

Teaching in Focus #20


What does teaching look like?
A new video study



Teaching & Learning

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- While teachers can make a great difference to student outcomes, we know little about how they teach and what makes “good” teaching.
 - The TALIS Video Study is a new OECD project that aims at understanding what teaching practices are used, how they are interrelated, and which ones are most related to students’ cognitive and non-cognitive outcomes.
 - It will use video observation to capture, literally, what teaching looks like in different countries, along with surveys of teachers and students, student assessments, and other instructional materials, to obtain as complete a picture as possible of teaching and learning.
 - The study unpacks teaching into different domains to depict a wide range of approaches in a systematic, detailed and consistent way across the eight participating school systems.
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Opening the “black box”

Supporting teachers has become a top priority across the globe for the improvement of the quality of our education systems. This renewed commitment to the teaching profession is based on evidence that teachers are what makes the greatest difference to learning outside students’ backgrounds, and that the quality of our school systems is only as good as the quality of our teachers. A better understanding of what teaching looks like and which approaches are most effective is not a trivial matter. It is critical, for teaching is at the heart of a teacher’s role and of the education process.

The nature of the teaching profession is now ever more challenging. Among other things, teachers are expected to embrace student-centred methods, while grappling with the impact of globalisation and new technology in their classrooms. When we asked them about their professional development needs in the Teaching and Learning International Study (TALIS) in 2013, their top three priorities in almost all of the 38 participating countries were how to address classroom diversity, use new technologies and foster 21st century skills. This suggests that teachers are eager to take on these challenges, but might lack the support needed to do so.

We know little about what teaching looks like and, in particular, what makes “good” teaching. We still refer to the classroom as a “black box”, even though teachers and researchers have discussed pedagogies and teaching practices for a long time. This is because we lack strong evidence about how teaching influences student outcomes and little is based on actual observation of classroom processes on a large scale. Video-based research methods now offer an opportunity to understand what teaching looks like across the globe and, in turn, to enable teachers to learn from their peers and better inform our efforts to improve education.

Literally watching how teaching and learning unfold in the classroom can be very revealing. Just think about the difference between watching a film and being told about it. The unparalleled power of such observation is prompting an increasing number of countries to organise discussions on teaching approaches based on classroom observation at the local level. Watching peers in action can help teachers become aware of their own practices, reflect on other teaching approaches, and understand what complex and highly situated practices actually mean in the classroom.

But, observing their peers in other countries can provide teachers with even fresher and deeper ideas to improve their own practice. We know that teachers teach differently in every country, particularly when it comes to promising practices to raise student outcomes. Economists argue that the diffusion of technology has unlocked productivity and led to unprecedented levels of prosperity in our societies. What if spreading the “science of teaching” could help teachers fuel a revolution of learning? The first step is depicting what it looks like and what works.

The new OECD TALIS Video Study

The OECD's work on education has resulted in global reference metrics that help us understand how much students know and are able to do, give a platform for teachers to express their views, and provide a wealth of insights on the system-level policies and practices that shape our classrooms. With the TALIS Video Study, we aim to take a step further in understanding what teaching looks like around the world. Our research questions are:

- **Which teaching practices are used?** We plan to describe differences in teaching within and between countries, which practices are most and least commonly used, and which practices are used most effectively, among others.
- **How interrelated are teaching practices?** We want to explore how teachers combine individual practices, and identify different profiles of teaching strategies.
- **Which teaching practices are most related to students' cognitive and non-cognitive outcomes?** We will look into what practices are most effective at, for example, handling disruptions or fostering students' thinking.

The findings will be of interest to policy makers, researchers and the teaching community. Policy makers can gain insights into how to support their teachers. Researchers can find novel methodologies to capture teaching in diverse national contexts, and new evidence to check the validity and reliability of alternative measures of teaching. The teaching community can learn how their peers teach in other countries, and discuss teaching approaches on the basis of evidence and featured videos in the accompanying OECD Global Video Library project.

An innovative video-based methodological design

The TALIS Video Study is trialling video-based education research methods at scale. The key features of the methodological design are outlined in Box 1. By looking into a single curricular unit, it focuses on teaching practices or, in other words, on *how*, rather than *what*, is taught. Narrowing to a single topic across countries can provide clearer evidence to understand the relationship between classroom processes and student learning.

The defining feature of the study is the use of videos to better capture teaching practices. Video observation is a powerful way to combine the highly detailed accounts of classroom interactions typical of qualitative research with the nationally representative data of quantitative designs. Unlike live observation, videos can be viewed an unlimited number of times by multiple people, which enables greater scrutiny of classroom interactions and more reliable judgements.

The TALIS Video Study is the first international large-scale effort to examine the quality of instructional materials. Instructional materials are important enablers and shapers of the classroom activities observed. Thus, it is essential to gain a better understanding of how they can influence teaching and learning. Otherwise, too little or too much could be attributed to teachers themselves. At a time when teachers can easily share resources with peers at scale, improving our understanding of what makes for quality instructional materials is also important to support teachers in their job.

This innovative research design is carried out on an international scale. It covers eight school systems, which feature a rich variety of classroom settings, pedagogical traditions, system-level policies and student achievement levels. These systems are Chile, China (Shanghai), Colombia, Germany (8 *Länder*), Japan, Mexico, Spain (Madrid) and the United Kingdom (England). The United States also participated in the initial phases of the TALIS Video Study.

Box 1. Key design features

- **A single curricular unit.** After mapping education systems' curricula, quadratic equations were chosen as a focal unit for the Study. This unit is not culturally-specific, enables teachers to employ a wide variety of teaching practices, is taught in a relatively short span of time, and students are at similar grades (8-10) and do not have prior knowledge of it.
- **A large and diverse sample of teachers.** Up to 85 mathematics teachers in lower secondary schools, who teach the focal unit, are participating in the video study. To the extent possible, they are drawn from a nationally representative sample of teachers. The study adheres to strict privacy and human protection regulations that require teachers and their students to provide consent before participating.
- **Longitudinal collection of several measures of teaching and learning.** To obtain as complete a picture of teaching and learning as possible, the project collects a wide range of information from teachers and students before, during and after the lesson:



Videotaped lessons to capture real teaching practices. Two lessons are videotaped. In addition, teachers report on their intended activities for the rest of the lessons in which they will teach quadratic equations.



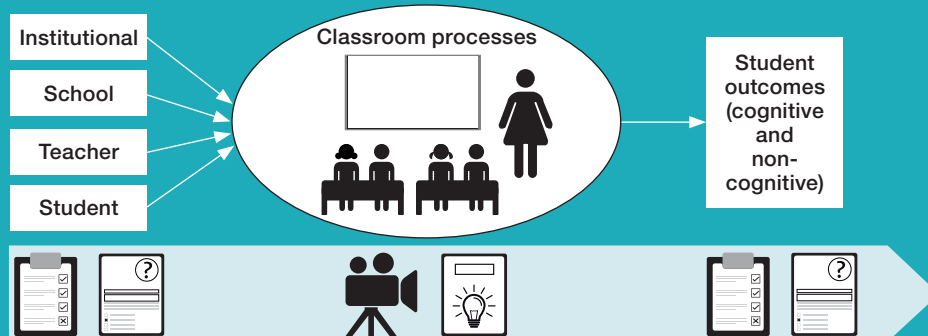
Pre and post assessment of students to measure learning gains. The pre-test provides information about students' prior knowledge of mathematics, while the post-test measures what they actually learned in the lessons.



Teachers' and students' questionnaires to gather contextual information. Teachers are asked to report on their teaching background and education, beliefs and motivation, perception of the school environment and the selected class, and the focal unit of the study (e.g. lesson goals and teaching practices used). Students are surveyed about their family background, learning time, their perception of and participation in classroom activities, and their confidence in mathematics. Many of these questions are also used in TALIS and PISA to enable comparisons.



Instructional materials to provide information about teaching intentions and resources. The study will collect materials including lesson plans, visual aids, handouts and in-class assignments.



- **Standardised procedures to ensure comparability.** All data collection and rating procedures have been standardised to ensure common implementation in all participating countries. This is important for ensuring that differences across countries are not the result of variation in implementation.

Unpacking teaching

A central task of the TALIS Video Study is defining the framework that characterises teaching-learning processes. The framework provides the common language needed to capture teaching practices in a systematic and consistent way across countries. It also enables the specific classroom behaviours observed to be translated into more general features of teaching quality.

The framework divides teaching practices into broad domains. These are not designed to capture a single way of teaching. They depict a wide range of teaching practices and features in recognition of teaching having broader goals than student achievement and of countries having different conceptualisations of teaching. The framework was drawn initially from an extensive international and national review of the literature and benchmarks of teaching quality. It was then further refined on the basis of the teaching practices actually observed in 100 videos from the pilot of the Video Study.

Each domain is broken down into components and indicators to provide a deeper characterisation of teaching approaches. These components refer to more complex interactions, such as handling disruptions, encouraging students to take risks, making explicit mathematical patterns and generalisations, fostering multiple reasoning perspectives, and eliciting student thinking. Indicators include easier-to-observe activities, such as the time spent on tasks, opportunities for participation and discussion, explicitness of learning goals, and use of technology. Both components and indicators have associated levels of frequency and quality to provide a more fine-grained account of the teaching practices observed.

A major effort to move education research forward

The video study is a major effort that involves international and national experts from different fields (e.g. pedagogy, survey methods, video observation and mathematics¹). Figure 1 outlines the major phases of the project, which spans four years. The final comparative report highlighting country-specific teaching profiles and a technical report explaining the methodology used will be published in 2020.

Figure 1. Timeline of the TALIS Video Study

| | 2016 | 2017 | 2018 | 2019 | 2020 |
|--|------|------|------|------|------|
| Curriculum mapping across countries and selection of content focus | | | | | |
| Framework, instrument and protocol development and revision | | | | | |
| Pilot | | | | | |
| Main data collection | | | | | |
| Rating of videos | | | | | |
| Analysis and reporting | | | | | |
| Launch of final comparative and technical reports | | | | | |

It is worthwhile highlighting that the video study is not a global assessment of teachers or a ranking of countries' teaching quality. It will not provide a country mean or rank. Nor is it a comprehensive study of "the state of teaching", which would need far more school- and system-level contextual data, among other things.

As with any truly innovative study, the TALIS Video Study is a proof-of-concept of new research methods to better understand teaching and learning. Realising its ambitious goals requires navigating new methodological, legal, technological and implementational challenges. The lessons learnt from this study will be carefully documented to advance education research methods.

The bottom line

It is now time to look inside the classroom to enable teachers to learn from their peers from around the world. The TALIS Video Study is trialling video-based research methods to better understand how teachers teach in different countries and what makes a difference to student cognitive and non-cognitive outcomes. Observing what teaching literally looks like can be a real game changer in supporting teachers in their core role and, in turn, improving education.

1. The OECD has contracted an international consortium of research organisations, led by RAND Corporation, and including Educational Testing Services (ETS) and the German Institute for International Educational Research (DIPF).

<http://www.oecd.org/edu/school/talisvideostudy.htm>

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