



2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

Measuring Transformational Pedagogies Across G20 Countries to Achieve Breakthrough Learning: The Case for Collaboration

David Istance (Center for Universal Education at the Brookings Institution)

Anthony Mackay (National Center on Education and the Economy)

Rebecca Winthrop (Center for Universal Education at the Brookings Institution)

Submitted on March 15, 2019

Revised on March 31, 2019

Abstract

Given the urgent need to transform traditional teaching and learning practices in order to prepare students with the breadth of skills needed for the future, it is urgent that G20 countries collaborate quickly to develop a breakthrough set of measures to track pedagogical transformation. Currently, no country has the data or assessments it needs to track if these pedagogical changes are happening and whether students are mastering the desired skills. International and national education assessments use metrics that only partially indicate whether a country is headed in the right direction. We recommend the G20 establish a Task Force made up of leading thinkers from the G20 and around the globe to develop these shared measures.



Challenge

A range of global comparative assessments, from PISA to PIAAC to TIMSS and PIRLS,ⁱ have underscored enormous gaps in the performance of students among education systems. Without major policy changes, these gaps will only widen. Projections show that by 2030 more than half of the world's children will not be on track to achieve basic secondary level skills from literacy and numeracy to critical thinking and problem-solving.ⁱⁱ And by some estimates if we continue with current approaches it could take students from poor families up to 100 years to catch up to the learning levels of students from wealthy families.ⁱⁱⁱ At the same time, the changing nature of the world of work and the advent of artificial intelligence and related technologies means that what will be required to succeed tomorrow may be very different than what is needed today. Beyond basic skills, students need skills for the 21st century such as critical thinking, collaborative problem-solving, empathy and flexibility to respond to a changing world.

All countries, high and low performing, face two equally urgent tasks: accelerating or maintaining their performance to enable their students to compete globally now, while simultaneously attempting to anticipate the skills that will be needed in the future.

Countries within the G20 urgently need to rapidly accelerate progress or leapfrog in order to prepare their students for a global economy and an uncertain future dominated by technology. The key to leapfrogging as outlined in *Leapfrogging Inequality: Remaking Education to Help Young People Thrive* is a major transformation in teaching and learning from lecture-based to more playful learning approaches, where “learning is driven by student needs and inquiry is meaningfully connected to students’ lives, and fosters experimentation and social interaction.”^{iv}

This is much broader than a curriculum revision: a holistic transformation in teaching and learning that reconsiders how, when and where students learn will be necessary. Transforming *how* students are taught must be a central part of the transformation. After all many 21st century skills are best developed not by introducing separate curricular subjects (e.g. a creativity class or critical thinking class) but by transforming how current subjects are taught (e.g. using



experiential, collaborative projects as a way of teaching science concepts).

Despite the evidence that transformational pedagogies make an impact,^v currently, no country has the data or assessments it needs to track if these pedagogical changes are happening and whether students are mastering the desired skills. This is because international and national education assessments use metrics that only partially indicate whether a country is headed in the right direction of transformational learning. These assessments primarily track two sets of data: performance data (based on student test scores) and education system statistics (enrollment, personnel, funding levels). **No matter how in-depth these assessment programs are, they do not go nearly far enough to illuminate whether innovative, dynamic teaching practices are being employed and to what degree of success.**

This information is crucial if education systems are to truly leapfrog towards all children developing broad competencies and skills.

Proposal

Given the enormous disruption to traditional teaching and learning practices that is necessary to prepare students for the future, it is urgent that G20 countries collaborate quickly to develop a breakthrough set of measures to track teaching and learning transformation. These measures must be holistic — spanning the learning interactions between student and teacher, the education system that enables the conditions for learning, and the macrosystem of economy and society that drives education — as well as forward-looking: usable to education decision-makers so they can simultaneously improve their education systems incrementally while planning for the uncertainty of the future.

The process should collaborate and complement existing international assessment programs and should build on the array of existing work that has been done to measure what success looks like today, for student performance, for classroom environments, and for education systems. For example, a number of leading global organizations such as the Brookings Institution, the Center on



International Education Benchmarking (CIEB), Yidan, and the OECD have proposed different frameworks for benchmarking the process of transformation of education systems towards the goal of helping children develop a broad set of capabilities and skills. All of these approaches are aligned in terms of the broad vision for success and general policy approach to transforming teaching and learning to reach that success.

All G20 countries will need some way of measuring transformational pedagogies, and it would be inefficient for countries to tackle this task on their own. Instead, significant cross-border sharing and collaboration will be necessary to develop a unified set of measures applicable across countries. It is the authors' belief that the G20 is the perfect vehicle for this collaboration. Such a pressing and far-reaching task will require the best minds from government, education, NGOs, and the broader society. The G20 is the perfect convener to gather the relevant groups as well as emphasize the need for the new measures.

We, therefore, recommend the G20 establish a Task Force made up of leading thinkers from the G20 and leading experts from around the globe to develop these shared measures. The shared measures would complement existing education data - both performance data such as standardized exams and education system statistics including student participation and enrollment - and provide insight into the educational processes that we know from the OECD's research are strongly linked with the pedagogical changes that develop breadth of skills.^{vi}

The Task Force would address four questions, which would guide the proposed phases of work:

1. What existing data is currently regularly collected and can be used for this initiative?
2. What are the gaps in data and how can that data be gathered?
3. What are the most salient measures for countries to track if their shift towards pedagogical transformation is moving in the right direction?
4. What approach should be used to collect, report out and share this data?



Throughout the process, the Task Force would survey key stakeholders to provide input into the work. Collaboration with existing assessment programs will be a top priority in order to build off the data collection efforts already underway. Broader input will be needed to inform the development of the research and ensure buy-in for the recommendations. To this end, extensive consultations with governments, the private sector, civil society, and other education actors will be undertaken. The specific phases of the Task Force are detailed below:

Phase I: Identify Existing Data

The Task Force would be charged with surveying existing frameworks, tools and research. For example, the OECD collects data on teacher collaboration as part of the TALIS survey that could be a starting point for the proposed breakthrough measures.^{vii} The Task Force would provide guidance for G20 countries about the multiple and complementary purposes of existing data and develop guidance and protocols about which sets of data are useful for what purposes.

Phase II: Identify Gaps in Data

After completing the above exercise, the Task Force would identify the gaps in data and what would be required to obtain the data. For example, an existing gap we are aware of is the lack of assessments designed to systematically measure pedagogical change from lecture-based to interactive, engaged and student-driven. The Task Force's work is likely to uncover additional gaps.

Phase III: Identify New Measures

The Task Force would work to determine the specific measures that would give countries actionable data on how they are performing on their path to pedagogical transformation. From existing research, we expect that these measures could include things like:

- the extent to which teachers are collaborating;
- the existence of structures for continuous school and systemwide improvement;



- widespread and thoughtful use of technology as part of pedagogy;
- to what extent teaching and learning are aligned to 21st century skills;
- whether teaching and learning are taking place in a wide range of contexts including outside the school building and day;
- Are systems using a diverse array of metrics to assess student performance that captures their abilities across academic knowledge, skills development, and other 21st century competencies;
- partnerships between schooling and sectors outside education; and
- a policy environment conducive to adapting rapidly to meet the demands of the future.

An essential part of identifying new measures will be to identify the possible methods for collecting data on them. The Task Force will consider a wide range of options including approaches that use more continuous data collection methods, are “lighter touch” than those used by current international assessment regimes, and do not result in internationally comparable league tables.

Phase IV: Develop Approaches to Collect, Report Out and Share

Based on the above work, the Task Force would identify approaches to collect and share data among G20 countries. A likely outcome would be the identification of a select group of countries where it would be useful to pilot the new measures. The Task Force would provide guidance on implementation, data collection and rollout in participating jurisdictions.

In closing, having a set of unified measures across countries will enable jurisdictions to compare themselves on common holistic measures that span the linkages between education and the economy and the society of the future. Given the slow pace of change across many education systems towards helping all students cultivate full breadth of competencies and skills they need, there is a need to try new approaches that can help leapfrog progress. With the uncertainty facing countries as they try to prepare students for a world that is constantly evolving, the time has never been more urgent.



References

ⁱ Program for International Student Assessment (PISA), Programme for the International Assessment of Adult Competencies (PIAAC), The Trends in International Mathematics and Science Study (TIMSS), and Progress in International Reading Literacy Study (PIRLS).

ⁱⁱ *The Learning Generation: Investing in Education for A Changing World.*

<https://report.educationcommission.org/report/>.

ⁱⁱⁱ *Leapfrogging Inequality: Remaking Education to Help Young People Thrive.*

<https://www.brookings.edu/book/leapfrogging-inequality-2/>.

^{iv} Ibid.

^v OECD's Innovative Learning Environments project.

<http://www.oecd.org/education/ceri/innovativelearningenvironments.htm>.

^{vi} Ibid.

^{vii} OECD's Teaching and Learning International Survey.

<http://www.oecd.org/education/talis/>.