panorama

"There is no education system in the world that achieves excellence without addressing the diversity of needs of its students."

INTERVIEW WITH ANDREAS SCHLEICHER

Andreas Schleicher (Hamburg, 1964) is one of the most influential people worldwide about the quality of educational systems and an education statistician and researcher. He leads the OECD's Education and Skills section since 2012; He previously was Director of the Department for Education Indicators and Analysis. He coordinates the PISA (Programme for International Student Assessment) report, which covers nearly 90 countries.



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"Quality in education is about teaching students develop a reliable compass to navigating a world we that cannot predict."

by Ana Moreno

he numerous studies over the last 20 years of PISA have provided a large amount of data that allows us to predict the success of certain educational policies with certain guarantees. What do you consider to be quality in education in the current situation, and what characteristic features should an educational system have?

For me, quality in education means that students are prepared to live with themselves, with others and with the planet. That they are able to think for themselves, but also to collaborate. Quality today is knowledge, competence, attitude and values. I believe that in the world we live in, quality in education is not about teaching students something, but helping them to develop a reliable compass and the tools to navigate with confidence in a world that we cannot predict, a world that is uncertain and volatile.

There are still many people who look askance at the change of focus in education from content to competencies. They fear a loss in the quality of education. What should be taken into account in this transformation for a positive transition? What would you say to those who fear a loss in basic language and mathematics skills or simply a decrease in knowledge? I think the need for skills comes from the world we live in, the modern world. It no longer rewards you for what you know; Google knows everything. It does it for what you can do with what you know.

Can you extrapolate what you know? Can you apply it to a new situation? This is what we have to take seriously.

At this time, it is very important to ask how to make the transition. It is clear that we cannot change our curricular paradigms radically from one day to the next and expect immediate results. This is a gradual change that involves different learning environments and ways of teaching, where learners are not passive consumers of knowledge but rather work actively to develop the knowledge they experience. It is not about eliminating the value of science, but about how we can improve the teaching of physics or chemistry so that young people think like scientists.

When you design an experiment, can you distinguish between scientific and non-scientific guestions? This is the foundation of science. This is how students acquire relevant knowledge. If we teach from the surface, they don't understand what science is, and it won't help them in the future when that knowledge is different. This is a bit like what happens in Spain. You have a curriculum that teaches young people a lot of things in a shallow way, a mile wide and an inch deep. With history, it's the same; the competition doesn't eliminate history: it makes the transition from learning names and places to being able to think as a historian does. In this way, they can understand how a society emerges, how it develops and advances, and sometimes how it reveals itself in changing contexts.

Mathematics is very important in competence-based learning. But it is also not about teaching how to calculate an exponential function; it is about helping students understand the concept, the nature of an exponential factor. In the pandemic, we have had big problems with this. As human beings, we are born into a linear world, time is linear, and that Students should be helped to understand the fundamentals of the most relevant ideas in each discipline. Less things with more depth to avoid superficial teaching.

makes us comfortable. Suddenly a virus appears that behaves exponentially, something that we have no experience of, but the world of mathematics can open us up to that experience and understand it. If we only teach the surface, students learn to calculate something that a computer can calculate much faster.

I think the important thing is not about more or less knowledge, but about helping students to rise beyond their knowledge by understanding the fundamentals of the relevant ideas in each discipline. This means teaching less to a greater depth and avoiding superficial teaching.

This puts a lot of effort on teachers; it is much easier to read a textbook than to provide pupils with a real conceptual understanding of the content. However, we can look at countries that are doing really well. If you go to a classroom in Spain, you will see a teacher teaching 16-17 maths problems in an hour, so students get a lot of practice on one type of problem. If you go to a class in Japan, the teacher works on only one problem in an hour. The teacher and students analyse the problem from different perspectives and ideas, and by the end of the lesson, the students have understood an idea, made it their own and can extrapolate from it.

This way of teaching is much more difficult. It is not about making a radical transition. It is about gradually empowering teachers, supporting them, and moving from a model where students are passive recipients of knowledge to one where they are active co-creators. This is the most important thing.

You are a great advocate of the idea that quality education for all is possible. How can schools make progress towards this goal without having a lot of large resources? How do the education systems that achieve it do so in order to attend to the most disadvantaged without improving the results of the rest? If you look at the most advanced education systems, you see that pupils' success is little related to their socio-economic background. You see much more stable performance in Estonia, where the closest school is the best. There is not much variability in the performance of the school, nor in the performance of pupils according to their social background.

There is an explanation for this. The traditional system is based on a single model applied to all students. This works well for some students but works poorly for others. What high-performing education systems understand is that different students learn differently, and they try to cater for that diversity with differentiated educational practices, giving students different paces to engage in their learning and make progress. There are different learning styles and special needs.

In Spain, 8% of their pupils are thought to have special needs and need to be treated separately. In Estonia, Denmark or Finland, they think that 100% of their pupils have special educational needs. All pupils have special talents, and we need to give them additional support so that they can develop them. There are pupils who have difficulties in one area or another, and we need to give them extra support. This is very demanding for teachers; they need to understand how different their pupils learn. They need to be able to master a wide repertoire of different pedagogical strategies.

But today, we have many good



examples. We can safely say that there is no education system in the world that achieves excellence without addressing the diversity of needs of its students.

In Spain, there are many students who fall through the cracks at the lower end of the spectrum. The mentality of the education system is still that if you don't succeed in the system, we let you repeat. But this is very expensive for Spanish society. You will have to pay 25 to 30,000 Euros for each repeater because you will have to wait a year for them to enter the labour market and pay taxes. So what they do in high-performing education systems like Japan, Singapore, Finland or Estonia, is to think differently, to give the school extra resources so that they can provide additional support and ensure that they avoid the risk of repeating as much as possible. In this way, resources are invested in understanding and nurturing talent and not in encouraging repetition.

We need to grow the extraordinary talents of ordinary pupils. It is not about sorting students who are very good at everything from those who are not good at everything. I think this is an achievable goal, and I see many education systems that are getting closer and closer to achieving it.

In 2019, the OECD was proposing a renewal of the competency framework for the 21st century. The idea of ensuring lifelong learning is strongly reaffirmed in it. What learning or competencies are basic to ensure lifelong learning? I think the key is curiosity. The lucky thing is that as human beings, we are born with it; if you have a threeyear-old daughter or son, they are extremely curious. They ask about everything, and they want to do everything themselves; they learn, and they make mistakes, and they try again: they are very resilient. If a good education system tries to nurture and enhance this curiosity, this hunger to learn, this love of learning, then we will create lifelong learners.

The challenge of lifelong learning

is not an opportunity. The challenge is the idea that every day I walk around trying to become that better version of myself that can prepare me for new jobs that have not yet been created, to use technology that has not yet been invented, to solve social problems that we can't even name yet. I think this disposition towards learning is very important. If, as a teacher, all you get is that your students leave school with this curiosity for life, you have achieved a lot. If, on the other hand, you educate for very specific knowledge and they don't update that knowledge and skills, they will soon find themselves lost because the world is changing so fast. You have to be willing to try new things, to question the wisdom of our time, not just reproduce it. It is also very important to have a growth mindset, to think that my success depends on me, on my effort, not on my inherited intelligence, the ability

Change is not a choice; we must make sure we educate young people for their future, not for our past. to solve complex problems, and the willingness to navigate ambiguity and make decisions in a context where we cannot understand all the elements and cannot take a step back.

Just yesterday, the OECD published a new report showing that young people have difficulty in distinguishing fact from opinion and also in dealing with conflicts of interest or finding their own way of thinking.

Another issue is that the willingness and ability to mobilise cognitive, social and emotional resources in learning, where emotional and social aspects are increasingly important.

On the other hand, in the world of artificial intelligence, we need to think much more about what makes us truly human. How to complement and not replace artificial intelligence. I think this is an aspect that education needs to pay more attention to. I think good teachers do this all the time. These are, for example, the teachers that young people will remember from the pandemic. Those who took care of them, who understood who they were as students, who they wanted to become, who helped them realise their dreams and their passions, so I think this is very important.

The PISA programme introduces new competencies every few years, such as cooperative problemsolving in 2015, global competence in 2018, and creativity in 2022. How can an education system introduce innovations so quickly, and when will a *computational*

competency such as programming be introduced?

I think we should ask the question the other way around. In a rapidly changing world, how can we make education adapt more quickly? Change is not a choice; we must make sure we educate young people for their future, not for our past. The question should be how we can make that transition.

Computer programming is very important today, but will it be important tomorrow? It is very difficult to say. I think it is very risky to try to teach young people today's techniques to solve tomorrow's problems.

It matters more whether students understand computational thinking. This question is already being incorporated into the next mathematics assessment - do you understand what an algorithm is? If not, you can become a slave to an algorithm very quickly. Programming for me, however, is a technique of today. I think that in education, we run the risk of jumping to the next type of technique that seems important today, investing a lot of effort and then, ten years later, we find that it's a dead end.

In a way, I think that in reference to the question about the future, we will probably be expected to be less instrumental in our approaches to education. In the past, we used to learn to work, and we invested our efforts in that, now learning is the work. I think this is a very important transition. We can no longer simply prepare people in a specific set of techniques to succeed in their lives. I think we really need to give them the tools to find their own way.

The pandemic has thrown the world into turmoil. The urgency to solve complex problems creatively and in a short time has shown that we are entering the depths of the age of innovation at full speed. How do you think this situation should be tackled from a quality education perspective?

Yes, it is true that the pandemic has been profoundly disruptive for education. The future will always surprise us. I don't think we can predict a single future. What we can do is think about different alternative futures and ask ourselves what the implications are. If we are prepared for multiple futures, we will be more agile and more prepared for what comes next.

I think this is what the pandemic has really shown. Students were able to learn on their own, where they were used to working with good technology, they had continuous social contact at school, and parents who were interested in their learning. The pandemic was perhaps even an interesting experience, and they even found a lot of new learning environments and resources.

But for students who *used to be spoon-fed by their teachers*, for teachers who worked in a very industrial kind of work organisation, suddenly, the world came crashing down.

In a way, the pandemic teaches us that in the future, having quality

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education means having much more responsibility on the front line. Less reliance on hierarchical structures where we look upwards.

Micro-managing a kind of realities where we look more outwards, where students collaborate, where teachers work professionally and are united and work very much connected to each other. I think this is what we really, really need to learn to make our education systems flatter, more collegial, more collaborative and less reliant on top-down prescription and direction and accountability. It is very important to have an education system that has more creativity and accountability in the classroom, in the school, on the front line, where teachers teach but also do other things. A good teacher also needs to be a good mentor, a good coach, a good designer of innovative learning environments, a great researcher in a technological world.

Scientists have a central part in this, it's about scientific innovation, but it's also about social innovation. I think they are like two sides of the same coin. In addition to great engineers, we want engineers who make ethical decisions. Artificial intelligence will give great power to most people, but it will not take away their responsibility to distinguish what is right and what is wrong, what is true and what is not.

In the past, you could teach someone technical skills, and that was enough. Today, I think you need to equip young people with a fairly wide range of technological and social innovation skills. The two need to go hand in hand, as we have seen in the pandemic.

Technology has not saved anyone in the pandemic; technology has not done the learning. In fact, what we discovered in the pandemic is that learning is not a transactional process; it is relational, a social phenomenon.

And I think this is where the scientific perspective and the social perspective will really become more closely integrated in the future. We used to distinguish between what was learned for life and what was learned for work. Today I'm not so sure that that distinction is really relevant.

Technology is already omnipresent in all areas of human life; today, a child can learn to use a mobile phone, a tablet and even a computer without knowing how to read or write. From your point of view: What role should technology play in the education of the new generations? I think technology has a lot of potentials. Artificial intelligence can help make learning much more regular, interactive and participatory. When you study mathematics on a computer, it analyses how you study, finds out what you are interested in, takes you where you need to go to improve. I think artificial intelligence is clearly a power that can improve the transmission of knowledge. Learning analytics can now help teachers better understand how different students learn in different ways and then understand how to change strategies or approaches.

Big data in education also brings a lot of potential learning. But, you know, the technology is always a social process. I think learning can empower students and teachers, but it cannot replace the social process; it cannot replace the role of a teacher. Although, the role of the teacher changes and evolves and improves the understanding of your students. It cannot be replaced in educational intentions, the understanding of where your students have their talents, how to help them develop their talents, to understand, or what would help a social purpose. I think technology can complement, but it should always be the human dimension, the people skills first. The biggest fear we should have is having a great smartphone and not having bad skills, being a slave to technology, to algorithms. I think we have to keep the balance between technology and human skills to create very meaningful synergies, and we have to think about how they can



complement each other, not replace each other. In a way, I think the main investment in training young people in this sense has to be the human skills to use technology.

It can also help teachers to design really good planning environments where the best technology is probably the technology that is totally invisible in the classroom.

We are almost at the end of our interview, and I would like to talk about something that you yourself have once considered a pending subject in many educational systems: the incorporation of ethical values into the curriculum as educational objectives. Why do you consider it so important, and what values do you think are the

most necessary at this time?

In the world we live in, the most important contribution to education is to give pupils a reliable compass, which gives them a sense of what is right and wrong, what is good and what is bad in this context. In the past, you could ask the people around you, the older people who knew the world very well and could tell you all the answers; in today's changing world, that is very difficult. Many parents don't understand that their sons and daughters need to make those kinds of judgements for themselves.

Technology doesn't help either; it's a great amplifier, an accelerator. It accelerates good ideas and good practices in the same way that it accelerates bad ideas and worst A good teacher also needs to be a good mentor and coach, a good designer of learning environments and a great researcher.

practices so that values become really critical.

In the past, we used to put values at the bottom of the system; we thought, let's teach knowledge first, and at the end, we talked about values. In the future, we have to put values at the centre of what we teach and then think about knowledge and skills as possible ways to illustrate those values. For example: in sport,



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in the future physical education is not just about being more athletic, but being able to take responsibility for oneself. I think we have to put values at the centre and ask ourselves to what extent our school subjects are based on those values.

On the question of knowing which values, this is a more difficult question, and I think the cultural and social context of a country plays a very important role.

But I think there are some really important ones. Plurality is a reality of our societies of the world we live in. If we understand each other as human beings, we can appreciate different ways of thinking, different ways of walking, understanding each other.

We can teach our own religion in a school, but if we understand other religions, if we can really look at the world through different lenses and perspectives, we can relate better.

We wish everybody had those values, but I think the question of the nature of values is something that is probably very difficult to answer from the outside. For me, the problem is that if people are not able to find answers for themselves, of what is right and what is wrong, and to navigate the ambiguity, I think in today's world, they will hardly find resources from the outside.

Finally, I would like to ask you about teachers: what do you think are the key competencies of a teacher today, and what are the key competencies of a school head?

Obviously, what we expect from teachers is that they have a real passion and a deep knowledge of the subject. Secondly, we want teachers to understand how each student learns differently from a deep pedagogical sense. They should understand their students and work with them. Finally, I think they should strive to understand their students as people, to know their context, where they come from, how they can help them find their way in their own lives. But that's just a starting point to be a good teacher: you have to help every student succeed, understand the diversity in the classroom dynamics, be a good researcher, find new methodologies with the teaching team, be a good team player in your

school, observing other teachers' classes and working with them to contribute to the profession.

But nowadays, the school must be a place where everybody learns, students, teachers, parents, and as a teacher you have to participate in that process, you have to give back to your school what you know and help others to succeed as mentors, as pupils, etc. A teacher has to take charge of his or her profession all his or her life.

The first thing a school leader must learn is that it is not about teachers doing what he or she tells them to do but about collaboration. What decides success is helping teachers to grow, develop and be connected to the outside world.

I may not be able to pay them more, but I can make their work more intellectually engaging. I can engage communities, attract parents to the school and tap into other interesting resources in the community. I can do many things as a principal to make the school an attractive place for everyone, where students, and each other, are trusted. Trust creates an environment where people feel comfortable working. Much can be done to create an enabling school environment for teachers and make the school a place that supports their continuous improvement as teachers and educators.