The Economist INTELLIGENCE UNIT

A report from The Economist Intelligence Unit

Fostering exploration and excellence in 21st century schools

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Contents

Executive summary

Education systems across the world are grappling with the challenge of preparing their students for the rapid changes they will experience during their lifetimes. To this end, schools have a critical role in equipping students with the requisite skills and competencies that will be in demand, particularly as digital technologies such as artificial intelligence (AI) increasingly transform businesses and influence economies.

In this report, The Economist Intelligence Unit (EIU) discusses the results of a study that explores how to best prepare primary and secondary school (referred to in this report as "K-12") students for the 21st century workplace ("the modern workplace"), where a mix of hard and soft skills are crucial for success. The research, sponsored by Google for Education, draws on a survey of 1,200 educators in 16 countries.[1] It looks at the strategies most effective in developing 21st century skills and how technology can support such efforts. By focusing on successful implementation of key strategies from the perspective of K-12 educators, this research builds upon a 2015 EIU study, *Driving the skills agenda: Preparing students for the future*, which took a broad approach in assessing shifts in skills needs.[2] That research examined whether the skills taught in education systems across the world were changing and meeting the needs of employers and societies.

Our latest study suggests that a holistic approach, integrating different educational strategies and techniques, is most effective for developing the skills needed for success. Among these, it includes empowering teachers by giving them greater autonomy to innovate and applying teaching strategies that engage students through hands-on and collaborative activities. Implementation of these initiatives faces numerous complex challenges, including resource limitations, but failure will leave many of today's young students unprepared for the life and work challenges they will face as economies and societies develop.

The key insights from the research are:

- **A range of teaching strategies is needed to effectively deliver the types of learning needed to prepare students for the 21st century workplace**.

1 Argentina, Australia, Brazil, Canada, Colombia, Denmark, Finland, Japan, Mexico, the Netherlands, Singapore, Spain, South Korea, Sweden, the UK and the US.

2 The Economist Intelligence Unit, 2015 "Driving the skills agenda: Preparing students for the future," https://perspectives.eiu.com/talent-education/driving-skills-agenda

A large majority of educators surveyed (79%) believe that soft skills need to be developed alongside foundational literacies. Educators most frequently cite the following teaching strategies as "very important" in developing the skills needed in the 21st century workplace: active learning (51%), project-based learning (45%), cognitive activation (42%) and personalised learning (40%).[3] Educators also consider these four strategies as proven to be the most effective in developing needed skills.

- **Technology can support the effective execution of teaching strategies by promoting interaction, engagement and communication**.
Four in five (82%) educators agree that technology is a valuable tool for developing skills for the modern workplace. Technology is seen as most effective in enhancing the top teaching strategies for developing 21st century skills, as it can be used to promote interaction, engagement and collaboration.

- **Teacher quality is key. Teacher autonomy also matters and is a significant factor in shaping schools' preparedness to teach 21st century skills**.
Good teachers need a supportive framework to make the most of their talents, including adequate resources, training and a well-planned curriculum. There is a strong correlation between the degree of autonomy teachers enjoy and schools' readiness to teach 21st century skills. Educators who assessed their schools as having "much better" teacher autonomy than other schools in their country far more often report being "very well equipped" to teach both foundational literacies and soft skills, such as communication (48% v 25% for the rest of the sample).

- **Budget limitations are the most frequently cited obstacle in adopting new strategies and technologies**.
Educators most frequently cite budget limitations as by far the most significant barrier to adopting both new teaching strategies (51%) and technologies (53%). A lack of technology access in schools and policy gaps are also notable challenges. On a regional level, budget constraints remain a top challenge for innovation, with North American educators most often reporting these as an obstacle to adopting new strategies (59%) and technologies (61%).

- **Educators most often favour a cautious approach to adopting new teaching strategies and technologies**.
Opinions vary over how quickly schools should innovate within the classroom. However, educators most often advocate a cautious approach for implementing new teaching strategies (39%) and technologies (40%), allowing for each to be investigated and tested before adoption. ■

3 See page 8 for definitions of teaching strategies.

About the research

Fostering exploration and excellence in 21st century schools is an Economist Intelligence Unit (EIU) research programme sponsored by Google for Education. It investigates the teaching strategies that are most effective in preparing K-12 students for their future working lives, as well as how technology can help support key initiatives. This research builds upon The EIU's 2015 study, *Driving the skills agenda: Preparing students for the future*, which examined whether the skills taught in education systems across the world were changing and meeting the needs of employers and societies. That study involved four global surveys of senior business executives, teachers, and students aged 11-17, and 18-25.

In addition to reviewing the 2015 study and conducting substantial desk research, this report is based on a four-part research process undertaken in 2017. This involved a literature review, a series of advisory interviews with five education experts, a global survey of 1,200 educators, and five additional interviews with experts in education and employment skills following the survey.

The survey sample consisted of a mix of primary and secondary school teachers (70%), and administrators, principals and vice-principals (30%) in 16 countries. Countries represented in the survey sample include: Argentina, Australia, Brazil, Canada, Colombia, Denmark, Finland, Japan, Mexico, the Netherlands, Singapore, Spain, South Korea, Sweden, the UK and the US.

We would like to thank the following (listed alphabetically) for their time and insights.

- Alex Beard, senior director, Teach For All, and author of the forthcoming book, *Natural Born Learners*
- Esteban Bullrich, national senator and former minister of education, Argentina[4]
- Marco Fernández, research professor, School of Government and Public Policy, Instituto Tecnológico y de Estudios Superiores de Monterrey (Tec de Monterrey), and researcher at México Evalúa
- Howard Gardner, professor of cognition and education, Graduate School of Education, Harvard University
- David Hung, associate dean of education research, National Institute for Education, Nanyang Technical University, Singapore

4 Esteban Bullrich was the minister of education at the time of his interview with The EIU in June 2017. At the time of publication, he is now a national senator.

- Ewart Keep, professor and director of the Centre for Skills, Knowledge and Organisational Performance (SKOPE), University of Oxford
- Neil Mercer, emeritus professor of education, University of Cambridge
- Justin Reich, assistant professor of Comparative Media Studies, Massachusetts Institute of Technology (MIT), and director of the MIT Teaching Systems Lab
- Andreas Schleicher, director for the Directorate of Education and Skills, OECD
- Caitlin Storhaug, head of global recruitment marketing and communications, McKinsey

The report was written by Nicholas Walton and edited by Veronica Lara of The EIU. ■

Introduction

"[Employers] want good communicators, listening managers and effective team players—people who can come up with new ideas and share what they know."

Neil Mercer, emeritus professor of education, University of Cambridge

Although robots and AI are unlikely to replace humans entirely, these and other rapidly evolving technologies do promise to revolutionise the workplace in the near future. As routine tasks are further replaced by automation, jobs in the 21st century will require very different demands, underscoring the need to prepare the children of today for a different world than the one of previous generations.

The most sought-after skills in the modern economy are already non-traditional, soft ones, according to our 2015 *Driving the skills agenda: Preparing students for the future* report. As part of that research programme, we surveyed senior business executives and found that problem solving was the most in-demand workplace skill, followed by collaboration, communication, critical thinking and creativity. "Employers are crying out for those skills," says Neil Mercer, emeritus professor of education at the University of Cambridge. "They want good communicators, listening managers and effective team players—people who can come up with new ideas and share what they know."

Our 2017 global survey of educators defined a core set of soft skills that included the five listed above, as well as two more that were identified by interviews with education experts: values and ethics, and a capacity for lifelong learning. The survey found there is general consensus among educators that soft skills are as important as foundational literacies (ie, mathematics, sciences and reading) in preparing students to succeed professionally. As industries are disrupted by new technologies that put a premium on the ability to use information, these skills will become even more important.

Justin Reich, assistant professor of Comparative Media Studies at MIT, and director of the MIT Teaching Systems Lab, says the emphasis needs to be on the two "areas where humans have a comparative advantage over computers." The first is "ill-structured problem solving, where you don't know what data you need or what the answer looks like"; and second, complex or persuasive communication. Both also require a large amount of specialist domain knowledge, acquired during formal education and beyond.

As the nature of work changes, schools play a pivotal role in preparing the young children of today for the jobs and economic opportunities of the 21st century. Indeed, our survey found that 81% of educators surveyed agree that teachers must consider future skills

needs when educating their students. The primary and secondary periods of schooling are when many of these literacies and skills are first acquired, as students socialise, grasp and begin to apply concepts, and gain the ability to learn.

Professor David Hung, associate dean of education research at Singapore's National Institute for Education, says that students need to be taught "certain cognitive, social, emotional regulatory skills", such as self-discipline and curiosity, when they are still very young. Andreas Schleicher, the director for the Directorate of Education and Skills at the OECD, agrees, saying that social and emotional skills such as "the capacity to work with people who are different from them, understand different ways of thinking and working" are very important in these critical years.

Getting education systems right is important for communities and countries, as well as individuals. "As economies evolve, education systems clearly have to drive that," says Mr Schleicher. He says that in advanced economies there is far less emphasis on knowing things, as so much knowledge is either easily accessible online or evolves rapidly. Instead, "it's about thinking like a mathematician, scientist or historian," developing cognitive skills and having the "capacity to navigate knowledge."

Middle-income countries such as Mexico face similar challenges, as they adapt to the rapidly changing global economy.[5] "The cost of not doing so is losing competitiveness to the rest of the world," says Marco Fernández, research professor at the School of Government and Public Policy at Tec de Monterrey and researcher at México Evalúa, an independent think-tank. Although recognising this risk, he notes that Mexico struggles to reform its education system to meet the needs of the 21st century.

In too many cases, experts acknowledge these looming challenges. Alex Beard, senior director at Teach For All, a global network of organisations that encourages high achievers to spend time as classroom teachers, says that education systems are failing to keep pace with wider developments in areas like technology and the global economy. "Education risks being left behind" by how quickly change is happening, he says.

Our 2015 report found that executives were not satisfied with the attainment levels of young people, with over half believing that this skills gap was hampering their organisation's performance. Teachers recognised that companies were unhappy with education standards, but how these deficiencies can be addressed remains a complicated question. This report focuses on the implementation of successful initiatives in K-12 classrooms. What do educators at these levels say are the most effective strategies and tools that support the development of 21st century skills? ■

5 The World Bank defines "middle income" countries (including both "lower" and "upper" middle income countries) as having a Gross National Income per capita of between US$1,006 and US$12,235. They are likely to have intermediate levels of industrialisation and have tighter government (and therefore education) budgets than richer countries. https://datahelpdesk.worldbank.org/knowledgebase/articles/906519

1 Strategies for the 21st century classroom

"Teachers are among the highest educated workforces, so it seems crazy to me that you wouldn't give autonomy and greater ownership to them."

Alex Beard, senior director, Teach For All

Although nearly half (45%) of educators in the survey report feeling empowered to make decisions about how best to help their students develop 21st century skills, almost a third (31%) say they feel constrained in doing so, including 8% who feel "very constrained". At a regional level, educators in Asia-Pacific (36%) and Europe (35%) more often say they feel constrained compared with those in Latin America (22%) and North America (26%). "Teachers are among the highest educated workforces," argues Mr Beard, "so it seems crazy to me that you wouldn't give autonomy and greater ownership to them."

Addressing the growing need for soft skills does not mean abandoning the foundational literacies that are currently taught; 79% of educators agree they are both equally important (with 46% strongly agreeing). Mr Schleicher strongly argues that character qualities, such as courage, leadership, empathy, resilience and curiosity, can be developed within more formal subjects, like sciences or language, rather than be taught separately.

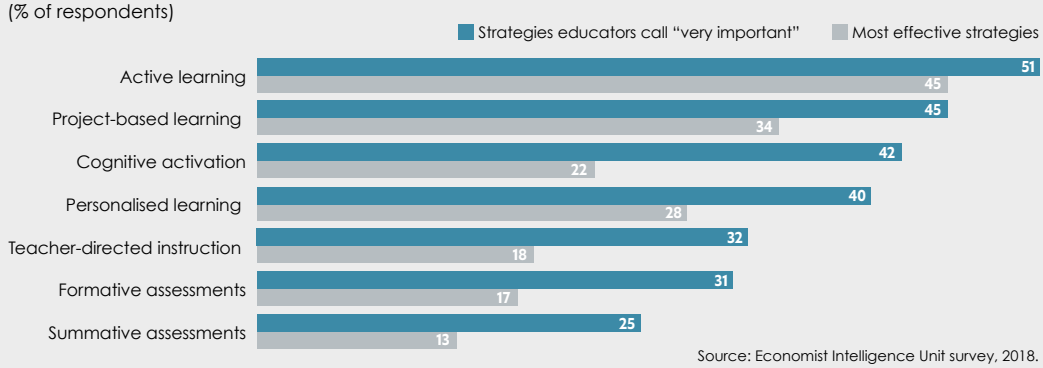
The survey results show that a range of teaching strategies are needed, and that the ones most commonly cited as effective are those that promote interaction, engagement and collaboration. When asked to evaluate the importance of specific teaching strategies in developing needed skills, educators are most likely to cite as "very important":

- active learning (ie, engaging students in activities, such as reading, writing, discussion and/or problem solving);
- project-based learning (ie, students working on complex and/or real-world challenges);
- cognitive activation (ie, encouraging students to focus on the method they use to reach a solution rather than the solution itself); and
- personalised learning (ie, addressing the needs and interests of individual students).

Notably, Latin American educators most frequently cite nearly every teaching strategy included in the survey as "very important", with North American educators following fairly near behind, and Asia-Pacific and European educators far behind.

The survey finds there is an alignment between the teaching strategies considered most effective and the ones educators most frequently cite as "very important" for preparing students for their future work. By contrast, only 18% consider traditional teacher-directed instruction as one of the most effective strategies, and only 32% think it is very important for preparing students. Overall, this is consistent with the finding that 76% of educators believe students benefit more from hands-on learning than formal lectures.

Most important teaching strategies for workplace-ready skills development vs most effective strategies
(% of respondents)



Source: Economist Intelligence Unit survey, 2018.

Some respondents in the survey shared examples of strategies and techniques that successfully fostered the development of soft skills and could be replicated. One Canadian vice-principal noted that project-based learning was useful for teaching teamwork, communication and leadership skills. A Singaporean school administrator said it was good for developing both hard and soft skills. A secondary school teacher in the US said collaborative group work helped to foster critical thinking, by understanding and assessing ideas from other children, while a Colombian teacher said it built confidence. Several educators cited role-playing as a technique that taught children different perspectives on an issue.

Several educators in the survey said they had success in taking education outside the classroom, for instance through study trips and encouraging parents to get involved. This can help students link their more formal studies to the wider world, applying concepts to real life. Such an integrated approach is considered essential to educational attainment by 73% of educators. "It's not just the six hours in school that make the difference, but how that connects to what else happens during the remaining waking hours," says Howard Gardner, professor of cognition and education at the Harvard Graduate School of Education. The ability to understand how knowledge is applied in real-life situations will help students adapt to a world where the required knowledge will change as rapidly as the technologies used at work.

This continuous change in technologies means the knowledge and skills that today's children develop in formal education will need to be updated or revamped to remain relevant throughout their working lives. This means that schools must equip students with the capacity and initiative to continue to learn beyond formal education.

"People are going to have to be more self-reliant in thinking how their career is going to develop, how they're going to invest in their own skills," says Ewart Keep, professor and director of SKOPE at the University of Oxford. Caitlin Storhaug, head of global recruitment marketing and communications for a consultancy, McKinsey, agrees, saying the ability to keep learning is vital for her firm's employees: "We absolutely don't expect our people to know everything when they come to us, but to be interested to learn from their teams."

For today's young students, this ability to learn and relearn will be a crucial part of success in a constantly evolving world. Parents

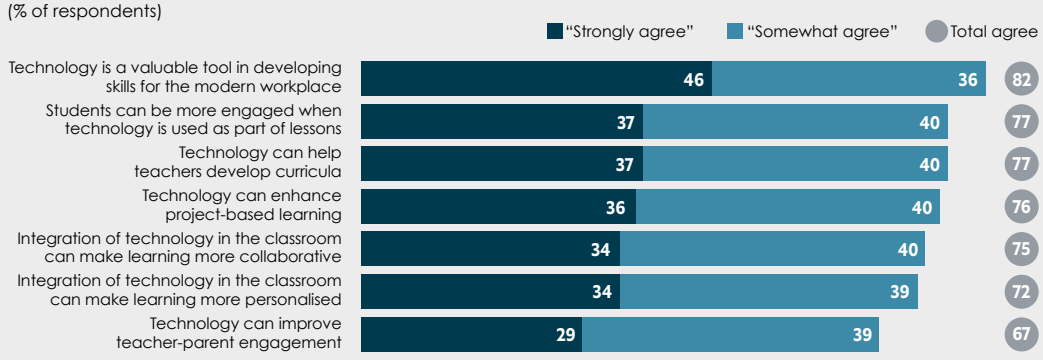
and guardians need to play a role in this; 77% of educators in the survey believed that their engagement was critical in developing a capacity for lifelong learning.

The social side of early schooling is also important, as this gives students the experience of interacting in a public space, and learning how to communicate and work with other children. Too much academic emphasis can crowd out this aspect: Mr Hung says that some students in Singapore and other East Asian countries can be persuaded to concentrate too heavily on academic achievements from an early age, neglecting their social regulatory skills. Mr Beard says this socialising aspect of schools can also have an important impact on the children's future mental wellbeing. ■

2 The critical role of technology

Although technology is revolutionising both work and wider society, it is also having an impact in the classroom. About four in five (82%) educators surveyed agree that technology is valuable for developing skills for the modern workplace, with 46% agreeing strongly. Approximately three in four say it enhances project-based learning (76%), and can make education both more collaborative (75%) and personalised (72%).

To what degree do you agree or disagree with each of the following statements?
(% of respondents)



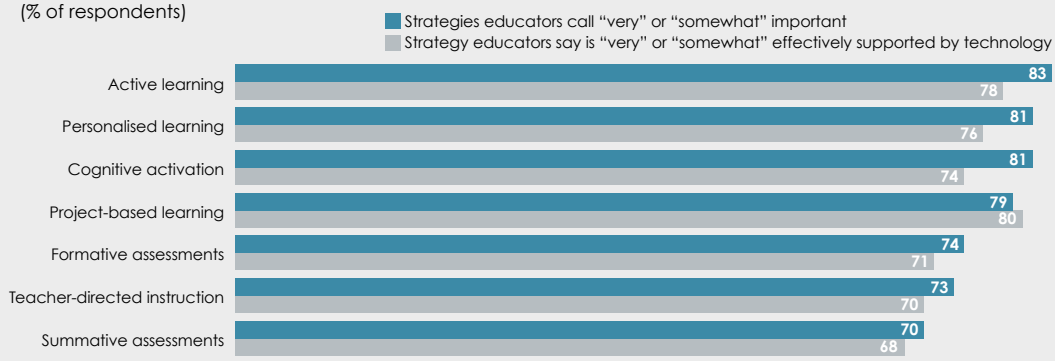
Note: Percentages may not equal total due to rounding.

Source: Economist Intelligence Unit survey, 2018.

Educators who report having "much better" technology adoption and usage at their school (22% of the sample) relative to others in their country show higher levels of confidence in its benefits. The majority (61%) of these educators strongly agree that technology is a valuable tool for developing workplace-ready skills, compared with 41% of the rest of the sample. Moreover, educators at technologically progressive schools feel more positively about its power to shape various aspects of the teaching experience studied in the survey, from developing curricula and increasing student (and parental) engagement to personalising learning.

The survey shows that technology is most effective at supporting the four teaching strategies that are most frequently cited as important for preparing students for the modern workplace: project-based learning (80%), active learning (78%), personalised learning (76%) and cognitive activation (74%). Technology is also considered effective in supporting other teaching strategies explored in the survey by approximately seven in ten educators.

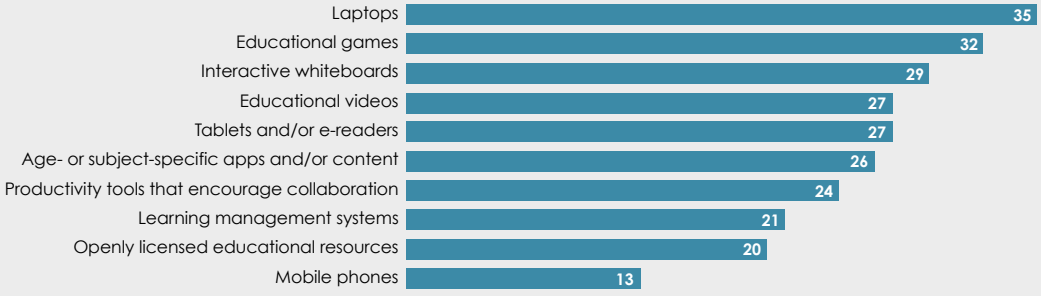
Most important strategies for workplace-ready skills development vs effectiveness of technology to support strategies
(% of respondents)



Source: Economist Intelligence Unit survey, 2018.

Educators surveyed note that widespread technologies such as interactive whiteboards, e-books or portable devices for homework were effective aids to teaching, with laptops considered the most useful. These technologies can allow individually tailored modules, free up teachers' time and provide access to innovative lesson plans. Educational games can help engage students and make learning more enjoyable. Speaking from his experience teaching history, Mr Reich says technology allows students to find a wider range of source material for studies.

Most effective technologies
(% of respondents)



Source: Economist Intelligence Unit survey, 2018.

Technology has the potential for helping middle-income countries address weaknesses in their education systems. For instance, Mr Hung observes, "it can solve the one-teacher-to-many-students problem," while educating those students in things that can be challenging for overworked teachers, such as seeing things from multiple perspectives or promoting collaboration. A former education minister for Argentina, Esteban Bullrich, says that connecting all the country's schools to the internet was a vital component of the reforms he introduced.

When not used appropriately, however, technology can sometimes be costly and counterproductive. Mr Beard says that schools across Los Angeles were given tablets after encouraging trials. But, he notes, "it was a

fiasco, with kids using them to watch YouTube during class." Mr Beard cites the Rocketship public charter school network in the US as an example of where technology is used effectively.[6] He says their students have a period of personalised-learning and problem-solving time each day on laptops. Teachers can utilise the time saved for planning and engaging students in collaborative learning. ■

6 Rocketship Public Schools, http://www.rocketshipschools.org/

3 Teacher quality counts

"If you have to make a choice between a better teacher and a smaller class, always go for the better teacher."

Andreas Schleicher, director for the Directorate of Education and Skills, OECD

The experts interviewed for this paper agreed that the common feature at the heart of every effective education system is high-quality teachers. "If you have to make a choice between a better teacher and a smaller class, always go for the better teacher," says Mr Schleicher. High-quality teachers are essential to meet the challenges outlined in this paper, including equipping children with a range of non-traditional skills and being able to unlock the potential of education technology.

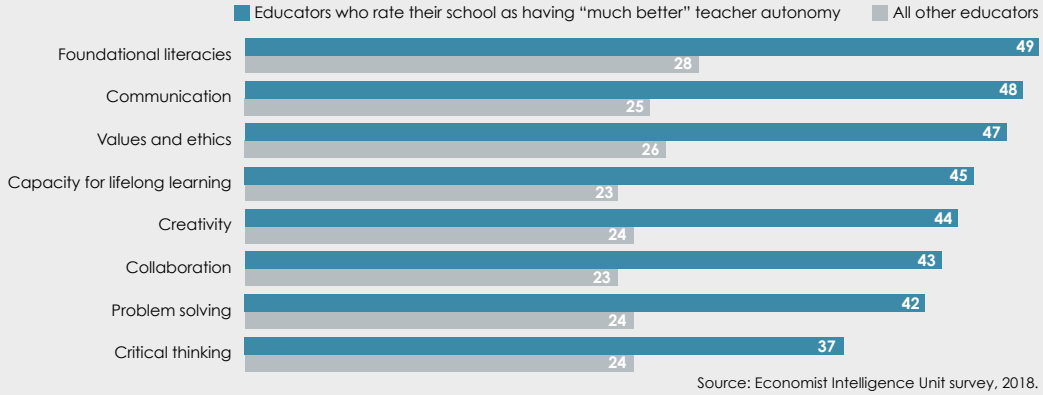
Countries with top-performing education systems, such as Finland and Singapore, concentrate efforts in motivating good students to become teachers, and teaching enjoys a high professional status relative to other countries. Appropriate training, including in non-formal skills such as communication and critical thinking, then allows these teachers to draw out similar skills in their students.

Teachers need to be able to take the initiative and have the flexibility to use pedagogies such as project-based and collaborative learning, and to help students understand how to apply concepts and knowledge outside the classroom. Mr Mercer says that improving teachers' communication skills helps them to interact more effectively with the students, but that teacher training often neglects what he calls an "obvious" area. To develop such skills, the survey data show teachers can benefit from a wide variety of professional development methods, including personalised learning, large group training, project-based learning and mentor support.

With the rapid pace of change, Mr Gardner says that effective teachers must be able to educate children to deal with different and unfamiliar timeframes. "They now have to think about how the world will be in 20 years, or 30, or even when their young students are at the later stages of life." To do this, he says, teachers need a broader "liberal arts and sciences" education themselves rather than narrower training in classroom skills.

Good teachers need a supportive framework to make the most of their talents, including adequate resources and a well-thought-out curriculum. The survey findings indicate a strong correlation between the degree of autonomy teachers enjoy and schools' readiness to teach 21st century skills. One in five educators surveyed said teachers at their schools have "much better" autonomy than other schools in their country. About half (48%) of these educators say they are also "very well equipped" to teach communication skills, compared with a quarter (25%) of those at schools with less autonomy. Similar gaps appear for other 21st century skills explored in the survey.

How well equipped are the teachers at your school to teach students each of the following skills?
(% of respondents who say they are "very well equipped")



Source: Economist Intelligence Unit survey, 2018.

These findings support research from *Driving the skills agenda*, which found that an overly rigid curriculum left little time for teachers to incorporate 21st century skills into their daily lessons, as cited by 49% of teachers in that research. The earlier study found that another key challenge was a requirement to focus primarily on traditional literacy and numeracy by education authorities, as cited by almost a third (30%) of teachers.

"In top performing systems teachers have a lot of autonomy, with more professional pride and ownership," says Mr Beard. He says this then helps students within the system develop valuable skills: "If you want to develop independent students who can collaborate in teams, we must communicate that through the structure of our education system." However, warns Mr Reich, "autonomy needs to be balanced with shared purpose." He says more time outside the classroom is a vital aspect of teacher autonomy, giving them the space to prepare and design lessons, as well as the opportunity to share and learn from their colleagues.

The survey data support Mr Reich's observation on the value of preparation and collaboration time. Most educators report that their schools are at least "somewhat well equipped" to teach soft skills, but they feel best equipped to teach foundational literacies. This suggests many teachers would benefit from additional preparation in teaching soft skills. ■

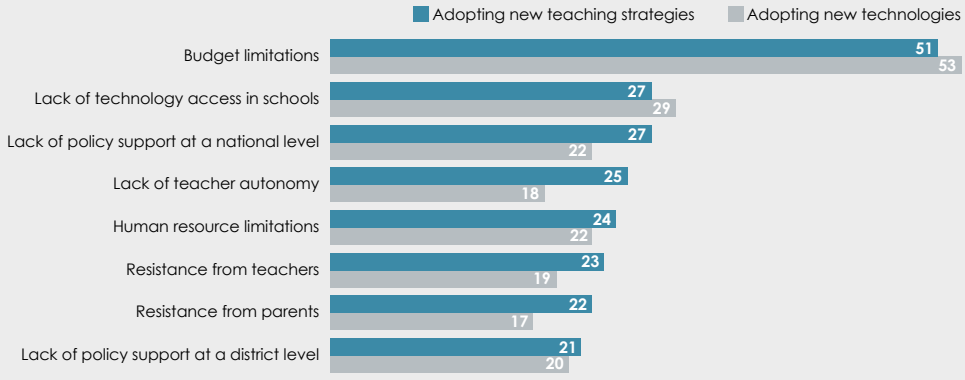
4 Implementing innovation

Innovations in the classroom may take the form of implementing new teaching strategies or adopting new technologies to transform the way lessons are taught. However, there are common hurdles to implementing these reforms. Budget limitations are most often cited as by far the most significant barrier to adopting these innovations (51% and 53%, respectively). The next most commonly cited obstacles are a lack of technology access in schools and a lack of national policy support for adopting new teaching strategies.

On a regional level, budget constraints remain a top challenge for innovation, with North American educators most often reporting these as an obstacle to adopting new strategies (59%) and technologies (61%). Beyond financial constraints, educators in Asia-Pacific more often cite a lack of teacher autonomy as a barrier to both adopting new teaching strategies (30%) and new technologies (26%) relative to other regions. Latin American educators more often cite a lack of national policy support as a barrier to adopting new strategies (38%) and a lack of technology access in schools (39%) as an obstacle to adopting new technologies (39%). European educators more commonly consider human resource limitations a significant barrier relative to other regions, though by just a small margin and only for technology adoption (24%).

Great majorities of educators surveyed favour at least some action in adopting new strategies (85%) and technologies (83%), but opinions vary on how aggressively schools should implement these measures. Educators most often advocate cautiously investigating

Most significant barriers to innovation
(% of respondents; top eight responses ranked by barriers to adopting new teaching strategies)



Source: Economist Intelligence Unit survey, 2018.

"How effective technology is in a learning environment depends a lot on how robust the curriculum is and how much the teachers are working together to continuously improve."

Justin Reich, assistant professor of Comparative Media Studies, MIT, and director of the MIT Teaching Systems Lab

these innovations on a case-by-case basis, adopting only the ones with proven successful outcomes (39% and 40%, respectively).

However, it can be particularly complicated to reform teaching strategies on a systematic basis. This may require wholesale changes to teacher training, curricula and funding priorities. Assessments, even for younger age groups, are tied to curriculum requirements later on, and overall examination systems and syllabuses are locked into the demands of higher education or employers. This can make it harder to incorporate the teaching of soft skills alongside traditional literacies and subjects.

With this complexity in mind, educators tend to believe that schools will adopt new technologies more aggressively and more often than new teaching strategies. More than seven in ten of respondents who believe that their school should completely overhaul their technologies believe that their school is likely to do so (72%) in the next five years, compared with only 59% of respondents who take the same view of teaching strategy innovation.

Bringing innovative technology into the classroom may be easier in some ways than introducing new teaching strategies, as it does not necessarily mean changing teaching fundamentals. However, Mr Fernández says that the introduction of technology to the classroom must be supported by both resources and well-designed policies. He cites one pilot for introducing laptops to Mexican schools that was undermined by resource restrictions and bad planning.

"How effective technology is in a learning environment depends a lot on how robust the curriculum is and how much the teachers are working together to continuously improve," says Mr Reich. This complements the survey's findings that teachers with autonomy felt more able to encourage and harness innovations. By contrast, warns Mr Schleicher, technology that is just layered onto an education system without careful consideration of the extra value it can afford will get worse results.

This integrated approach chimes with the "blended" use Mr Keep advocates, "where technology is just an everyday part of learning." He says this helps students to understand how to use it rather than think of using technology or developing technical skills as specific ends in themselves. "Learning coding is not the top priority," he says. "Children need to be familiar and comfortable with technology so they can pick up specific skills as they go on." ■

Conclusion

In the light of the transformational nature of new technologies on the world's economies, and the rapid pace of evolution of the technologies themselves, K-12 students of today have an urgent need for a new range of skills. As well as continued emphasis on fundamental literacies, they must develop critical thinking, creativity, collaboration and problem-solving skills, among others. Students will also need to learn how to continue learning as they progress through their professional lives. Their ability to do so is crucial for entire economies, as well as individuals. Our *Driving the skills agenda* report noted that these questions can help an economy industrialise, or reshape it altogether.

The educators surveyed recognise that there is room for improvement in better preparing to teach 21st century skills, and few advocate refraining from change altogether. Some experts interviewed for this research programme are far less satisfied with current education systems, especially in the light of the changing educational needs of students. As Mr Beard says, "we don't even deliver the current model of education particularly well, and that model is fast becoming outdated."

The educators in the survey agree that a range of innovative pedagogical strategies, such as active and project-based learning, can help equip students with the requisite skills, and can be integrated into existing lessons. In addition, they agree that education must break out beyond the classroom, so that students learn to apply knowledge and concepts to real life.

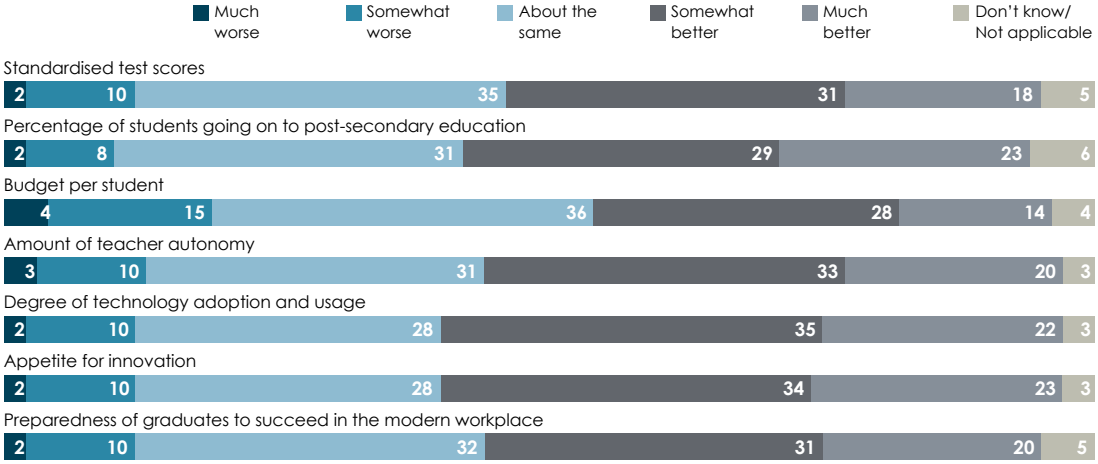
Although there is no silver bullet that can turn an inadequate system into a high-performing one overnight, educators see technology as a key tool that can be particularly effective at supporting top teaching strategies. The survey indicates a strong degree of confidence in the ability of technology to enhance learning, particularly through promoting interaction, engagement and collaboration.

Crucially, teachers themselves are a vital resource with great potential for preparing young students for their working lives. But they need to be supported with resources such as relevant technologies and well-tested policies, as well as the time and space to learn themselves and plan activities geared towards fostering 21st century skills. Given the right tools, they can do the job of preparing the young students of today into becoming the successful working adults of tomorrow. ■

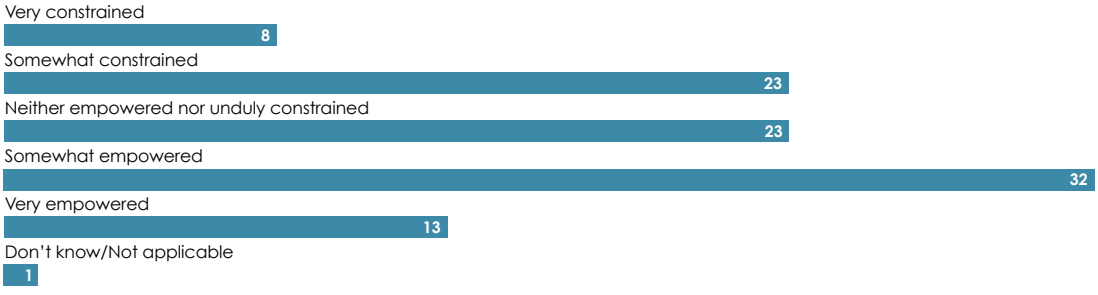
Appendix: survey results

Percentages may not add to 100% owing to rounding or the ability of respondents to choose multiple responses.

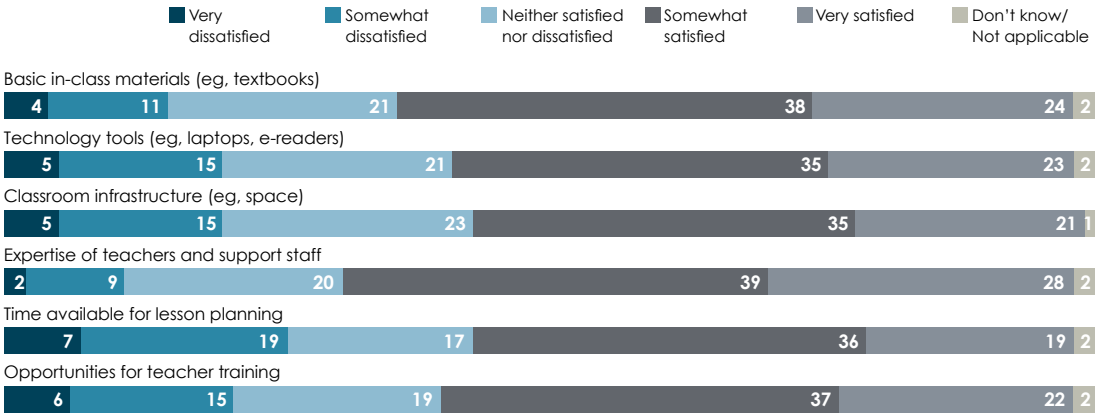
How would you rate each of the following aspects of your school compared with others in your country?
Please select one from each row.
(% of respondents)



To what extent do you feel empowered to make decisions about how best to serve students' needs?
Please select one.
(% of respondents)

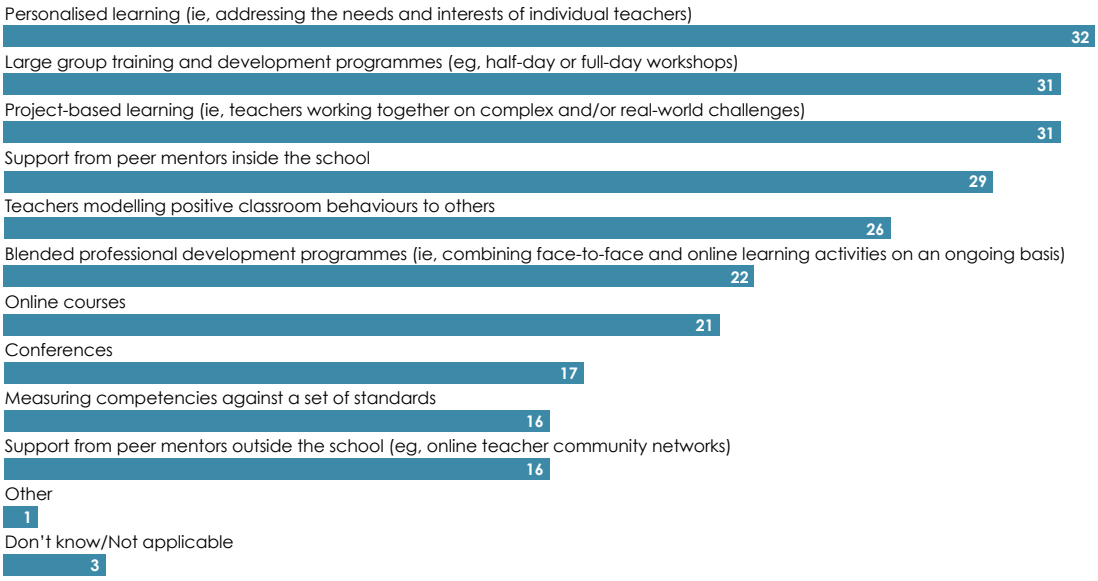


How satisfied are you with the following resources at your school?
Please select one from each row.
(% of respondents)

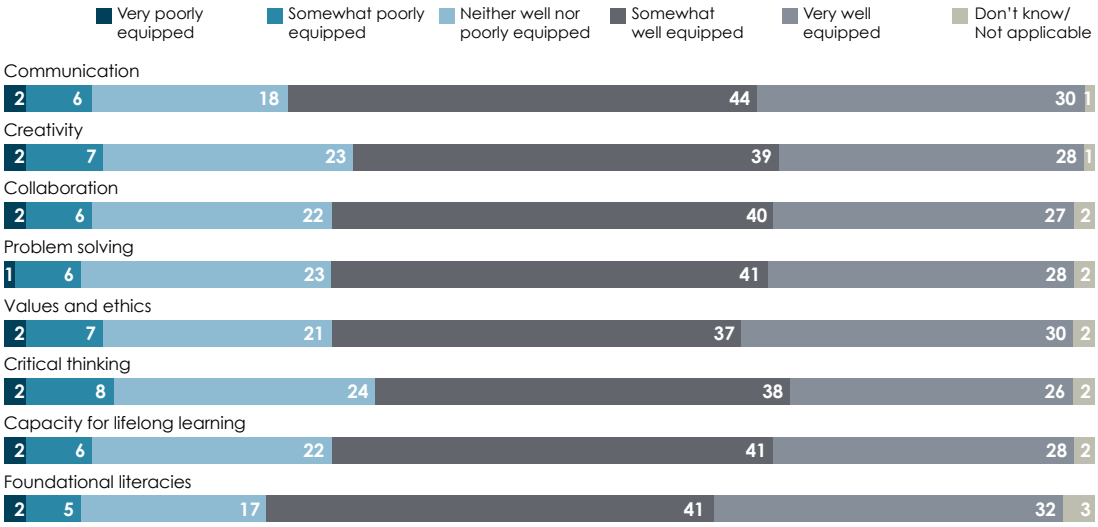


What is a specific example of a strategy, technique or technology used in a school that successfully fostered the development of soft skills in students and could be replicated?
Please cite an example you have seen or experienced.
(Open-ended question)

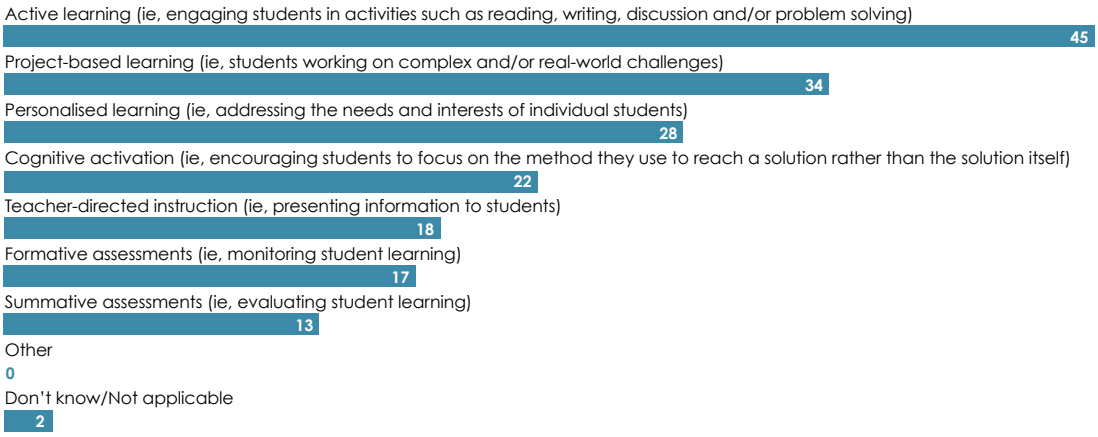
Which of the following strategies have most helped the teachers at your school improve their own skills as educators?
Please select up to three.
(% of respondents)



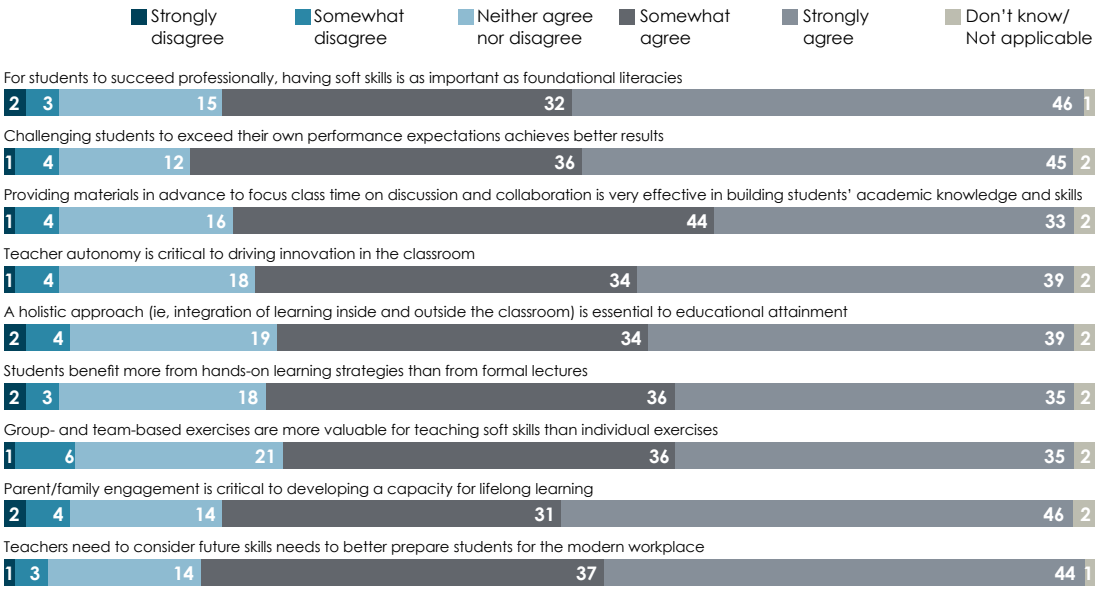
How well equipped are the teachers at your school to teach students each of the following skills?
Please select one from each row.
(% of respondents)



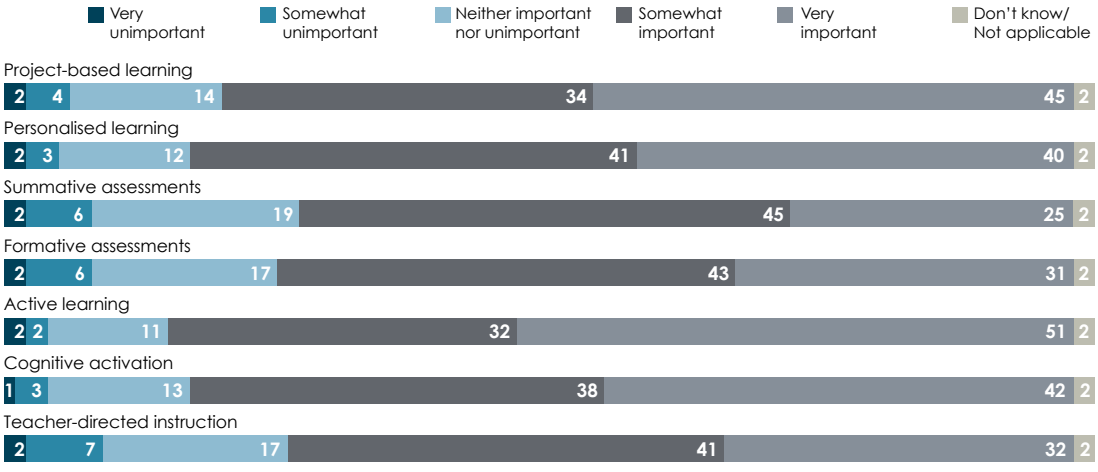
In your experience, which of the following teaching strategies have been proven most effective in developing the skills students need for the modern workplace?
Please select up to two.
(% of respondents)



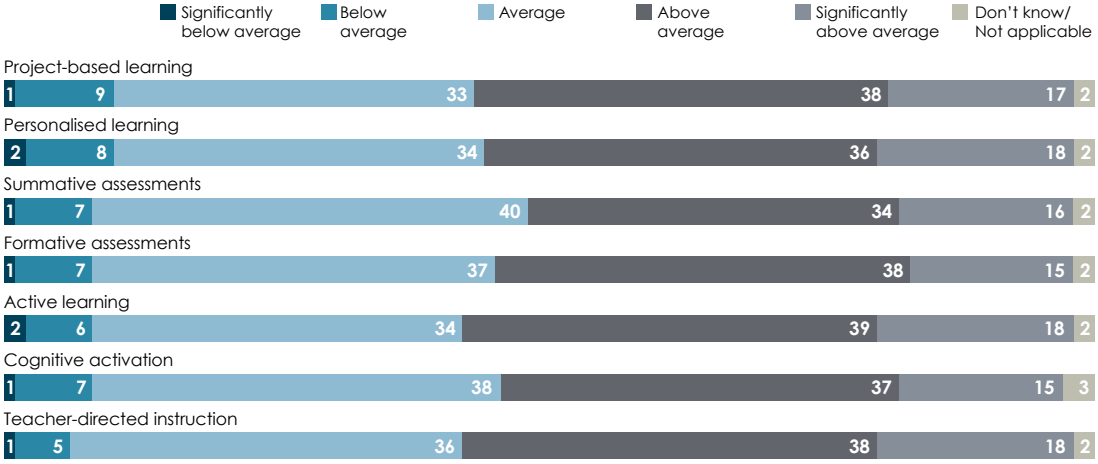
To what degree do you agree or disagree with each of the following statements?
Please select one from each row.
(% of respondents)



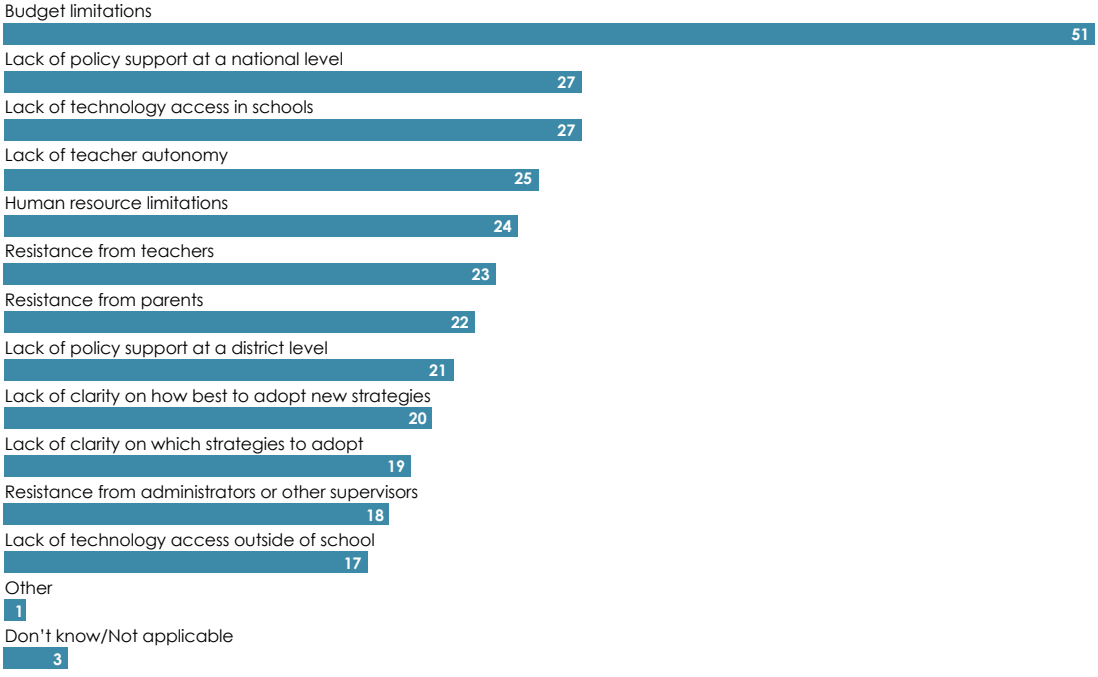
How important is each of the following teaching strategies in developing the skills students need for the modern workplace?
Please select one from each row.
(% of respondents)



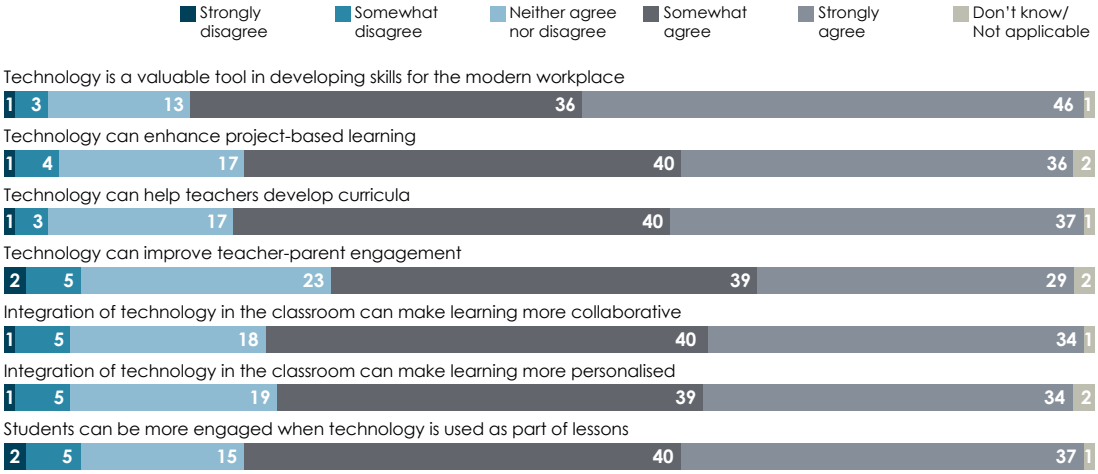
Compared with other schools in your country, how would you assess your school's performance in each of the following teaching strategies?
Please select one from each row.
(% of respondents)



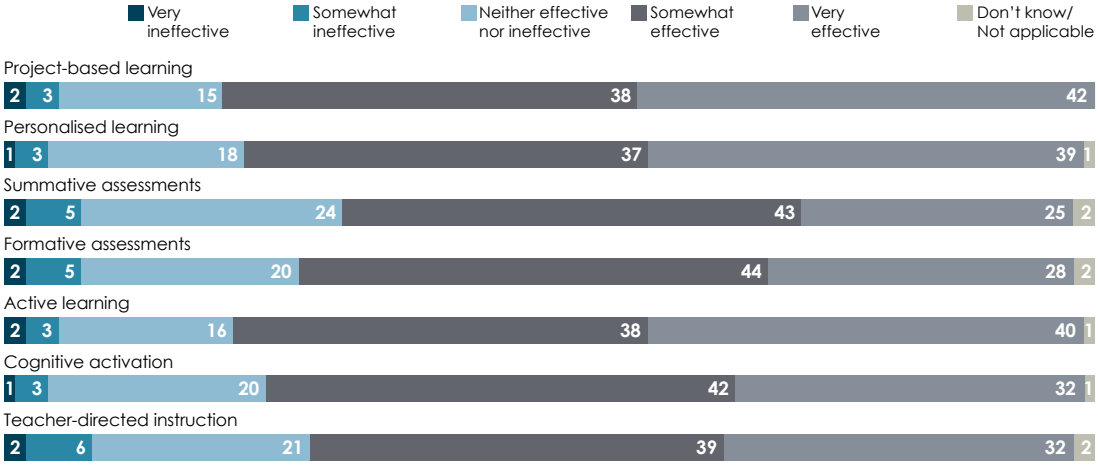
Which of the following, if any, are the greatest barriers to adopting new teaching strategies in the learning process?
Please select up to four.
(% of respondents)



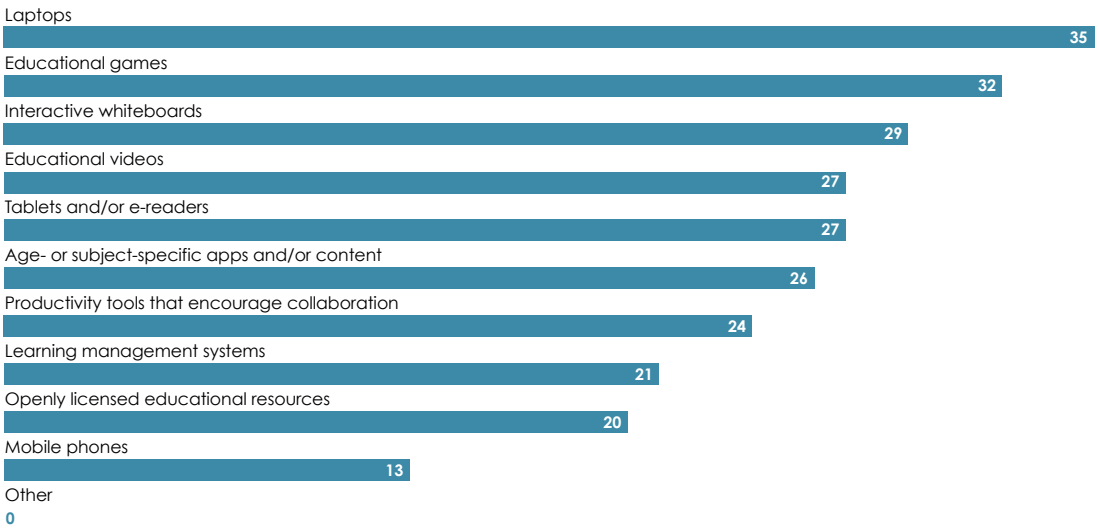
To what degree do you agree or disagree with each of the following statements?
Please select one from each row.
(% of respondents)



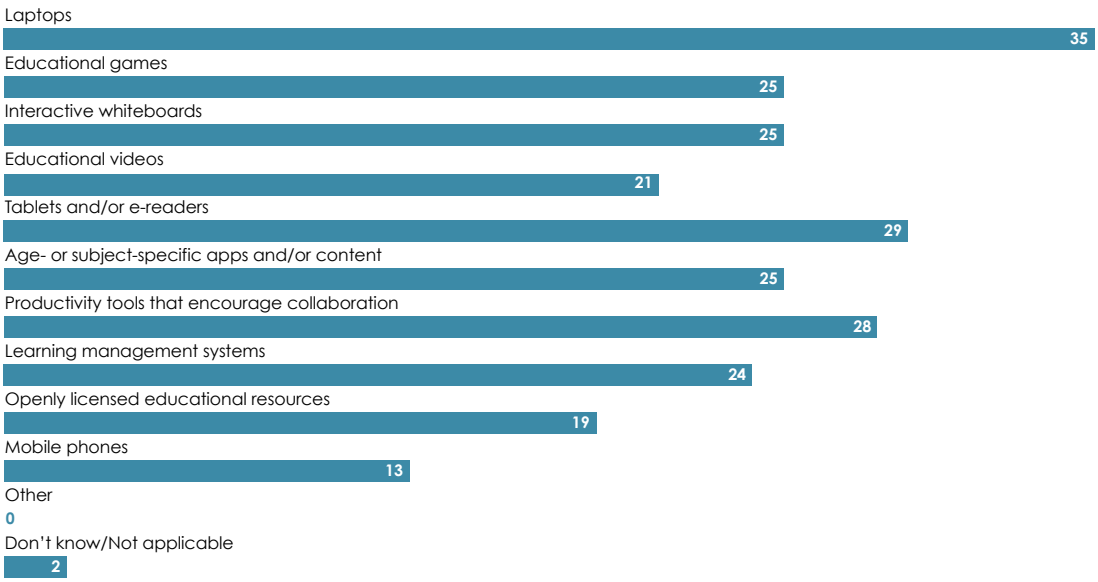
When used appropriately, how effective is technology in supporting the following teaching strategies?
Please select one from each row.
(% of respondents)



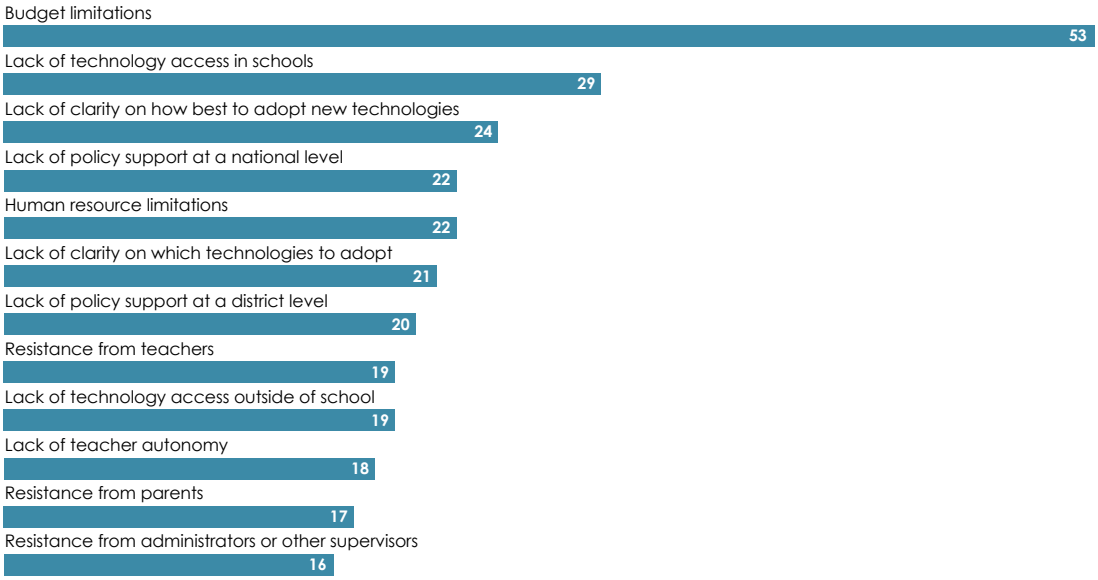
In your experience, which of the following technologies, if any and when used appropriately, are most effective in developing the skills students need for the modern workplace?
Please select up to three.
(% of respondents)



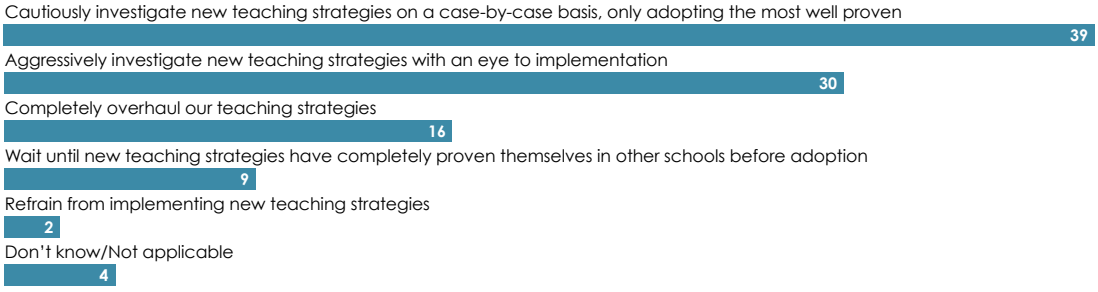
Which of the following technologies, if any and when used appropriately, have the greatest potential in developing the skills students need for the modern workplace?
Please select up to three.
(% of respondents)



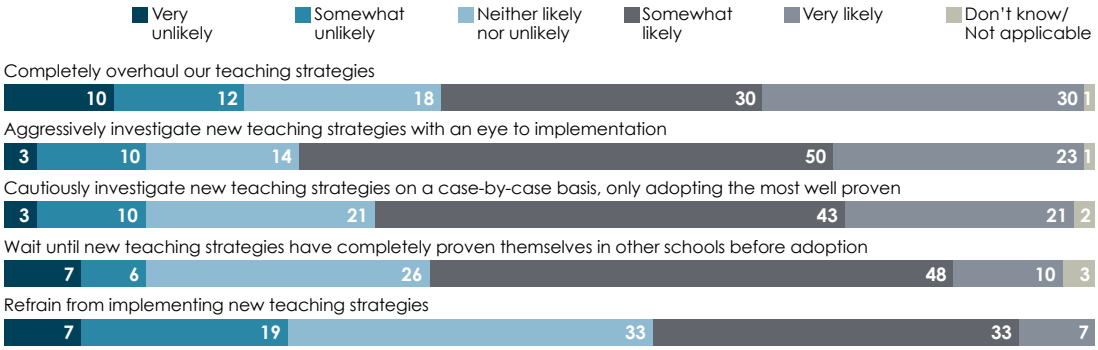
Which of the following, if any, are the greatest barriers to adopting new technologies in the learning process?
Please select up to four.
(% of respondents)



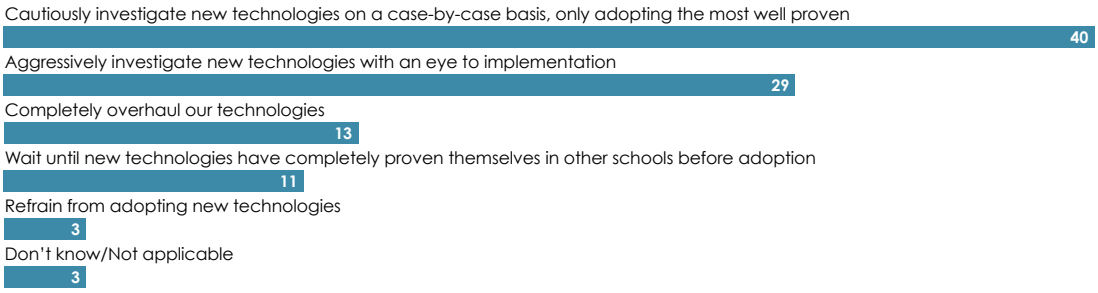
Which of the following statements best describes the actions that your school should take in the next five years to implement new teaching strategies?
Please select one.
(% of respondents)



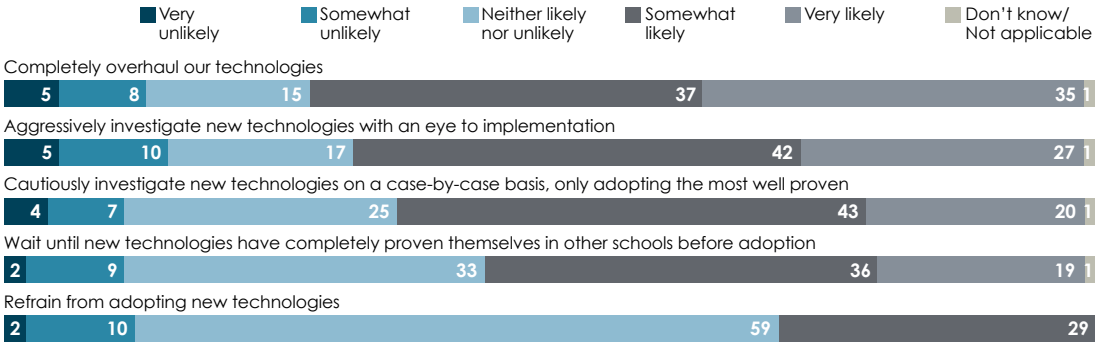
What is the likelihood that your school will do this in the next five years?
Please select one.
(% of respondents)



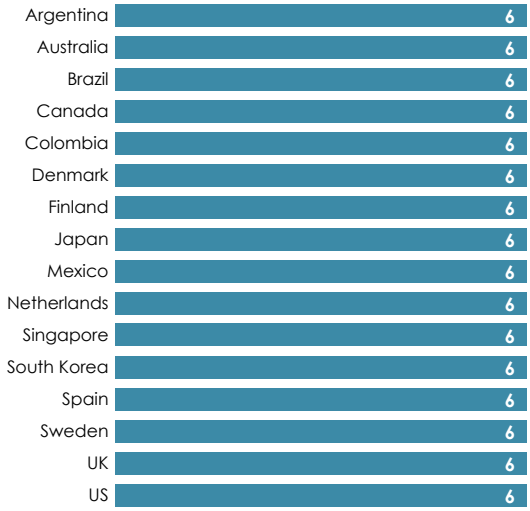
Which of the following statements best describes the actions your school should take in the next five years to adopt new technologies?
Please select one.
(% of respondents)



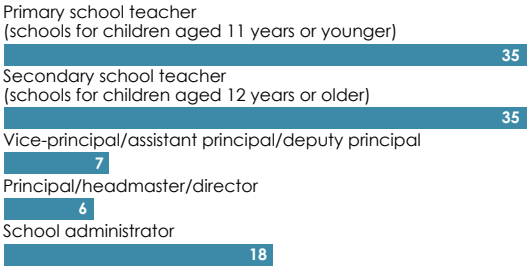
What is the likelihood that your school will do this in the next five years?
Please select one.
(% of respondents)



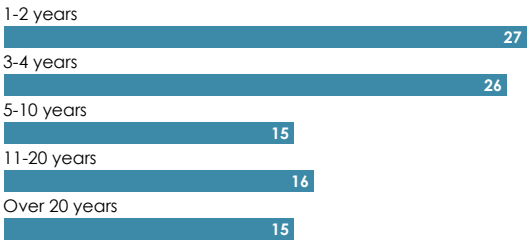
In which country are you personally located?
Please select one.
(% of respondents)



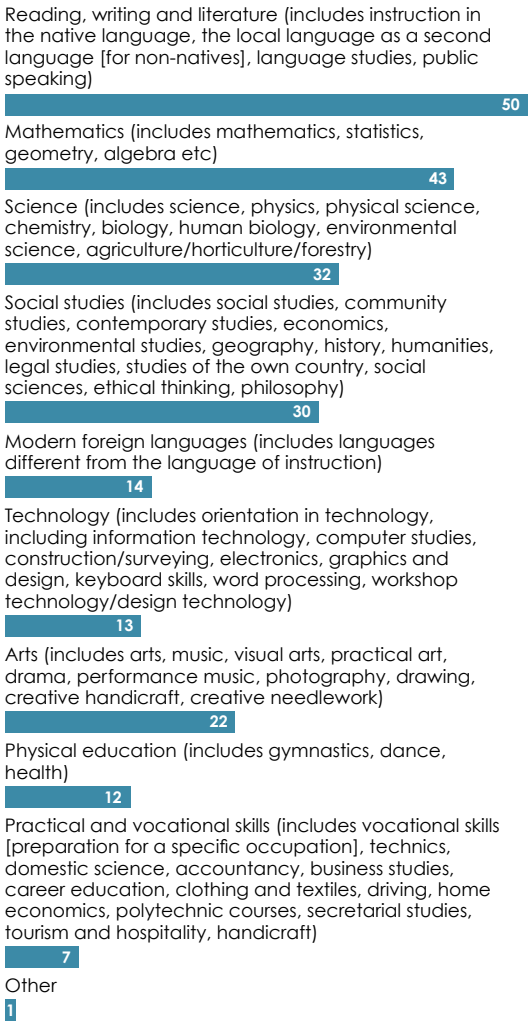
Which of the following best describes your current role?
Please select one.
(% of respondents)



For how long have you been an administrator, teacher, principal or a combination of these roles?
Please select one.
(% of respondents)



Which of the following subjects do you currently teach?
Please select the subjects that individually account for at least 20% of your teaching time.
(% of respondents)



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