THE COFFEES OF
THE SECRETARY-GENERAL

Lucy Crehan

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Bringing New Perspectives to the OECD

Secretary-General’s Speech Writing and Intelligence Outreach Unit
Short Bio

Lucy Crehan

Lucy Crehan is a qualified teacher, an education explorer, and an international education consultant. She taught science and psychology at a secondary school in London for three years before turning her sights to research and policy, completing a Masters in Education at the University of Cambridge, and setting off on an ethnographic, educational exploration of the world’s ‘top-performing’ education systems. She helped out and observed in schools in Finland, Canada, Singapore, Japan, New Zealand and Shanghai, spending a month living with educators in each place.

On returning from her trip, Ms Crehan published a book – Cleverlands – recounting her findings, which was named one of The Economist’s ‘books of the year’ within a week of its release, and has been described by Professor Dylan Wiliam as “a truly important contribution to educational scholarship”. She spent a year at Education Development Trust as part of a team advising governments on education reform, where she spent several months in Brunei working on a teacher coaching reform programme. She has also been involved in a research project on teacher career structures with IIEP UNESCO, writing a book on the existing literature and theories, and conducting case studies in Scotland and New York.

Ms Crehan has advised the UK government as part of a working group on teacher workload, and spoken about her work at conferences in eight countries. She now works as a freelance education consultant and is conducting research for her second book.

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Good afternoon and thank you very much for coming to hear me speak this afternoon. It is such an honour to speak at the OECD. Much of my work depends on the OECD; I have used PISA to identify what are the top performing education systems that I then went to have a look at. I began my education and my career in England as a teacher. I taught science in a secondary school in a challenging part of south west London. Teaching is a challenging job, particularly in the first few years, but I felt that not all of the challenges were a result of the difficulties that some of the children brought from their home lives with them into the classroom. Some of the challenges were as a result of policy, government policy and how that was being interpreted by the headteacher at my school. Just to give you an example, we have quite an intense accountability structure in England, headteachers are therefore sometimes fearful for their jobs based on exam results. So as a result we had pictures of some students in the staff room – not all students but the ones on the C to D grade borderline, the ones that mattered to the school, the ones that we were paying extra attention to because they were the ones that would make a difference in the data.

These kinds of experiences made me become interested in policy and the huge effects that policy can have in the school and in the classroom. So I went to study for a Master’s Degree in education and read many of the wonderful reports produced by the OECD and had a look

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1 The original transcript of the presentation by Lucy Crehan has undergone minor editing to ensure that the text published in this brochure is presented in a reader-friendly format.
at some of the country publications, focusing on what policies seemed to correlate with high performance in PISA. But I did not feel that I could get a deep understanding of what that actually meant and looked like in the classroom; what it actually felt like as a teacher, and how each of those policies interacted in a particular cultural context to affect how children are learning and how teachers are teaching.

So that was my question. At the time I was in my mid-twenties I did not have any adult responsibilities, so I thought I would take the opportunity to go and have a look at countries around the world and see what it is like in those schools.

I approached teachers under the radar in five top performing education systems: Finland, two provinces in Canada, Japan, Shanghai China, and Singapore. I was also in New Zealand but unfortunately had I included that experience in the book, it would have been far too long. When I say ‘under the radar’, that was quite deliberate. Partly as a result of the fact that if I were to approach governments or NGOs and ask them to put me in touch with schools, I am not sure I would have had much of a response as an ex-teacher. Why would they take the time? They would be constantly busy if they did that for all the teachers who wanted to have a look. In addition, I have been a part of delegations visiting schools in other countries – visits which have been organised by an external organisation – and naturally, you are sent to particular types of schools that are good, and innovative schools with the best teachers. You do not necessarily see what a typical Monday morning lesson is like in a regular school in the suburbs.

So I contacted teachers via social media, I found them on Facebook, I googled ‘Finnish teacher, English speaking’ and emailed all the people that came up! Amazingly, I was able to find contacts and people who were happy for me to visit them. I took an ethnographic case
study approach. What I mean by that is, I was looking at the big picture, I wasn’t focusing on a particular research question or a particular policy focus. I wanted to know, broadly, how the education system functioned and I did that by embedding myself in that system for a few weeks. So I did not just say, ‘can I come and help out at your school?’, I also asked whether I could stay with them; and educators, being wonderfully generous people, said yes.

So I lived with teachers and I taught in those systems. Overall I spent 1 month in each place, 2-3 weeks inside different schools and 1-2 weeks in one particular school. This gave me the chance to get to know the teachers really well, to hang out with them in the staff room and make them realize that I was there to learn from them and not a threat. So hopefully, I got to see a lot more of what was truly going on in these classrooms. And I think it is a testament to that method that in every single country I went to, I saw at least one class that was really badly behaved.

I interviewed teachers, parents, policymakers, students and caretakers. Some of those interviews were formal and recorded, others were over a bowl of noodles or on the way to school. When I came home, I identified themes and commonalities from those conversations, from my own observations and from the very rich TALIS and PISA data that is available. Today, therefore, I would like to focus on one particular area of my findings: teachers and teaching, rather than to speak on all of things that I observed on my trip.

I did not only visit schools, I also visited hospitals, although this was not intentional! When I was in Finland I developed a rare Finnish disease called rabbit fever, I spent a week on a drip and completely trusted the doctors to identify what was wrong with me and give me the right medicine. When I came home through Heathrow airport, I came wearing bunny ears just for the benefit of my baby cousin.

I was also in hospital in Singapore, on this occasion my left leg swelled up, doctors thought I may have deep vein thrombosis. The junior doctor I was seeing tried to take blood from six different places on my body but was unable to do so – in the end, with the help of a senior colleague, they ended up taking blood from my leg. So why am I telling you this story? I do not think it was an affront to the professionalism of that young doctor that he was not able to innovate and make up his own way of taking blood. Nor was it an affront to the professionalism of the senior colleague when he did decide to take it from my leg; he was
following evidence-based medical guidelines on what to do in that situation. Sometimes in teaching, we think that unless teachers are able to do what they like, we are not treating them as true professionals and I think that sometimes it is actually the opposite.

Knowledge about what works in teaching exists. It is not as extensive as the medical literature and we do not spend as much money on what works in teaching as we do on what works in medicine. But we do have a lot of research and there are organisations, such as the Education Endowment Fund in the UK, that are collecting all the data on a particular topic and summing up the evidence base. To give you an example, slide 1 shows how much an intervention costs, how secure the evidence base is – by the number of padlocks – number of months’ progress that children typically make compared to the control groups in these studies. For example, we do have a good evidence base about phonics – teaching children to read.

Do teachers actually need to know this information? Yes of course they do and I will not dwell on this because it is probably evident that this is the case. But what other types of teaching knowledge exist that we need teachers to have? There is obviously content knowledge. If I am teaching science I obviously need to know science, and this is one of the differences that I noticed between top performing systems and my own country. In both Singapore and Shanghai, for example, they have specialist maths and science teachers teaching upper primary school. I spoke to a Professor in Quebec, which does significantly better than other Canadian provinces when it comes to maths in PISA. She has been doing a study comparing different provinces across Canada. She explained that because they do not have a middle school in Quebec, in grades 7 and 8 children are being taught by a specialist maths teacher compared to other provinces with a middle school where children are being taught by a generalist. So specialism does play a role, as stated by Professor Savard: “I am not saying that others are not good, all teachers want to do their best for their students but when teachers do not have the knowledge, it is just not possible”.

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Content knowledge will only get you so far and beyond a certain point it ceases to be a useful cause of increasing teacher quality. Pedagogical knowledge is knowledge that teaches about teaching in general. It will include things like child development and how to design an effective assessment. There has been a limited amount of research in this area. What does exist suggests that pedagogical knowledge seems to lead to high teaching quality as evaluated by students, but there has not yet been much of a link with student outcomes.

A Finnish teacher who was focusing on how to support children with special needs said that ‘many times it was about the methods, you have to know and learn the methods. Of course you can think of ideas yourself but it is always easier if you have seen examples’. A friend of mine tweeted recently whether we should be testing teachers and a lot of teachers in England tweeted back asking ‘what would you test them on? Surely if they know their subjects, then it is about experience.’ Actually it is not. There is knowledge that has been shown to improve not only teacher quality but student outcomes as well and the final version of that – which I think is most important – is where these two issues cross over, and that is pedagogical content knowledge. So it is not knowing how to teach in general, of course you need to know your subjects, but actually the kind of knowledge we really need teachers to know is ‘what are the common student misconceptions when they are learning about gravity for instance, and what is a really useful analogy that we can use when teaching about circuits and electricity? That kind of knowledge exists in teachers heads around the world but it is not necessarily being shared with other teachers.

So there are a number of reasons why people reject the idea that there is actual knowledge that all teachers need to have and I would like to address a couple of those before I carry on. One is that teachers need more than knowledge, of course they do, I am not suggesting for
a minute that this is enough and this alone will make you an effective teacher, you need to actually be using that knowledge to make it your own and to make it personalised knowledge in the classroom through experience. A second question that I often get, especially when talking about evidence from other countries, is: ‘isn’t it all dependent on the context? Is there really this canonical central body of knowledge that all teachers need to know? Surely it must be a matter of what is right for children in rural Japan or in central Detroit.’ I do have some sympathy with this view, there are some practices which may work in Japan but may not transfer that well to Detroit. But there are not dramatic differences in terms of the cognitive architecture of children’s brains across the world. We have increasing knowledge from cognitive psychology about how children learn and how memory functions. The cognitive psychologist Daniel Willingham, who writes a lot about this, states that some of the more general findings from cognitive psychology should be part of initial teacher training.

Just to give you an example of a teaching practice which has transferred well from one country to another, the way maths is taught in Shanghai and in Singapore is by taking a mastery-based approach. They will thus spend longer on the basic foundational concepts of mathematics, particularly in the earlier years, and really focus on making sure that all children understand that. For example, an English teacher who was learning about this approach said ‘when teaching children about what one fifth is, I have always drawn a pie and I have divided it into 5 equal parts and pointed to one fifth.’ What she had not thought to do was to draw a pie and divide it into 5 unequal parts and say ‘that is not one fifth’. It seems pretty obvious but there are different ways in which you can describe a particular concept to a child. In these countries they will make sure that everyone in the class will have grasped that basic concept before moving onto another topic.

A number of schools in England are now using this mastery based approach to great effect and there has been a randomised control trial conducted by some researchers at the Institute of Education in London. They are now finding that children are making significantly more progress in these classrooms, compared to the normal curriculum and teaching methods being used in England. So these are examples which prove that we can learn from each other.

The third objection is a slightly chunkier one; it is the idea that we cannot agree as teachers on what is good teaching. We therefore cannot have a body of knowledge that everyone learns as we cannot agree on what that body should be. To caricature this disagreement, if you go on twitter and look at some of the debates, all reason seems to have left the chatroom. Some people will say that traditional teaching is terrible, that we cannot have a teacher standing there writing things on the board and children memorising it and the teacher using that chalk to throw at someone – that’s bad teaching! On the other hand some say, we need to have traditional teaching, children cannot be playing all the time, wearing their dungarees and using their crayons – that’s bad teaching! I am exaggerating to an extent but there are these two ideas on very different types of teaching and of course the truth lies somewhere in between. There are excellent types of traditional teaching and excellent types of more progressive teaching.

I think one particular way of solving this problem is by recognising that it depends both on the subject and the age group as well. The appropriate way of teaching something depends on what you are teaching. Are you teaching children to understand a particular concept in
chemistry? Or are you teaching children how to communicate and overcome disagreements and challenges in a group? Very different outcomes that we may be seeking to achieve. I want to focus on this because it does not only apply to different subjects but also within subjects. In America and Canada they call these the math wars.

Essentially, there are two camps about the best way to teach mathematics and luckily PISA 2012 focused on maths and asked students a few questions about the kind of teaching that they receive and created two indices: ‘Student oriented instruction’ and ‘teacher oriented instruction’. The X-axis on slide 2 depicts different countries taking part in PISA. On the left hand side we see the student oriented instruction and the right hand depicts teacher oriented instruction. The 3 along the X-axis means that children are reporting that they are experiencing teacher directed instruction three times as much as student oriented instruction. The green dot represents the OECD average and the red dots are the countries which do the best in PISA mathematics. Most of these countries are on the same axis just above 3. To me that is remarkable and it coincides with what I saw in all those top performing education systems. I expected to see very different types of teaching, particularly the contrasts between Finland and Shanghai. In fact, however, they have far more in common than you may expect.

You will also notice that, with the exception of Switzerland, all of those countries are near or to the right of the OECD average, which means that they are doing about three times as much teacher directed instruction than student oriented instruction. This by itself does not tell us anything because it is just correlational, but it does suggest that those countries which are doing well at PISA mathematics have a ratio of around 3 times as much teacher directed instruction to student oriented instruction, and it seems to be working.

I hope we do not only care about PISA maths results, there is much much more to education than your ability to solve problems using maths. One of the other things that we care about
has been measured by the OECD, creative problem solving. The OECD has developed a very clever way of measuring how children are able to solve problems using a computer programme. On the same slide I have plotted in the turquoise colour where the countries that do well in creative problem solving fall. We may expect countries to fall on the left of the graph but, with the exception of Italy, all the countries that do well in creative problem solving are also using around three times as much, or more, teacher directed instruction.

So what is actually happening in these classrooms? I will give you a few examples. In Finland, I met a 16 year old named Emma, she was in her final year of compulsory education and I asked her to describe a typical maths lesson. She said, the teacher would arrive and we would go through the homework and it is quite scary if you have not done it because the teacher would randomly ask for the answers and you can get caught out if you are not prepared. Then the teacher explains the lesson after which we have a discussion. If the teacher believes we have all understood, we will then do some exercises and the teacher will go around and help students. This is surprising perhaps because we always hear how teaching and learning in Finland is project-led and student directed. I should note that this is a student report on the kind of teaching that they are receiving but it also very much corresponds with what teachers report too. So in TALIS (a survey given to teachers), teachers in Japan, Finland, and Singapore are all reporting that they are among the least likely to set projects for small groups that last longer than a week. They are doing less of it than many other countries that are on the left of the graph.

In Singapore, during a maths lesson, the teacher may start with a particular problem or by going through the homework. Then they may address a new topic, such as solving simultaneous equations, and outline it on the board at first before putting students in small groups to discuss and solve particular problems. Then there will be a discussion around the different answers before the correct one is revealed. This is aimed at getting students to think actively and to explain their reasoning behind their answers. This is summed up by another index used in the PISA tests called Index of Cognitive Instruction. It is not a fundamental way of laying out a lesson but it is something that can be added to different types of lessons. This kind of teaching has some pretty impressive correlations. Children taught using these cognitive activation strategies are doing well on every different item of difficulty in the PISA tests.

Teacher directed instruction, on the other hand, is not as positive in terms of the effects and correlations it is having on student outcomes. It is however having an overall positive effect and it is increasing the chances of students answering correctly for almost all of the questions except the hardest ones. So just having the teacher leading the lesson, explaining concepts and getting students to practice does not lead to very high performance but it is good for the lower achievers.

Student oriented instruction, seems to be having a negative effect in every single item difficulty. Students are about 25% less likely of getting questions right through this method. This negative correlation is true in every single country that takes part in PISA except for Albania.

The reason I am focusing on this is because I was encouraged by many people to come to the OECD and to ‘shake the tree’ and to ‘rock the boat’. So in the context of me having huge esteem for the OECD and all the work that you do, this is one area which perhaps could be looked into a little more. I have collected the way in which teaching strategies are reported in OECD publications blogs and talks.
For example, in one report written for teachers, the OECD states ‘provide a mix of teacher-directed and student-oriented teaching strategies’. That is not the conclusion that I would draw from that data. I would say ‘use a mix of teacher directed and cognitive activation. Be very careful about student oriented teaching, by all means do it, but do it carefully, pilot it and see how it goes.’

A statement from the OECD blog Education Today says: ‘Further support of teachers’ and students’ engagement in student-centred activities is needed to ensure that a variety of practices are used in the classroom’. Again it is actively encouraging teachers to use these methods more which correlate negatively with PISA outcomes. And I will say again that of course PISA outcomes are not all we want. We do not want students to only do well in maths, we want them to be creative and to be able to collaborate. But it should be highlighted – because this is PISA and it is produced by the OECD – that there are some potential dangers associated with it in terms of children’s relationship to mathematics.

TALIS reports that “these practices promote skills that students should possess for academic success and may be highly sought after in post-secondary education and the workplace.” I agree on the goals, I think the OECD has a really important role to play in saying what the goals of education should be from an economic perspective and what skills children need to participate in the workforce. But sometimes, and I am not saying this is the OECD’s mistake, some people make a mistake of confusing the ends with the ways in which we teach children in order for them to gain those skills.

Finally, from a presentation, “Instruction in the past was subject-based, instruction in the future needs to be more project based”. The reason that this concerns me is that when Ministers of Education, policymakers, headteachers and inspectors hear this, what they actually hear is ‘the OECD has found in PISA results that student oriented practices are the way to go’. And we can see what effects student oriented practices are having in every country in the world on student outcomes and their ability to understand and apply
mathematics. All I am suggesting is that we exercise more caution, perhaps re-examine some of the conclusions in terms of what we are saying regarding teaching strategies.

Coming back to the knowledge that teachers need, one of the fundamental differences between education in countries that do very well in PISA and those that do not is a big division between canonical pedagogical content knowledge (PCK), which is everything outlined by research and that teachers agree leads to good educational outcomes, and personal PCK which is what individual teachers have developed through their own experience and have come to know through their own research. Canonical PCK can be informed by research as well as by consensus among many teachers, it then ought to be feeding back to what individual teachers are doing in the classroom. But in my country and in many others, a gap has developed between those two and we end up having excellent teachers in the classrooms who have studied and learnt the hard way by themselves over long periods of time. Whereas, they could have been brilliant much earlier in their careers if they were taught these things and then practiced them in the classroom.

So how do we get rid of this gap? I will explain some ways in which the top performing education systems do that. One approach to scaling this canonical knowledge to more teachers is through what they learn before they get to the classroom. For example, primary school teachers in Finland are educated for five years. During this time they go through every subject they will teach in school, learning about the concepts themselves and the best ways to teach them. That is ideal, but it is tricky to firstly get people to commit five years of their lives before beginning to work, and also convincing countries to pay for that amount of teacher education. However, having this pedagogical content knowledge taught as part of initial teacher training means that there is a whole science behind this training, it becomes quite difficult to master and makes it more attractive and interesting for teachers.

Another idea is to continue learning throughout teachers’ careers. I would like to quote Ms. Ho Peng, the former Director General of education in Singapore, who said ‘I think we are a deep believer of lifelong learning. At the preservice level we cannot teach our teachers
everything it means to be a good teacher. We have to encourage our beginning teachers to come by and be involved with continual learning and in-service courses. There are plenty of professional development opportunities for them and I think the access and support is an envy of many countries”. This is how they encourage their teachers to take part in continued training. Although it is optional, there are some pretty good reasons why teachers should take part in this, as it involves progressing through their careers. So just like in medicine, where they will have a registrar and a consultant, each stage will involve learning more and demonstrating that they are able to do more as well. So rather than only being able to progress through leadership, they can go down the teaching track, meaning they are still teachers but are becoming real experts at their profession. What they are ultimately able to do at the top, as master teachers and master principal teachers, is take an active role in the development of younger teachers. So it is really encouraging much more dialogue and learning from each other in terms of the teaching career structure.

Teacher training however is not that easy, it is quite expensive. It is also not always effective, particularly as a one off course. For example, I had a conversation with a man called Ashish who set up a teacher training organisation in India. He went to the Harvard Graduate School of Education, learnt a lot of education theory and came back to India to setup his programme of a few weeks’ intensive training for teachers. However, six months into the teacher training programme there was no change, teachers were doing exactly what they were doing before because it is difficult to change people’s behaviour.

In a Singapore classroom, I was walking around looking at what all the students were doing and then I noticed that on the teacher’s desk there was a teachers’ guide with several instructions, including: objectives that children need in order to understand a particular topic; things that children may often get wrong and misconceptions that they may have; ways of discovering whether or not they have those misconceptions and explanations of overcoming them; and questions that really get them thinking deeply about a particular topic. As an ex-teacher I am envious, if I had that guide in my classroom it would have been phenomenal. So another way we can get this canonical PCK to more teachers is through shifting responsibility for the design of lessons and schemes of work to more experienced teachers.
Rather than expecting every teacher from day one to plan all their lessons, graduate that responsibility. Provide teachers with other teachers’ lessons in case they want to use them.

The use of textbooks is also important. But I do not mean instructing children to open the book on a particular page and to do a particular exercise. In Finland for example, textbooks are very heavily used. I enquired about this and a teacher told me that “in Finnish schools the textbook is the main tool, experienced and skilful teachers have come together with the publisher to create an interesting, enjoyable and motivating textbook that is based on the current curriculum. Nowadays teachers have so many other things to do in planning their lessons that they do end up relying on their materials a lot. I think this system is really typical for Finland and concerns the whole country. Of course there are some exceptions, teachers who insist on doing their own way do not use textbooks, but that is really rare, who has the time to do this?”

If you are provided with really interesting, engaging, educationally beneficial materials, why would you not use them? I’m going to read you another teacher quote, from the research of academic Gert Biesta, who was looking at teacher agency in implementing a new curriculum in Scotland: “When am I going to do all this? It’s not feasibly possible. And every school, every council, every teacher, are all trying to do this, instead of someone somewhere coming up with it.” The point that I’m trying to make, is that in the name of autonomy, in the name of professionalism, we end up expecting far too much of teachers than is feasibly possible, and overwork them, so it’s no longer an enjoyable profession.

Complimentary to all of this is of course professional collaboration in schools. I’m not suggesting that we just tell young teachers what to do and ask them to just get on with it because knowledge is not enough. I’ve seen some great practice in the different systems I was in. The ways that you can do this: partly through time tabling, as they do in Finland, Singapore, Shanghai and Japan. There is a lesson on the time table every week, where you are time tabled at the same time as other teachers in the same subject or in the same year group, to meet and plan together.
There are two benefits to this method: you don’t have as much planning to do because you are sharing it with other teachers, and also you are learning; you are constantly talking about your practice with your colleagues rather than sitting by yourself doing it at home.

Another option, a bit more in depth, is something that they do a lot in Japan and in Shanghai: lesson study. On a number of occasions, I went into classrooms or was teaching a class, and there were about 10 teachers sitting at the back of the classroom. From an English teacher’s perspective this is quite intimidating, when I had observers in my lessons, there was someone with a clipboard evaluating me and my teaching, giving me a number out of four. That's not what’s going on here. Rather, those ten or five teachers have jointly planned a lesson together in great detail, they spent time really thinking about what’s the best way to teach this subject, what does research say, how can we make it interesting, how can we use innovative technology to get all the ideas across. And then they were watching the students, they’re not watching the teacher to see how well she is doing, they are saying “now I noticed that when you gave that instruction, the students didn’t really know what you meant, so next time we do it, we need to change that part”. The debriefing afterwards allows for detailed thinking to go into the lesson planning.

In addition, every country I visited had professional learning communities. This is where teachers meet together, often after school, sometimes during a school day, and they identify what the Canadians call a “problem of practice”. Essentially, what is the problem in my practice? That might be that the 15 year olds in my history lesson don’t care at all and I do not know what to do with them; it may be that I’ve looked at the data from a recent test in a biology lesson and they misunderstood a particular concept, so what’s the best way to change that? And then, with all the different things that teachers are identifying, they talk to their colleagues about what they would do, get some ideas from them, go away during the month, try it out, come back a month later and report back. That way, you’ve got some professional accountability, because you’re not going to forget about it. In fact, you are going to meet with your colleagues and they are going to ask you ‘how did it go?’ If you haven’t done it, it is going to be a bit embarrassing.

Finally, I would like to problematise this idea of universal autonomy and self-sufficiency. Let’s see where teachers are getting their inspiration from in England and in America. In the UK, 57% of teachers (in one sample from Teacher Tapp) said that they planned their last lesson entirely alone, and didn’t use any resources from someone else. In the USA, nearly 100% of teachers (in a study by the RAND foundation) were selecting lesson material from Google and Pinterest. So there is no guarantee of quality and it’s contributing to the teacher’s workload. We do not need thousands of teachers across the country, all looking at various different videos on YouTube to find the one that perfectly demonstrates evolution, we can have one person doing that, and then teachers can choose whether or not to use that resource. If they want to do it themselves, fine.

So, what I think we need to do therefore, is help teachers through policy to create the structures where they can learn from each other and stand on the shoulders of giants; start with all the knowledge that the teachers around the world already have, and that includes what teachers in Japan, Shanghai and Finland are doing in their maths lessons. That’s something which I think we do need to bottle, and share with teachers in other countries. So, what we should be helping them to do, is giving them more ideas about how to use cognitive activation strategies, more resources designed by experienced teachers, and more access to pedagogical content knowledge. So, we need to help them to stand on the shoulders of giants.

Thank you.
Question and Answer Session

Question 1: Ms Mari Kiviniemi, Deputy Secretary-General, OECD

My question is about new technologies. You discovered so many countries and went into so many classrooms; how were these well-performing countries using new technologies?

Lucy Crehan:
I get asked this question quite often because people are very interested in tech, and for a good reason: this is 2018, there is technology available everywhere. But it was not as developed a while ago. I was in these places 3 or 4 years ago and they weren’t using technology very much at all. The only place I saw anything more sophisticated than an interactive white board being used was in Canada where students were using their laptops. But they were just using their laptops for the kind of thing that they would usually do: writing essays and emailing them to their teachers instead of handing them in. So, I didn’t see anything particularly innovative going on.

One concern perhaps about the use of technology in the classroom: I think it has a lot of potential, but I’m not sure that we know how to do it yet, and in places where they are using tech, PISA data actually finds they do worse in terms of their learning outcomes. One explanation for that might be – to give you an example: I spent a week in five schools in Sweden two weeks ago, and in every lesson I observed, students were either using Ipads or Chromebooks, and in every lesson but one, students were watching X-Factor on YouTube, watching football, looking at pictures of cats, animated cartoons, or they were on their phones.

When I spoke to the headteachers about this, they said “but it’s 2018, I can’t ban mobile phones, I can’t ask students to put them away because they might need to use them for their learning”. I think that that is misguided, and potentially harmful, and perhaps it is something the OECD might make more noise about, just to prevent some of the damage that is being done by incorrect use of IT, while we do some research and find some schools where it is being used in a good, useful, learning-conducive way.
Question 2: H.E. José Ignacio Wert, Permanent Representative of Spain to the OECD

How can we assign to policy decisions the quality of an education system? I have the perception that there is an underlying cultural factor of great importance in the performance of education systems. As former Minister of Education of Spain, I visited Korea, Singapore, Shanghai, Beijing, and I got the impression that the quality of teachers is a commonality, there is no doubt about it. No system can perform above the quality of their teachers. But the engagement of students has deep cultural roots that do not depend on policy. In terms of policy frameworks, what role could provisional versus innovative pedagogy play in having a well-performing system? My idea is that in terms of policy frameworks, pedagogy should be really let aside, this is a decision by professionals, and you need to define which kinds of outcomes you want from the students and give freedom to teachers so that they can develop innovative, traditional, semi-innovative or semi traditional pedagogy.

Lucy Crehan:

I completely agree. I think the role of policymakers, and of a democracy, is to set the goals, and not get confused between the goals and the means. The professionalisation of teachers requires governments to say more than one thing.

Firstly, what are the outcomes we expect? And secondly, I think it is helpful to have a curriculum which includes the concepts and the expectations for children at each year group, because if it’s more general, if it’s “by the end of the curriculum the students will have these skills”, you have lower expectations and different understandings by teachers of what those skills mean. You do need to specify what are the concepts the children need to understand, what are the skills and how might they demonstrate that, and what might that look like.

But absolutely, teachers should be the ones deciding how to make that happen. The reason I was concerned about messaging around teaching strategy is just that while national governments might not make a statement – some do – about the kind of teaching that should happen, it is also headteachers, and local authorities, who come in with particular
ideas about what good teaching is, who can then be pushing teachers towards one way or the other, based on their own thoughts.

And let’s be honest, whether you think it should be traditional or student-centred, they are both ideologies. My point is, let’s not be pushing one particular side, especially when the research is suggesting that it can potentially be harmful.

**Question 3: H.E. Zoltan Csefalvay, Permanent Representative of Hungary to the OECD**

*Is there any difference in teaching students from good backgrounds and those from more vulnerable ones? And in these cases, how can you really measure teacher performance? What do you think about algorithms to evaluate teacher performance?*

**Question 4: Angela Gosmann (OECD - STI)**

*How do the different requirements for teachers – content-knowledge versus pedagogical knowledge – influence teaching performance and differences across top performing countries?*

**Lucy Crehan:**

On teacher performance, I think I would be very wary of algorithms for assessing teacher performance. The way that I have seen it done best is by using teaching standards rather than teacher results. This is because if you are teaching children from privileged socio-economic backgrounds, or children from more vulnerable ones, it will be easier to teach one group rather than another. This is why things like performance related pay for teachers based on students’ results are very problematic, and lead to teachers thinking it’s unfair. Also, research suggests that such systems don’t tend to increase teacher performance.

So, how do you evaluate teachers? Having teacher standards – and including as part of teacher standards what we want teachers to know and what we want them to be able to do – is an essential part of the answer. Moreover, it is necessary to have them judged by at least two people, one person can be very subjective, so in addition to someone like the headteacher of the school, an external evaluator or a peer observer are also highly recommended.

Regarding the different approaches to teaching and how that affects students from different backgrounds, research outside of PISA suggests that student oriented instruction hasn’t worked particularly well. It tends to be the worst for the children from poorer backgrounds, because in order to succeed in learning through problem-solving or learning through projects, you’ve got to have a high level of base knowledge already and skills that you might have already developed from your family background.

In terms of pedagogical versus content knowledge, there is no definitive research to say exactly what the right proportion is. It does seem to work very well in Finland, at least at the primary level the teachers learn the pedagogical science alongside the content knowledge all the way through. Perhaps at the secondary level they need a higher level of understanding, that’s where time becomes an issue, because on top of studying four years of history for example, you have to add the pedagogical knowledge which takes at least one year. In this case, that’s where I think learning throughout your career comes in. You don’t have to learn everything that you need to know in your initial teacher training, the important thing is to have a basis.

All photos: OECD/Andrew Wheeler
The Coffees of the Secretary-General is delighted to present:

Lucy Crehan
The teacher who has experienced PISA in the classroom

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