. Teacher mobility across and within countries

4. Teacher education and initial preparation
   a. Characteristics of initial teacher education and training: content (e.g. pedagogy, content, practice, teaching students with special needs); length; providers
   b. Perceived effectiveness of training

5. Teacher feedback and development
a. Support for in-service education and training
b. Barriers for further engagement in in-service education and training
c. Types of in-service education and training, including collaborative forms of PD
d. Types of formal forms of PD
e. Content of formal forms of PD (new teaching practices and emerging innovations)
f. Types of informal forms of PD (including teacher initiated networks, on-line learning)
g. Content of informal forms of PD (new teaching practices and emerging innovations)

6. School climate
   a. Student-teacher relations (including supportive environment for learning)
   b. Parental and community relations/participation with the school
   c. Disciplinary climate (including tolerant climate)
   d. Teachers’ beliefs about how student-teacher relations can be improved
   e. Factors hindering instruction
   f. Teachers’ readiness for and openness to diversity
   g. School ethos (e.g. goal driven, high aspirations, community engagement)

7. Job satisfaction
   a. Overall job satisfaction (with school and with profession)
   b. Teacher perception of the value of the profession
   c. Teacher perceptions of national and local educational policies
   d. Satisfaction with salary and working conditions
   e. Teacher opinions about priorities for education policies and reform

8. Teacher human resource issues and stakeholder relations
   a. School policies that recognise, reward and evaluate teachers
   b. Career ladder and prospects of teachers
   c. Perceptions of the impact of policies that recognise, reward and evaluate teachers
   d. Recognition for being innovative in pedagogical practices
   e. Interventions to address underperformance

9. Teacher self-efficacy
   a. Teacher self-assessment of general pedagogical knowledge (instructional processes, student learning, formative assessment)
   b. Teacher self-efficacy in general
   c. Teacher self-assessment of non-cognitive skills/patience/motivation

“Innovation” was initially seen a cross-cutting issue closely related to teachers’ instructional practices and school climate but emerged as an explicit theme as a result of considering the content that was developed. Innovation (theme 10) in TALIS 2013 included indicators such as: teachers’ openness to adopting innovative practices; types of innovation in school in past year; types of innovation in the target
classroom in the current or past school year; perceptions regarding the barriers and incentives for the adoption of innovation; and evaluation and dissemination of innovative practices in the school. “Equity and diversity” were originally considered to be encapsulated in the substance of each of the nine themes but after consultation with TALIS participants and policy stakeholders this (theme 11) emerged as a theme of high contemporary importance.

It was considered that even though specific items might need to be adapted for respondents at different levels of education, the same themes should be addressed by the questionnaires for ISCED levels 1, 2 and 3.

**Mapping TALIS 2018 themes to policy issues**

Figure 1 provides a mapping of the TALIS 2018 themes to the five policy areas that had been defined for the ongoing programme of TALIS surveys. In Figure 1 only the main connections between themes and policy areas are shown. Those connections could arise either because the theme is by definition part of the policy area or because the theme encapsulates factors that are considered to have potentially strong influences on the policy area. It can be seen that all five policy areas are represented in the themes and that, necessarily given the relative numbers of each, some of the policy areas are addressed through more than one theme. For example, the policy area of effective teachers and teaching is informed by four of the TALIS 2018 themes. Concomitantly, some themes inform more than one policy area. For example, the theme “teacher human resource measures and stakeholder relations” is connected to both attracting teachers and retaining teachers. For simplicity, the number of multiple connections has been kept to a minimum.
Figure 1: Map of TALIS 2018 themes to policy issues

<table>
<thead>
<tr>
<th>TALIS 2018 Theme</th>
<th>Policy Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attracting teachers</td>
</tr>
<tr>
<td>1 Teachers’ instructional practices and beliefs</td>
<td></td>
</tr>
<tr>
<td>2 School leadership</td>
<td></td>
</tr>
<tr>
<td>3 Teachers’ professional practices</td>
<td></td>
</tr>
<tr>
<td>4 Teacher education and initial preparation</td>
<td></td>
</tr>
<tr>
<td>5 Teacher feedback and development</td>
<td></td>
</tr>
<tr>
<td>6 School climate</td>
<td></td>
</tr>
<tr>
<td>7 Job satisfaction (including motivation)</td>
<td></td>
</tr>
<tr>
<td>8 Teacher human resource measures and stakeholder relations</td>
<td></td>
</tr>
<tr>
<td>9 Teacher self-efficacy</td>
<td></td>
</tr>
<tr>
<td>10 Innovation</td>
<td></td>
</tr>
<tr>
<td>11 Diversity and equity</td>
<td></td>
</tr>
</tbody>
</table>

Source: OECD, 2015b; EDU/INES/TALIS(2015)3

ISCED 1 and ISCED 3 international options

Although the core focus of TALIS 2018 is ISCED Level 2, there were international options for ISCED Level 1 and ISCED Level 3, as in TALIS 2013. This Conceptual Framework is developed from the firm belief that themes should be held constant across ISCED levels but with the option to tailor items to ISCED Level 1 and 3 where appropriate. For example, questions and items for ISCED Level 1 would recognise such factors as the organisation of primary school curricula, with possible links to the proposed OECD staff survey in Early Childhood Education and Care (known as Starting Strong Survey). Questions and items for ISCED level 3 should recognise such factors as specialisation of study programmes at upper-secondary level. More recently (February 2016), interest with respect to the field of Vocational Education and Training (VET) has been voiced, especially in the context of the Riga Conclusions agreed upon by delegations in 2015. While these interests, primarily from the European Union perspective, are not expected to have a substantial impact on the framework and instrument development, the QEG will aim to retain the possibility of identifying VET schools and teachers teaching VET-related subjects in the 2018 instruments. Having themes, and many questions and items constant across the ISCED Levels has the benefit of maximising the analytical potential for comparisons and reporting across levels.

Links to Related Studies

TALIS 2018 has links to a number of related OECD surveys that focus on student achievement (PISA), are concerned children before they commence formal school (Starting Strong) or make use of
different methods (e.g. video records) for to study teaching (TALIS Video). In addition it is linked through the provision of data to the OECD Initial Teacher Preparation Study.

**Links between TALIS 2018 and PISA 2018**

The concurrent (i.e. in the same year) implementation of TALIS 2018 and PISA gave rise to the possibilities for harmonizing the two surveys (Davidson, Weatherby & Belanger, 2014). These possibilities gained impetus from the fact that PISA also includes questionnaires for teachers and principals. Planning for TALIS 2018 has therefore taken into account reports about the possibility of aligning and developing joint conceptual frameworks for TALIS and the contextual framework for PISA (Jensen & Cooper, 2015) and comparisons of survey themes, indicators and questions from TALIS, PISA and PIAAC (Bloem, 2015). More specifically, it is believed that TALIS could benefit from PISA contributed information and micro-data, such as on the socio-economic composition of schools, data which is difficult to measure without a more in-depth student or home context component. Similarly, the concurrent measurement of teacher and student reported aspects of the instructional context are seen to be enriching analytical possibilities.

The synergies between TALIS and aspects of PISA need to take account of differences in survey populations (teachers eligible to teaching PISA students of age 15 rather than currently teaching at any grade level within ISCED 2). They also need to acknowledge that the PISA teacher questionnaires have a form for teachers of the major domain of reading (or the subject most related to reading) in PISA 2018 as well as a form for teachers in general. Finally, it was intended that TALIS 2018 materials would include formats similar to those used in TALIS 2013. In addition the timelines for development of the frameworks for TALIS and PISA were not synchronised and PISA 2018 included only limited efforts to pre-emptively align with TALIS. Finally, TALIS 2018 will be supported by more than 40 countries whereas the uptake of the teacher questionnaires in PISA is expected to be lower.

There are similarities and differences between the teacher questionnaires in TALIS and PISA. Some constructs are common to both questionnaires, such as teachers’ background or job satisfaction, but other topics are unique to only one of the surveys, such as teachers’ beliefs about teaching in TALIS and questions on the content of schools’ formal curriculum in PISA. Our approach to the intended alignment between TALIS 2018 and PISA 2018 was to review themes, and some questions, that are common to the TALIS and PISA teacher and principal questionnaires. In addition the TALIS Consortium participated in discussions with the TALIS and PISA teams at the OECD Secretariat, as well as with the PISA 2018 Contractors on conceptual and instrument work and on matters of operations and the sequencing of sample selection. That led to TALIS and PISA using the same questions with respect to, for example, job satisfaction, self-efficacy and school climate. In addition specific questions concerned with initial teacher education and teaching in diverse settings (regarding both equity and diversity) are the same in both surveys.

**Links to the TALIS Starting Strong Survey**

The first cycle of the TALIS Starting Strong Survey, the OECD's survey on early childhood and care (ECEC) staff will be implemented in 2018 in 10 to 15 countries. It is intended to generate data on which to base international comparisons of ECEC learning and well-being environments, staff pedagogical practices, their professional development, issues related to equity and diversity, as well as staff and centre characteristics. The survey will focus on ISCED level 0.2 staff (i.e. staff working in "pre-primary education" - typically aged 3 years or older) with a second target population of staff in settings serving children under the age of three years implemented in a small number of countries. It is planned to develop linkages between the TALIS framework and instrument development (especially the ISCED level 1 option.
of TALIS) and the Starting Strong Survey. A conceptual and instrument overlap between both surveys of approximately 70 per cent is envisaged.

**Links to the TALIS Video Study**

The TALIS Video Study plans to record videos from two mathematics lessons taught by a representative sample of 85 lower secondary teachers in each participating country and economy. The lessons will be chosen to cover the same specified subject content – quadratic equations. It is proposed to administer pre- and post-tests of achievement (with some items assessing student general knowledge of mathematics and others directly related to the lesson content). There will be teacher and student surveys completed before and after the lessons. The teacher surveys will include questions about teacher background, teaching quality and practice (as in TALIS main survey) as well as teacher lesson- and unit-related perceptions. The student surveys will cover family- and peer-related conditions, aspects of student cognitive, motivational, and emotional learning traits and student lesson- and unit-related perceptions. Lesson artefacts (such as lesson plans, homework and assessments) will also be gathered from teachers. Data will be collected in years 2017 and 2018. In addition to generating an international comparative report focussed on teaching practices and cultures, the OECD Secretariat is envisioning the development of a video library of teaching practices.

**Links to the OECD Initial Teacher Preparation Study**

In developing the TALIS Conceptual Framework and instruments for TALIS 2018, consideration will be given to policy and analytical findings from the OECD Initial Teacher Preparation (ITP) study, which includes secondary analyses of TALIS 2013 data. It is important to note that newly trained teachers make up a small part of the target population and that for many respondents, the information provided in the TALIS survey on initial teacher education is likely to reference programmes completed decades earlier. However, in order to effectively examine possible effects of initial teacher education, it is possible to identify in TALIS 2018 when teaching qualifications were received and the nature of initial teacher education programmes, in addition to continuing to collect data on support for new teachers, who may be at greatest risk in terms of teacher attrition (OECD, 2005).

**Summary**

OECD studies have far reaching influences outside the sphere of educational policy, practice, and research. This is especially the case because the data from those studies are available to researchers from a range of disciplines to investigate patterns and relationships among variables of interest. This includes thematic reports commissioned by the OECD that use TALIS data as well as research papers that report researcher initiated analyses. These reports foster the increased use of TALIS data and add to the body of research on the cross-cultural conditions of teaching and learning.

Broadening the scope of TALIS as a database for policy relevant research in the area of teaching and learning requires that general constructs such as teacher professional development or teaching practices are operationalised in a rigorous way. To that end, TALIS is committed to drawing on current and well-established literature as well as empirical evidence from previous cycles of TALIS to ensure that the constructs are conceptualised in a way that researchers will find useful or in a way that provides a basis for further development.

As TALIS moves into its third cycle, an emergent value of this study is the power to examine trends over time within and across educational systems. Cross-sectional data can provide limited perspectives on patterns of teaching and learning. These perspectives can be enhanced through time-series data. Therefore, preserving the integrity of a set of variables from cycle to cycle is important for ensuring that changes in
inputs and processes can be related in a substantive way to changes in outcomes over time. This is a particularly challenging goal as new methods for reliably and validly measuring the constructs of interest are continually developed. It is thus important that the value of trend preservation is weighed against the value of incorporating new methods for instrument development and measurement.
SECTION II – KNOWLEDGE SURROUNDING THEMES AND MAIN INDICATORS

As described in Section I, the TALIS 2018 expert members of the Questionnaire Expert Group (QEG) are elaborating the content of the themes and developed associated indicators. From these elaborations questionnaires will developed for piloting and inclusion in the instruments implemented in the field trial which is conducted in all countries. As described in greater detail in Section III, a rotated design will be adopted for the field trial so that more items can be tested than could be included ultimately in the main survey. The International Consortium, the OECD Secretariat and country representatives will be involved in shaping the final questionnaires for the main survey. The TALIS Governing Board (TGB) will approve the final questionnaires and the themes and indicators included in the main survey.

This section describes the conceptual framework which informs the TALIS 2018 questionnaires and provides an overview of research related to each of the TALIS 2018 themes. It begins with a conceptual map that focuses on the themes that have been designated as of highest priority by TALIS participants. This conceptual map represents diagrammatically how the themes relate to, and interact with, each other. The conceptual framework then elaborates each TALIS content theme providing a short literature review and suggested indicators. Evidence is provided in support of the indicators as important to educational policy, practice and research. Finally the conceptual framework includes an analytic schema. These three components constitute the conceptual framework for TALIS 2018.

The TALIS 2018 framework builds on that used in TALIS 2013 and draws upon what is known about effective teaching and learning conditions. Effectiveness can be operationalised broadly as the extent to which a given activity’s stated objectives are met (OECD, 2007). For TALIS, effective teaching and learning environments are elements that contribute to student cognitive and affective learning. TALIS gathers information about aspects of the teaching and learning environment that other research suggests contribute to positive student learning. However, effective teaching and learning embraces many factors that are not included in TALIS and factors that would need to be investigated by methods other than self-report questionnaires completed by Principals and Teachers.

A conceptual map of TALIS 2018 themes

The conceptual map of the TALIS 2018 themes is one component of the conceptual framework. The TALIS 2018 themes can be considered in terms of two dimensions: focus and level. The first of the two dimensions (focus) is based on the extent to which a theme is mainly concerned with professional characteristics or pedagogical practices of institutions or teachers. The second of the two dimensions (level) refers to whether the theme mainly operates and references institutions or teachers. Institutional level could be either the school, the national or regional system of which the school is part. School and system are combined in this conceptual map because human resource policies and practices could be enacted by a school or a system, or both, depending on the school governance arrangements that are in place.

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5 This framework uses the term themes to be consistent with TALIS 2013. In PISA the content units are called modules. Themes will be taken to refer to the organisation of the main ideas for the survey and modules or sections will be used for the organisational units for the instruments.
**Theme placement on the conceptual map**

Figure 2 is a rendering of the TALIS 2018 themes in relation to these two dimensions. The figure represents these themes on a conceptual map built around the two dimensions of focus and level. Given the nature of a two-dimensional map in time it is possible that themes may influence other dimensions. The primary purpose of this map is to represent the direct basic framework structure.

**Figure 2: Conceptual mapping of themes in TALIS 2018**

### Themes concerned with the teacher level

A consequence of the results of many studies of influences on school-based student learning has been to emphasise the importance of teacher and classroom level influences with school-level influences being seen as operating mainly indirectly through their effect on teacher and classroom level influences (Hattie & Yates, 2014). The themes concerned with the teacher level represent core aspects that TALIS seeks to explain. Institutional aspects are considered critical and exogenous supports to these core aspects. Policy initiatives will differ on how to improve conditions for student learning depending on the level being addressed.

The lower right quadrant of the conceptual map refers to teaching and learning in classrooms, as influenced by each individual teacher. It includes two themes: “teachers’ instructional beliefs and practices” and “teacher professional practices”. These might be thought of as central to the pedagogical core of schooling. These themes are similar to the characteristics that form the concept of “instructional quality” that was initially invoked in analyses of the 1999 TIMSS Video Study (US Department of
Education, 2003) and PISA (especially in the 2003 and 2012 cycles) and later applied to other studies (Decristan et al., 2015). It refers to aspects of teachers’ practices that have been established as predictive of student achievement and motivation (e.g., cognitive activation, clarity of instruction, supportive climate, and classroom management).

The lower left quadrant of the conceptual map is concerned with teacher characteristics that are thought to be associated with student learning outcomes. The themes referenced here are related to the factors that constitute the concept of “teacher quality” elaborated by Goe (2007). These include “teacher education and initial preparation”, “teacher feedback and development” and “teacher self-efficacy” as well as “teacher job satisfaction” and motivation.

Themes concerned with the institutional level

In the conceptual map “human resource issues and stakeholder relations” is represented in the upper left quadrant because it is mainly concerned with teacher characteristics (through recruitment, reward and retention) and is part of the institutional level. On the other hand “initial teacher education” is located in the lower left quadrant because it is mainly concerned with teachers’ credentials that he or she brings to the classroom that is independent of the school in which he or she works. The two themes “school climate” and “school leadership” are located in the upper right quadrant because they are mainly concerned with school-level contributors to teaching and learning and are part of the institutional level.

Themes that operate at both institutional and teacher level

The map shows the themes of “innovation” and “diversity and equity” as straddling the teacher and the institutional level and focussed on teaching and learning since these themes are personal to the teacher as well as fostered by colleagues. For example, innovation is concerned with both the school environment and teaching practices. Furthermore, some aspects of innovation and diversity and equity are associated with professional characteristics as well as with pedagogical practices (e.g. individual innovativeness or openness to innovation). The placement on the map represents a focus on what happens in practice even though those practices may be influenced by the professional characteristic.

Relationships between themes

The conceptual map shown in Figure 2 does not include indications of paths of influence. This is partly because it is a map of broad themes rather than a representation of defined indicators and partly because the number of potential relationships between themes is large. In addition, the relationships between themes (or indicators within themes) could be unidirectional or reciprocal.

Unidirectional relationships

Unidirectional relationships do not incorporate any feedback influence. An example would be the influence of “teacher education and initial preparation” on “teachers’ instructional practices”. It would be expected that there would be an influence (and possibly a strong influence) but there would not necessarily be an influence in the reverse direction. Similarly, it would be expected that there would be an influence of human resource issues and stakeholder relations” on “teacher education and initial preparation” (possibly through accreditation requirements) but not in the reverse direction.

Reciprocal relationships

An important development in educational effectiveness research has been the adoption of dynamic models of school effects (Creemers & Kyriakides, 2008; Creemers & Kyriakides, 2015a). These models recognise that some relationships between variables can operate in both directions. Some of the
relationships among the themes are envisaged as being dynamic and reciprocal rather than as unidirectional. This is evident when thinking about themes at the teacher level that are concerned with teaching and learning and teacher quality. “Teacher beliefs and practices” and “teacher professional practices” (the pedagogical core) can be thought of being shaped by, and dynamically shaping “teacher affect”, “teacher feedback and development” and “teacher self-efficacy”. For example, teacher practices are influenced by teacher feedback and development but the experience of those practices also influences feedback and development including through the processes of appraisal. There are similar reciprocal influences across levels. “School climate” both shapes, and is shaped by, “teacher professional practices”. “School leadership” might be seen as largely influencing teacher practices (of both sorts) but the form of leadership will also be conditioned by the teacher professional practices at the school.

**Relating the conceptual map to policy areas**

The four quadrants of the Conceptual Map shown earlier in Figure 2 correspond to the five TALIS policy areas. The two themes in the lower right-hand quadrant are concerned with informing the policy area concerned with effective teaching: “teachers’ instructional beliefs and practices” and “teacher professional practices”. The four themes in the lower left hand quadrant are concerned with developing the attributes of teachers (developing teachers): “teacher education and initial preparation”, “teacher feedback and development” and “teacher self-efficacy” and “teacher job satisfaction” and motivation.. The two themes in the upper right-hand quadrant are concerned with aspects of school effectiveness: school leadership and school climate. The theme in the upper left-hand quadrant is titled “human resource issues and stakeholder relations”. It is concerned with the two policy areas of “attracting teachers” and “retaining teachers”. The quadrants of the Conceptual Map as they relate to TALIS policy areas have been represented in Figure 3.

*Figure 3: Quadrants of the TALIS 2018 conceptual map related to policy areas*
TALIS and PISA

Possible synergies between TALIS 2018 and PISA 2018, and in particular synergies involving the teacher (which is an international option) and principal questionnaires, have been discussed in a number of forums and the possibility of a joint conceptual framework has been suggested (Jensen & Cooper, 2015). Some alignment is relevant generally as well as for the TALIS-PISA link international option. Even though the TALIS themes and PISA modules are articulated differently there are some apparently common elements so that an overall model, however preliminary, can inform the specific model developed for TALIS 2018. The areas in which materials appear to be most closely aligned between the TALIS 2018 and the PISA 2018 field trial teacher questionnaires include: job satisfaction, self-efficacy, professional development and initial teacher education (ITE). More limited alignments apply to the notion of diversity and equity as well as to some of the background questions.

The framework presented by Jensen and Cooper (2015) represents five levels: education system, school, principal, classroom, and student. It distinguishes which indicators are measured by PISA and which by TALIS as well as those that are measured by both. Interrelationships between elements of the system within each level and across levels are envisaged. Of course TALIS does not involve information collected, or analysed, at the student level (such as individual background or cognitive and affective outcomes) and does not collect or analyse data concerned with curriculum.

TALIS themes and indicators

As mentioned in Section I, the TALIS 2018 themes and indicators were chosen through participating countries’ collaborative rating exercise. In this section those themes are discussed in more detail by drawing on the evidence stemming from current research in teaching and schooling. The themes have been grouped into the major domains of the conceptual map in which they fall: institutional level, teacher level: characteristics and teacher level: practices.

Themes that are mainly concerned with the institutional environment

This sub-section considers research evidence regarding three of the nominated themes. One of these was considered to be mainly related to teacher characteristics: human resource policies and practices. The other two were considered to be more directly related to teaching and learning: school leadership and school climate. In each case it was considered that the main effects on student learning outcomes would be transmitted effects through influences on what teachers do and how they do it. School leadership and school climate are seen as having reciprocal relationships with teacher professional practices (especially collaboration) and teacher instructional beliefs and practices. These institutional factors influence these teacher factors and are in turn influenced by them.

Theme: Human Resource Issues and Stakeholder Relations

Introduction

Human resource issues and stakeholder relations form an integral part of the TALIS framework, located at the institutional level, and forming the key set of professional characteristics at this level. This represents a more explicit framing of these elements in TALIS 2018 compared to previous TALIS iterations. Human resources and stakeholder issues was not a separate section in TALIS 2013. Rather, different aspects were addressed at different places in the surveys. TALIS 2018 adds to the TALIS 2013 items in this area by addressing the following main aspects of the theme:

1. Attracting good students into teaching,
2. Recognition, reward and evaluation of teachers, and
3. Teachers working time.

In addition it links this theme to the theme of “teachers’ professional practices”.

Theoretical background

While teacher human resource issues and stakeholder relations are not generally found to be directly related to student outcomes, they can significantly impact the recruitment of teachers to the profession, the retention of teachers in the profession, job satisfaction, and teaching and learning conditions. As such, they form a part of the school context that creates conditions for effectiveness, as shown in various educational effectiveness models (Reynolds et al., 2014).

Teasing apart the professional characteristics from the stakeholder beliefs will help to better understand why teachers believe there is a low value attached to teaching in most countries (TALIS 2013 found that it was only in Finland, Singapore and Abu Dhabi that a majority of teachers felt highly valued by society, OECD, 2014). Determining the source of this sentiment can guide policy to influence it, with the expectation that improving the perceived value of teaching would improve recruitment to and retention of capable citizens to the teaching profession.

Greater emphasis needs to be put on the characteristics of teaching as a profession. Characteristics of professions are variably described in the literature, but typically include practice underpinned by an established body of knowledge, the fact that practitioners undergo a relatively long period of training, the existence of a code of ethics for the profession, a relatively high degree of autonomy, and responsibility for admitting new members (Hoyle, 1980). The problematic nature of a number of these elements in teaching has led some to describe teaching as a semi-profession (Mausethagen & Grunland, 2012).

A related issue, which is not shared to the same extent by many other professions, is a difficulty in many countries in attracting high quality applicants to the profession, a factor that has been posited as distinguishing some high performing education systems from the rest (Sahlberg, 2011). Both intrinsic and extrinsic value (e.g. rewards), and both personal and social utility have been found to influence motivations for choosing teaching as a career, as have social factors like the esteem the profession is held in, though the balance of these factors shows some cross-country variation (Watt & Richardson, 2008; Watt et al, 2012). In TALIS 2018 we will therefore explore teachers’ own perceptions of some of these issues.

Analytical potential and indicators

In terms of human resources, much policy interest has gone into developing more effective systems of teacher reward and appraisal, including the development of formal systems of performance appraisal at both school and system level and the development in some countries of performance related reward systems (Flores, 2012; Fullan 2008; Schleicher, 2011). This is a contested area in both research and practice, with much ongoing discussion around the relative importance of intrinsic and extrinsic motivators and summative and formative appraisal approaches (Darling-Hammond, 2010; Atkinson et al, 2009). In TALIS 2018, new material on recognition, reward and appraisal would include areas of recognition for innovation in pedagogical practices, interventions to address underperformance, career ladder and prospects of teachers, teachers’ perceptions of linking pay to achievement, and assessing unmet needs from current appraisal and feedback processes. Teacher work time allocation also defines the professional state of teaching.

Related to this, there has also been increased discussion of the role of teachers and their representative organisations in the areas of educational policymaking and resource allocation. We have
therefore added new materials to address teachers’ participation in policy making, and their views (and those of principals) on their educational policy priorities particularly with regards to resource allocation within education systems. This also aligns with the issue of teachers’ contributions to school and system leadership.

**Theme: School Leadership**

**Introduction**

Leadership remains a key concern for the countries participating in TALIS and the world of education more generally. As stated in the discussion of the main findings of TALIS 2013: Effective school leadership is a major factor in shaping the overall teaching and learning environment, raising aspirations and providing support for pupils, parents and staff, and thus in fostering higher achievement levels (OECD, 2014, pp. 79-81). Instructional leadership continues to be of major interest to TALIS. This refers to supporting and developing high-quality instructional practices, policies that support student achievement, developing learning communities, providing feedback on instruction, modelling effective instruction, and supporting the use of assessment data. This clearly remains the case, and the field of educational leadership is showing evolution rather than major changes at present. The main evolution is the greater emphasis on both distributed and in particular teacher leadership, and on leadership beyond the school, known as ‘system leadership’. The latter encompasses innovative collaboration with other schools, work with the community and relationships with policymakers and other agencies (such as social services). In addition, there has been a growing emphasis in leadership research on linking leadership to student outcomes.

**Theoretical background**

A key finding from recent studies is that the relationship between leadership and student outcomes is indirect; effective leadership creating the conditions under which teachers can optimise their effectiveness (Muijs, 2015; Hallinger, 2011). In their review of research, Day et al (2010) identify eight key components of successful school leadership: defining vision and values, improving conditions for teaching and learning, redesigning and enriching the curriculum, restructuring the organisation, enhancing teacher quality, building relationships outside the school community, enhancing teaching and learning, and building relationships inside the school community. Research into educational effectiveness has identified leadership as the most important school-level factor in relation to student outcomes (Chapman et al, 2015).

Though there is increasing interest in and emphasis on distributed forms of leadership in education, which has in several countries led to specific policy actions (Harris, 2014), it remains the case that the principal is the key actor in providing leadership at the school level. Even in distributed contexts it is still typically the principal who instigates any distribution of leadership, and continues to occupy a steering role in both instructional leadership and administrative management. Instructional leadership has been defined as the actions that a principal takes to promote growth in student learning (Flath, 1989). Principals who take a strong role in instructional leadership emphasise high-quality instruction and develop policies that support student achievement, such as supporting the development of learning communities, giving instructional feedback to teachers, modelling effective instruction, and supporting the use of assessment data in the classroom (Blase & Blase, 2000; National Association of Elementary School Principals, 2001; Kerr et al, 2006). Instructional leadership has been found to be related to student outcomes in a number of studies (Muijs, 2010; Hallinger, 2015; Goddard et al, 2015).

In light of the research mentioned above, school leadership is here conceptualised as encompassing five key dimensions:

1) Who principals are: Qualification, recruitment and development of principals;
2) What principals do: Role, function and work of the principal, instructional leadership, terms and conditions, workload, hours, autonomy, role, function, and actions;
3) Distributed and teacher leadership and teacher perceptions thereof;
4) Principal job satisfaction and self-efficacy; and
5) Network and system leadership.

If leadership is central to creating the school conditions under which teachers can be effective, then it is clearly important to collect data on what school leadership entails, from the perspective of both principals and teachers.

Analytical potential and indicators

The research summarised above shows that Principals’ roles, their recruitment and retention are key elements of school effectiveness. The leadership factors surveyed in TALIS will allow policymakers to benchmark leadership in their countries, and can aid in the development of policies regarding leadership training and continuing development. We have built the leadership components of TALIS 2018 around the key characteristics of effective leadership mentioned above, in the following ways:

Who principals are: qualification, recruitment and development of principals: qualifications and experience, training and development, attracting leaders

As previously, TALIS 2018 will gather information on principals’ characteristics, including age, gender, and previous experience and training, which will allow for analysis of the profile of principals across countries and how these profiles relate to leadership styles and teaching and learning environments. For some aspects, such as experience, there is evidence of a relationship with student outcomes (Clark, Martorell & Rockoff, 2009). For others, such as gender, this is less clear, but there are nevertheless important equity dimensions to the distribution of principal characteristics such as gender and ethnicity which make these important to any study of educational leadership. A key question which currently is unresolved is the relationship between principal qualifications, leadership development and student outcomes. This was an important element of TALIS 2013 and remains so for TALIS 2018 in light of evidence both of the differential distribution of highly qualified principals across schools (Boyd et al, 2008), the relationship between qualifications, distribution across schools and drop-out (Burkhauser et al, 2012), and growing, though to date inconclusive, studies on the impact of different types of leadership development (Bush, 2013). An important emerging issue across many countries is a growing challenge in attracting school principals, which is likely to lead to increasing difficulties in developing effective leadership at the school level. Additional items have therefore been added focusing in particular on factors that can facilitate or hinder principal recruitment in the perception of principals and teachers.

What principals do: role, function and actions of principals

As identified in TALIS 2013, there can be significant variation in the extent of autonomy that principals experience in their role as well as in their experience and their background. What appears to matter more is what principals actually do, particularly with regards to the exercise of instructional leadership, which has an established relationship with student outcomes and school improvement (Muijs, 2010). However, instructional leadership itself needs to be more clearly defined in terms of principal actions, and it is here that the work of Day et al (2010) referred to above provides value. In TALIS 2018 we will therefore seek to explore the key components of successful school leadership: defining vision and values, improving conditions for teaching and learning, redesigning and enriching the curriculum, restructuring the organisation, enhancing teacher quality, building relationships outside the school community, enhancing teaching and learning, and building relationships inside the school community.
Distributed and teacher leadership and teacher perceptions

As was identified in relation to TALIS 2013, current developments in educational leadership theory and research suggest that effective leadership is not only vested in the person of the principal, but is increasingly shared with other staff in the school (Spillane, 2013; Harris, 2014, Sergiovanni et al, 2009). Distributed leadership focuses on leadership practices, including interactions with other leaders, teachers, staff, parents, and students, rather than formal leaders' traits, roles, functions or organisational structures (Spillane, 2006; Grubb & Flessa, 2006). Three specific aspects of distributed leadership include making collaborative decisions, emphasising school governance that empowers staff and students, shared accountability for student learning, and emphasising school-wide participation in efforts to evaluate the school’s academic development (Hallinger & Heck, 2010). While distributed leadership has in many cases taken the form of extended senior leadership teams or greater involvement of middle level leaders such as year or department heads, there is a growing realisation of the value in harnessing the leadership potential of teachers more generally. Conceptualised as ‘Teacher Leadership’, this presupposes flatter structures in which teachers themselves take on leadership not just inside but outside of the classroom, working collaboratively with colleagues on school improvement and pedagogy, as well as having a clear voice in the development of school vision and goals (Harris & Muijs, 2005; Gonzalez & Lambert, 2014; Portin et al, 2013).

Principals’ job satisfaction and self-efficacy

Self-efficacy (see 39 for a definition and discussion) has been found to be significantly related to individual performance in a wide variety of areas (the direction of causality is not entirely straightforward) (Schunk, 1995; Sitzman & Yeo, 2013). Though relatively underexplored in school leadership, there is some evidence as well as theoretical understanding that principal self-efficacy may be an important element of principal job performance, job satisfaction, and burnout (Petridou & Nicolaidou, 2014; Federici & Skaalvik, 2013). These in turn are related to levels of principal retention, and are themselves influenced by school context and working conditions (Burkhauser et al, 2012). It is therefore important to study the extent of principal self-efficacy and job satisfaction and its distribution both within and between countries.

Network and system leadership

In many systems principals are increasingly being asked to exercise leadership not just within, but beyond the school, as understanding has developed both of the importance of the ways schools relate to their communities, contexts and other social services, such as exist in extended or full-service schools (Cummings et al, 2010); the need for schools to be interconnected and to collaborate in order to maximise positive outcomes across communities and enhance social justice (Hadfield & Chapman, 2009). There is growing, though contested, evidence of the relationship between collaboration and school improvement (Chapman & Muijs, 2014; Croft, 2015), but also of the challenges this involves for school leaders, not least in moving from hierarchical to equal peer leadership relationships (Muijs et al, 2010). As the demands for system and network leaders increase, it therefore becomes more important to add items on this new topic to TALIS 2018.

Theme: School Climate

Introduction

Researchers and educators share a view that school climate has important influences teaching and learning. School climate is a multi-faceted concept that includes: safety, relationships, engagement with teaching and learning, institutional environment, and the school improvement process (Thapa et al., 2013). It is sometimes taken to include the overall school culture. There is a body of research that concludes that
school climate has an impact on student affect and behaviour as well as approaches to learning (Thapa et al., 2013). The TALIS Board of Participating Countries (BPC) – now the TALIS Governing Board - expressed the desire to:

- repeat and improve indicators on teacher-student relations and classroom disciplinary climate;
- add new material on teachers’ views on the school climate conditions needed to foster effective teaching and learning (for example, teacher leadership structure); and
- integrate aspects of conditions of equity, diversity and innovation.

In TALIS 2018 questions concerned with teacher mobility and attrition (which were part of this theme in TALIS 2013) have been considered as part of other themes. TALIS 2018 assesses classroom climate from the teachers’ perspective and the school climate from the teachers’ and principals’ perspective.

**Theoretical background**

Research shows that a positive school climate is a powerful influence on many elements affecting both students and teachers. School climate relates to student learning and social well-being (Battistich et al., 1997; Bryk & Schneider, 2002; Cohen et al., 2009; Engel et al., 2009; Hoy, Tartar, & Hoy, 2006; Nilsen & Gustafsson, 2014; Martin et al., 2013; Rutter & Maughan, 2002; Thapa et al., 2013) as well as teacher effectiveness, confidence, and commitment to teaching (Hoy & Woolfolk, 1993; Fulton, Yoon, & Lee, 2005; Weiss, 1990). For instance, a safe environment in which no bullying prevails is associated with high quality relations between students and teachers (Eliot et al., 2010).

As discussed in the TALIS 2013 Conceptual Framework (p. 32), the most commonly discussed elements of school climate are teaching and learning practices, disciplinary norms, decision-making processes, organisational structures, safety, a sense of community, and interpersonal relationships (Allodi, 2010; Anderson, 1982; Battistich et al., 1997; Brophy, 1988; Cohen et al., 2009). The community and interpersonal relations elements of school climate, including relationships between students and teachers, schools and parents, and principals and teachers, are burgeoning areas of effective schools studies. Repeated indicators in TALIS of teacher-parent and teacher-teacher relations are found to be predictive of student achievement (e.g. Cornelius-White, 2007). In addition, other studies find high support from teachers relates to higher student self-concept and lower levels of depressive symptoms (Reddy, Rhodes & Mulhall, 2003). Collegial collaboration found in teacher-teacher and teacher-leadership relationships enhances school climate (Rutter, 2000; Rutter & Maughan, 2002). Lastly, strong school-parent relationships improve student attendance (Epstein & Sheldon, 2002).

In a recent review of school climate, Wang and Degol (2016) synthesise the many indicators of school climate into four dimensions: academic, community, safety, and institutional (see Table 2). “Academic” school climate focuses on the overall quality of the academic atmosphere including the ‘academic press’ in the school, leadership, teachers’ instructional quality and their professional development (Hoy et al., 2006; Martin et al., 2013; Nilsen & Gustafsson, 2014; Wang & Degol, 2016:3). “Community” emphasises the quality of interpersonal relationships between stakeholders (Barth, 2006; Bryk & Schneider, 2002; Thapa et al., 2013; Wang & Degol, 2015:3). “Safety” refers to the degree of physical and emotional security, as well as an orderly disciplinary climate (Goldstein, Young, & Boyd, 2008; Gregory, Cornell, & Fan, 2012; Wang & Degol, 2016:3). “Institutional” reflects the organisational and structural features of the school environment related to effective teaching and learning (Thapa et al., 2013; Wang & Degol, 2016:3). While classroom climate is not a direct subset of school climate, many measures of classroom climate (other than pedagogical practices) are operationalised in a similar manner. Student learning is linked to classroom climates that: hold high academic standards, provide a safe learning environment, develop and maintain interpersonal relationships, and maintain adequate learning resources
(Bryk & Schneider, 2002; Fraser & Rentoul, 1982; Koth, Bradshaw, & Leaf, 2008; Mitchell & Bradshaw, 2013; Peter & Dlabert, 2010).

Table 2: School climate framework (Wang and Degol, 2016)

<table>
<thead>
<tr>
<th>Academic</th>
<th>Community</th>
<th>Safety</th>
<th>Institutional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership</strong></td>
<td><strong>Partnership</strong></td>
<td><strong>Social and Emotional</strong></td>
<td><strong>Environmental</strong></td>
</tr>
<tr>
<td>Principals and administration support teachers, openness of communication</td>
<td>Role of community members and parents in schooling, stakeholder involvement</td>
<td>Bullying, accessible counselling</td>
<td>Heating, lighting, AC, acoustical control, cleanliness, upkeep of maintenance, quality of building</td>
</tr>
<tr>
<td><strong>Academic Press</strong></td>
<td><strong>Relationships</strong></td>
<td><strong>Discipline and Order</strong></td>
<td><strong>Structural Organisation</strong></td>
</tr>
<tr>
<td>Quality of instruction, assessments, teacher expectations of students, achievement goal structure</td>
<td>Trust, interpersonal relationships between staff and students</td>
<td>Clarity, fairness and consistency of rules, belief in school rules, conflict resolution</td>
<td>Class size, school size, ability tracking, time use</td>
</tr>
<tr>
<td><strong>Professional Development</strong></td>
<td><strong>Connectedness</strong></td>
<td><strong>Physical</strong></td>
<td><strong>Availability of Resources</strong></td>
</tr>
<tr>
<td>Opportunities and programs for growth and development</td>
<td>Cohesion, sense of belonging, student activities</td>
<td>Level of violence or aggression, students and staff feeling safe, security measures</td>
<td>Adequacy of supplies, resources, and materials, technology, sharing of resources</td>
</tr>
</tbody>
</table>

*Source: Wang & Degol (2016, p. 4)*

If school climate creates conditions for effective teacher instruction as well as motivates student learning and success, then it is clearly important to collect data on the four dimensions of the school climate from the teachers’ perspective. TALIS allows the link of school climate to teachers’ instructional practices, self-efficacy, and job satisfaction while PISA provides the link of school climate from the students’ perspective as it relates to student outcomes. School climate is an area of school policy that lies within the power of policymakers to adjust and revise to improve educational outcomes.

TALIS 2013 did assess the safety and institutional dimensions to a great extent on the principal questionnaire and partially assessed other dimensions on the teacher and principal questionnaire. Current questions on the professional development aspect are a whole theme in TALIS. The instrument lacked measurement of several key academic press characteristics. Similarly, current questions on relations between teachers and with students and principals address some, but not many of the community characteristics. Many institutional and safety dimensions questions which were asked on the principal questionnaire in TALIS 2013 are recommended to be mirrored on the teacher questionnaire for TALIS 2018.

Given the priorities for TALIS 2018 and the burgeoning research on school climate, items related to teachers’ perceptions of leadership, expectations and achievement goals for students, relations with parents trust, and equity are recommended. Questions concerned with assessing the school climate for innovation
and cultural diversity are included as part of cross-cutting themes on those issues. The continuance of two-tiered questions assessing school and classroom climate maximises potential for multiple perspectives and offers triangulation opportunities.

**Analytical potential and indicators**

The four school climate dimensions can allow direct analysis to answer questions such as:

- **School and classroom climate variation within and between countries**
  - To what extent does school and classroom climate vary within and between countries?
  - What is the extent of interrelationships between the four dimensions of school climate? Does this vary between countries?
  - How varied are classroom climates within schools?
  - To what extent do school climate dimensions explain classroom climate as compared to teachers’ pedagogical practices?

- **School and classroom climate relationship to teacher and school outcomes**
  - What is the relationship of academic, community, safety, and institutional climates to:
    - School composition;
    - School leadership practices;
    - Teachers’ instructional practices and beliefs, self-efficacy, and job satisfaction;
    - Appraisal and feedback;
    - Practicing innovation among teachers;
    - Levels of tolerance, equity, and diversity in schools; or
    - Teacher turnover, absentee rates, and attrition?

Unlike relatively fixed school demographic or economic conditions, school climate is a more dynamic condition that can potentially be changed. It is important for shaping teacher education and training policies. To maintain consistency in comparisons and trend analysis, question wording between TALIS and PISA on school climate should remain identical when possible and the classroom climate questions should remain unchanged. Other well-established surveys, such as TIMSS and the U.S. Schools and Staffing Survey (SaSS), provide established indices to assess aspects of academic climate.

**Themes that are mainly concerned with teacher characteristics**

This sub-section considers research evidence regarding four of the nominated themes. Initial Teacher Education is potentially influenced by policy at the aggregate level but is relatively a fixed attribute for individual teachers. For teachers in the profession their initial teacher education characteristics will not change but they may influence other developed characteristics as well as their professional and instructional practices. In contrast, the other three themes represent teacher characteristics and processes that might be expected to change during the careers of teachers and even in response to immediate experiences. These are Teacher Affect (being made up of Teacher Job Satisfaction and Motivation), Teacher Self-Efficacy, and Teacher Feedback and Development.

**Theme: Teacher Education and Initial Preparation**

*Introduction*

Teacher education was included as a topic in TALIS 2013 and covered indicators concerned with initial teacher education (including in education in content areas, in pedagogy and practical experience) as well as professional development and its impact. TALIS 2018 intends to describe initial teacher education
(ITE) profiles and allow in-depth analyses of their effects on outcomes such as teacher self-efficacy or job satisfaction of lower-secondary teachers. In addition, the connection of ITE and continuous professional development is of interest. Understanding the different profiles of ITE leading into teaching and how they are connected to outcomes is highly relevant because countries need to recruit the best teachers. Many countries struggle with retaining teachers in the profession.

Teacher education changes substantially over time and its effects are probably washed out the longer a teacher is in the profession because other characteristics come into play and the competencies acquired during teacher education become more integrated so that it is no longer possible to disentangle effects of specific teacher education characteristics on specific competencies. It is therefore necessary to take into account the differences among teacher cohorts by asking when they had finished their program.

This discussion focusses on ISCED 2 but the requirement for response categories appropriate for ISCED levels 1 and 3 on a few items is recognised. Full measurement invariance of teacher education indicators is probably difficult to achieve and therefore it may be necessary to apply advanced techniques that can deal with this problem\(^6\). In addition to modelling relations at the country level, teacher education data should be analysed by subgroups (e.g., latent profiles of opportunity to learn [OTL]) in a manner similar to Vieluf, Kaplan, Klieme, and Bayer (2012) but using profiles as predictors of outcomes.

**Theoretical background**

Assuming a relationship between opportunities to learn (OTL) provided during teacher education and knowledge acquired by teachers – which in turn is significantly related to student achievement (Baumert et al., 2010; Hill et al., 2005; Kersting et al., 2012) mediated by differences in the instructional quality delivered (Blömeke, Gustafsson, & Shavelson, 2015) –, we can begin to understand how the outcomes of education were achieved and where potential starting points for reforms may lie. OTL in teacher education can be regarded as intentionally developed by educational policy makers and teacher education institutions (Stark & Lattuca, 1997). National and program specifications of OTL reflect particular visions of the knowledge and skills lower secondary teachers are expected to have in a country (Blömeke & Kaiser, 2012; Schmidt, Blömeke, & Tatto, 2011).

The Teacher Education and Development Study in Mathematics (TEDS-M) – carried out in 2008 under the supervision of the International Association for the Evaluation of Educational Achievement (IEA) – offered the first chance to examine OTL in teacher education across 15 countries (Tatto et al., 2012). Prior to TEDS-M, only crude data existed about teacher education which led to inconsistent results about its effectiveness (Cochran-Smith & Zeichner, 2005). In many studies, only the type of licence or the number of courses taken was used to define OTL. These quantitative measures reflected the amount of content coverage without taking into account which content was offered and how this was done, thereby ignoring qualitative similarities or differences between countries or teacher education programs. Pure structural features do not necessarily have significant effects on outcomes of teacher education such as teacher knowledge, teacher retention or student achievement (Bruns & Luque, 2014; Goldhaber & Liddle, 2011). In contrast, evidence suggests that the quality of programs does have an impact on teacher education outcomes (Boyd et al., 2009; Constantine et al., 2009).

TEDS-M followed the IEA tradition of connecting educational opportunity and educational achievement to determine whether cross-national differences in teacher knowledge were caused by differences in the teachers’ OTL (McDonnell, 1995). TEDS-M framed OTL in terms of content coverage, specifically as “the content of what is being taught, the relative importance given to various aspects” (Travers & Westbury, 1989), as well as in terms of professional preparation and teaching methods

\(^6\) For example Bayesian elastic constraints.
experienced. These were surveyed via self-reports of the future teachers based on Shulman’s (1986) distinction between teachers’ content knowledge, pedagogical content knowledge and general pedagogical knowledge as well as practical experiences. The indicators were closely linked to the daily work of teachers in the classroom, thus acknowledging that effective professional education is grounded in the practices of the profession (Ball & Cohen, 1999).

Teacher education programs can vary greatly from university to university and from country to country (Blömeke, Kaiser, & Lehmann, 2010; Tatto et al., 2012). TEDS-M had revealed that lower secondary teacher education prepares in many countries for teaching in grades 7 through 9. However, in some countries preparation covers lower and/or higher grades. In most countries, one teacher education program for future lower-secondary exists. However, in some countries several programs exist in parallel to each other. Teacher education can furthermore be organised in a concurrent or consecutive way. The length of teacher education programs can also vary as well as the number of subjects and the amount of OTL in these. The entrance requirement for teacher education is typically a high-school exit exam but exceptions exist. Only few countries are able to recruit from the upper half of the school achievement distribution.

Content courses deliver the body of deep knowledge necessary to present the content to learners in a meaningful way and to connect the topics to one another as well as to the learner’s prior knowledge and future learning objectives (Wilson et al., 2001; Cochran-Smith & Zeichner 2005). However, knowing the content provides only a foundation for teaching; student achievement is higher if a strong content background is combined with strong educational credentials (Clotfelter et al., 2007). Pedagogical content knowledge links general pedagogical knowledge and content knowledge (Shulman, 1986). The importance of such a professional preparation, that links content knowledge to an understanding of how learners acquire knowledge, how to teach students that are diverse with respect to achievement, motivation, socio-economic background or language background using a wide array of instructional strategies, represents a robust finding in this context (Constantine et al., 2009; NRC, 2010). A third robust finding on the impact of OTL on the outcomes of teacher education is the quality of the teaching methods experienced, in particular, the opportunity to engage in actual teaching practices, such as planning a lesson or analysing student work, rather than only listening to lectures (Boyd et al., 2009).

Analytical potential and indicators

Based on the state of research, the following indicators seem to be important:

- Year when ITE was completed
- Level of formal degree (tertiary/post-secondary or secondary level)
- Alternative pathways into teaching
- Type of institution (university, pedagogical college)
- Duration of teacher education
- Attendance in a concurrent, consecutive or alternative program
- Grade range teachers were prepared for to teach (e.g., 1-8, 7-9, 5-10, 5-12)
- Type of school teachers were prepared to teach at
- Entrance requirements (school exam, university exam, practical experience)
- Degree of subject specialisation (number of majors and minors, training as generalists)
- Major in the subject teaching
• Relative emphasis to learn content knowledge, pedagogical content knowledge and general pedagogical knowledge as well as practical experiences measured by the opportunity to learn that was provided.

• Sense of preparedness for different teacher tasks such as teaching content, classroom management or dealing with heterogeneity and responding effectively to individual learning needs

• Teaching as a life-long career (could also be an outcome variable)

**Theme: Teacher Job Satisfaction and Motivation**

**Introduction**

For TALIS 2018 it is proposed that the theme of “teacher job satisfaction” be joined with motivation (perhaps under a revised title of “teacher affect”). Job satisfaction refers to the sense of fulfilment and gratification that is experienced through working as a teacher (Locke, 1969). Teachers’ motivation refers to the extrinsic and intrinsic factors that influence people to become and remain a teacher (Watt & Richardson, 2008). The TALIS Board of Participating Countries (BPC) – now the TALIS Governing Board expressed the desire to:

- repeat and improve indicators on overall job satisfaction and teacher perception of the value of the teaching profession;
- add new material on teachers’ views on the factors that would increase their job satisfaction and perception of the value of the profession;
- improve material on teacher attrition; and
- improve questions on teacher well-being and stress.

During the process of instrument development there was seen to be benefits in moving teacher motivation from the initial teacher education section to this theme. Like job satisfaction and unlike initial teacher education, motivation is not static and can vary in response to teaching environments and affects the learning environment for students.

It can be noted that PISA has identical items on job satisfaction of teachers. This allows for triangulation of data. The items on PISA are assessed on the Teacher Questionnaire, but not on the Principal on the School Questionnaire. Unlike PISA, TALIS allows for analysis and comparison of job satisfaction at the teacher level in relation to other school climate, teaching practices, leadership, and stakeholder relations. TALIS also asks questions on job satisfaction of principals that can be related to questions concerning leadership.

**Theoretical background**

Research shows that teachers are generally satisfied with the aspects of their job that relate to their teaching work (e.g., work tasks, professional growth), yet dissatisfied with the aspects surrounding the performance of their job (e.g., working conditions, stress, interpersonal relations, salary; Butt et al., 2005; Crossman & Harris, 2006; Dinham & Scott, 1998). This creates a tension in teacher affect that has multiple implications for teaching and learning.

Positive teacher job satisfaction impacts teachers, schools, and students. Research finds a positive relationship between teachers’ job satisfaction and job performance (Lortie, 1975; Renzulli, Parrott, & Beattie, 2011). Job satisfaction plays a key role in teachers’ attitudes, efforts, and confidence (self-efficacy) in their daily work with children (Caprara et al., 2003; Klassen et al., 2009; Tschannen-Moran &
Hoy, 2007). Exploring teachers’ job satisfaction is important because it has real implications for teachers’ retention, attrition, absenteeism, burnout, commitment to educational goals, job performance and, by extension, the academic achievement of students (Brief & Weiss, 2002; Ingersoll, 2001; Kardos & Johnson, 2007; Klassen et al., 2009; Lee, Carswell, & Allen, 2000; Lortie, 1975; Price & Collett, 2012; Renzulli, Parrott, & Beattie, 2011; Somech & Bogler, 2002). Well-being and stress – both classroom and workload stressors – is part and partial to these relationships (Boyle et al., 1995; Collie, Shapka, & Perry, 2012; Klassen & Chiu, 2010).

Recent research suggests factors related to school organisation can improve and sustain teachers’ job satisfaction. In particular, job satisfaction is shown to vary by the level of professional community, collaboration, and teacher autonomy in the school (Stearns et al., 2015). Teachers’ relationships with their principals, both socio-emotionally as well as organisationally with regards to leadership opportunities and professional discretion over classroom policies, are factors influencing teachers’ job satisfaction and commitment (Price, 2012; Rosenholtz, 1989; Stearns et al., 2015; Weiss, 1999). Levels of stress are magnified or lessened by environmental factors of school climate (Collie, Shapka, & Perry, 2012). At the resource level, it is shown that the absence of proper classroom support for students with special needs and basic classroom materials also heightens dissatisfaction (NAEd, 2008; OECD, 2013). As discussed in TALIS 2013, a sense of commitment and involvement appears to be related to organisational climates characterised by collegiality and collaboration, while climates of isolation and partition contribute to teacher dissatisfaction (Hargreaves, 1994, as cited in Ma & MacMillan). Studies suggest that a positive school climate also has a positive impact on teacher retention (Miller, Brownell, & Smith, 1999; Weiss, 1999).

Teachers’ motivation for joining the profession strongly correlates with job satisfaction and can be mediated by school climate. Whether teachers are “highly engaged persisters”, “highly engaged switchers”, or “lower engaged desisters”, can predict the expected length of time teachers remain in the profession, their perceptions about the profession, and whether intrinsic or extrinsic motivators are most effective for teacher growth and development (Watt & Richardson, 2008). These different motivations are found to be stable across a teacher’s first five years (Richardson & Watt, 2010) and determine different levels of effectiveness of teacher retention policies (Müller, Alliata, & Benninghoff, 2009). The “centrality of teacher motivations is integral to teachers’ goals, beliefs, perceptions, aspirations, and behaviours, and thereby to student motivations and learning” (Richardson & Watt, 2010: 139). In addition, the empirical findings from TALIS 2013 generated strong interest among participating countries. Results from TALIS 2013 showed that in regression-based models controlling for school and teacher demographics (pp. 200-201):

- There is a positive relationship with job satisfaction and self-efficacy, teachers’ opportunities to participate in decision making at a school, teachers’ perception that appraisal and feedback leads to changes in their teaching practice, and collaborative professional development or engaging in collaborative practices five times a year or more.
- There is a negative relationship with job satisfaction and classroom disciplinary climate and the perception that appraisal and feedback is performed merely for administrative purposes.
- There is a mediating effect of interpersonal school relationships on some of the challenging classroom circumstances that affect job satisfaction.
Analytical potential and indicators

Given the important consequences related to teachers’ job satisfaction, we retained the 2013 indices in TALIS on job satisfaction. They align with PISA items and assess two dimensions of job satisfaction: school and general professional. These indices worked well in TALIS 2013. Notably missing was satisfaction with the target classroom, an item now requested by the TGB (formerly the BPC). Satisfaction with classroom autonomy is intended to be the focus of this measure. Assessing teachers’ workplace well-being (stress) was highlighted in the deliberations of the BPC as a measure to improve. Given the literature, classroom and workload stressors will be the foci. There are many aspects to workplace stress, but research shows these two stressors to be the most influential among teachers (Boyle et al., 1995; Collie, Shapka, & Perry, 2012; Klassen & Chiu, 2010). Workload stress relates to stress acquired from performing duties beyond one’s regular teaching duties and classroom stress relates most prominently to student behaviour management (Boyle et al., 1995). Relatedly, the principal questionnaire could also address the issue of teacher attrition and turnover rates using questions about the frequency of teacher attrition, absenteeism, and turnover to provide a basis for investigating the relationship of school climate to these outcomes.

Teacher affect data on job satisfaction and motivation could be linked to the school climate, school leadership, human resources, self-efficacy, and other factors related to teacher’s job commitment and satisfaction. In consideration of the TGB (formerly the BPC) requests to extrapolate the factors associated with overall job satisfaction, items about satisfaction with school leadership, leadership opportunities, terms of contracts, and educational policy on teaching (autonomy) as well as appreciation by stakeholders are suggested as new items. New measures to assess teacher turnover, retention, and attrition at the school level will provide a context to understand the ramifications of job satisfaction.

The importance of job satisfaction on commitment to teaching is critical to attract and retain quality teachers for teaching and learning. The areas and items suggested would allow us to answer questions such as:

- Teacher affect variation within and between countries
  - What is the variation of teachers’ job satisfaction, motivation and stress within schools, within countries, and between countries?
  - What is the relationship between teachers’ job satisfaction, motivation and stress with their classroom, school, and the profession?
- Relationship of teacher affect (job satisfaction and motivation) to other educational factors
  - To what extent is the variation in teachers’ job satisfaction, motivation and stress explained by:
    - terms of contracts and other educational policies;
    - material resources;
    - school climate;
    - principal leadership;
    - teacher autonomy; or
    - external appreciation by parents and society in general?
- Relationship of teacher affect to other teacher attributes and behaviours
  - To what extent does teachers’ job satisfaction, motivation and stress relate to:
    - teachers’ self-efficacy and commitment to teaching; or
    - teacher attrition, absenteeism, and turnover, at the school level?
Theme: Teacher Feedback and Development

Introduction

A link between teaching quality and student learning outcomes is well evidenced in the research literature (see for example, Darling-Hammond, 2000; Hattie, 2009; Jensen et al., 2016; Rowe, 2003; Wenglinsky, 2002) and so there is great interest at every level of the education community in the ways that teacher professional development and feedback can contribute to teacher learning and improved instruction.

In TALIS 2008 and 2013 professional development and feedback were areas of high priority represented in two separate themes – Teacher Education, From Initial Education through Induction to In-Service Professional Development and Teacher Appraisal and Feedback. In TALIS 2018, both areas retain a high priority; however they are combined in one theme, Teacher Feedback and Development. This acknowledges their relationship and connectedness to one another and to their role in teachers’ ongoing professional learning.

In line with the guiding policy and content focus provided by the BPC (May, 2015), repeat and improved indicators related to sources, types and perceived impact of feedback and professional development activities will be developed for TALIS 2018. In addition, new material will be developed related to teachers’ views about effective forms of feedback and professional development, connections between professional development and innovation, and connections between feedback and professional development.

Jensen and Cooper (2015) recommended considering opportunities for greater synergies between TALIS 2018 and PISA 2018 surveys, and suggested possible areas of convergence related to feedback as well as ways that professional development measures from the two surveys might be compared to determine relevant associations with student outcomes. They also pointed out ways that TALIS-PISA link schools might be able to provide rich data. Discussions between the OECD Secretariat, the TALIS Consortium and the PISA contractors have facilitated negotiations related to potential synergies between the 2018 TALIS and PISA surveys.

Theoretical background

As noted above, the impact of teaching quality on student learning outcomes makes the areas of teacher feedback and development of high interest in education communities globally. From policymakers to practitioners, instructional improvement is typically a key priority, and teacher feedback and development are considered levers to achieving teaching quality.

The comprehensive discussion of the theoretical background and justification for the foci on teacher feedback and development prepared for the TALIS 2013 Conceptual Framework has relevance to the development of material for TALIS 2018. In recognition of the fact that professional development appears to have the strongest impact on changes in teachers’ learning (Hattie, 2009), TALIS 2018 will again examine how schools implement professional development for teachers and it will extend the TALIS 2013 examination of specific characteristics of professional development. And, because giving constructive feedback to teachers based on teaching and learning in their classrooms has the largest impact of any school intervention on student performance (Hattie, 2009), feedback will also be an area of key focus. TALIS 2013 allowed researchers to consider what schools provide to teachers, both in terms of possibilities for teachers’ professional development and for adequate feedback on teachers’ work. It is anticipated that TALIS 2018 will provide opportunity for researchers to obtain richer detail about the quality and impact of these at both teacher and institutional levels.
As discussed in the TALIS 2013 Conceptual Framework (OECD, 2013a, p. 30), teacher feedback and appraisal processes that support effective teaching practices can be a vital element of high performing schools. In TALIS 2013, feedback and appraisal were treated together as a single construct. However for TALIS 2018 they will be examined separately. This position recognises that teacher feedback can take various forms and be provided by different sources for different purposes. For example, with respect to purpose, feedback can have an appraisal/accountability focus (e.g. for the purpose of career and salary advances), feedback can have a learning/professional growth focus (e.g. for the purpose of improving instruction) or feedback can juxtapose these two foci. Of interest are the ways that different types of feedback impact teaching and learning and other aspects of teachers’ working lives (for example, self-efficacy and job satisfaction at the teacher level, and school climate at the institutional level). Important elements related to the impact of feedback include transparency and trust with respect to its purpose. Richer detail about different forms of feedback, the quality of feedback and the impact of feedback is recommended. In TALIS 2018, more detailed information will be sought from teachers about the feedback they receive and the perceived impact of that feedback, and principals will be asked about appraisal processes in their schools. Importantly, and as requested by the TALIS 2018 BPC, feedback and appraisal questions will be used for trend analyses.

Engaging in the process of seeking, receiving and responding to feedback can be a rich source of professional learning (Jensen & Reichl, 2009). And, including opportunities for professional development participants “to benefit from rich and frequent feedback” is a key feature of effective professional development design (Ingvason et al., 2005). Connections between feedback and teacher development are of interest because of their relationship and connectedness to one another and to their role in teachers’ ongoing professional learning (Isore, 2009; OECD, 2005). As noted in the TALIS 2013 Conceptual Framework (p. 32), by investigating links with professional development and school development, TALIS 2013 provided policy-relevant information on how feedback and appraisal is related to teachers’ working lives. TALIS 2018 will further examine the connections between teacher feedback and development.

A growing body of research points to features common to effective professional development (Desimone, 2009; Hattie, 2009; Ingvason et al., 2005; Timperley et al., 2001; Yoon et al., 2007). While TALIS 2013 questions provided insight into the kinds of professional development content that makes a difference to teaching practice, Jensen and Cooper (2015) reported that an “opportunity is missed to link particular forms of professional development with their perceived impact on teaching”. Jensen and Cooper pointed out that “information about the form is equally important as the content”, and they noted the potential for better coordinating questions about form and content between the TALIS and PISA surveys to enable comparisons and potential correlation to student outcomes. New material in TALIS 2018 will specifically target those professional development activities that teachers consider are effective in order to better understand characteristic features of those activities.

Professional development experiences can motivate, inform and support the development of teachers’ instructional practices and beliefs, and their ability to implement innovation in teaching and learning. Areas of interest related to connections between professional development and these pedagogical characteristics include: stimuli for new ideas, professional experimentation, and contextual factors that facilitate or hinder the development of instructional beliefs and practices and the ability to innovate (Clarke & Hollingsworth, 2002). New material in TALIS 2018 will provide opportunities to seek teachers’ views about these different areas.

**Analytical potential and indicators**

In addition to the key research questions examined in TALIS 2013 (OECD, 2014), the types of questions that could be answered in TALIS 2018 based on the proposed directions and changes for this theme include:
• What *forms* of feedback are available to teachers? What *forms* of feedback do teachers perceive impact their teaching and other aspects of their professional practice (for example, job satisfaction, motivation, self-efficacy, instructional beliefs and practices, school climate)?

• What *forms* of professional development do teachers perceive impact their teaching and other aspects of their professional practice (for example, job satisfaction and motivation, self-efficacy, instructional beliefs and practices, school climate)?

• What connections exist between teacher feedback and development? Do teachers perceive feedback to be a feature of effective professional development? Does feedback stimulate further teacher professional development?

• In what ways does professional development stimulate and support innovation in teaching and learning?

These questions have relationships with other themes, including:

- **Teaching Profession (Professional Characteristics)**
  - Teacher Job Satisfaction and Motivation (confidence; professional reflection and analysis)
  - Teacher Self-Efficacy (confidence; professional reflection and analysis)

- **Teaching and Learning (Pedagogical Practices)**
  - School Leadership (instructional leadership; support; resources)
  - School Climate (learning community; fostering effective teaching and learning)
  - Teachers’ Professional Practices (collaboration)
  - Teachers’ Instructional Beliefs and Practices (professional experimentation; salient outcomes; beliefs)

The proposed questions with their relationship to other TALIS 2018 themes, as well as their relationship to system, school and teacher characteristics, have high policy relevance. As noted earlier, links between teaching quality and student learning outcomes are well evidenced, and teacher feedback and development are critical levers to achieving teaching quality.

**Theme: Teacher Self-Efficacy**

**Introduction**

Currently, there is an enhanced awareness of the importance of teachers’ self-beliefs in the fields of teacher education and educational effectiveness (Klassen, Tze, Betts, & Gordon, 2011; Klassen & Tze, 2014; Tschannen-Moran & Hoy, 2001). This increased attention might be due to a number of reasons: First, teachers’ self-efficacy is considered to be an essential teacher characteristic which is related to their teaching practices and the quality of their instruction (Holzberger, Philipp, & Kunter, 2013). Second, these teaching practices are, in turn, correlated with students’ achievement and motivation, which represent essential educational outcomes (Caprara, Barbaranelli, Steca, & Malone, 2006;Muijs & Reynolds, 2002; Woolfolk Hoy & Davis, 2006). Third, teachers with high self-efficacy show higher job satisfaction and commitment, and are less likely to be affected by burnout, indicating the importance of the construct for their well-being (Avanzi et al., 2013; Chesnut & Burley, 2015; Klusmann et al., 2008; Skaalvik & Skaalvik, 2010). As a consequence, teacher self-efficacy has received much attention in both national and
international assessments. For instance, besides investigating teachers’ characteristics, professional development, appraisal and feedback, and perceptions of school leadership, TALIS 2013 has put emphasis on the assessment of teachers’ self-efficacy and related constructs such as their job satisfaction (Desa, 2014; OECD, 2014). In sum, teacher self-efficacy is an essential construct that may shape creating effective teaching and learning environments (OECD, 2009).

Theoretical background

On the basis of social cognitive theory, Bandura (1997) defined self-efficacy beliefs as individuals’ perceptions of their capabilities to plan and execute specific behaviour. These perceptions comprise personal beliefs about what that person can do rather than beliefs about what he or she will do (Bong & Skaalvik, 2003), therefore affecting a person’s goals, actions, and effort (Skaalvik & Skaalvik, 2007). In the context of education, research has clearly shown that students’ self-efficacy is significantly positively related to their academic achievement and behaviour (Honicke & Broadbent, 2016; Pajares & Schunk, 2001; Schunk, 1989). Bandura (1997) pointed out that these beliefs are not merely perceptions of external factors and obstacles that might facilitate or inhibit the execution of behaviours, but should be regarded as self-referent; they are first and foremost subjective evaluations of one’s own capability, although they are formed and affected by external factors (Usher & Pajares, 2008). In other words, individuals that are subject to the same environment or context – be it a school, country, or educational system – may show very different efficacy beliefs. Moreover, environments may also affect collective efficacy beliefs leading to systematic differences between groups (e.g., teachers in different countries).

Teachers’ self-efficacy refers to the beliefs of teachers in their capabilities to enact certain teaching behaviour that may influence students’ educational outcomes such as achievement, interest, and motivation (Klassen, Tze, Betts, & Gordon, 2011; Skaalvik & Skaalvik, 2010; Tschannen-Moran & Woolfolk Hoy, 2001). Tschannen-Moran and Woolfolk Hoy (2001) emphasised that these beliefs are context-specific and connected to instructional capabilities and tasks. Different beliefs may therefore result from different teaching environments and practices (Klassen et al., 2011; Malinen et al., 2013). Hence, existing research has aligned teachers’ self-efficacy with specific teaching practices and requirements to enhance student learning (Caprara, Barbaranelli, Steca, & Malone, 2006; Dellinger, Bobbett, Olivier, & Ellett, 2008; Ho & Hau, 2004; Holzberger, Philipp, & Kunter, 2013; O'Neill & Stephenson, 2011). The conceptualisation of the construct consequently comprises elements of self-efficacy theory, and is also informed by research on teaching quality in which specific criteria for effective instruction are defined, operationalised, and used to evaluate the effectiveness of teaching practices.

In line with the assumption that teaching practices comprise a number of aspects and are therefore multidimensional, Tschannen-Moran and Woolfolk Hoy (2001) proposed a multidimensional framework of teachers’ self-efficacy in teaching. In this framework, three core factors of teachers’ self-efficacy are distinguished: Self-efficacy in classroom management, instruction, and student engagement (Klassen et al., 2011). Teachers’ self-efficacy in classroom management refers to the capabilities for establishing an orderly environment without disruptions and coping with disruptive behaviour (Brouwers & Tomic, 2000). Teachers’ self-efficacy in instruction refers to the use of alternative teaching practices, assessment strategies, and explanations. Finally, teachers’ self-efficacy in student engagement addresses emotional and cognitive support for students and includes the capabilities to motivate students for learning. There is a great body of research supporting the validity of measures that are based on this framework with respect to the internal three-factor structure, the relations to external constructs such as job satisfaction and teachers’ working experience, and the generalisability across countries and cultures (Klassen et al., 2009; Pfitzner-Eden, Thiel, & Horsley, 2014; Scherer et al., 2016; Tschannen-Moran & Hoy, 2001; Vieluf, Kunter, & van de Vijver, 2013).
The assessment of teacher self-efficacy in TALIS 2018 covers the three essential aspects of the construct (self-efficacy in classroom management, instruction, and student engagement). Since these aspects have also been covered in TALIS 2013, linking the two cycles in order to study trends in teacher self-efficacy may become possible. Besides this, TALIS 2018 addresses the concepts of innovation, equity, and diversity in the context of teacher self-efficacy. Specifically, the following aspects were added: (1) teacher self-efficacy in fostering students’ innovation and cross-curricular skills (e.g. creativity, critical thinking, and problem solving); (2) teacher self-efficacy in using information and communication technology (ICT) to support student learning; (3) teacher self-efficacy in dealing with diverse classrooms. These three aspects extend the existing framework toward 21st century education.

Analytical potential and indicators

The incorporation of teachers’ self-efficacy in TALIS 2018 provides opportunities for addressing research questions that are concerned with: (1) the extent to which teachers feel capable of performing general teaching practices and specific instruction to foster cross-curricular skills; (2) the relations between teacher self-efficacy, job satisfaction, and further relevant teacher outcomes (Skaalvik & Skaalvik, 2010); (3) the differences in teacher self-efficacy across cultures, countries, and educational systems (Vieluf et al., 2013); (4) the relation between teacher self-efficacy and teaching practices (Holzberger, Philipp, & Kunter, 2014); (5) individual differences in teacher self-efficacy with respect to teachers’ age, education, gender, school environment, and further factors (Klassen & Chiu, 2010); (6) the impact of a school climate of innovation and teacher self-efficacy in innovation (Michael, Hou, & Fan, 2011). Moreover, identifying the relation between teacher self-efficacy and teaching practices may provide some ground for inferences on potential interventions to strengthen teacher self-efficacy. In fact, some research indicates that strengthening teacher self-efficacy can result in higher levels of reported instructional quality (Holzberger et al., 2013). In light of these considerations, direct links between teacher self-efficacy and teachers’ job satisfaction, and teacher self-efficacy and self-reported instructional practices can be established.

Self-efficacy is also linked to the concept of innovation (i.e. self-efficacy in fostering students’ cross-curricular skills and using ICT to support student learning) and to the concepts of equity and diversity (i.e. self-efficacy in diverse environments). The latter is of particular importance, as it may reveal specific needs in preparing teachers for education in changing societies. TALIS 2018 adds a separate scale on “Teachers’ self-efficacy in multicultural classrooms” (see theme “Equity and Diversity”).

The following is a summary of teacher self-efficacy indicators and dimensions.

- Teachers’ self-efficacy in three core dimensions as in TALIS 2013 (Tschannen-Moran & Woolfolk-Hoy, 2001):
  - Classroom management
  - Student engagement
  - Instruction

- Teachers’ self-efficacy in:
  - Fostering cross-curricular skills such as creativity, critical thinking and problem solving
  - Using information and communication technology to support student learning Dealing with multicultural environments
Themes concerned with teachers’ practices

This sub-section considers research evidence regarding the two nominated themes concerned with what teachers do. “Teachers’ instructional beliefs and practices” are central to a survey of teaching and learning because of the evidence that what teachers do is the strongest direct school-based influence on student learning outcomes (Hattie, 2009). Most other factors influence student learning mainly because they influence teacher practices and thereby have a transmitted influence on student learning. “Teachers’ professional practices” are also of considerable interest because those practices embody how teachers interact with each other and their institutions in pursuit of more effective student learning.

Theme: Teachers’ Instructional Practices and Beliefs

Introduction

As noted above there is substantial evidence that teaching practices are the most powerful school-based predictors. The theme of teachers’ instructional beliefs includes repeated indicators on the profile of teachers’ beliefs about teaching. In addition, new items on teachers’ classroom practices are included in the questionnaires. The following literature review provides background evidence to support the collection of both existing and repeat indicators.

Theoretical background: Teachers’ Instructional Practices

Teachers’ instructional practices comprise a number of aspects, some of which have been shown to be highly important for students’ learning outcomes such as achievement and motivation in subject areas such as mathematics and first-language learning (Baumert et al., 2010; Creemers & Kyriakides, 2008; Hattie, 2009; Isaac, Dinis da Costa, Araújo, Soto Calvo, & Albergaria-Almeida, 2015; Kunter et al., 2013; O’Dwyer, Wang, & Shields, 2015). Consequently, research considers them to be indicators of what is often referred to as “instructional quality”.

It is noteworthy that a considerable number of the studies reporting on instructional practices or instructional quality rely on students’ reports of classroom activities (Marsh et al., 2012), classroom observations (Schlesinger & Jentsch, 2016), and teacher reports (Wagner et al., 2016). Measuring instructional quality by teachers’ self-reports is challenging, because these reports are likely to be affected by social desirability (Little, Goe, & Bell, 2009; van de Vijver & He, 2014). This measurement issue might particularly occur in Likert scales ranging from low to high agreement regarding the importance placed in each of the instructional practices scales. In order to avoid social desirability in some of the scales, and in order to assess the frequency of countable instructional practices without assuming that they represent the actual quality of teaching, TALIS uses frequency scales referring how often a set of instructional practices occur during lessons in the target class (i.e., cognitive activation and clarity of instruction). This choice of a response scale has at least two implications. First, teachers’ self-reports on selected instructional practices no longer represent the quality of the instructional practices but the frequency of their occurrence. Second, these self-reports provide a description of the teachers’ actions in a classroom and are therefore also considered to be characteristics of the classroom. However, teacher support and classroom management, as indicated by a positive disciplinary climate, are measurement on an agreement scale, because most of the practices that are associated with them already reflect quality aspects of teaching.

Although TALIS refers to instructional practices, the corresponding measure is based on the theory and previous research on instructional quality. Instructional quality is understood differently across the field, however there is agreement that the concept is multidimensional (Fauth, Decristan, Rieser, Klieme, & Büttner, 2014; Kane & Cantrell, 2010; Kunter & Voss, 2013; Wagner, Göllner, Helmke, Trautwein, & Lüdtke, 2013). More specifically, effective instructional practices are for instance characterised by:
classroom management, teacher support, clarity of instruction, and cognitive activation. Internationally, teacher support and clarity of instruction are considered to be closely related, therefore reflecting a single aspect of instructional quality. A great body of research exists on the impact of teaching practices on students’ learning outcomes and progress. Moreover, a recent study showed that even the relation between students’ socioeconomic status and their achievement may be mediated by the presence of these teaching practices (Rjosk et al., 2014).

Numerous studies have found classroom management to be important for students’ learning and a strong predictor of achievement (see, for instance, Baumert et al., 2010; Klusmann, Kunter, Trautwein, Lüdtke, & Baumert, 2008; van Tartwijk & Hammerness, 2011). Classroom management is often described as actions taken by teachers to ensure an orderly environment and effective use of time during lessons (van Tartwijk & Hammerness, 2011). In fact, a safe and orderly environment — as reported by teachers — is positively related to student achievement across a number of countries (Martin, Foy, Mullis, & O’Dwyer, 2013; Wang & Degol, 2016). In TALIS 2018, classroom management is indicated by a positive disciplinary climate in the target class.

Teacher support is another important teaching practice influencing student achievement (Kane & Cantrell, 2010; Klusmann et al., 2008). This dimension often includes practices such as providing extra help when needed, listening to and respecting students’ ideas and questions, caring about and encouraging students, and providing emotional support (Klieme, Pauli, & Reusser, 2009).

Clarity of instruction has also been found to be important to student learning (Kyriakides, Campbell, & Gagatsis, 2000; Scherer & Gustafsson, 2015; Seidel, Rimmele, & Prenzel, 2005). This dimension refers to clear and comprehensive instruction and learning goals, connecting new and old topics, providing a summary at the end of a lesson (Hospel & Galand, 2016; Kane & Cantrell, 2010; Seidel, Rimmele, & Prenzel, 2005). In the IPN Video Study, Seidel and colleagues (2005) found that goal clarity and coherence had a positive influence on students’ perceptions of supportive learning conditions. Hence, the two dimensions (i.e., clarity of instruction and teacher support) may go together.

Cognitive activation is perhaps the most demanding and complex of the four dimensions when it comes to its operationalisation. This might be due to the close connection to the subject as compared to the other three dimensions on the one hand (Baumert et al., 2010; Hiebert & Grouws, 2007; Klieme et al., 2009) and its strong dependence on, and variability across, lessons on the other hand (Praetorius et al., 2014). It comprises instructional activities, in which students have to evaluate, integrate, and apply knowledge in the context of problem solving (Lipowsky et al., 2009).

In the context of TALIS, instructional practices are focused on general rather than domain-specific instructional practices. These reports provide a teacher-centred perspective on instruction, contributing to an understanding of instructional quality (Kunter et al., 2008; Wagner et al., 2016). Although this perspective might be subject to response bias, teachers’ self-reports may provide valid information, particularly about their perceptions of classroom management, which is significantly related to teachers’ well-being and risk of burnout, and students’ academic, behavioural, emotional, and motivational outcomes (Aloe et al., 2014; Korpershoek, Harms, de Boer, van Kuijk, & Doolaard, 2016). Furthermore, there is a substantial relation between teachers’ practices and their self-efficacy (Holzberger, Philipp, & Kunter, 2014).

In addition to the four instructional practices mentioned above, it is important that teachers provide feedback to students in terms of both formative and summative assessment (Hattie & Timperley, 2007; Kyriakides & Creemers, 2008; Scheerens, 2016). Research has shown that effective teachers provide constructive feedback, and that this has positive implications for teaching and learning (Muijs & Reynolds, 2001). In fact, providing feedback to students is important for their motivation, and students need to know
their strengths and weaknesses in order to improve their performance (Muijs et al., 2014). Feedback from teachers may also enhance students’ understanding of teachers’ expectations and is important in order to make self-regulated learning effective (Dignath et al., 2008).

Among other assessment strategies that form the basis for teachers’ feedback to students, homework has been pointed out as being a rich source of information on learning (Cooper, Robinson, & Patall, 2006). Beyond the mere time students spend on their homework, homework effort predicts learning outcomes significantly (Flunger et al., 2015). Given these findings, TALIS 2018 has incorporated examining students’ homework as another assessment strategy in classrooms. With the shift toward developing students’ 21st century skills comes the challenge for teachers to facilitate this development (Dumont & Istance, 2010). The importance of these skills has been recognised widely; in fact, developing transferable knowledge and skills (e.g., problem solving, critical thinking, creativity, and digital literacy) is considered to be one of the main goals of education (Binkley et al., 2012; Bohle Carbonell, Stalmeijer, Könings, Segers, & van Merriënboer, 2014). Nevertheless, facilitating the development of such skills may not necessarily require novel forms of instructional practices and, moreover, it can be achieved within specific subject domains (Greiff et al., 2014; Scherer & Beckmann, 2014; Schwichow, Croker, Zimmerman, Höfllter, & Härtig, 2016). Besides this, the current challenge of dealing with equity and diversity in classrooms demands instructional practices that are sensitive toward individual differences (Dumont & Istance, 2010).

Whereas TALIS 2013 assessed teaching practices of classroom management and aspects to teacher support, TALIS 2018 adds two dimensions which were identified as crucial aspects of instructional quality: cognitive activation and clarity of instruction. In fact, by extending the existing assessment, the TALIS-PISA link becomes more valuable, because PISA attempts to assess students’ perceptions of classroom management, teacher support, and cognitive activation (OECD, 2013). Moreover, with respect to the theme of innovation, equity, and diversity, the assessment of teaching practices can be enhanced by focusing on “Teachers’ instructional practices of fostering students’ cross-curricular skills”7 and “Teachers’ instructional practices to account for equity and diversity in classrooms”.

Theoretical background: Teachers’ Instructional Beliefs8

Teachers’ instructional beliefs relate to the nature of the subject and competences students are supposed to develop, the beliefs about students’ ways of learning, and the beliefs about teaching and classroom practice. For instance, teachers with constructivist beliefs are more likely to provide cognitively activating learning environments than teachers with transmission views. There is a large body of research showing that these beliefs are related to teachers’ pedagogical knowledge, their instructional practices, and students’ learning outcomes (Blömeke, 2014; Staub & Stern, 2002). Generally, teachers’ instructional beliefs affect the way in which they perceive classroom situations and, in consequence, choose among a number of instructional practices (OECD, 2009). However, the reverse direction of this relation may also hold, because practices shape attitudes and beliefs (e.g., Fang, 1996).

The link between teachers’ professional beliefs and student outcomes may not be straightforward, however, since research shows that teachers’ beliefs and practices do not always overlap (Thompson, 1984; OECD, 2009). It is reasonable to assume that situational factors may constrain teachers’ actions, thus leading to inconsistencies between beliefs and practices. Among these situational constraints, aspects of the school context, such as school climate and ethos or school leadership can play a significant role.

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7 Please find a thorough definition of cross-curricular skills in the description of the “Innovation” theme.

8 Elements of the TALIS 2013 Draft Framework (p. 34) appear in this subsection.
Teachers’ beliefs and practices may also be significantly shaped by their formal education (Richardson, 1996). Thus, it is not surprising that teachers’ beliefs often vary systematically according to the type of training they have received (Tittle, 2006). However, teachers’ beliefs are also shaped by their life experiences and the feedback they receive (e.g., Richardson, 1996).

Triggering changes in beliefs remains a challenge (Forgasz & Leder, 2008). As Richardson (1996) points out, teachers’ beliefs about learning and educational matters are often influenced by teachers’ own experiences as students, their formal education and finally, their own life experiences. These influences make teachers’ beliefs difficult to change unless they are targeted with explicit interventions (Feiman-Nemser, McDiarmid, Melnick, & Parker, 1989).

Previous findings from TALIS 2008 indicated that there is little variation in teachers’ transmission view on instruction. Moreover, a strict dichotomy between constructivist and transmission views is not clear-cut and conceptually questionable, as instructional beliefs represent a continuum rather than a categorical entity (Schwartz & Jordan, 2011). Nevertheless, TALIS 2018 focuses on constructivist and direct transmission beliefs. Finally, to account for the notion of innovation in the beliefs dimension, TALIS 2018 adds the construct of “Teachers’ openness to adopting innovative teaching practices”. This construct is related to teachers’ volition and provides information on the potential barriers of innovation in instruction.

**Analytical potential and indicators**

Assessing teachers’ instructional practices and beliefs provides ground for a number of research questions that are concerned with: (1) the relations among teaching practices, beliefs, and teachers’ background (e.g., teacher education); (2) profiles of teaching practices and potential determinants on the teacher level; (3) the relations between teachers’ perceptions of their instructional practices and relevant teacher outcome measures such as self-efficacy and job satisfaction; (4) cultural differences in instructional practices and beliefs; (5) profiles of general teaching practices (i.e., classroom management, teacher support, cognitive activation, and clarity of instruction) and specific practices to foster students’ cross-curricular and innovation skills. In light of this potential, the concepts of teaching practices and beliefs can be linked to teachers’ self-efficacy (e.g., classroom management and fostering innovation as aspects common to both themes), school climate (e.g., teaching practices feed into a school’s academic climate), job satisfaction (e.g., classroom management as a potential determinant of job satisfaction), and innovation (e.g., establishing innovative teaching practices and/or fostering students’ innovation skills).

From a policy perspective, the assessment of teaching practices becomes highly relevant, as it provides information about aspects of instructional quality (Klieme et al., 2009). Moreover, information on different levels of classroom management, teacher support, cognitive activation, and clarity of instruction may also reveal specific needs for teacher education and in-service training. Yet, given that the assessment of teaching practices in TALIS 2018 is based only on teachers’ self-reports, the inferences that can be made are limited. Incorporating practices related to innovation, equity, and diversity informs us about the extent to which teachers respond to crucial societal developments and whether they foster the development of transferable knowledge and skills. The latter are considered to be main outcomes of 21st century education (Pellegrino & Hilton, 2012).

The assessment of instructional practices and beliefs in TALIS 2018 is based on teachers’ self-reports. In order to broaden this assessment, situational judgement tasks (SJTs) were added, which present teachers with a number of hypothetical classroom situations. Teachers are subsequently asked to estimate the extent to which they consider a number of instructional practices to be appropriate to deal with these situations (see Christian, Edwards, & Bradley, 2010, for a general overview of the design of SJTs). The information obtained from teachers’ responses on the classroom situations may provide further evidence on
the face and content validity of the instructional practices measures, as they may have a closer correspondence to actual work-life situations of teachers than self-reports (Klassen & Durksen, 2015; Whetzel & McDaniel, 2009). Including situational judgment tasks is one of the major methodological innovations in TALIS 2018 that will supplement the assessment of instructional practices.

The following is a summary of indicators and dimensions concerned with teacher instructional practices and beliefs.

- Teachers’ instructional practices
  - Profile of teaching practices with respect to the dimensions of instructional quality (Fauth et al., Decristan, Rieser, Klieme, & Büttner, 2014; Klieme et al., 2009):
    - Classroom management as indicated by a positive disciplinary climate (as in TALIS 2008/2013)
    - Teacher support (as in TALIS 2013)
    - Clarity of instruction
    - Cognitive activation
    - Feedback to students
    - Assessment strategies
    - Lesson time spent for teaching and learning
  - Profile of teaching practices with respect to 21st century instruction:
    - Fostering students’ cross-curricular skills
    - Accounting for equity and diversity in classrooms
  - Situational judgement tasks on teacher support, cognitive activation, clarity of instruction, and classroom management

- Teachers’ instructional beliefs
  - Teachers’ constructivist and direct transmission beliefs about instruction (as in TALIS 2008/2013)

**Theme: Teachers’ Professional Practices**

**Introduction**

Interest in Teachers’ Professional Practices as a TALIS theme acknowledges the complex and multi-faceted dimensions of teaching as a profession. The theme encompasses a range of professional activities that teachers engage in within and beyond the classroom that, together with the theme Teachers’ Instructional Beliefs and Practices, might be thought of as central to the pedagogical core of schooling (see earlier discussion of the Conceptual Mapping of Themes in TALIS 2018, Figure 2). The kinds of professional practices that are examined in this theme include collaboration, participation in school decision-making (a topic which also forms part of the theme on human resource issues and stakeholder relations) and involvement in teaching activities outside of teachers’ own countries (i.e. academic mobility).

In line with the guiding policy and content focus provided by the BPC (May, 2015), the main focus for this theme in TALIS 2018 will be on collaboration. A key finding of TALIS 2013 highlighted the
complex forms of collaboration that teachers engage in. Teachers’ views on conditions and resources
needed to foster deep forms of collaboration in schools, and between schools and external stakeholders, is
of high interest for TALIS 2018, as is the extent to which there is alignment between teacher and principal
views regarding collaboration. There is also interest in the role of collaboration in teacher professional
development and in teachers’ professional experimentation with innovative pedagogies. Jensen and Cooper
(2015) reported that “collaboration can support new ideas and challenge existing ones, which can be a
powerful form of teacher learning.” New material will be developed focusing on these areas, and repeat
and improved indicators will enable comparisons with TALIS 2013 data.

Teachers’ involvement in school decision-making processes is another area of focus for this theme
for which repeat and improved indicators will be developed. There is interest in understanding ‘new’
emphases placed on teacher leadership in schools (see discussion of School Leadership theme) and the
extent to which synergies exist between teachers’ and principals’ views of decision-making processes in
schools. There is also interest in some countries about opportunities afforded by the transnational mobility
of teachers and potential links between teacher academic mobility and continuing professional
development, collaboration, instructional beliefs and practices, and innovation.

Theoretical background

Collaboration is a professional practice of high interest to teachers and policymakers alike. As noted
in the TALIS 2013 Conceptual Framework, collaboration among teachers has repeatedly been found to be
a “particularly important professional practice” as it is seen to play a role in various elements of teachers’
work including teaching practice, teacher learning, decision-making, teacher job satisfaction, and school
culture (see for example, Desimone, 2009; Goddard et al., 2007; Timperley et al., 2007).

However, collaboration is very complex and its status has sometimes been elevated without foundation.
Some researchers have cautioned about this. For example, Little (1990) contends:

*The term collegiality has remained conceptually amorphous and ideologically sanguine. Advocates
have imbued it with a sense of virtue – the expectations that any interaction that breaks the isolation
of teachers will contribute in some fashion to the knowledge, skill, judgment, or commitment that
individuals bring to their work, and will enhance the collective capacity of groups or institutions...
Teachers’ collaborations sometimes serve the purposes of well-conceived change, but the assumed
link between increased collegial contact and improvement-oriented change does not seem to be
warranted.* (p. 508)

Researchers have also highlighted the interrelationship of collaboration and collegiality. For example,
Kelchtermans (2006) writes:

*In the literature teacher collaboration is often mentioned in the same breath together with (or even
subsumed in) “collegiality”. Although indeed closely connected, both terms are not identical.
Whereas collaboration is a descriptive term, referring to cooperative actions, collegiality refers to
the quality of the relationships among staff members in a school. Often the term carries with it a
positive value, referring to “good” (supportive, stimulating, rewarding, equal/democratic)
relationships among equals. As such collegiality implies a normative dimension that goes beyond
mere description and refers to an aspect of the school’s organisational culture.*

*Collaboration and collegiality constitute and reflect one another. The actual actions of working
together are determined by the quality of the relationships among staff members. They “reflect”
collegiality. At the same time, however, the actual actions contribute to the meaning and value of the
professional relationships. This mutual constitution and reflection is an ongoing process and therefore, both their appearance and meaning may develop and shift over time.

(pp. 220-221)

As noted in the TALIS 2013 Conceptual Framework (p. 35), co-operation and collaboration among teachers has repeatedly been found to be a particularly important element of professional practice. It can, for example, play a role in supporting teacher reflection (Tse, 2007; Harris, 2002), help teachers to develop a more purposeful knowledge base (Erickson et al., 2005), and through encouraging professional communication and sharing among teachers be valuable for supporting changes in teaching practice (Garet et al., 2001).

Collaborative activities may take different forms, including formal opportunities in the learning organisation and equally valuable informal and voluntary collaboration triggered by situations or challenges teachers themselves collectively feel the need to address. However, not all collaborative activities benefit teachers’ work.

In TALIS 2013 teachers were asked about the frequency of their involvement in different types of collaborative activities. However, there were no questions that specifically focused on the impact of teachers’ collaboration, with respect to the ways in which collaborative activities support or hinder teachers’ professional work and the ways that collaborative activities might shape teachers’ attitudes about their professional work. Kelchtermans (2006) notes:

In order to properly understand and evaluate (value) collaboration and collegiality more, in particular one has to (a) distinguish between different forms of teacher collaboration, (b) develop a more balanced view on the value of both teachers’ collaboration and autonomy, and (c) take into account the content or the agenda of teacher collaboration (collaboration for what?). (p. 224)

The idea of developing a more balanced view on the value of both teachers’ collaboration and autonomy has been investigated by a number of researchers. Key ideas among their findings include: autonomy can take various forms and serve different purposes in schools (for example, Hargreaves, 1993, describes three types of autonomy – constrained, strategic, and elective; Clemente and Vanderberghen, 2000, describe a fourth type – ascribed autonomy); autonomy and collegiality can be conceptually and empirically linked to teacher professional learning (for example, Clemente and Vanderberghen, 2000 argue that a balance between autonomy and collaboration strongly influences teacher learning opportunities in schools and the extent to which teachers can implement things learned); autonomy is important to teachers (for example, Firestone & Pennell, 1993, report that autonomy is central to teachers’ intrinsic motivation and reducing teachers’ autonomy can create dissatisfaction about their work), and not all collaboration is educationally valuable (for example, Hargreaves, 1994, describes a type of collaboration that is contrived that does not contribute to developing teacher professionalism). As Kelchtermans (2006) notes, a proper balancing of both autonomy and collaboration seems to provide the most promising way ahead for the goals of teacher professional development and school improvement. A focus on the conditions in schools that enable both individualism and collaboration will be included in the design of TALIS 2018.

Kelchtermans also reports:

The particular form, content, meaning and impact of teacher collaboration have to be understood as determined by the organisational context of the school in which it takes place. In other words: the cultural and structural working conditions in schools determine and mediate actual teacher collaboration, as well as the way “collegiality” is experienced and valued by the staff members involved. (p. 222)
Areas recommended for further consideration in TALIS 2018 include a focus on the conditions under which collaboration can (effectively) occur, forms of collaboration that might impact teaching practices and student learning (e.g. collaboration that clearly involves teachers in dialogue about teaching), and the distinction between collaboration and cooperation. Kelchtermans (2006) draws attention to the fact that:

... Teacher collaboration is not new, but over the past 25 years its focus and ambitions have shifted remarkably. Early optimistic claims and hopes were outbalanced by empirical work. More recently the concepts of teacher collaboration and collegiality are often discussed as part of the idea of “professional learning communities” or “communities of practice” (see for example. Bolan et al., 2005)

Ideas related to collaboration and collegiality as part of professional learning communities and communities of practice are other areas of focus for TALIS 2018.

Other areas of focus within this theme for TALIS 2018 are teacher participation in school decision-making processes and teacher academic mobility. As reported in the discussion of the School Leadership theme, evolution in the field of educational leadership has seen a greater emphasis in schools on distributed leadership and teacher leadership. As noted, there is growing interest in harnessing the leadership potential of teachers more generally, using flatter structures that enable teachers to be more involved in areas such as school improvement, pedagogy, school vision and school goals. In TALIS 2018 new material will be developed to gather information about teachers’ perspectives of their involvement in school decision-making and to compare these with principals’ views in this area.

Another area of interest for some participating countries relates to the nature of teacher academic mobility opportunities. For TALIS 2018, academic mobility is defined as a period of study, teaching and/or research in a country other than a teacher’s country of residence, which is of limited duration and has the expectation that the teacher will return to his or her country upon completion of the designated period. Mobility opportunities may be achieved within exchange programmes set up for this purpose, or individually, and do not include migration from one country to another. Interest in teacher academic mobility is strong in some locations because of its anticipated benefits – in particular with respect to teacher learning and teaching quality, and with respect to areas of teachers’ professional characteristics such as job satisfaction and motivation, and self-efficacy. Questions related to the purpose and duration of teacher academic mobility will enable the examination of links between these opportunities and areas including: continuing professional development; collaboration; instructional beliefs and practices; innovation in teaching and learning; job satisfaction and motivation; and self-efficacy.

Analytical potential and indicators

In addition to the key research questions examined in TALIS 2013 (OECD, 2014) related to the profiles of Teachers’ Professional Practices, the types of questions that could be answered in TALIS 2018 based on the proposed directions and changes for this theme, include:

- What do teachers and principals perceive are the conditions under which collaboration can effectively occur (including a balance with autonomy)?
- What forms of collaboration do teachers perceive impact their teaching practices and student learning?
- What connections exist between collaboration and development? Do teachers perceive collaboration to be a feature of effective professional development? Does collaboration stimulate further teacher professional development?
In what ways does collaboration stimulate and support innovation in teaching practice?
What do teachers and principals perceive are teachers’ roles in school decision-making?
What do teachers and principals perceive are teachers’ roles in leadership?
In what ways does academic mobility stimulate and support teacher learning and teaching quality (for example in areas including teacher development, collaboration, instructional beliefs and practices, innovation) and other aspects of their professional practice (for example, job satisfaction and motivation, self-efficacy)?

These questions have relationships with other themes, including:

- **Teaching Profession (Professional Characteristics)**
- Teacher Job Satisfaction and Motivation (confidence; professional reflection and analysis)
- Teacher Feedback and Development (role of collaboration)
- Teacher Self-Efficacy (confidence; professional reflection and analysis)

- **Teaching and Learning (Pedagogical Characteristics)**
- School Leadership (instructional leadership; support; resources)
- School Climate (learning community; fostering effective teaching and learning)
- Innovation (professional development; professional experimentation; collaboration)
- Teachers’ Instructional Beliefs and Practices (professional experimentation; salient outcomes; beliefs)

The proposed questions with their relationship to other TALIS 2018 themes, as well as their relationship to system, school and teacher characteristics, have high policy relevance. As noted in the earlier discussion of the Conceptual Mapping of Themes in TALIS 2018 (Figure 2), Teachers’ Professional Practices together with Teachers’ Instructional Beliefs and Practices are the ‘pedagogical core’ of the Teaching and Learning focus in TALIS 2018, and can be thought of as being shaped by, and dynamically shaping the different areas of teachers’ professional characteristics.

**Themes that intersect with other themes and apply to both the institutional and teacher levels**

This sub-section considers two themes that emerged during the planning process as concerned with cross-cutting issues: innovation and cultural diversity. These themes were cross-cutting in the sense that they were identified as involving elements and concepts that overlapped with other themes (especially school climate and teachers’ instructional practices and beliefs) and in the sense that they involved both the teacher and the institutional level. They were considered to be sufficiently important to be developed as distinct themes rather than to be developed as aspects of other themes.

**Theme: Innovation**

**Introduction**

Rapidly changing societies, economies, and technologies have led to frequent calls for innovation also in the field of education. The 2015 International Summit of the Teaching Profession lists “Encouraging innovation to create twenty-first-century learning environments” as one of three crucial criteria which have to be in place if an education systems wants to succeed (ISTP, 2015). How to define innovation is not entirely clear though. One of the recent TALIS reports defined innovation as “a new idea or a further development of an existing product, process or method that is applied in a specific context with the intention to create a value added” (Vieluf, Kaplan, Klieme, & Bayer, 2012; p. 39). The report pointed
out that incremental adaptations of existing characteristics are more common when it comes to innovation than radical changes.

Theoretical background

Specifically with respect to innovation in education, the literature discusses at least three perspectives on education where a need of innovation is seen:

1) **Innovation in teaching practices that support the acquisition of cross-curricular skills.** In addition to well-established literacies such as reading or mathematics literacy, the next generations of students are seen in need of additional broader and/or more complex skills. Only then, they would have a fair chance to succeed in complex modern societies and on rapidly changing global labour markets. In this context, a number of skills have been identified as ways of thinking, ways of working, tools for working, and aspects of living in the 21st century (Binkley et al., 2012). Among others, creativity and innovation, problem solving, critical thinking, and digital literacy are skills mentioned most often in this context (OECD, 2015). In fact, some of these skills have been essential for individuals over centuries, whereas others have just emerged due to recent societal changes and technological advancements (Greiff, Niepel, & Wüstenberg, 2015). In order to account for the societal need for developing such skills, teachers need to be prepared to foster such skills in education. The integration of digital technologies into current teaching practices is one topic often mentioned in this context (Dumont, Istance, & Benavides, 2010). It may be meaningful to link TALIS 2018 to the IEA studies about the implementation of computer and information technology in education – SITES-M1 and SITES-M2 as well as ICILS 2013 – by using some of the scales implemented there (Fraillon, Ainley, Schulz, Friedman, & Gebhardt, 2014). The integration of digital technologies into practice has an affective-motivational prerequisite, that is, a positive attitude toward technologies and technological innovativeness. Teachers with such a positive attitude are more likely to integrate digital technologies in their teaching (Teo, 2011) and, at the same time, they are willing to take risks in their use (Yi, Fiedler, & Park, 2006). The concept of innovation in teaching practices is a domain-specific version of the more generic innovativeness of teachers (see 3). The application of innovative teaching practices, which cross traditional subject borders and support interdisciplinary approaches but also collaboration between students and inquiry learning, is another topic in this context (OECD, 2013).

2) **A general orientation towards innovation of teachers as core actors in educational processes.** Individual innovativeness is an indispensable precondition for educational systems to change (Rogers, 2003). Existing research indicates that, based on the time when teachers adopt an innovation, they can most probably be classified into five different groups when it comes to their innovativeness: Innovators, Early Adopter, Early Majority, Late Majority and Laggards (ibid.). Without the willingness of teachers to take risks and without their openness to new experiences and an ability to cope with uncertainty that comes along with change, innovation is hard to accomplish because it always breaks up routines. In order to assess individual innovativeness, teachers’ self-perceptions are most often used as indicators. For instance, the *Individual Innovativeness Scale*, which was designed by Hurt, Joseph, and Cook (1977), showed good psychometric properties (Pallister & Foxall, 1998; Simonson, 2000), and has already been applied in many countries (see, for instance, Celik, 2013). It measures the general innovativeness of individuals using 20 items which reflect sub-constructs of innovativeness such as risk-taking, resistance to change or opinion-leading. Although the use of self-ratings is often controversially discussed, they provide efficient measures that provide sufficient degrees of both reliability and validity in the context of innovativeness (see references above). Openness and extraversion are facets of plasticity, a personality trait which promotes adjustment to changing environments and is a prerequisite for innovativeness (DeYoung, Peterson, & Higgins, 2002). Hanfstingl and Mayr (2007) summarised the state of research with respect to these as follows: Extraversion and openness are significantly related to teacher performance in the classroom as
perceived by the teachers or rated by their students. These teacher characteristics are also related to teachers’ self-efficacy. Tschannen-Moran & Woolfolk Hoy (2001) pointed out that teachers with high self-efficacy are more open to new experiences and are more willing to implement innovations than those of low self-efficacy. Other characteristics to be considered in this context refer to seeking novelty, which plays an essential role in the early stages of adopting new products (Manning, Bearden, & Madden, 1995; Schweizer, 2006); and to seeking diversity for the purpose of decreasing boredom or obtaining a change of pace (Fishbach, Ratner, & Zhang, 2011; Steenkamp & Baumgartner, 1992). As a consequence, teachers’ general orientation towards innovation – understood as an individual, personality-related trait – plays an important role in facilitating innovation in their teaching practices.

TALIS 2018 intends to combine a psychological and a sociological perspective on teacher innovativeness by taking into account that it has an individual (cognitive) component which is addressed with the individual teacher innovativeness scale but that it also has an organisational component that reflects shared perceptions of a group’s innovativeness (Anderson & West, 1998), in our case the teachers in a school. Teachers in a school interact with each other at least infrequently and this within the same school environment and on the basis of a common goal (to foster students’ abilities) while having experienced similar socialisation processes. Such interactions and shared experiences make it likely that teachers in a school develop shared perceptions, for example of how to respond to change (ibid.). The Team Climate Inventory captures this facet of innovativeness that is a collective characteristic rather than an individual one. It emphasises the nature of an organisation as an open system instead of a classic bureaucracy (Patterson et al., 2005) which means that a school has a flexible orientation toward change and innovation as well as new ideas and innovative approaches are encouraged and supported (ibid.)

3) A school context that is open to innovation. Teachers are working in an organisational context that mediates or moderates the impact of their cognitive and non-cognitive personality characteristics on their performance and well-being (Job-Demand-Resources model, JD-R; Bakker & Demerouti, 2007). In this respect, job resources refer to school conditions that buffer potentially negative effects on teachers’ classroom performance and health on the one hand, and enhance their work engagement and well-being on the other hand (Bakker, 2011). Typical barriers that work against innovation are related to a lack of time and infrastructure needed (Andrews, 2007). In this context, school leadership – as performed by principals – plays an important role in creating a culture of innovation in schools and breaking down barriers of innovation. Besides an innovation-friendly school climate that supports change, system characteristics which make it easier for schools to adapt to rapid developments are another important precondition of innovation. The TALIS report about pedagogical innovation pointed to the value added of professional learning communities (Vieluf et al., 2012); they would constantly provide feedback to teachers, thus support incremental changes, and have positive effects on instructional quality and student achievement (Bolam et al., 2005; Louis & Marks, 1998).

Analytical potential and indicators

The concept of innovation feeds into different themes in TALIS 2018. As a consequence, indicators within different themes and levels are needed. As a first attempt to capture the above mentioned perspectives on innovation, TALIS 2018 will use four perspectives including six indicators.

- Innovative teaching practices
  - Teachers’ preparedness for fostering innovative educational outcomes such as creativity, critical thinking, and problem solving (i.e. cross-curricular skills)
  - Integration of information and communication technology in teaching practices

- Individual innovativeness (teacher level)
  - Teachers’ general innovativeness and openness towards innovation in teaching
• School climate for innovativeness (teacher and principal level)
  - School climate for innovativeness at an organisational level
  - School climate for innovativeness with respect to professional learning communities (i.e., teacher teams) – adapted version of the Team Climate Inventory (Paterson et al., 2005)

In this respect, we notice that teaching practices that are aimed at fostering innovative educational outcomes (21st century skills) may be distinguished from innovative teaching practices. Whereas the former considers the educational outcomes to be innovative (i.e., outcome orientation), the latter puts an emphasis on innovation in the ways to teach such skills (i.e., process orientation).

**Theme: Equity and Diversity**

*Introduction*

Diversity of student background can arise from many sources such as cultural background, socioeconomic background and gender. The extent of diversity in cultural and socioeconomic background differs greatly among school systems and schools. Some are quite homogenous while others are heterogeneous. Many schools and education systems have developed approaches to teaching and learning that deal with diversity. TALIS 2018 asks schools and teachers about approaches to teaching and learning that respond to cultural, socioeconomic, and gender differences among students.

Issues concerned with school policies and teaching approaches in diverse cultural environments have become increasingly important, notably in Europe. Cultural diversity has been a feature of many countries in Europe, with migration being an important source of diversity. Cultural diversity was highlighted in the November 2015 meeting of the TALIS Board of Participating Countries by the European Commission as a topic that required attention in the Conceptual Framework and questionnaires. The recent massive influx of refugees has put cultural diversity high on the educational policy agenda. Still, diversity can come from various sources. TALIS 2018 will address three sources of diversity: cultural background, socioeconomic status, and gender. Each of these sources has a long history in educational policy and practice. Many school systems have adopted programs that represent responses to differences in each of these domains.

In PISA there have been assessments of responses to, and the impact of, student diversity using information obtained through student, teacher, and school questionnaires. In the recent OECD report “Immigrant Students at School: Easing the Journey towards Integration” (OECD, 2015b), PISA data were used to explore how educational systems across the world managed to integrate into their schools a diverse student population with immigrant background. PISA 2018 plans to continue, and give greater emphasis to, this theme. Therefore the education policies and practices regarding cultural diversity could be a suitable area for harmonisation of TALIS and PISA. It can also be noted that PISA has addressed issues of equity in outcomes among students of differing socioeconomic background as well as cultural background (OECD, 2013).

Issues of equity and diversity cross a number of existing themes but to be investigated thoroughly they require some specific questions about school policies, practices and approaches to teaching. Therefore, equity and diversity have been considered to be a theme rather than just a cross-cutting issue.

*Theoretical background*

Equity and diversity are addressed within the context of cultural background, gender and socioeconomic background; most emphasis is given to cultural background (thereby aligning with PISA 2018).
Cultural diversity. In relation to cultural diversity there is evidence that various school and teaching policies and practices have ramifications for immigrants (Banks & Banks, 2009). PISA studies have shown that differences in school systems can impact on outcomes for immigrant students (OECD, 2006, 2009, 2012). PISA reading achievement among immigrant students is higher in countries with a more inclusive immigration policy (Arikan, Van de Vijver & Yagmur, 2016). In countries with a more inclusive immigration policy greater proportions of immigrants use the majority language than in countries with a more assimilation-oriented policy, such as France (Yagmur & Van de Vijver, 2012). A dominant paradigm in the study on cultural derives from the work by Ely and Thomas (2001). That work articulates two perspectives in studies of cultural diversity policies. In the first perspective there is an emphasis on fostering equality and inclusion and valuing diversity; this perspective is often called equity. It is a policy in which there is an emphasis on the equality of all children in a class, the avoidance of discrimination, and a fair treatment of all students (Schachner, 2014). At the school level, this policy often resembles a so-called “colour-blind” approach to diversity, in which the primary goal is to create and maintain homogeneity. This homogeneity often implicitly refers to the dominant culture of a country and is often associated with assimilation (Plaut, Thomas, & Goren, 2009). There is evidence that the adjustment of immigrant students is promoted by this policy (Schachner, 2014). The second perspective can be called multiculturalism. The principle behind this perspective is that diversity creates resources that can enrich the school and promote respect for, and knowledge of, other cultures. In this approach expressions of diversity are acknowledged and recognised. Diversity is viewed in this perspective as a resource that can lead to more knowledge of other cultures, more openness to other cultures, and the enhancement of intercultural skills. This policy has been shown to promote student motivation and school belonging (Schachner, 2014). Although the two policies may seem to be different, empirical studies show that schools often combine components of both (Schachner, 2014; Schachner, Noack, Van de Vijver, & Eckstein, 2016).

Gender. There are similar themes to those above evident in education policies and practices concerned with gender. There has been a long tradition of policies and practices that promote equal opportunities for and equitable outcomes between female and male students (Voyer & Voyer, 2014). This has been especially focused on achievement and participation in mathematics and science. Cross-national studies have shown that the extent to which the achievements of female and male students differ across countries and have shifted over time within countries (e.g., mathematics performances are small, despite the stronger motivation of boys; Else-Quest, Hyde, & Linn, 2010). Some of those differences, and temporal shifts in those differences, appear to be associated with emphases in policy and practice (such as gender equity in enrolment; Else-Quest et al., 2010). At the same time many school and system practices (including curricula) are concerned to recognise differences in interests, perspectives and aspirations of female and male students.

Socioeconomic background. In relation to socioeconomic background the focus of educational policy and practice, and of research, has been on equity so that the association between achievement outcomes and socioeconomic status is minimised (OECD, 2013; Sirin, 2005). One of the contributions of international studies to deliberations about the effects of socioeconomic background has been to show that the strength of its relationship to achievement outcomes varies considerably across countries and that has led to interest in the policies and practices associated with those variations (Alegre & Ferrer, 2010; Nilsen, Blömeke, Hansen, & Gustafsson, 2016). In terms of education policy and practice one focus has been on what is done in schools that have high concentrations of students of low socioeconomic background. In many countries it is these schools that have been included in special programs, or have been the recipients of additional resources to generate greater equity in outcomes. In a few instances these have recognised aspects of culture in the communities served by those schools.
Analytic potential and indicators

TALIS provides a unique opportunity to compare practices and policies concerned with these aspects of equity and diversity across schools and across countries. In addressing cultural diversity TALIS includes a number of questions that are scheduled to be used in PISA 2018 (or at least in the field trial). These questions have been developed through an expert group that dealt with global competence but we have been selective and focused on questions concerned with differences in cultural background of students. Still, it is important to note that the TALIS indicators are broader than the PISA indicators in two ways: (1) TALIS measures address both equity and diversity, whereas PISA indicators have an emphasis on diversity; (2) gender and socioeconomic diversity are not assessed in PISA.

The TALIS items about cultural diversity are partly derived from PISA and partly from work by Schachner (2014). The items about gender and socioeconomic status mainly involve equity issues.

Background information for teachers, principals and schools

TALIS 2018 follows the procedure of TALIS 2013 in collecting key elements about teachers’ backgrounds. It asks about teachers’ personal attributes (e.g. gender, age, employment status, work experience, initial education and teaching program) as well as characteristics of the classrooms (e.g. the student composition of the class). In addition, TALIS 2018 collects principal and school background information. It asks about principals’ personal attributes, education and experience as well as about school characteristics (e.g. location, school size, school type, funding model, and student composition). This personal, classroom and school contextual information is important when examining teachers’ work and the working conditions that teachers’ perceive enable them to function effectively in their role. The background information is intended to reveal basic characteristics which are expected to be of interest in terms of their relationship to other indicators and which may also be of value as descriptive information about schools and systems. In addition these background characteristics may be of value in understanding the context in which data about themes and indicators are interpreted.

Teacher background

Introduction

To be able to describe and compare the composition of the teaching force across countries, information about teacher background in terms of age, gender, employment status and job experience is crucial. The OECD Teaching and Learning International Study (TALIS) will provide this information which is also important for complex analyses of the antecedents of outcomes such as teacher self-efficacy or job satisfaction and in profile analyses. Bearing in mind that TALIS 2018 focusses mainly on ISCED 2, it will be necessary to develop specific response categories to a few items for ISCED levels 1 and 3.

Theoretical background

Existing research points to the fact that teachers have great influence on instructional quality and student achievement (Hattie, 2009; Kyriakides, Christoforou, & Charalambous, 2013). Within-country variability of teacher characteristics is probably very large and may reflect large differences in profiles. In addition background characteristics would often be expected to affect student outcomes through transmitted (e.g. through teaching practices) rather than direct effects. Since trend comparisons are an overarching objective for TALIS 2018, as many items as possible are kept consistent with TALIS 2013 cycle. However, recent state-of-the-art literature and interest in more in-depth information as well as alignment with PISA 2018 may require other or additional items. With respect to consistency, alignment between TALIS and PISA may be considered regarding the sequence of the items and their response
categories. Some variables were changed in PISA 2015 compared to TALIS 2013 (see EDU/INES/TALIS (2013)3/REV1).

**Analytical potential and indicators**

The following indicators of teacher background are included in TALIS 2018.

- Gender, age and language background
- Employment status
- Full-time teaching
- Commitment in other schools
- Work experience

**School Context**

**Introduction**

A number of aspects of school context are important for understanding conditions under teaching and learning takes place. School contextual information may important when interpreting data about teachers’ work and working conditions. School context information is expected to be of interest in terms of its relationship to other indicators and as descriptive information about schools and systems.

**Theoretical background**

There is a substantial body of research concerned with the impact of school context (conceptualised either as the social composition of the school or as the neighbourhood in which the school is located) and school characteristics on student achievement. There has been an ongoing debate about the extent to which the overall characteristics of the student population have an effect on student learning outcomes after statistically allowing for the effects for individual students (Borman & Dowling, 2010). Analyses of the results from PISA suggested that for most countries there was an advantage in “attending a school whose students are, on average, from more advantaged socio-economic backgrounds” regardless of their own socio-economic background. (OECD, 2004, p. 189). Moreover, the extent of this advantage varies across countries depending on the extent to which schools differ in their social composition. Of more direct concern to TALIS is the extent to which effects of school composition on student achievement could be influenced by differences in the characteristics of teachers and differences in approaches to teaching that are associated with differences in the composition of school population. In other words are more affluent schools able to attract and retain more highly qualified and experienced teachers than less affluent schools? Moreover, do the social circumstances of less affluent schools constrain approaches to teaching either because of access to resources or concerns with behaviour management? There is also interest in the extent to which school structural characteristics, and geographic location, impact on student achievement and other outcomes through the influence they have on how teaching takes place. One substantial review of the effects of school size has suggested that smaller schools have benefits for many aspects of teaching and learning (Leithwood & Jantzi, 2009).

School characteristics may be of value in understanding the context in which data about themes and indicators are interpreted. In particular, the composition of its student body (in relation to socioeconomic and cultural background the transience or mobility of its students) and its teaching workforce (including the transience and attendance patterns of teachers) as well as characteristics such as school size may relate to various approaches to teaching and aspects of school management.
Analytical potential and indicators

The TALIS Principal Questionnaire is intended to generate data related to the following indicators:

- School location
- School enrolment
- Types of programs provided
- School governance and funding model
- Student composition (in terms of socioeconomic disadvantage, cultural diversity and special needs requirements).

These indicators will be included in analyses as context variables that potentially mediate or moderate relationships between other variables.

Analyses

Three forms of analyses of TALIS 2018 survey data will form the bases of reporting (analyses for other purposes or reports are not discussed here). The first involves comparisons of indicators across countries. The second involves the comparison of indicators over time, which is sometimes referred to as trend analyses. The third involves analyses of the relationships among indicators replicated across countries to establish general patterns. For all these forms of analysis it is important to establish measurement invariance. This refers to whether the same construct is being measured across countries or other specified groups (e.g. gender, cultural or socioeconomic backgrounds) or over time. Measurement invariance is an essential basis for the interpretation of data. TALIS 2018 will conduct measurement invariance analyses in order to test the extent to which cross-country and cross-time comparisons of indicators and relationships are valid.

TALIS 2018 will be administered using on-line or paper questionnaires to samples of teachers and their principals. The samples for the main survey will consist of approximately 200 schools per country and 20 teachers within each school. Schools are sampled with a probability proportion to size and in some countries sampling rates differ among strata. Response rates differ among schools. Survey weights are computed to take account of the sample design, and differences in participation, so that population estimates, and estimates of sampling error, can be generated that are representative of the population of teachers. It is essential to apply survey weights when conducting analyses of TALIS data. Sampling is discussed in greater detail in Section III of the framework.

To ensure that the samples are not biased by non-response a required response rate is specified. In TALIS this is 75% of sampled schools (after specified replacement) provided that each school included attained a minimum response rate of 50%. A minimum overall participation rate of 75% of teachers for each country was also required.

Comparison of indicators across countries or over time

A number of tables to be reported from TALIS 2018 will be concerned with single indicators reported for each country or for each TALIS cycle (i.e. time). The statistics reported depend upon the nature of the indicator. For categorical indicators the statistic reported will be the percentage of respondents (estimated for the relevant population of teachers) in each category (e.g., the percentage of
female teachers or the percentage of class time spent on “administrative tasks”, “keeping order in the classroom”, and “actual teaching and learning”). For indicators based on continuous variables the statistic reported would be the average (mean) on either a natural metric (e.g., average age) or a constructed scale (e.g., the average scores on scales of aspects of teacher self-efficacy or school climate). For all of these statistics standard errors are reported so that a judgement can be made about the confidence with which it can be concluded that any apparent differences between countries, or between TALIS cycles for each country, could not have resulted simply from random fluctuations in the sample or the measurement instrument.

Comparison of measures of association

A number of tables to be reported from TALIS 2018 will be concerned with the strengths of relationships between indicators. The simplest involve bivariate measures of association between two indicators reported either as correlation coefficients (e.g., between the participation among stakeholders index and the teacher professional collaboration index) or regression coefficients. The regression coefficients would be derived from multiple, or multilevel, regression analyses of the relationship of a common set of variables with a criterion. Using these estimates, the strengths of relationships would be able to be compared across countries or across TALIS cycles.

In TALIS 2013, many of these analyses were based on a model developed by the International Association for the Evaluation of Educational Achievement (IEA) (Purves, 1987) and further articulated in the model of school effectiveness developed by Scheerens and Bosker (1997). This model examined teaching and learning in terms of context, inputs, processes, and outcomes (CIPO). The framework used in TALIS 2013 was comprehensive in that it included a wide range of measures and was multi-level in that it was structured around factors at the teacher or classroom, school and system level. The TALIS 2013 model indicated that the influences of some factors were relatively similar in a range of contexts (e.g., initial teacher education), while others varied to a greater extent (e.g., teacher job satisfaction). In general, variables that were classified as process factors tended to be seen as more malleable, and being the factors through which teachers, principals and education system managers could influence the system and enact change. TALIS 2013 investigated influences on teacher self-efficacy and job satisfaction as the main outcomes (OECD, 2014a, p. 183). The investigation included indicators concerned with teacher experience in schools: teacher professional practices (collaborative practices), instructional practices and beliefs (teaching practices), teacher feedback and development (appraisal and feedback, mentoring, professional development) as well as school climate and school leadership. It also included teacher background characteristics (gender, work experience as a teacher, and elements included in initial teacher education) and demographic characteristics of students in the teachers’ classrooms.

TALIS 2013 acknowledged that outcomes could be both the result of process and inputs and could themselves influence inputs and processes. One example of such a feedback loop would be where teacher feedback and development could influence the propensity of teachers to engage in desirable instructional processes but would themselves be influenced by the experience of implementing those practices. Similarly, teacher self-efficacy could be considered as an output from teacher development and the experience of adopting new pedagogical practices as well as an input that would influence participation in professional development and the willingness to improve practice. Since 2013, research has been further influenced by the adoption of dynamic models of school effectiveness (Creemers & Kyriakides, 2008; Creemers & Kyriakides, 2015a). Creemers and Kyriakides (2015a) show how the same factor can often be both an input and output of schooling. Dynamic models have also been used in studies of teacher influences on student learning (Kyriakides, Christoforou, & Charalambous, 2013) and school improvement (Creemers, Kyriakides, & Antoniou, 2013; Muijs et al., 2014).
Recent years have seen a number of other important developments in educational effectiveness research including models that integrate system-level, school-level, and classroom-level factors (Scheerens, 2016). Concomitant with these developments has been a wider application of forms of analysis that can be used to explore indirect (as well as direct) effects on learning outcomes and reciprocal relationships among multiple influences on outcomes (van der Werf, Opdenakker, & Kuyper, 2008). Increasingly studies use composite indicators rather than single-item indicators to capture complex school and classroom constructs providing more reliable measures of what happens in schools and classrooms. These composite indicators are often preferred over single-item indicators when the construct has multiple factors that contribute to it. For example, a single item on “the frequency of classroom disruption” would limit an understanding of the complex construct of “classroom disciplinary climate”. A composite measure can widen the scope of, and capture more appropriately, the underlying construct being investigated.

This TALIS 2018 Conceptual Framework is not intended to be prescriptive with respect to the analyses to be undertaken. Rather, it aims at illustrating some possible analyses without being comprehensive or precluding others. For TALIS 2018 one set of the possible analyses could focus on influences on teacher self-efficacy. This was investigated in TALIS 2013 and remains a focus because it represents a measure of enduring teacher quality. The relationships among various indicators and teacher self-efficacy could be direct (e.g. an aspect of initial teacher education directly influences teacher self-efficacy) or indirect (e.g. an aspect of initial teacher education influences teacher self-efficacy because an aspect of initial teacher education influences professional learning which in turn influences teacher self-efficacy). The approach adopted for the analyses would depend on a theory concerned with how various factors are believed to influence teacher self-efficacy. In this hypothetical example professional learning is a “moderator” which explains why there is an apparent relation between initial teacher education and teacher self-efficacy. Other variables might influence the strength of the relationship between two variables. For example, the relationship between initial teacher education and teacher self-efficacy could be stronger when there is a high level of collaboration than when there is a low level of collaboration. If this was the case collaboration would be said to mediate the relationship between initial teacher education and teacher self-efficacy.

Such an investigation could incorporate indicators at both teacher (e.g. extent of feedback) and institutional levels (e.g. school climate or school leadership) as well as reciprocal relationships (e.g. between teacher collaboration and school climate)9.

Conclusion

TALIS 2018 aims to gather quality indicators on each of the themes described in this section in order to provide participating countries with comparable data on the conditions of teaching and learning in their lower secondary schools (and for some countries, primary and upper secondary schools). TALIS does not measure how these themes impact or relate to teacher effectiveness or student learning. However, it does provide opportunities to investigate relations between elements in those themes such as between school climate and teachers professional practices, between feedback and development and instructional practices and between factors that form part of institutional environments and teacher job satisfaction, motivation and self-efficacy.

The breadth of academic and policy research in education using TALIS is extensive. The sample of literature included in this section includes country-specific and international research and provides a

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9 As a further example, TALIS 2018 could also investigate influences on teacher instructional practices by building on and extend the model articulated in the report of TALIS 2013 (OECD 2014a, p. 151). An argument for investigating influences on instructional practices would be that instructional practices are considered most closely related to student learning outcomes.
foundation for the development of common indicators that appear to be relevant to an international survey such as TALIS. The priority rating by TALIS participating countries and the literature review in this section aimed to provide an overview that helped guide the creation of the TALIS 2018 survey. Each subsection provided educational policy and research evidence in support of the indicators. This section shows that the themes requested by the TALIS participating countries are important aspects of educational processes and may serve as potential avenues for educational improvement.

Section III will take a turn away from a discussion of TALIS 2018 themes and indicators and focus on design issues and survey operations.
SECTION III – DESIGN OF TALIS 2018

Section III describes key aspects of the TALIS 2018 survey design, including descriptions of the field trial and main survey. The framing provided by the ISCED (International Standard Classification of Education)\(^\text{10}\) Levels 1, 2 and 3 is described along with how teachers are being defined for the purpose of TALIS. Further, overviews of the sample design, the survey instruments and the survey operations are provided. To ensure a process of continuous improvement from cycle to cycle, a discussion of what was learned from the first and second TALIS cycle (2008 and 2013) is also presented.

**Defining teachers in TALIS**

TALIS 2018 adopts the same definition of a teacher that was used in TALIS 2013 and before in 2008, which is congruent with the formal definition given by the OECD’s Indicators of Education Systems (INES) project. Box 2 is a description of the definition of a teacher. For TALIS 2018, a teacher is defined as a person whose professional activity involves the transmission of knowledge, attitudes and skills that are stipulated to students enrolled in an educational program. This definition does not depend on the qualification held by the teacher or on the delivery mechanism. The definition is based on three concepts: Activity, i.e. excluding those without active teaching duties; Profession, i.e. excluding people who work occasionally or in a voluntary capacity in educational institutions; and Educational program, i.e. excluding people who provide services other than formal instruction to students. School principals without teaching responsibilities are not counted as teachers.

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\(^{10}\) ISCED (International Standard Classification of Education) was designed by UNESCO in the early 1970’s to serve ‘as an instrument suitable for assembling, compiling and presenting statistics of education both within individual countries and internationally’ (UNESCO, 1997, p. 1). The most recent classification of educational levels references 2011 data and was published in 2012 (ISCED-2011) (UNESCO, 2012). Annex A provides an overview of the ISCED classification.
A teacher is defined as a person whose professional activity involves the transmission of knowledge, attitudes and skills that are stipulated to students enrolled in an educational program. This definition does not depend on the qualification held by the teacher or on the delivery mechanism. It is based on three concepts:

- **Activity**, thus excluding teachers without active teaching duties – although teachers temporarily not at work (e.g. for reasons of illness or injury, maternity or parental leave, holiday or vacation) are included.

- **Profession**, thus excluding people who work occasionally or in a voluntary capacity in educational institutions.

- **Educational program**, thus excluding people who provide services other than formal instruction to students (e.g. supervisors, activity organisers, etc.).

Teaching staff refers to professional personnel directly involved in teaching students, including classroom teachers; special education teachers; and teachers who work with students as a whole class in a classroom, in small groups in a resource room, or in one-to-one teaching inside or outside a regular classroom. Teaching staff also includes chairpersons of departments whose duties include teaching, but it does not include non-professional personnel who support teachers in providing instruction to students, such as teachers’ aides or other paraprofessional personnel.

Also, in general, school principals, vice principals and other administrators without teaching responsibilities in educational institutions, as well as teachers without active teaching responsibilities for students in educational institutions, are not classified as teachers.

In vocational and technical education, teachers of the “school element” of apprenticeships in a dual system are included in the definition. Trainers in the “in-company element” of a dual system are excluded.

### Full-time and part-time teachers

The classification of educational personnel as “full-time” and “part-time” is based on a concept of working time. The stipulation of full-time employment is usually based on “statutory hours” or “normal or statutory working hours” (as opposed to actual or total working time or actual teaching time). Part-time employment refers to individuals who have been employed to perform less than the amount of statutory working hours required for a full-time employee.

A teacher who is employed for at least 90% of the normal or statutory number of hours of work for a full-time teacher over the period of a complete school year is classified as a full-time teacher. A teacher who is employed for less than 90% of the normal or statutory number of hours of work for a full-time teacher over the period of a complete school year is classified as a part-time teacher.

*Source: A modification of Box 2.1 in Teachers Matter (OECD, 2005b).*
Overview of the sample design

TALIS investigates the learning environment and working conditions of teachers in schools. Information is gathered via on-line questionnaires (main data collection mode) and paper questionnaires (substitute or fall-back mode) that are administered to a sample of teachers and their principals. The representative samples for the main data collection consist of approximately 200 schools per country and ISCED level and 20 teachers within each school. The nominal international sample size was set at 4,000 teachers. The minimum school participation rate was set at 75% after replacement and the minimum teacher participation rate was set at 75% of the teachers. The international sampling and operational parameters applied in TALIS are shown in Box 3.

Box 3: The TALIS design in brief

- **International target population (Core):** lower secondary education (ISCED 2) teachers and the principals of their schools
- **International options:** primary (ISCED level 1) and/or upper secondary (ISCED level 3) education teachers and the principals of their schools; school-level link to PISA 2018 (aiming at teachers teaching 15-year olds in schools that took part in PISA 2018)
- **Sample size**: 200 schools per country, 20 teachers in each school
- **Sampling:** probability samples of schools and of teachers within schools
- **Target response rates:** 75% of the sampled schools (school considered responding if 50% of sampled teachers respond), aiming for a 75% response from all sampled teachers in the country
- **Questionnaires:** separate, adaptable questionnaires for teachers and principals, each requiring around 45 minutes to complete
- **Modes of data collection:** self-administered on-line or paper and pencil completion
- **Phases:** a pilot study (focus group pretesting), a field trial and the main data collection
- **Main data collection windows:** three months period towards the end of the 2017-2018 school year

The participating countries determined that the main focus of TALIS 2018 should be teachers of lower secondary education (Level 2 of the 2011 revision of the International Standard Classification of Education, ISCED 2011) and their school principals.

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11 The term “country” is used here and to refer to any TALIS “Participant”, which may be a country, an OECD partner economy, an educational system, a region/jurisdiction or a likewise sub-national entity.
12 The ‘Sample Size’, ‘Sampling’, and ‘Target response rates’ apply for each specific target population (i.e. Core, ISCED level 1, ISCED level 3 and school-level link to PISA 2018).
13 This classification will still be valid for TALIS 2018.
Countries that participated in TALIS 2008 and TALIS 2013 successfully managed to keep the proportion of excluded teachers to less than 5%\textsuperscript{14} (OECD, 2010c, Table 5.1), thus a 5% threshold has been adopted for the future rounds of TALIS as an upper limit for the exclusion of teachers from the survey population. Schools entirely devoted to students with special needs, and schools offering exclusively adult education have been considered out of scope for TALIS 2018 to keep consistency with the earlier TALIS target populations. As in the earlier TALIS, substitute and other emergency teachers are excluded from the international TALIS 2018 target population, as depicted in Figure 4.

Figure 4: International and national target and survey populations

<table>
<thead>
<tr>
<th>ISCED Level 2 Universe</th>
</tr>
</thead>
<tbody>
<tr>
<td>TALIS 2018 out-of-scope</td>
</tr>
<tr>
<td>- Schools exclusively for adult education</td>
</tr>
<tr>
<td>- Schools exclusively for students with special needs</td>
</tr>
<tr>
<td>- Substitute or emergency teachers</td>
</tr>
<tr>
<td>- Teachers exclusively for adult education in regular schools</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TALIS 2018 international target population</th>
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<tbody>
<tr>
<td>TALIS 2018 international survey population</td>
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</table>

<table>
<thead>
<tr>
<th>NATIONAL target population</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATIONAL exclusions</td>
</tr>
<tr>
<td>- Remote, small schools</td>
</tr>
<tr>
<td>- Entire province, state, or sub-population</td>
</tr>
<tr>
<td>NATIONAL survey population</td>
</tr>
<tr>
<td>- Not more than 5% of teachers</td>
</tr>
<tr>
<td>- At least 95% of teachers</td>
</tr>
</tbody>
</table>

As in TALIS 2013, countries have expressed their interest in pursuing international options, \textit{i.e.} surveying ISCED levels 1, 3 and implementing a school-level link to PISA 2018. There are consequently four target populations for the survey:

- Core: ISCED Level 2 teachers and school principals.
- International option: Primary school (ISCED Level 1) teachers and school principals.
- International option: Upper secondary (ISCED Level 3) teachers and school principals.
- International option: School-level link to PISA 2018 (aiming at teachers who are eligible to teach 15-year-olds in 2018 in schools that took part in PISA 2018).

As it is the objective of the survey to obtain unbiased estimates for each of these four target populations, a sampling strategy is required that reflects this objective. The samples must yield sufficient data and indicators for policy makers at the classroom, school, and labour market/professional and system levels. The samples must be sufficiently broad so that labour market and system-wide indicators can be used to draw valid inferences used for policy analysis. The resultant data should also contain the necessary detail so that school-level data and indicators would facilitate policy discussion. This is required for both the school principal and teacher questionnaires and for each target population.

A sampling strategy cannot be developed in isolation: it must work in symbiosis with the manner in which, and to whom, the survey instruments are expected to be distributed, accounting as much as possible

\textsuperscript{14} There were two exceptions in 2008: Estonia excluded 5.7% of the targeted teachers; however, the size of their base population was not quite 9,000 individuals. Turkey excluded 5.5% of their targeted teachers from a population of nearly 158,000. If a threshold had been set at 5%, say, Estonia would have missed that mark by 65 teachers and Turkey by about 770.
for response burden and practical field considerations. In TALIS 2013, the advantages and disadvantages of using a universal instrument (i.e. an instrument not specific to any ISCED level) across all three ISCED levels have been carefully discussed. Although it might have been advantageous to use a truly universal instrument, it appeared that adaptations were required to fully address the specificities of the optional ISCED levels, and especially those of the vocational tracks. Furthermore, the use of specific references to condition teachers’ answers (e.g. the use of a “reference” or “target” class to focus attention in regards to teaching practices) compelled the use of level-specific instruments under otherwise constant sets of themes and survey questions.

In countries opting to survey more than the Core population, one might find schools that cover more than one ISCED level and where the teachers themselves might teach at more than one ISCED level. Using schools sampled for one ISCED level to obtain a sample of teachers for a second ISCED level is a tempting strategy. Details of the within-school sampling procedures under this scenario were developed and proved to be too demanding from the points of view of computer programming, of automating the school coordinator interventions, of the remaining manual labour in participating schools, and of the burden on selected teachers and principals. Hence, the Board of Participating Countries adopted the position (EDU/INES/TALIS/M(2011)2, p. 7-8) that, as much as possible, samples of schools for each ISCED level should be distinct from one another (minimised sample overlap). Since it is expected that the estimates for each population will be of similar statistical quality or precision, samples from each population should be of similar sizes.

The “nominal” sampling plan for TALIS 2018 is a two-stage design, with schools as primary sampling units and teachers as secondary sampling units. School principals are asked to respond on behalf of their school. Based on OECD’s examination of response rates and design effects obtained by TALIS 2008 and 2013, the sample sizes for TALIS 2018 have been set at 200 schools and 20 teachers per school, for each population (or ISCED level) in which a country participates. In a country opting to survey all three ISCED levels and where each school offers education at only one ISCED level, as many as 600 schools and 12,000 teachers would be asked to participate in TALIS 2018.

Acceptable participation rates have been fixed at 75% of schools (after replacement of non-responding schools) and 75% of teachers from participating schools, understanding that a school is deemed to have participated if at least 50% of its sampled teachers have participated. This requirement is similar to that of the previous TALIS, which has proved quite manageable by almost all participating countries.

Requirements for the school-level link to PISA 2018 cannot be set in the same manner: the sample of PISA schools represents a universe somewhat different from the TALIS 2018 universe; the sample of schools and the set of participating schools will be determined by the PISA 2018 main collection campaign; the nominal sample size for PISA 2018 is 150 schools. However, the within-school sample size for the school-level link to PISA 2018 is set at 20 teachers.

**Overview of survey instruments and their development**

To collect information on the themes and indicator domains described in this document, TALIS 2018 targets teachers and school principals working at the ISCED 2 level of education as in 2008 and 2013. In addition, and as in TALIS 2013, countries will be given the option to survey their ISCED 1 and ISCED 3 teacher and school principal populations as well as a teachers and principals in schools selected for participation in PISA 2018. As in previous cycles, the instrumentation consists of two questionnaires, one for teachers and one for school principals, which include an array of questions across all thematic areas concerning context, input, process, and outcome related aspects at the school, classroom, and notably personal level (e.g. including personal beliefs or perceptions). All questionnaires in TALIS are therefore intended to be completed by individual teachers and principals, not by substitutes or other members of the school staff, who might be knowledgeable only about structural or administrative characteristics of a school.
Both questionnaires are organised in sections that loosely, yet not strictly, match a thematic area of interest in TALIS. In some cases, questions relating to the same theme may appear in multiple sections or, vice versa, a section may combine question from multiple themes. Questionnaire sections are further used to introduce a topic or provide definitions and guidance relevant for some, many or all questions in the section. Some topics and constructs within and across the two instruments use identical or highly similar lists of items (e.g. with respect to professional development activities and needs). Other types of triangulation, including between teachers’ and principals’ perspectives regarding a particular topics, are envisaged.

As in most large-scale assessments and surveys in education, the development of questionnaires occurs in three major steps: a pilot, a field trial and a main survey. The main purposes of the pilot phase are to: 1) trial new questionnaire items; 2) collect information on the international applicability of the items across countries and levels; 3) gather information on how well the instruments perform in the field for all target populations (core survey and international options); and 4) fine-tune the questionnaires for the field trial. In TALIS 2013, these goals were achieved by implementing a qualitative methodology (i.e. focus groups of teachers and school principals) rather than a quantitative methodology used in 2008 (i.e. administering the questionnaires to a larger group of teachers and school principals). TALIS 2018 follows the successful practice established in 2013 and conducts focus groups in a selection of participating countries in 2016. The objective of the field trial in early 2017 is to test the survey instruments and the operational procedures in all participating countries in preparation for the main survey. The field trial is mandatory for all participants and helps ensure that the main survey instruments can be applied successfully. The main survey represents the most important data collection period. It uses the instruments developed and revised in the previous field trial phase and is implemented according to guidelines, operational instructions, and pre-agreed technical standards.

The main responsibility for the development of the teacher and principal questionnaires rests with the Questionnaire Expert Group (QEG), convened and chaired by the international Consortium (see also the introduction of this document). The work of the QEG is organised in multiple phases and in an iterative process of desk work, virtual meetings, and face-to-face meetings at key stages of the survey (inception, prior to the pilot, prior to the field trial, and prior to the main survey). An Extended QEG assists the main QEG and the Consortium by providing scholarly reviews of both the conceptual framework and the questionnaires from specific perspectives relating to regions (e.g. Latin-America), levels (e.g. ISCED level 1), or other contexts (e.g. low-income countries). The work of the QEG is presented to the OECD Secretariat, the TALIS Governing Board, and the Technical Advisory Group at each key stage of the development for commenting and/or approval.

Using universal template questionnaires as a starting point, adaptations to the local, as well as level-specific, context are needed for the core and all optional populations. As in TALIS 2013, questionnaires across the core and options overlap in terms of themes and indicators to allow for analyses across levels, with the possibility of specific questions and items targeting a particular level only (e.g. elements of initial teacher preparation of particular relevance or interest for ISCED 1). For these measures, comparative analyses between TALIS and the TALIS Starting Strong Survey would become possible if questions and items are also included in the latter survey. A glossary of terms accompanies the questionnaires and provides important guidance to National Project Managers (NPM) in terms of terminology, interpretation, and intended adaptation and translation to the local context.

As in previous TALIS cycles, a limiting factor applies to the questionnaire development process in TALIS 2018. Only a finite amount of amount of questions can be administered to any one respondent and, hence, accommodated by the survey in general. It is important to trial new materials in some countries (pilot stage) and eventually all materials in all countries (field trial stage) to assess the functioning of new, revised and trend materials. While the pilot is of lesser concern in terms of scope, the limitations in the
field trial and main survey apply in terms of feasible response time. The Terms of Reference for TALIS 2018 state a maximum 45 minutes on average for the English version of either questionnaire. In the context of TALIS, this limitation primarily concerns the population of teachers for which most of the survey questions are developed (ISCED 2), noting that the average response time for the teacher questionnaires in TALIS 2013 were closer towards 60 minutes.

This limitation can be addressed by the introduction of designs that use overlapping (or rotated) forms and thus allow for more materials to be trialled. Such overlapping forms are routinely used in the assessment of cognitive domains, and recently also in the context of background questionnaires for large-scale assessments (for example in OECD PISA). For TALIS 2013, such an approach was discussed but rejected because of the operational complexities and corresponding error sources for the national instrument production process. In a number of countries, up to eight different questionnaires had to be produced and synchronised already for the four target populations. Overlapping forms would only have added to the complexity.

In TALIS 2018, the proportion of respondents using the already predominant on-line survey mode can be expected to grow. In this scenario, and given advances in technology, the entire national instrument production process is handled through an electronic assessment system developed and operated by the Consortium. TALIS 2018 therefore employs a design for the field trial that uses three forms for teachers for each target population and one common form (only) for principals because few related constraint exists there.

Each version of the teacher questionnaire includes questions on general background characteristics as well as themes that are important to collect from all teachers. These common elements provide for meaningful disaggregation and grouping during the field trial analysis and validation stage. All other sections, again loosely corresponding to themes, then appear in two out of the three forms. This design allows for an estimated maximum of 75 minutes of questionnaire materials as well as correlational analyses between all themes and the common materials. A secondary benefit of the approach is that it facilitates the inclusion of experiments where one of the two groups administered each form would receive a variation from the one administered to the other group. Finally, the electronic assessment system produces paper-and-pencil questionnaire templates should they be needed for teachers or principals not willing or able to use of the on-line delivery of instruments. This could be because of a lack of the necessary computer equipment, a lack of Internet connectivity or, in some cases, refusal to complete the questionnaire on-line.

Figure 5 below provides an abstract representation of this approach.\textsuperscript{15} In this illustration, a common questionnaire section is administered in all three forms in the same position. Abstract sections 1, 2, and 3 are then included in two of three forms. Additionally, (a) and (b) denote variations of one section where the majority of questions would be identical but some questions would be presented in alternative forms in the two forms. Finally, one section (1) is presented in two different positions to study the impact of ordering and position (e.g. with respect to effort as manifested in response time, factorial comparability, and non-response).

\textsuperscript{15} The specifics of the design are not determined at the time of completing draft 4 of the conceptual framework and will be included in the next revision.
In light of this instrument structure, the nominal field trial sample size for TALIS 2018 is increased slightly in comparison to 2013. Thirty schools and 20 teachers within each school will be sampled for the field trial for each participant and each population. Attrition aside, either 600 (common sections), 400 (materials used in two of three forms), or as a minimum 200 data points (for question alternatives/experiments) would be available per participant for field trial analyses.

The TALIS 2018 main survey will not use a rotational design given operational, methodological, and analytical consequences arising from this that cannot be accommodated by the established TALIS 2018 survey envelope in terms of time and budget. The main survey uses a single, common teacher questionnaire per target population.

Overview of survey operations

Like the first two cycles of TALIS (2008 and 2013) the third cycle of TALIS (2018) includes three major components of a large-scale international comparative survey: a pilot study, a field trial (FT) and the main survey (MS). In order to validate the quality and the content of the questionnaires, especially for new and improved item materials, a pilot study is conducted in about 10 countries providing some room for a maximum of five additional depending on the interest participants have to pilot the 2018 survey material. Based on the positive experiences and results in TALIS 2013 a qualitative pilot study approach was adopted also for 2018. As part of this approach, feedback and comments from teachers and principals of all ISCED levels are requested via moderated focus group discussions. Field trial instruments are prepared as a result of the feedback collected in the pilot study, in parallel expert reviews and feedback from NPMs.

The objective of the field trial is to test the survey instruments and operational procedures in all participating countries in preparation for the main survey. Due to the larger amount of field trial survey material, a rotated questionnaire design will be implemented requiring a sample size per country of 600 teachers and 30 principals from 30 sampled schools for the ISCED level 2 core and each international option. Each participant is required to run this field trial administering all agreed upon language versions according to standardised procedures. Technical standards and corresponding quality control measures based on those implemented in TALIS 2013 are in place to ensure that the study is implemented in ways that yield comparable data.

The main survey data collection is conducted in two waves, each towards the end of the school year, taking into account the different timing of the school year in northern and southern hemisphere countries. As discussed in the previous sections, a nominal sample of 4,000 teachers and their principals working in 200 sampled schools is selected for the ISCED Level 2 core and each international option. National study centres prepare individualised national survey operation schedules within the given international timeline. As was the case in the field trial, the main survey will be carried out according to the rigorous technical standards, manuals and guidelines to ensure high response rates and high quality data.
On-line delivery is the main mode of questionnaire administration in TALIS 2018. This decision is based on the positive experience of using the on-line delivery mode in TALIS 2008 and 2013 and the increasing number of participants using this mode. This mode offers a number of operational benefits, including a significant reduction of paper handling and data capture costs for national centres. On-line data collection helps improve the administration of questionnaires. It allows for more flexibility and efficiency in administering questionnaires. For example, filter questions can guide respondents through the questionnaire, inconsistencies in responses can be checked on-line, and no manual data entry is required.

All questionnaires are made available to countries in English and French. For the field trial and the main survey, questionnaires are adapted and translated at the national centres and submitted for international translation verification through the IEA eAssessment platform. National centres will be trained in adapting and translating the instruments into their local language(s) in electronic form and how to deliver the questionnaires using the on-line delivery system. An on-line data monitor provides national centres with the opportunity to monitor the questionnaire return status at any time as well as the level of questionnaire completion.

The traditional paper delivery mode will be fully supported as a fall-back solution when individual teachers or principals request a paper instrument and for all those participants where a full delivery of the questionnaires online is not possible. The IEA eAssessment software supports the paper delivery mode by providing direct instrument assembly and print functionality. A final layout verification step will be applied to the paper instruments to ensure high questionnaire quality and comparability with the questionnaires delivered online.

Standards, manuals and guidelines define the rules national centres are asked to follow when preparing and implementing TALIS 2018 in the countries. Special attention is provided to the training of National Project Managers (NPMs) and their staff to enable them to fulfil all required tasks and activities to the highest possible quality. NPMs will receive thorough guidance with respect to identifying and liaising with coordinators in the local school as well as individuals responsible for all local listing and logistics. National data managers will receive Consortium-provided training and software to list, select and administer TALIS instruments in a standardised and controlled way.

International quality control monitoring is a central part of the quality control measures of TALIS 2018. An International Quality Control Programme is implemented and trained International Quality Observers (IQOs) conduct this programme in each country. In addition, a National Quality Control Manual as well as training and guidelines for NPMs are provided to prepare and implement national quality control measures.

In preparation for all post-collection tasks, NPMs are obliged to follow a data management manual and to attend the respective data management trainings. In participating countries that make use of the paper delivery mode, data entry software together with codebooks support standardised data entry procedures and data processing. Double data entry of paper versions of the questionnaires by two key-entry operators is an effective measure to detect and reduce systematic or incidental data entry errors. Here, the advantage of the on-line data collection option becomes evident because data entry is already predefined in terms of value ranges and variable types. Data submission of the national centres is monitored closely to verify the completeness and quality of the data received.

TALIS 2018 requires detailed attention regarding all aspects of survey quality and quality control measures in a total survey error perspective. Quality control measures are be implemented in the following areas of activities:

- standards, manuals, guidelines;
- sampling plan implementation;
- instrument preparations including national adaptations, translation and translation verification;
- survey implementation and data collection (on-line and paper mode);
- international and national quality control monitoring of data collection;
- data entry, processing and products;
- weighting;
- data adjudication; and
- analysis and report production.

Finally, a fully documented international database containing the teacher and school principal responses, together with the survey weights to allow published estimates to be reproduced and original analyses to be conducted, will be made available on the web. Further, a technical report documenting the methods and procedures used in developing and implementing TALIS 2018 and analysis guidelines will be prepared and published.
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