



Preparing learners to thrive

in a changing world

The view from International Education

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Foreword

One of the rewarding parts of my role is visiting schools in our community and seeing our Pathway being so brilliantly enacted in an extraordinary range of classrooms - across ages and stages, reflecting both local and international contexts.

What unites these diverse settings is the trust that schools, teachers, families and learners place in Cambridge to help prepare young people for their next step, whether continuing in education or beyond education. Yet we do not take that trust for granted. It comes with the responsibility to keep asking ourselves a fundamental question: are we helping young people prepare not just for today, but for the future?

In developing the Cambridge curriculum, we are acutely aware that, as an international education organisation, we are part of the community we serve, and we recognise the need for a collaborative approach. This is why we launched this consultation programme, and we are delighted to have heard from over 3000 teachers, nearly 4000 learners and around 50 experts who have profound insights into the challenges and opportunities ahead. We sought to understand how they see the student experience of education today, and what they think is important in preparing for a future that is being rapidly reshaped by technological advances, climate pressures and shifting global dynamics.

What strikes me most from this report is the clarity with which it highlights a simple truth: never has the role of schools and teachers been more important. At a time of profound global change, great schools, great teachers and a clear, purposeful curriculum remain the foundations of great education.

Yes, the challenges are significant. Technology and artificial intelligence (AI) can make information more accessible than ever, but without the subject knowledge and critical thinking to evaluate and use that information wisely, young people risk being overwhelmed or even disempowered. And skills such as communication and self-management - how to learn and manage your time, how to build



relationships with others, how to disagree agreeably - they are the foundations of success in a world of complexity and disruption. This is why the role of teachers, and the school environment, is irreplaceable. Because teachers foster these skills and bring knowledge to life to help students thrive. Technology can enhance this, but it cannot substitute for the human relationships, understanding and guidance that, now more than ever, lie at the heart of education.

The world is changing, and the future of education is as yet unwritten. What gives me great confidence is the evidence in this report showing that, together with our community of schools and teachers, we can listen to students and help prepare them not only for the future they will face but also for the future they want to create.



Rod Smith

Group Managing Director, International Education, Cambridge University Press & Assessment.

Introduction

This report captures the voices of thousands of teachers and students from around the globe, offering a wealth of perspectives on readiness for the future from those at the heart of education.

For young people on the brink of adulthood, the future can feel uncertain and difficult to navigate. Geopolitical shifts, rapid advances in technology such as generative artificial intelligence (AI), and the impacts of climate change are reshaping how we live and work in profound and increasingly unpredictable ways.

Yet we believe young people are more adaptable and more resourceful than they are often given credit for, and there is much we can do to support them to face the future with confidence. Teachers are always at the heart of helping young people learn how to navigate the world. Their role is more important now than ever – guiding students to develop the subject knowledge, skills and agency they need to shape their own futures and make a positive contribution to their communities and society as a whole.

As the world's largest provider of international education for learners aged 3 to 19, Cambridge works with a community of 10 000 schools around the world, where teachers guide millions of learners in 160 countries through our programmes and qualifications every year. Given the impact of our curricula and assessments on teaching and learning, we always have a responsibility to listen closely to our schools.

At this moment, we need to understand how students – and their teachers – feel about students' readiness for the future, the knowledge, skills and attributes they think are important, and the challenges they perceive in developing them. With this information, we can better shape the pathways that enable students to thrive in an unpredictable world.

It is with this goal in mind that we initiated the research described in this report. Throughout our research we have heard from over 3000 teachers and nearly 4000 students in 150 countries, as well as experts from across the fields of education, research, science, technology, industry, government and more.

Our report focuses on four key themes:

- how students perceive their readiness for the future, and the importance of helping them recognise the ways in which they are well prepared
- why subject knowledge matters even more in the age of AI, and the importance of reframing its role in education for its value to be better appreciated
- the vital role of self-management skills in helping students to shape good habits and navigate complexity and uncertainty
- the urgency of addressing challenges young people have with communication and interpersonal skills, particularly handling difficult and important conversations.

'My wish for students is that their learning will help them find what their passion is and where they can make a difference in this world. My wish for educators is that they can become a good coach, a good mentor, a good facilitator so they can provide the environments for students to find what they love.'

Andreas Schleicher, Director for Education and Skills, Organisation for Economic Co-operation and Development (OECD).

Across the report's four themes, we examine how students and teachers appreciate the ways AI and other digital technologies enhance teaching and learning, while also expressing concerns that these tools may fuel distraction, shorten attention spans and undermine critical thinking.

Our analysis highlights several priorities for action:

- 1. Explicit signposting of the skills students are developing through their learning, so that they can recognise the ways they are prepared for their future.
- 2. Reframe the role of subject knowledge as an enabler to the development of skills (not an equivalent to information) and vital for sparking students' curiosity and engagement with learning.
- 3. Emphasise oracy a set of skills involved in using spoken language – as vital for students to become effective communicators and build meaningful relationships.
- 4. Create space to support students in developing self-management skills so they can navigate the uncertainty they feel about the future.
- 5. Position school as a critical place to foster meaningful connections.

International education provides a powerful context in which to address these priorities. Why? Because its communities are inherently diverse, encompassing countless combinations of contexts: state and independent schools; students who have lived their whole lives in





one place or in several different countries; fully international programmes, or blended national and international curricula.

More families around the world are choosing international education because of the opportunities it can offer to live, work and study in different countries (with qualifications trusted by top universities and employers worldwide), to become fluent in English, and to develop a truly global outlook. Many also value the fact that an international curriculum has been road-tested in multiple regions, improved over time and offers a robust framework for learning.

This diversity makes international education a natural space for innovation. It is in such an environment that schools can put these priorities into practice - signposting skills, reframing subject knowledge, strengthening oracy, supporting self-management and fostering connections – in ways that better prepare students to navigate the future.

Through our long-standing work with over 50 national governments, we have learned to take great care before transferring lessons learned in one context to another, avoiding the risks of blunt 'policy borrowing'. At the same time, we welcome the chance to share what we are learning in international education with a wider education community.

The research we present in this report builds on our experience. It has given us a deeper insight into how students and educators are experiencing change. Together with our community of teachers, schools and partners, and everyone who has joined this conversation, we hope that educators will now be better equipped at navigating the future and preparing learners to thrive in a changing world.

Research approach

The aim of this study is to understand students' and teachers' perspectives on what it means to be prepared for the future in a rapidly changing world. To achieve this, we explored their current experiences of education and gathered their views on the key factors necessary for future success in education and beyond.

We carried out the research in three phases, using a combination of qualitative and quantitative methods.

Phase 1: Qualitative interviews with educators

Firstly, we conducted qualitative research to understand what is top of mind for educators when it comes to preparing students for their future, with the aim of identifying specific areas for us to explore in a large-scale quantitative survey.

We carried out in-depth qualitative interviews with 12 educators (five teachers, four school leaders and three higher education professionals) in eight countries (Australia, China, India, Kenya, Oman, Pakistan, Spain and United States of America) drawn both from our exclusive online research community, the **Panel**, and through recommendations from regional colleagues.

The interviews were conducted by **Basis Global**, and reveal several areas for further investigation including:

- · the influence and impact of technology
- · students' relationships and interpersonal skills
- critical thinking abilities
- the skills, subject knowledge and attributes that are important for the future.

Phase 2: Quantitative survey

Following the qualitative interviews, we worked with Basis Global to devise a comprehensive survey based on these areas. We aimed to capture not only how teachers and students experience education today, but also their

perspectives on what students need in order to be ready for their next step in education (for example A Levels or higher education) and for their future beyond formal education. For this reason, we focused the survey on the experience of those in the later stages of their school education – students studying for Cambridge IGCSEs, Cambridge International A Levels, or equivalent. We invited educators of students aged 14 to 19 to participate, and also asked them to share a version of the survey tailored towards students with their students aged 16 to 19. Survey invitations were sent by email.

The survey examines areas such as:

- the development of different aspects of social and interpersonal skills
- the role of technology in supporting learning and teaching
- · students' attention spans
- · students' engagement with world events
- · students' attitudes towards change.

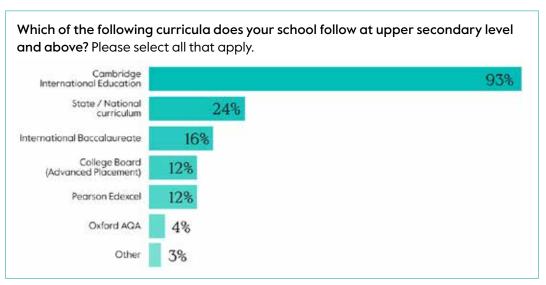
The survey also looks at teachers' and students' perspectives on the subject knowledge, skills and attributes they see as most important for the future, and explores which of these they find most difficult to teach or to learn.

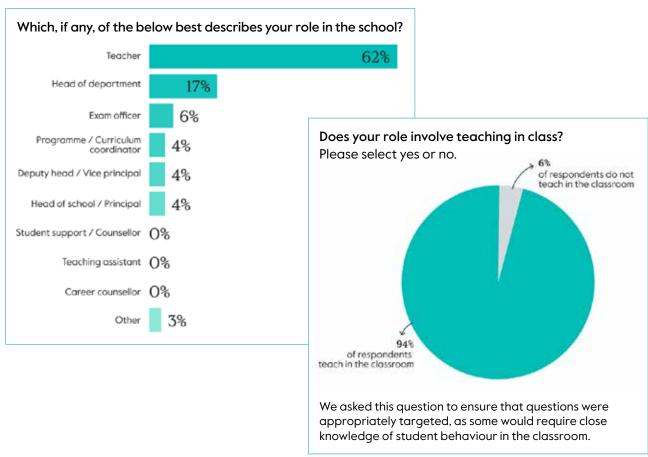
We wanted to capture a wide range of views from those involved in teaching and learning international education, so we sought opportunities to share the survey beyond our Cambridge community – for example by sharing it with a database maintained by ISC Research, which collects and analyses data on Englishmedium international schools worldwide.

In total, 3021 teachers and 3840 students across 150 countries completed the survey. To avoid overrepresentation or bias from countries

with much larger response numbers than others, we applied weighting to ensure the results are reflective of our diverse, global audience. The weighting was applied using exam entries as the most reliable indication of the size of the Cambridge community in each region. We took this approach because the majority of respondents are teaching or learning a Cambridge curriculum.

Teacher demographics:

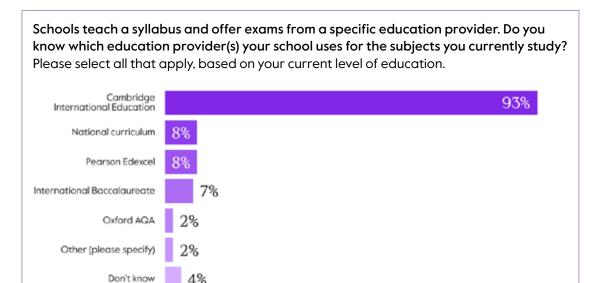


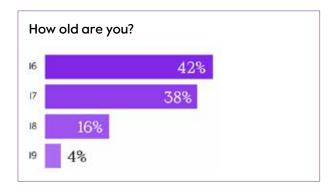


 $^{^{\}rm 1}\,\mbox{Weighted}$ regional breakdowns are as follows:

- Teachers East Asia (325), Europe (265), Latin America (65), Middle East & North Africa (332), North America (439), Pakistan (562), South Asia (281), Southeast Asia & Pacific (358), Sub-Saharan Africa (393)
- Students East Asia (414), Europe (337), Latin America (82), Middle East & North Africa (421), North America (559), Pakistan (714), South Asia (358), Southeast Asia & Pacific (455), Sub-Saharan Africa (500)
- The weighted totals have been rounded for simplicity, which can account for any variation between the total sample size and totals across the weighted regional breakdown.

Student demographics:





Phase 3: Qualitative interviews with students:

We followed up the large-scale quantitative survey with qualitative student interviews. We gave students the opportunity to opt-in for this at the end of the student quantitative survey, and selected two students from each of our **nine regions around the world** and held short interviews to enrich our understanding of students' perspectives.

Participants were chosen to ensure a diverse and balanced mix of learners across geographies, qualification levels and school contexts.

Phase 4: Expert consultation

Following initial analysis of the research findings, we consulted leading academics, education experts, policymakers and other experts to seek their views on the findings. Around 50 experts from diverse organisations - including OECD, UNESCO, World Heritage Group, the Learning Planet Institute and the American Psychological Association – shared their perspectives on our findings. Some of their comments are included in this report; all who contributed are listed in the acknowledgements section. We are grateful to everyone who shared their perspectives and supported in shaping our thinking.

Editorial note:

Please note that the present report does not give details of all the questions we asked. Rather, we have identified a number of key themes and report only the responses relating to these.



Ready for the future?

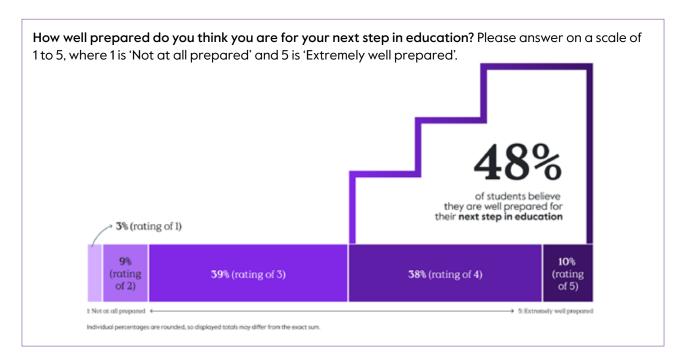
Students are more prepared than they think they are.

The first survey question aims to give an overall sense of how well prepared students feel they are for (a) their next step in education and (b) their future after finishing formal education. Respondents were asked to rate preparedness on a scale of 1 to 5, where 1 represents 'Not at all prepared' and 5 represents 'Extremely well prepared'.

Findings

Next step in education

Less than half of students consider themselves to be well prepared (a rating of 4 or 5) for their next step in education.



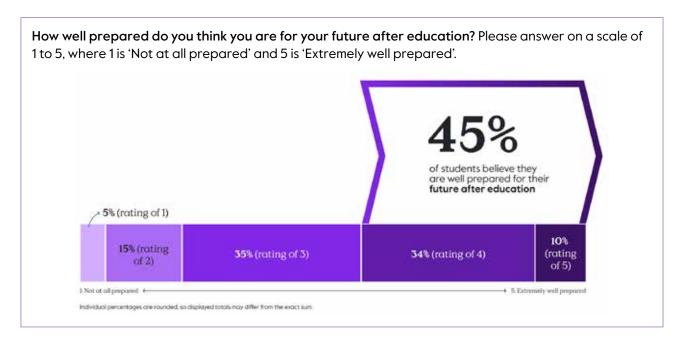
In an interview, one student shared their concerns about the change of environment and demands of university:

'Studies-wise, I think my grasp of the subject is probably pretty good, but going into a new environment that's where I feel less well prepared. Studying psychology as a full degree versus just having it as one of my four subjects, just handling that will be difficult let alone moving to a new environment at university. I feel largely underprepared for handling that sort of a thing.'

Student. Pakistan.

Future after finishing formal education

When considering how well prepared students feel they are for their future after finishing education, only 45% of students rate themselves as feeling well prepared.







We did not ask students to explain their responses, but we did ask students to describe in three words the qualities of someone who is ready for their future after finishing education. The words expressed most often include confidence, determination, and being responsible. This may be a recognition of the shift of responsibility that occurs when students finish formal education and enter the workplace.



One student highlights this responsibility, while reflecting on the skills they might need in the future:

'Compared to high school, university is mainly self-study so I can't rely on my teachers anymore, I will need to develop my own skills to do deep research for projects and reports. But when I start to work, I think self-management is the most essential skill for me to develop so that I can improve my ability and have more individual achievements.'

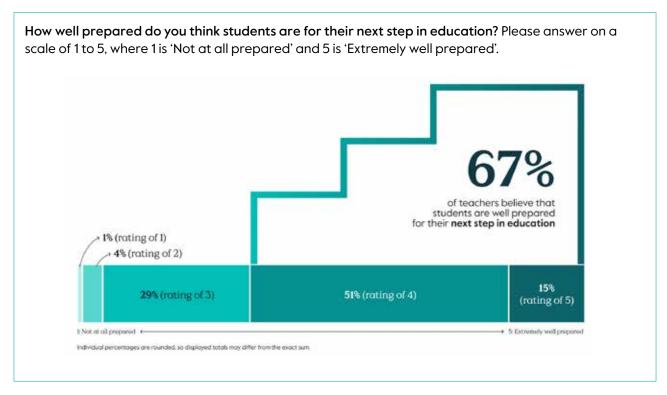
Student. Thailand.

How well prepared do teachers feel their students are?

We also asked teachers to reflect on how well prepared they feel their students are for their next step in education. Teachers were asked to reflect on their cohort of students aged 14 to 19.

More than two-thirds of teachers feel that their students are well prepared for their next step in education (a rating of four or five).



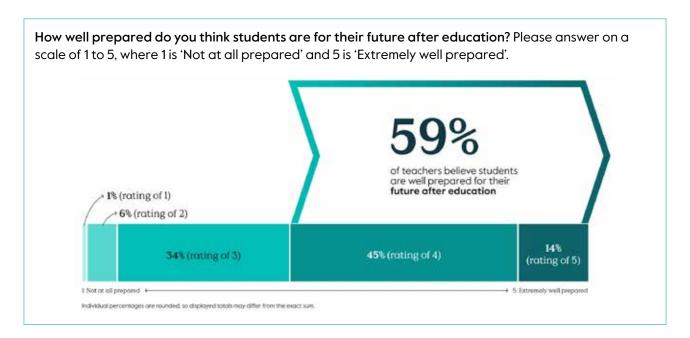


Within the survey, we asked teachers to explain their rating and this reveals nuanced opinions on student preparedness:

'We are fostering students' independence, encouraging them to rise to every occasion with confidence and resilience. As they transition into the next phase of their lives, we are ensuring they are equipped with the right skills and the right attitude towards personal growth and development.'

Teacher, Nigeria.

When considering how well prepared their students are for their future after finishing education, teachers continue to be confident - around three in five teachers say that their students are well prepared (a rating of four or five).



One respondent explains the challenge of preparing students for life outside formal education:

'Though students have made short term plans for the next one or two years, they are unsure of what to choose post-graduation.' Teacher, India.

Nevertheless, many responses reflect confidence about the long-term value of students' skills and experiences:

> 'They consistently inquire about the subject choices that match their dream careers, and they usually make an effort to perform well in those subjects.' Teacher, Uganda.

'They gain strong communication skills, enhancing their ability to articulate ideas and collaborate effectively with others. Exposure to diverse perspectives fosters adaptability and cultural sensitivity, which is essential for navigating a globalized workforce.'

Teacher. United Arab Emirates.

Developing future-readiness: where should schools place the most emphasis?

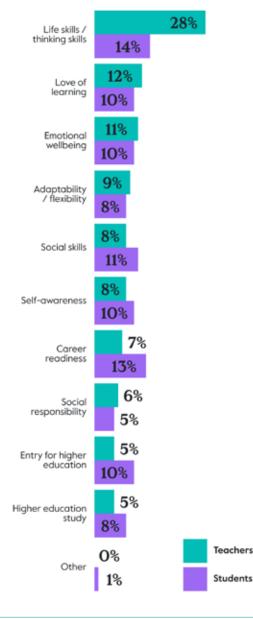
We wanted to understand how teachers and students view the role of school in preparing students for their future. From a list of options, teachers place the greatest emphasis on thinking skills / life skills², followed by love of learning and emotional wellbeing.

Students also highlight thinking skills / life skills, although not as strongly as teachers do. Like teachers, they also emphasise love of learning and emotional wellbeing. Unlike teachers, significantly more students rate careerreadiness and entry for higher education as their highest priority. Students were also more likely than teachers to prioritise social skills.

Teachers: What do you believe are the most important aspects of the future that schools should prepare students for? Please select up to 3 of the most important factors, with 1 being the most important factor.

Students: What do you believe are the most important aspects of your future that your current school should prepare you for? Please select up to 3 of the most important factors, with 1 being the most important factor.

This chart shows the percentage of teachers and students selecting each of the 10 factors as the most important.



² 'Life skills' was included on the teacher survey and 'Thinking skills' was included on the student survey – both had the same definition: 'for example, problem-solving, decision-making, and critical thinking'.

Conversations in the classroom

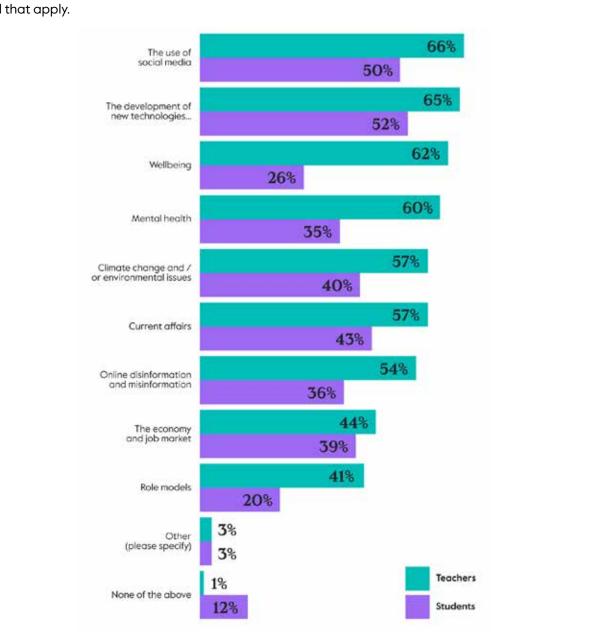
An important part of being prepared for the future is understanding the world around us, so we asked teachers and students to tell us about the topics they discuss at school.

It is clear many conversations are happening in the classroom that may help students to understand the world around them. However, it is striking that across all the topics, a significantly higher number of teachers mention these conversations than students.

and the difference is especially large in relation to mental health and wellbeing. Additionally, 12% of students say they do not discuss any of these topics in the classroom.

It is important to acknowledge that these differences could be because teachers are reflecting on their whole cohort of students aged 14 to 19, whereas students are reflecting on their own experiences.

Teachers: Which of the following, if any, do you discuss with your students? Please select all that apply. Students: Which of the following, if any, do you discuss in lessons / with your teachers? Please select all that apply.



Analysis

Our research reveals that many students do not feel well prepared for their future - yet we believe they are more capable than they think. By building their awareness and belief in their abilities, we can support them to feel more ready for the future.

Where does this underestimation on the part of students come from? They may not recognise all the skills they are developing alongside deep subject knowledge, nor see the different ways in which their learning experiences at school could translate into future success. For example, our recent skills audit has shown that students who study Cambridge International A Level Geography develop proficiency in systems thinking. While they may not always recognise or describe themselves as being skilled in this area, by studying this subject they are implicitly building these skills. This presents an opportunity for education providers to better signpost these skills so that students recognise the ways in which they are being prepared and understand how these skills may serve them in the future.

From our research we see that teachers reflecting on their students aged 14 to 19 consider them to be well prepared for their futures. Teachers are well placed to judge students' preparedness, because of their understanding of curriculum design and skills development, and because of their longitudinal experience of seeing students progress to - and thrive in - higher education and in careers.

Beyond the skills students develop through subject study, we also need to show students how the conversations they are having in the classroom, and the extracurricular activities they participate in, are valuable opportunities to develop important skills, deepen their interests, support their wellbeing and



demonstrate commitment beyond the classroom. We should also help students appreciate how involvement in community outreach offers meaningful opportunities to develop a sense of engagement and citizenship beyond the classroom. Finally, it is important that students have opportunities to develop empathy, which is essential for inclusion, helping students to understand and connect to others' experiences and perspectives.

There are indications that conversations taking place in the classroom around wellbeing and mental health are not as impactful as they need to be, and in this context it should be acknowledged that wellbeing is an important aspect of inclusion, and that feeling prepared for the future is not just about being equipped academically, but also socially and mentally. The fact that fewer students report these conversations happening than their teachers could indicate that the conversations are not having the desired impact, and that could be factoring into students' feelings about their preparedness for the future. Developing a shared language around wellbeing and having caring conversations that make space for feelings as well as exchange of ideas and perspectives, will make a difference.

'We're facing a huge mental health crisis and depression of young people globally. This makes the dimensions of thriving, happiness, health, understanding emotions, understanding the way you think, being able to relate ever more central to learning. Making space to show that caring is crucial in a world which is so challenging is really important.'

> Olivier Brechard, Director of International Relations, Learning Planet Institute.

Supporting students to recognise the full extent of when, where and how they are developing key skills – both in the classroom and beyond – is critical for helping them to feel prepared for their future. If students are more aware of the skills they are developing and understand how

they can be applied outside school to tackle challenges in the future, we believe they will have a stronger belief that they are prepared for their future and will have a greater sense of agency in terms of influencing their future.

'Signposting students through their learning is really important. If we could signpost from the beginning – from early years – that they are acquiring those skills, and of course, it's got to be age appropriate, then I think you would change people's perception.'

Alison Bellwood, Executive Director of Education, Project Everyone.

How you can get started

In the 'How you can get started' sections of this report we highlight the Cambridge resources and support available now, or coming soon, that can help teachers and school leaders start putting what they have learned into practice.

- · We have resources on active learning, inclusive education and learner wellbeing that can support the topics explored in 'Ready for the future?'. Go to page 58 for more information and links to these resources.
- · Students' own ideas about what it means to be prepared for the future include confidence, discipline, determination and being responsible - two of which (confident and responsible) are Cambridge learner attributes. These are threaded through our programmes and resources to support schools to develop students who are confident, responsible, reflective, innovative and engaged. You can find guidance on how to nurture these in our Cambridge learner attributes guide.
- \cdot We can help you maximise the impact of the wellbeing conversations you are having in the classroom. The Cambridge Wellbeing Check (for ages 7 to 19) is a great starting point. It gives students the chance to explore and share with teachers how well they are feeling, and how well they feel they are doing (whether they feel they are fulfilling their potential). This classroom assessment helps teachers to spot students who need more support with their wellbeing.



Subject knowledge and skills

Teachers and students view subject knowledge as essential for students' progression through formal education, but value it less for students' life afterwards.

We wanted to understand teachers' and students' perspectives on the importance of different skills, values and subject knowledge for students' futures. To support this analysis, we needed to develop a list of categories for each to consider. We used a framework created by the University of Cambridge Digital Education Futures Initiative (DEFI)³ as a starting point. We then analysed research literature and future skills frameworks from 2021 to 2024 to understand whether there were any new, emerging skills. From there, building on the existing DEFI framework, we created the following list of eight skills categories that we asked teachers and students to reflect on.

Skill set	Example of competencies
Aesthetic	appreciating and creating art, aesthetic perception.
Communication	active listening, language skills, literacy, but also social awareness, social skills, empathy.
Creativity and innovation	creative thinking, abstract thinking, imagination.
Digital	Al literacy, Al ethics, security and privacy, programming.
Leadership, management and business	entrepreneurial skills, financial literacy skills, responsibility.
Physical	coordination, positional awareness, strength, balance.
Self-management	ability to manage uncertainty, coping skills, adaptability, flexibility, metacognition.
Thinking and research (higher order thinking)	critical thinking, problem-solving, systems thinking, and research, fact checking and evidence gathering.

We explored these skills categories in our survey, together with subject knowledge and values:

Subject knowledge	for example, discipline-specific subject knowledge, mastery of key concepts.
Values	for example, environmental awareness and sustainability mindset, cross-cultural literacy, social agency.

³ Kotsiou et al, 2022, A scoping review of Future Skills frameworks https://www.tandfonline.com/doi/full/10.1080/03323315.2021.2022522

Findings

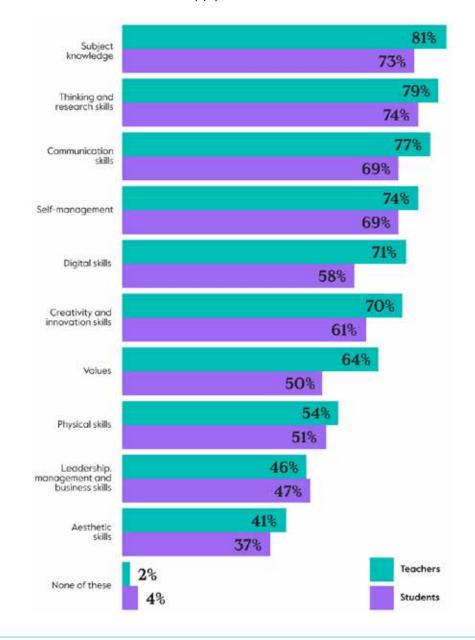
Next step in education

When presented with the list of categories, both teachers and students consider subject knowledge to be critical for students' next step in education. It is the most selected option by teachers, and the second most selected by

students (after thinking and research skills). This emphasises the critical role of subject knowledge in preparing students for immediate educational milestones such as exams and progressing to advanced study or higher education.

Teachers: Which of the following, if any, do you view as important for students to learn to be ready for their next step in education? Please select all that apply.

Students: Which of the following, if any, do you view as important to learn to be ready for your next step in education? Please select all that apply.

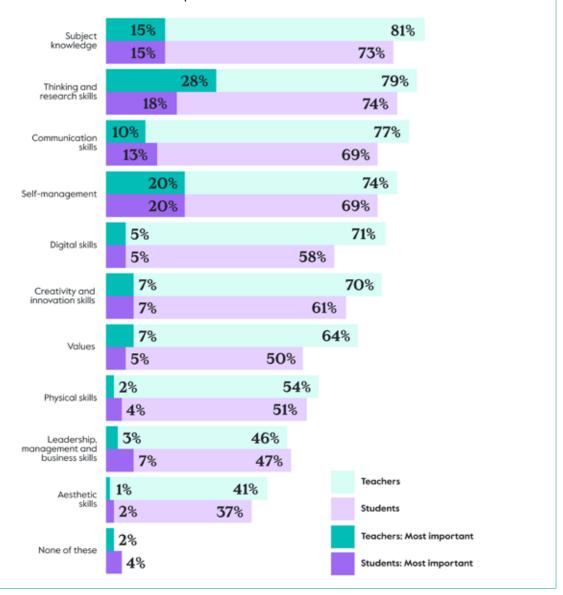


To refine thinking further, when asked what is most important for students' next step in education, both students and teachers choose the same top three, albeit in a different order. Students most often select self-management

skills, followed by thinking and research skills and subject knowledge. Teachers most often prioritise thinking and research skills. Selfmanagement skills and subject knowledge are the next most common choices.

Teachers: And which of the following do you think is the most important for students to learn to be ready for their next step in education? Please select one option.

Students: And which of the following do you think is the most important to learn to be ready for your next step in education? Please select one option.



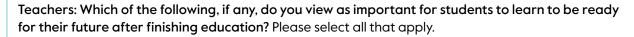
'It's incredible to see that teachers and students are recognising the importance of thinking and research skills and self-management skills. This is what research shows is important based on the science of learning, so it's great to see this also being recognised by students and teachers themselves.'

Professor Sara Baker, Professor of Development Psychology and Education, University of Cambridge.

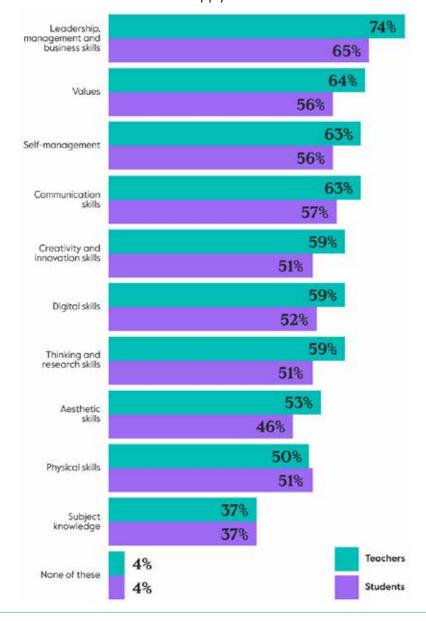
Future after education

While both students and teachers consider subject knowledge important for students' next step in education, there is a striking difference in its perceived importance for students' futures beyond formal education. Subject knowledge is the least selected option by both teachers and

students when asked to think about what is important for the future beyond education. In sharp contrast, leadership, management and business skills, values, self-management skills and communication skills are most frequently viewed as important.



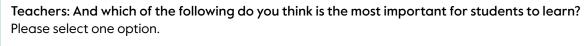
Students: Which of the following, if any, do you view as important to learn to be ready for your future after finishing education? Please select all that apply.



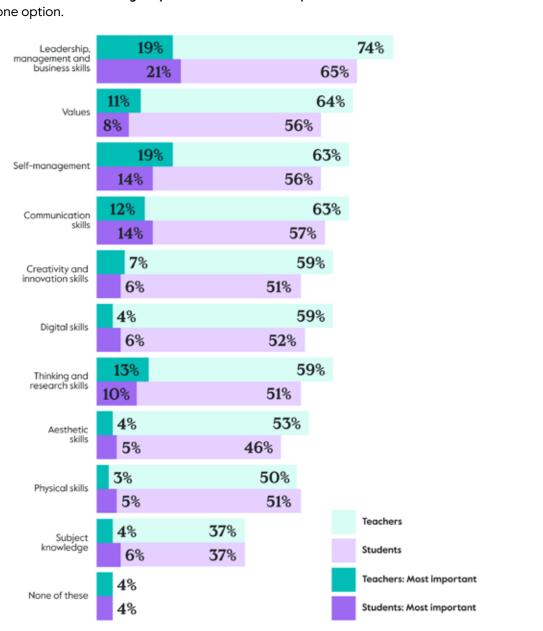
'I would say leadership, management and business skills are the most important for the future. Leadership can help your team grow.' Student, Pakistan.

When asked to identify what they consider most important, students most commonly choose leadership, management and business skills, followed by self-management skills and communication skills. Teachers most commonly choose self-management skills and leadership, management and business skills as the most important, followed by thinking and research skills.

Notably, when considering the skills needed for life beyond education, both teachers and students select thinking and research skills as most important more frequently than subject knowledge.



Students: And which of the following do you think is the most important to learn? Please select one option.



Challenges in teaching and learning

We were curious about the skills that students find most difficult to learn and teachers find most difficult to teach.

Almost a quarter of teachers identify selfmanagement skills as the most difficult to teach. The next most frequently selected options are thinking and research skills, values, and creativity and innovation skills.

Students also see self-management skills as a challenge, with 19% of students considering this skill as the most difficult to learn. A relatively large proportion of students consider leadership, management and business skills and communication skills the most difficult to learn.

Thinking back to the perceived shift in importance of subject knowledge for students' future after finishing education compared to their next step in education, it is interesting to

note that teachers consider subject knowledge less of a challenge to teach than students find it to learn: 12% of students list it as the most difficult to learn, but just 4% of teachers report it as the most difficult to teach.

Self-management skills emerge as a critical focus for education. Both teachers and students agree on their importance for students' futures and on the challenges of learning and teaching this skillset. This topic is explored in more detail later in the report.

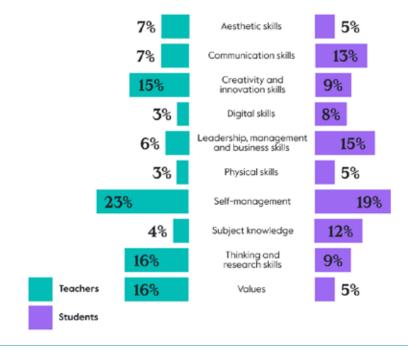
Students say communication skills are more difficult to learn than teachers believe they are to teach. The challenges students face in this area are also explored later in the report.

Teachers find thinking and research skills and values more difficult to teach than students report they are to learn.

Teachers: What do you think are the most difficult to teach students? Please select up to 3 responses, with 1 being the greatest challenge.

Students: What do you think are the most difficult to learn? Please select up to 3 responses, with 1 being the greatest challenge.

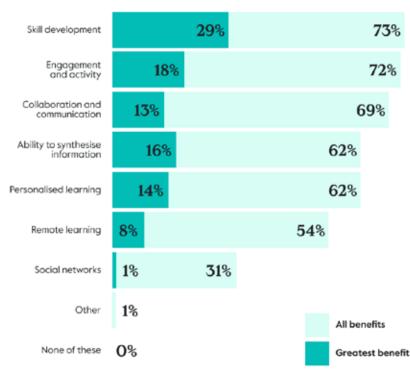
The chart reflects the percentage of responses selecting each skill as the hardest to teach or learn.



Technology and learning

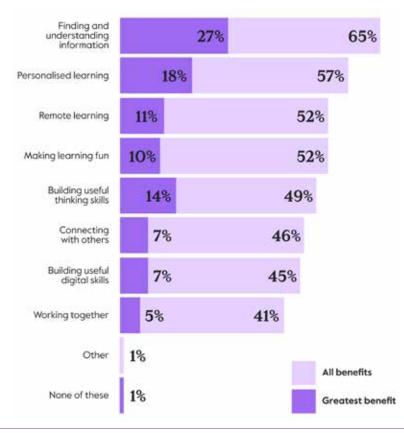
A quarter of students say that the greatest benefit of technology (from the options listed) was its application in finding and understanding information. A slightly higher percentage of teachers (29%) emphasised its role in supporting students' skill development more generally.

Which of the following, if any, do you view as benefits of technology in preparing students for the future? Please select all that apply. And which of the following, if any, do you view as the greatest benefit of technology in preparing students for the future? Please select one option only.





Which of the following, if any, do you view as benefits of technology in preparing you for the future? Please select all that apply. And which of the following, if any, do you view as the greatest benefit of technology in preparing you for the future? Please select one option only.



Perhaps students' emphasis on finding and understanding information as the greatest benefit of digital technology may suggest that they see digital technology as a shortcut to subject knowledge. As one student put it:

'As AI gets more popular and more widely available the need to memorise subject knowledge becomes less important as we can find and implement subject knowledge easily with the help of AI.' Student, India.



Some educators and students were concerned about the potential negative impacts of this 'shortcut':

'If students produce a PowerPoint on a topic, AI can do in 30 seconds what in the past would have taken students three hours to do. This can impact how deep and profound their knowledge is. Critical thinking comes from looking into what's below the surface, not just what's on the surface that you can present off-hand. By taking shortcuts, you're missing the beautiful mountain road.' School leader, Oman.

'It definitely worries me that more and more students are starting to rely on technology alone. I'm starting to see that many students would rather go to ChatGPT (or any other AI website) whenever they need the slightest help, instead of using their brainpower. It's a way to get an easier answer. Personally, I don't like to use AI as it takes away the creativity from my brain.' Student. United Arab Emirates.

Others were more positive:

'It's impossible to get AI away from our agenda. I think it's a very powerful tool. After school, there is no one to help [students]. If AI can support by tutoring students, I think it may be valuable.' Teacher. China.

'I wouldn't say that AI is making students lazy and I don't believe that they're trying to look for shortcuts. I would say that they're embracing AI in a positive way because they see that they are more effective, that they can bring more information to any decision.' Higher education leader, Spain.

'AI really can help a lot because it's time-saving. When I was revising for my AS levels, I used it to make a study schedule.' Student. Pakistan.

Analysis

Our research shows that subject knowledge is not highly valued for students' long-term futures. This may suggest that it is seen more as a currency that enables students to take their next step in education.

'It must be so disempowering for students to feel like disciplinary knowledge is just for the exams. It really raised for me the question of how teachers can communicate the intrinsic value of disciplinary knowledge.'

> Loic Menzies. Senior Research Associate. Jesus College, University of Cambridge.

Subject knowledge provides the foundations for informed thinking. Distinct skills are needed to apply subject knowledge so that subject knowledge and skills together enable effective action and decision-making. Having a particular skill can help students to acquire further knowledge and vice versa. For example:

- · Analytical skills can help us to acquire knowledge from reading a text.
- · Being able to apply knowledge from a range of subject areas or disciplines to a particular problem or context can support effective problem-solving.

'You need to acquire knowledge to develop some cognitive capacities, skills and higher order thinking. The hard thinking doesn't come just as something independent from knowledge and this process of acquiring and applying knowledge continues throughout life as part of lifelong learning.'

Borhene Chakroun, Director Division of Policies and Lifelong Learning, UNESCO. Students' relationship with knowledge should not be a passive one where they receive, memorise and then recall the knowledge when required. Instead, we need to help students and teachers see knowledge as a foundation for each student to actively construct, internalise and build on throughout their life.

'Knowledge is something you have to actively construct. It involves you and not just someone or something providing you with information. We should think about knowledge being the medium through which you develop these sophisticated learning skills.'

Professor Rose Luckin, Founder and CEO. Educate Ventures.

Showing students how the subject knowledge they are developing could apply to their future experiences can also help to underscore its long-term value. This can spark curiosity and interest, supporting them to more deeply engage with the active construction of subject knowledge.

As generative AI evolves at pace, the value of subject knowledge is being questioned and challenged. However, the ability to retrieve information is not the same as building subject knowledge. Information becomes subject knowledge only when processed and organised mentally, enabling advanced cognitive skills such as clear communication, critical thinking and problem-solving. For example, a surgeon cannot build the skills they need to operate on someone without deep subject knowledge of the human body.

'I want to make the case for subject knowledge in the era of AI – it actually matters more and not less; if you don't have the knowledge how will you know what the AI is telling you? You need to build your own internal capabilities to use the AI thoughtfully.'

Professor Jaideep Prabhu,

Professor of Marketing and Jawaharlal Nehru Professor of Indian Business and Enterprise, Cambridge Judge Business School.

In the same way, we cannot rely on a generative AI chatbot or assistant to replace our long-term memory. When we encounter new information, our working memory must process it while simultaneously engaging with the contextual details of a task. Without prior subject knowledge stored in long-term memory to support this process, the demands on working memory can become overwhelming, hindering effective learning and problem-solving.

'There are two major learning systems in the brain, the basal ganglia, which is the path of habits and automaticity, and the declarative learning through the hippocampal system. When you do things enough, you create basal ganglia automatic internal links or engrams. Skills turn into knowledge, knowledge turns into skills, it all intertwines.'

Professor Barbara Oakley,

Distinguished Professor of Engineering, Oakland University.

A solid foundation of subject knowledge will remain important. New technologies can provide immediate access to large amounts of data and suggest interpretations, but the challenges of misinformation and inaccuracies highlight the need for a sound subject knowledge base to contextualise and assess information critically and effectively.

It is time for us to reevaluate the role of subject knowledge within education. We must urgently reframe it so that it is seen as a foundation for developing skills and not as an equivalent to information. Subject knowledge and skills go hand in hand - you cannot have one without the other. It is essential to help students see the value of subject knowledge as something concrete that they will draw on in the future, and its use as a critical protector against misinformation and disinformation.

> 'Nobody can take away your knowledge. You could lose a lot of things, but if you have your knowledge and have really good values, you can go very far in life.' Student, Argentina.



In the 'How you can get started' sections of this report we highlight the Cambridge resources and support available now, or coming soon, that can help teachers and school leaders start putting what they have learned into practice.

- · We have resources on AI in the classroom, assessment for learning and climate change education that can support the topics explored in 'Subject knowledge and skills'. Go to page 59 for more information and links to these resources.
- To help students and teachers connect subject knowledge to real-life applications, we are evolving our assessment and teaching and learning design to draw explicit parallels to workplace scenarios. For example, creating an assessment scenario for biology in which the student is situated in a virtual lab as a cancer research scientist conducting an experiment.



Spotlight on: Climate change education

- · We are embedding climate change education within a multi-disciplinary approach.
- · We regularly hold forums with academic leaders in climate change, including experts from across the University of Cambridge, and feed what we learn into our products and services. For example, Cambridge IGCSE™ Geography has been updated to include a specific climate change topic in Paper 1, along with a greater focus on sustainability. The latest Cambridge IGCSE Business and Economics syllabus redevelopments also considered up-to-date understanding and framing of climate and sustainability issues.
- · Together with climate experts from the University of Cambridge, our curriculum experts have designed a climate change education framework. This outlines the key subject knowledge, skills and understanding required for learners to be empowered to make a positive impact in a climatechallenged world.

- · The framework is built around four dimensions that together create a holistic approach for climate change education:
- Understanding of causes, effects, consequences and responses.
- **Evaluating** information, perspectives and data,
- Caring for ourselves, each other and the planet
- Responding together with informed action.
- · Organised by learning stages, the comprehensive framework ensures that learners can build on prior subject knowledge and that the content is age appropriate.

Find out more on our website: https://www. cambridgeinternational.org/why-choose-us/ benefits-of-a-cambridge-education/climatechange-education/supporting-cambridgeschools/about-climate-change-education/

Communication and interpersonal skills

Students want to develop their interpersonal skills to understand the perspective of others, feel included and increase their confidence - but teachers report that students' fear of judgement, their social anxiety and use of digital forms of communication get in the way.

A common theme emerging from our qualitative interviews with educators is concern around students' interpersonal skills. Educators are positive about how technology offers opportunities to make connections across the world, but they also raise questions around whether young people are developing the skills necessary to communicate effectively face to face, and to develop meaningful relationships.

Therefore, one objective of our quantitative study was to explore students' social and interpersonal skills in more depth. We wanted to understand how well developed teachers feel students' social and interpersonal skills are, the ways in which students choose to communicate, and what the benefits and challenges are of developing social and interpersonal skills at school.

'Although technology has opened the world in terms of the connections it can offer, it has also limited understanding in the way it offers solutions, opinions, and what the world looks like, because they [students] are building a worldview precisely based on what they see through the world wide web.'

School leader, India.

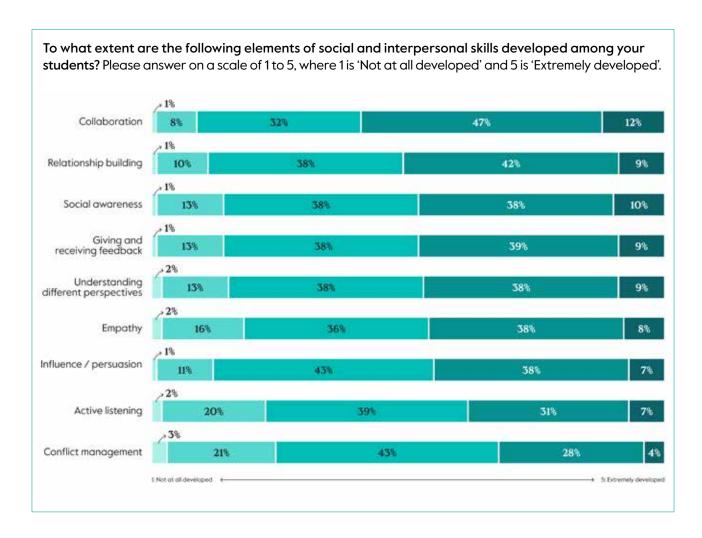


Findings

How well developed are students' interpersonal skills?

We asked teachers to rate the development of different aspects of students' social and interpersonal skills - including collaboration,

relationship building, active listening, conflict management and understanding the perspectives of others.



Most teachers (59%) rate students' collaboration skills as well developed (that is, they give a rating of 4 or 5).

'Teamwork is the best way to go. I think a mistake people can make when they are a team leader is to be bossy. They can think that as the leader they are the one who knows. But other people also have ideas, and when we put creative minds together, we tend to get something that is extraordinary.' Student. Zimbabwe.



When considering which skills are not well developed, more teachers rate students' active listening skills and conflict management skills as not well developed (that is, they give a rating of 1 or 2) compared to other aspects of social and interpersonal skills.

We know that many students view communication skills as among the most important for their future. In addition, students are more likely to say these skills are the most

difficult to learn than teachers are to say they are the most difficult to teach (see our previous chapter on 'Subject knowledge and skills').

Qualitative interviews with students provide deeper insight, revealing that students consider verbal communication to be challenging. They also reveal that students may choose to avoid disagreement due to fear of social repercussions, such as being the 'lone voice' or facing social judgement.

'It's very hard for me to imagine how you can teach verbal communication skills, but it is important to have the ability to talk through your problems and to work hard even when it's tough.'

Student. Serbia.

'Communicating with teammates and problem solving a lot of times in school just feels like making people happy rather than being able to communicate your ideas because there are social stakes in school. It's mainly because of the maturity level. For example, if someone in the group has an idea, and most people agree with it but someone else disagrees, there can be backlash on that person that creates a division.'

Student. United States of America.

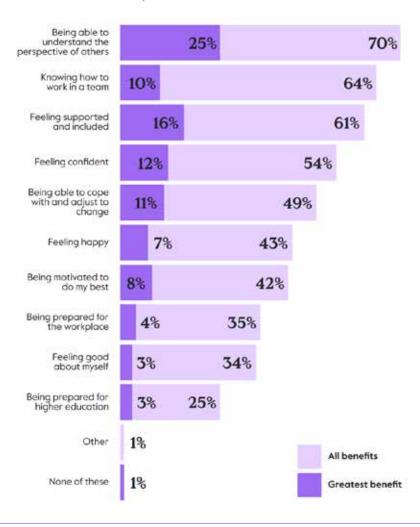
Benefits and barriers to developing social and interpersonal skills at school

When asked about the greatest single benefit of developing social and interpersonal skills, 25% of students choose understanding the perspective of others. Students also frequently select feeling supported and included (16%) and feeling confident (12%) as the greatest benefit.



Which of the following do you think are benefits of building relationships and getting along with people? Please select all that apply.

Which of the following is the greatest benefit in encouraging you to develop your social and interpersonal skills? Please select one option.



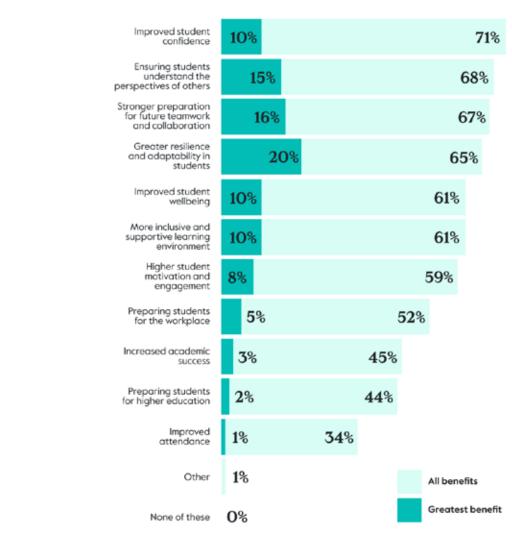
Teachers most commonly choose greater resilience and adaptability (20%) and stronger preparation for future teamwork and collaboration (16%) as the greatest benefit of encouraging students to develop their social and interpersonal skills. This is closely followed by ensuring students understand the perspective of others (15%), mirroring students' responses.

We also asked teachers to share the challenges they face in helping students to develop their social and interpersonal skills at school.



Which of the following, if any, do you view as benefits of encouraging students to develop social and interpersonal skills? Please select all that apply.

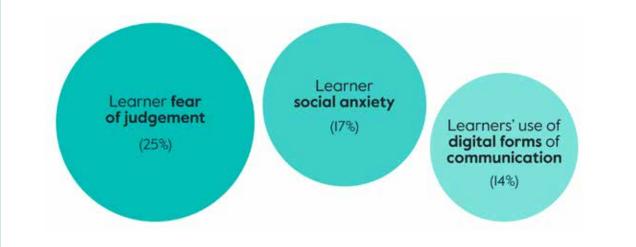
Which of the following is the greatest benefit of encouraging students to develop social and interpersonal skills? Please select one option only.



Fear of judgement and social anxiety are the most selected greatest challenge. This seems to be consistent with students' concerns about the social repercussions of disagreement and reflects a broader challenge in encouraging meaningful communication.

The options that are least selected as greatest challenges in helping students develop social and interpersonal skills are limited face-to-face interaction (3%), language differences (3%) and cultural differences (6%).

And which of the following do you think is the biggest challenge to helping students to develop social and interpersonal skills when at school? Please note: Teachers were first invited to select all that apply, and as a follow-up question they were asked to select the biggest challenge.



The figure shows the percentage of teachers selecting each challenge as the biggest one.

'I would say that students are asking for more opportunities to connect. We have a mentorship programme where the class is divided into groups according to their interests and personalities, allowing them to build stronger connections with one another. They often spend their breaks discussing the world and exploring values together.'

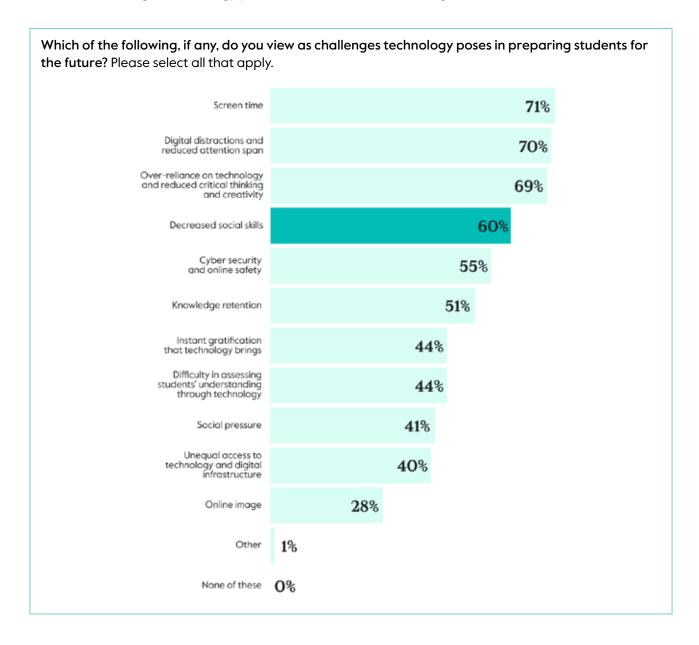
School leader, Kenya.

'Having the vocabulary and the words to describe what they're feeling is really important. In our context English is often a second language and the default is "that's bad" or "I'm sad" and the challenge is trying to pin down the feeling and having the tools to say "it's not that I'm feeling sad, it's that I'm feeling frustrated." Once they identify it, they can tell someone.'

School leader. China.

We also know from our research that digital technology has a part to play. When asked about the challenges technology poses in

preparing students for the future, 60% of teachers select decreased social skills as one of the challenges.



This aligns with findings from our qualitative interviews where some teachers voiced concerns about students' reliance on digital forms of communication, saying they feel it hinders students' ability to connect with each other.

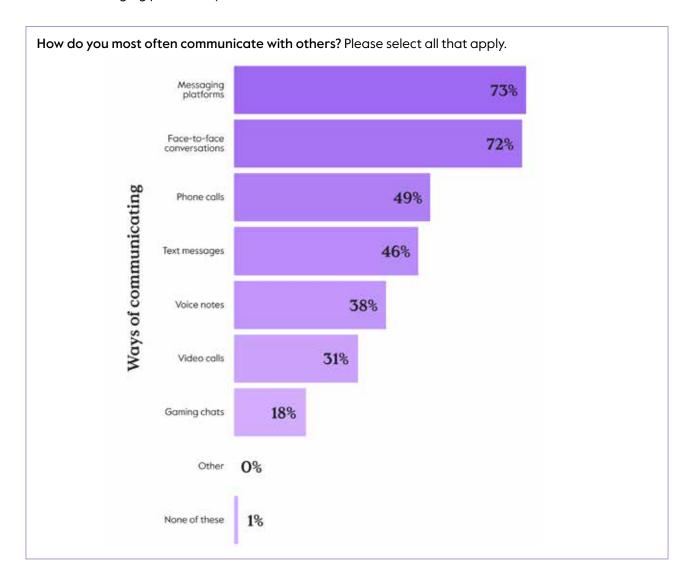
'During breaks, the younger year groups will run...but the older years, most of the time they will stay in the classroom holding their devices, playing games. Their time could be devoted to more meaningful activities. I'm not against entertainment through digital technology. There are many YouTube videos that are very good. There are some that inspire, and critique, and teach them something. I think they just need some guidance.'

Teacher, China.

How do students most often communicate?

When asked how they most often communicate with others, students are almost equally likely to mention messaging platforms (described in the

survey as 'WhatsApp, Instagram DMs [direct messages], Snapchat, Discord, etc.') as face-toface conversations.



Qualitative interviews show that some students prefer face-to-face communication, with several students noting that it helps them avoid misunderstandings:

> 'I prefer face-to-face because I can't be misunderstood.' Student, United States of America.

'Some things you say can have two different meanings depending on the tone or the facial expression and text doesn't really capture that. So the person you're texting can misinterpret what you're trying to say and can maybe get offended or think you're being rude, and if they don't tell you, then you don't realize that you've had that effect.'

Student. Costa Rica.

Analysis

The fear of getting communication wrong is a recurrent theme in teachers' and students' responses. This anxiety is perhaps unsurprising given the increasing dominance of online spaces in young people's lives and the idea that they are much more visible to, and contactable by, a wider range of their peers.

'The 24/7 nature of children's social lives and the pressures that are on children, through their phones, didn't exist for previous generations.'

Lord Jim Knight,

Member House of Lords,
second chamber of the UK government.

This increased pervasiveness of online communication can also impact key social and interpersonal skills such as active listening and conflict management.

'In a world where our feeds often become echo chambers and [social media] algorithms amplify certain belief systems and perspectives, it's really hard for our young people to learn how to disagree well and practice active listening.'

Zubair Junjunia, Founder, ZNotes.

Digital communication can lack the nuance and depth of face-to-face interaction, while at the same time amplifying social pressures and fear of judgement. Teachers observe that social anxiety, the nature of digital platforms and students' reluctance to speak openly are all challenges to students developing interpersonal skills in the classroom.

These challenges may be particularly acute in international education settings, where students are navigating diverse cultural norms and could be asked to communicate in a language that is not the one they use socially. Without intentional support, this can limit their ability to connect with teachers and fellow students and to feel a sense of belonging.

'Cross-cultural differences can explain why learners in an international education context can find conflict management or being able to disagree agreeably slightly more challenging.'

Jane Larsson, Executive Director, Council of International Schools (CIS).

Students themselves recognise the importance of communication skills for their future success. They say that being able to communicate well helps them to understand others' perspectives, feel supported and included and build confidence. Yet many also report that these skills are difficult to learn – more so than teachers perceive them to be to teach. This disconnect suggests a need to consciously consider how we approach the development of social and interpersonal skills in schools.

'Communication skills are very useful in a school environment or a work environment. We need to exchange ideas and to be a person who understands and is able to talk about problems and talk about issues before it gets out of hand.'

Student. India.

Creating safe, inclusive and structured spaces for students to practise communication is essential. Schools should create an environment where students can experiment with language, consider different ways of communication, make and learn from mistakes, and grow in confidence, so that they can participate fully in learning.

'I would continue to urge that we think about the experience of young people. We often think about what we teach young people, but far too little about where and the environment around them. If you think about nonverbal or relational communication skills - how to read body language, tone, facial cues, understanding implicit social norms - most of that stuff is undermined by the engagement with the technological and it's not rehearsed enough. We need to think about the context which enable various skills to emerge and deepen.'

Dr Robert Loe, Deputy Principal – Academics, The Scots College, Sydney.

'There's a sense in the findings of how critical relational and physical safety is in the classroom to developing these skills.'

> Dr Louise Edgington, Educational Psychologist and part of the Climate Psychology Alliance.



Oracy, which is broadly defined as the set of skills involved in using spoken language to communicate effectively, offers a valuable framework for this. It enables educators to embed communication skills into everyday learning, helping students to listen actively, engage in constructive dialogue and articulate ideas.

The creation of a safe and respectful environment for talk lies at the heart of oracy. It requires clear ground rules and shared expectations, such as taking turns, listening without interruption and encouraging everyone's contribution. These principles not only build trust and inclusion in the moment but also equip learners with the habits of respectful dialogue that prepare them for future relationships, workplaces and communities where effective communication and collaboration are essential.

Importantly, these opportunities to practise communication should begin early. Embedding communication and relational skills from the early years can help students build a strong foundation, becoming more confident and better prepared to navigate complex social interactions as they progress through education and into the workplace.

'Anecdotally, I'm seeing many workplace challenges emerging, especially among young people at the start of their careers who lack the skills to manage conflict. For example, I've heard of employees leaving a job rather than speaking with their manager about workload. I think this reflects a broader inability to disagree well.'

Zubair Junjunia, Founder, ZNotes.

International schools may be uniquely positioned to support this development. The diversity of their student bodies provides a rich context for learning how to appreciate different viewpoints, communicate across cultures and collaborate effectively. When harnessed thoughtfully, this environment can be a powerful asset in preparing students for a global future.

'Students will talk about the value of their international education experience in relation to living and learning with people from different backgrounds, or who hold very different beliefs to their own and how this helps them to better understand and respect diverse perspectives, while also enabling them to understand their own beliefs more clearly and express them in a more constructive way.'

Dr Fiona Rogers,

Deputy Director, Council of British International Schools (COBIS).





How you can get started

In the 'How you can get started' sections of this report we highlight the Cambridge resources and support available now, or coming soon, that can help teachers and school leaders start putting what they have learned into practice.

- · We have resources to support bilingual learners through language awareness, and resources to help students develop strong communication and social skills through oracy. Go to page 60 for more information and links to these resources.
- \cdot We can help you maximise the impact of the wellbeing conversations you are having in the classroom. The Cambridge Wellbeing Check (for ages 7 to 19) is a great starting point. It gives students the chance to explore and share with teachers how well they are feeling, and how well they feel they are doing (whether they feel they are fulfilling their potential). This classroom assessment helps teachers to spot students who need more support with their wellbeing.



Spotlight on: Personal, Social and Emotional Development



· We recognise that building confidence and proficiency in these skills needs to start from a young age, which is why they are emphasised in our Cambridge Early Years programme. Our Personal, Social and Emotional Development learning area aims to 'shape children's ability to empathise, interact and build positive relationships with others, and work collaboratively' and enable them to 'develop a sense of self-esteem and identity'. Learning statements explicitly address these aims. In Language,

Communication and Literacy, speaking and listening are rightly called 'powerful tools' for children's learning across the curriculum. We explicitly support the development of listening and attention, understanding spoken text and speaking. Teachers can easily see the expected progress in these areas through the learning statements progressing across the year groups and are supported to help children through playbased learning approaches and observational assessment practices.

Self-management skills

Self-management skills are hard to teach and learn, but both teachers and students see them as critical for students' futures.

A central focus of our research is to understand what it feels like to be a student facing a rapidly changing world. We recognise that an external emphasis on all that is changing in the world can make the future feel uncertain, so we set out to explore how this shapes students' behaviours and habits and to explore their attitudes to the different types of change they might need to navigate. By listening to how students themselves feel, we can better reflect on how to support them to face the future with confidence and a sense of agency.

Self-management – a set of skills that enable students to recognise and manage their thoughts, feelings and actions - deserves particular emphasis in preparing students to thrive in a changing world. In both the

qualitative interviews and the quantitative survey, self-management skills emerged as a priority for education. We heard how teachers strugale with students becoming distracted and that they often perceive their students to be uncomfortable with change. The concept of distraction also echoed through our conversations with students, and several spoke of the need for discipline to manage the distraction created by their electronic devices.

Self-management can provide a solution to these challenges, but teachers and students also say that these skills are difficult to teach and to learn. We also need to recognise that self-management is personal and will be different for each individual.



'I think metacognition is the most important part - being able to plan and think and understand why your thinking is wrong.' Student, United States of America.

'The finding that self-management skills are perceived as both highly important and highly difficult, by both students and teachers, should be treated as a strategic priority.'

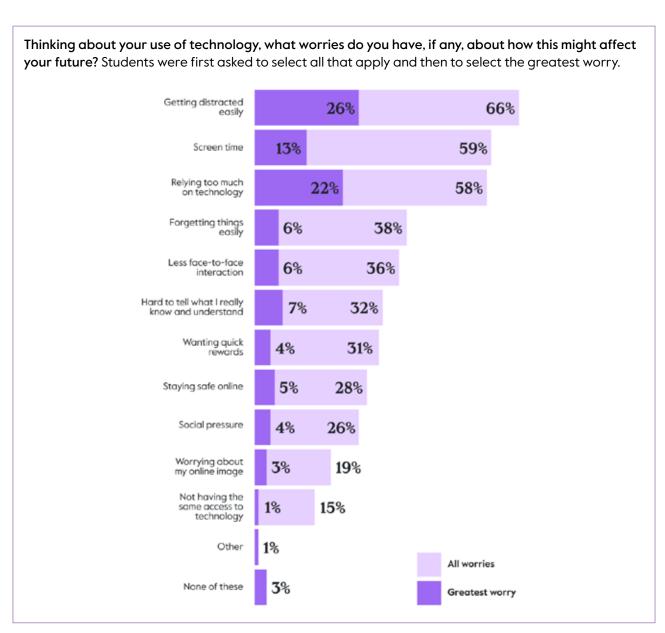
Dr Iwan Syahril, Global Education Advisor and former Director General of the Ministry of Education, Indonesia.

Findings

Managing distractions

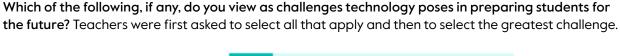
When asked what worries they have, about how their use of technology might affect their future, students' most common worries are getting distracted easily (66%), excessive screen time (59%) and an over-reliance on technology (58%).

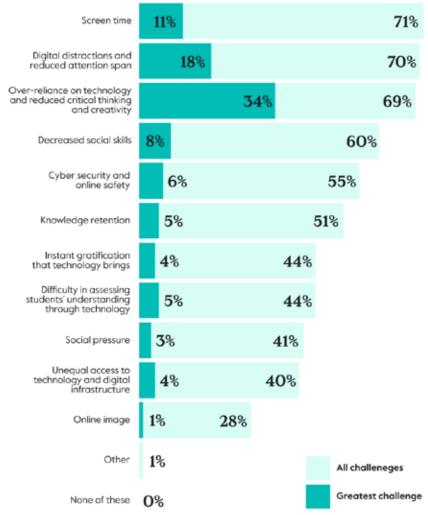




Teachers also express concern about how students' use of digital technology might impact their futures. Over a third (34%) of teachers select over-reliance on technology as the greatest challenge that technology might

pose in preparing students for the future. Digital distractions and reduced attention span are also a common concern, with nearly one in five teachers (18%) selecting this as the greatest challenge.





Notably, screen time is a commonly selected challenge, reported by well over two-thirds (71%) of teachers, but it is only seen as the greatest challenge by 11%. This points to a need to support students to manage distractions and use screen time effectively.

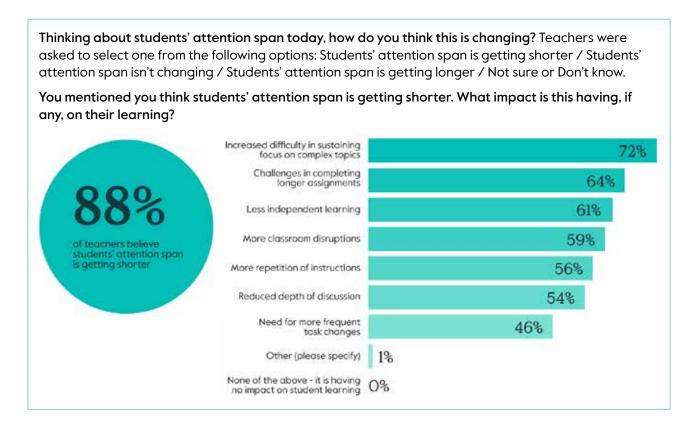
In qualitative interviews, some students describe how they implement effective selfmanagement strategies, such as turning off or putting timers on their devices, when they need to study. Others speak about how all-consuming their devices can be.

'I think I'm currently in a really bad relationship with my phone because I feel kind of addicted to my phone and my iPad. And sometimes I will stay up really, really late, like until morning.' Student. China.

'An exercise I do with myself when I'm studying for an important exam and I need to be attentive, I close off all of my electronics, I put my phone on do not disturb and I just put a one- or two-hour timer. This will basically help me to be attentive as I'm not focusing on any electronics at that time and I don't have anything to distract me.'

Student, United Arab Emirates.

When asked to consider any changes in their students' attention spans, the vast majority (88%) of teachers perceive that this is getting shorter. Of those, almost three-quarters (72%) report that this impacts their students' ability to sustain focus on complex topics, an important aspect of self-management.



'In the past, people had to rely on reading books to get new information. But nowadays they get quick access to information by watching a short video or listening instead of actually reading a whole book. People are used to getting quick information, so they lack the patience to concentrate for longer than one minute to get the information they want.'

Student. Thailand.

'Before COVID, I would say my attention span was fairly decent but with classes going online during quarantine that did affect my attention span. The classes were shorter, and I was going for a long time sitting in front of a screen in my own home in my own comfortable zone. It made me be less attentive to the class and to what teachers are saying or what's happening around me. It was an adjustment again when we came back to school.'

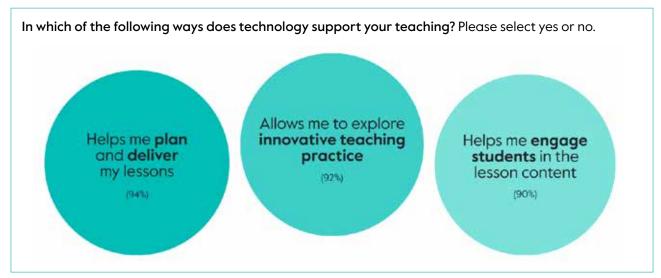
Student. United Arab Emirates.



While technology can be a challenge, it is also part of the solution, and it is widely embraced by teachers and students to support learning and effective self-management. Over 90% of teachers feel that technology helps them to plan and deliver lessons and allows them to explore innovative teaching practices. These are valuable efficiencies at a time when teachers are facing competing demands and experiencing pressure to engage – or as one teacher put it, to 'entertain' - their students amid challenges with student attention spans and increased distractions.

'Being a teacher is more like a locksmith who has to figure out every student and their needs. You have to keep them engaged and interested in the subject.'

Teacher. Pakistan.



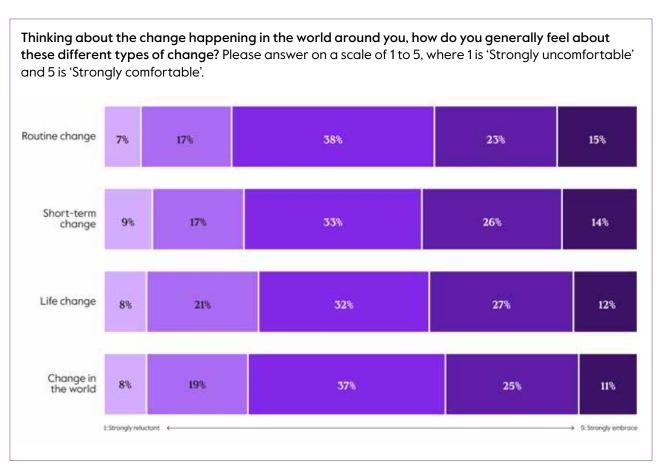
Attitudes to change

The survey explored students' attitudes towards different kinds of change – everyday changes such as seating arrangements, shortterm changes such as temporary teacher replacements, major life changes such as transitioning to the next educational stage, and existential changes at a global level, such as climate change.

Among students, there is a considerable range of feelings towards the different kinds of change: for each kind, over a third of students report feeling comfortable (a rating of at least 4 out of 5), with a smaller proportion of students reporting a sense of discomfort (a rating of 1 or 2 out of 5).

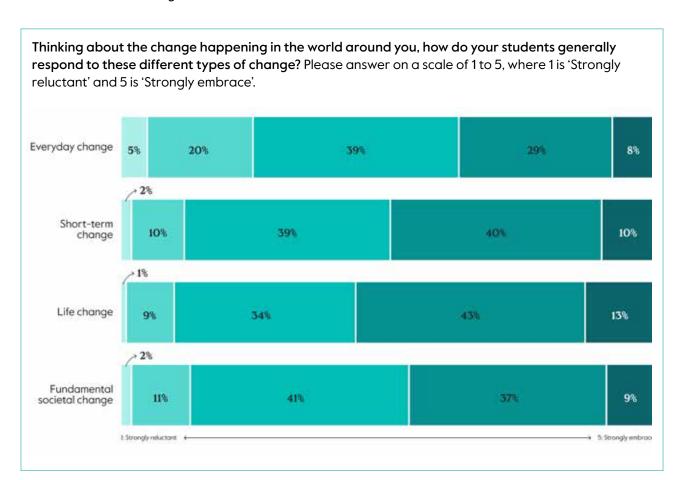
Interestingly, teachers think that their students embrace change more than students' responses suggest that they do, particularly when thinking about short-term change and life change.





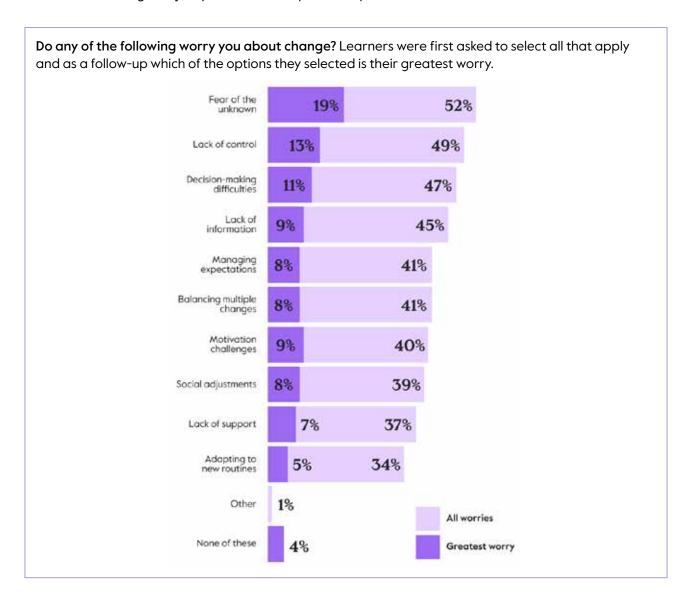
Half of teachers (50%) say their students embrace short-term change (a rating of 4 or 5) yet only 40% of students say they are comfortable with this type of change. The gap is even wider for life changes: well over half of

teachers (56%) believe that their students 'embrace' life changes (a rating of 4 or 5), whereas fewer than 4 in 10 students (39%) report feeling comfortable with this level of change.





When asked 'What, if any, worries do you have about change?' very few students (4%) say they have none. In fact, a large majority of students report multiple concerns.



Fear of the unknown, lack of control and decision-making difficulties are the most commonly reported worries - they are each mentioned by around half of all students.

It is clear that many students are concerned about both uncertainty and a perceived lack of agency - challenges that self-management skills can address.

When asked what is their greatest worry about change, students give a broad range of responses. The most commonly selected option, by a significant margin, is again 'fear of the unknown'.

'I think it is difficult to prepare students for the realisation that they will have to learn throughout their lives, adapt to change, and be ready to grow and change, and seek out new opportunities.'

Teacher, Latvia.

Although most teachers believe that their students 'embrace' or 'strongly embrace' life changes, some teachers also reflect on the challenges students face.

'I think Covid was a kind of change overload for students. And now they just want things to stay the same for once, and not to go back to that kind of chaos.'

Teacher. United States of America.

Supporting students to manage and adapt to uncertainty is an important part of self-management.

'I do feel very positive about my students and the futures that they can create. But there are so many things that make being their age really challenging, that I never dealt with, and that my students that I taught 10 years ago did not deal with.'

Teacher, United States of America.

In line with our survey findings, some of the students we spoke to in one-to-one interviews demonstrate a positive attitude towards change, and appreciate the way their life experiences have given them greater confidence.

'I used to be scared of change, but then I moved to another country. That was definitely very scary for me. After living that experience, I am not afraid anymore. So, change doesn't scare me. I really like change.' Student, United States of America.

'For me as a person who has moved schools a few times and changed curriculum, adaptability is pretty important. I have to change my mindset to suit different environments, and the more I change the more adaptable I become.'

Student, Portugal.



Analysis

'We've historically just hoped that young people can develop core executive function skills and habits - like time management, organisation, goal-setting - as they make their way through their schooling experience or life, but we really can't afford to make that mistake any longer.'

Mitch Weathers.

High School Teacher and Creator and Founder, Organized Binder.

Self-management skills are widely recognised as essential for students' long-term success, yet there is a perception that they are challenging to teach and to learn. This difficulty may stem, in part, from the open-ended nature of these skills which include focus, organisation and adaptability, and can be hard to quantify or assess. Without clear benchmarks, it can be difficult for both teachers and students to know when progress has been made or what the next steps should be. Additionally, these skills are holistic, cutting across all areas of the curriculum rather than aligning neatly with specific subjects or assessment criteria. As a result, they can be neglected or underrepresented in lesson plans and teaching materials.

Students' attitudes towards change also reveal important insights. Many young people experience school as a structured environment, which may not adequately prepare them for the uncertainty, ambiguity and complexity of the wider world.

Some of the experts we consulted highlighted the growing influence of global events on students' outlook, suggesting that increased exposure to unsettling news is likely having an adverse influence on their sense of agency and optimism about the future.

'Young people have so much more awareness of what's going on in the world through access to social media. What they see makes them more fearful than hopeful about our world and their future. This is different from older generations and I don't think we are responding to that in an educational sense. We should be doing more to help them to navigate the fear they feel.'

Alison Bellwood, Executive Director of Education, Project Everyone.

'I see young people who are concerned about society. They have ideas, they know about the issues, but feel it's not their job to fix it and they don't feel they have the power to make change. But if everyone thinks they have no power then who's going to change the world? It's very complicated.'

Wencong Chai, Director of Admissions, University of Sydney.

This underscores a vital role for education in encouraging a sense of optimism and agency.

'What happens when you associate fear of change with widespread pessimism? I think that's the kind of double condition in which the younger generation is now living. We need to think about the competencies we can build back that would counteract this and give young people the ability to develop intent, purpose and agency.'

> Michael Stevenson, Senior Consultant, OECD High Performing Systems for Tomorrow.

'I'm 17, so I use my phone a lot. I'm on a lot of social media websites, so I'm mostly getting a lot of individual experiences and opinions and insights. And then my brain is just going to try and generalize that - like, oh, I'm pretty sure a good chunk of people think like this, or I'm sure a good chunk of people disagree with this. And so, that probably leads me to being a little bit more pessimistic.' Student, Pakistan,

Some experts we spoke to reflect on how the challenging aspects of learning – the times when students need to step out of their comfort zone to learn – are not setbacks, but opportunities that support growth and self-belief, leading to agency.

'Agency [...] is key to building hope. Things can be changed because we are adaptable. We can do hard things because we've tried hard things and made it through. Struggle in learning is not a sign of weakness, but a sign that growth is happening.'

Jenny Anderson and Rebecca Winthrop in The Disengaged Teen: Helping Kids Learn Better, Feel Better, and Live Better (2025).

'Learning is never ever a linear process. It's repetitive, it's iterative, it's something that you fail, and you try it again. For me the essence of learning is that it's also building the character of the learner, showing they are capable of doing the challenging stuff and not only doing small and pleasant things, and staying in their comfort zone.'

Lasse Leponiemi, Co-founder and Chair, HundrED Foundation.

Alongside this, experts remind that young people must have the opportunity to process the impact of what they are learning.

'We need to tend to the learners' emotional process while they are learning. We should think about building active hope by giving space for young people to acknowledge more positive futures but at the same time we mustn't deny the complex situation we are in. In building this active hope we need to make sure that young people's emotions are heard and understood, that we tolerate uncertainty and don't dismiss the views. Crises like climate change aren't on children to solve – we should be giving them examples of powerful adults that are taking action.'

Dr Gareth Morgan, Clinical Psychologist / Senior Clinical Tutor, and Honorary Associate Professor, University of Leicester.

It is also important to help students recognise the self-management skills they are developing. For example, independent or group study demands discipline, motivation and strategic planning. Making these processes visible and explicit can help demystify self-management, making it more achievable.

'We don't give young people extended periods of time to focus to follow through on a project to make links across disciplines, to fail, to learn from mistakes, to resolve their own conflicts, which takes time.'

Professor Hilary Cremin, Professor of Education and Head of Faculty, University of Cambridge.

'Self-management and leadership can only be developed if students have real opportunities to experience them.

That means adults sometimes giving up control of the classroom or school environment to allow young people to be exposed more often to situations in which those abilities are required.'

Alex Beard, Senior Director, Global Learning Lab at Teach for All.

One expert noted that young people's awareness of the importance of self-management reflects their awareness that thriving in uncertain times relies on strength of character.

'I think the responses show that young people themselves understand that [thriving in the future] is about personal qualities and how best to cope with change in a very uncertain world.'

> **Professor Miles Berry**, Professor of Computer Education, University of Roehampton.



Equally important is the need to create opportunities for students to strengthen executive functioning skills, particularly attention, focus and emotional control. Concerns persist about the impact of digital devices on students' ability to concentrate, with information overload potentially overwhelming those who have not yet developed the skills to filter and prioritise effectively. While schools can set boundaries for device use, lasting change requires collaboration with parents and carers to ensure consistent habits across home and school environments.

'Increased distraction and decreased attention spans are part of a continuing and evolving trend that is not likely to go away anytime soon. The attention economy has been exacerbated by the consumerisation of AI and that is a real challenge for young people.'

Professor Rose Luckin. Founder and CEO. Educate Ventures.

'If you can't keep your focus you can't deliver anything more than simple memory.'

Dr David Good, Director of Research - Department of Psychology, University of Cambridge.

Educators face a critical choice: whether to compete for students' attention or to nurture their capacity to sustain it. In a world where many professions still demand engagement with complex information, helping students build these foundational skills is not just beneficial, it is essential.

How you can get started

In the 'How you can get started' sections of this report we highlight the Cambridge resources and support available now, or coming soon, that can help teachers and school leaders start putting what they have learned into practice.

- · We have behaviour for learning resources focusing on developing positive behaviours for learning, and resources exploring how metacognitive skills can enhance learners' ability to selfregulate. Go to page 61 for more information and links to these resources.
- · Recognising and controlling feelings, as well as thoughts and actions, is an important part of self-management. The Cambridge Wellbeing Check (for ages 7 to 19) gives students the chance to explore and share with teachers how well they are feeling, and how well they feel they are doing (whether they feel they are fulfilling their potential). This classroom assessment helps teachers to spot students who need more support with their wellbeing.
- · Our Wellbeing curriculum for **primary** and **lower secondary** students provides many opportunities for students to learn self-management skills and covers physical as well as mental wellbeing. This could help with the challenges reported by both students and teachers around the distractions of technology and overuse of phones and other devices. It is important that we equip students with the tools they need early on, and our Wellbeing curriculum provides a solid foundation upon which to build more advanced self-management skills.
- · We are auditing our programmes and qualifications, starting with our Cambridge International AS & A Levels, to show the skills that students develop implicitly and explicitly as they build their subject knowledge. We have started by looking at complex thinking skills, and will be expanding this so that we can highlight to teachers and students how different subjects support the development of wider skills, including self-management skills such as metacognitive, decisionmaking and problem-solving skills. This will increase awareness among teachers and students of what these skills look like in practice, and in turn, may increase self-confidence among students.



Conclusion - where do we go from here?

The research we present in this report provides valuable new insights into how students feel about their education and how prepared they (and their teachers) feel students are for their futures. What is clear is that at a time of profound global change, great schools, great teachers and a clear, purposeful curriculum remain the foundations of great education.

Our findings demonstrate that students and teachers are thinking about the holistic development of the 'whole' learner - with an equal emphasis on the importance of what they know and what they can do (their subject knowledge and their skills), how they are (their wellbeing and self-management skills) and how they relate to others (their communication and interpersonal skills).

This message, the findings and these conversations will continue to inspire our work now and in the future. We see this research as a starting point and will continue researching these critical areas with our community.

Teams across Cambridge are already working to incorporate what we have learned so far into our existing programmes, and to plan new initiatives that will enable us to make an evergreater contribution to our students' futures.

As part of a global university that is thinking deeply about the ethics of AI and other digital technologies, we will be sharing the findings of the research with our colleagues and across the wider ecosystem of technology companies to inspire further action.

Enhancing our curriculum, assessments, support and resources is an ongoing process involving careful planning and trialling, and schools need time to prepare for the changes. Nevertheless, we are already working on innovations that we will be able to share with our community in the near future.

For example, we are developing a Getting Started With Executive Functions guide with Professor Sara Baker, one of the experts who has contributed to this research project. This resource will explain the research background on how executive functioning skills develop, and how teachers can support them in the classroom. As such it will help to address the challenges of developing students' selfmanagement skills.

One of the most pressing priorities that this research has highlighted is the need to support students in recognising the ways they are preparing for their futures, beyond deep subject knowledge. By extending our existing skills audit (referenced in the 'Self-management skills' section), we can give students clearer sight of the skills that are developed implicitly and explicitly alongside subject knowledge.

We want to develop a Skills Profile tool that will help students to make informed decisions about what subjects they want to study at Cambridge International A Level based on the breadth and depth of the skills they want to develop.

We will also hold an Education Summit to continue to unpack the implications of our findings with world-leading experts, employers and senior education leaders. Most importantly, we will establish a permanent student consultative forum to continue to understand how students are feeling about their education and their futures, to inform our direction.

It is evident that we need to help young people see the future as something they can shape, so they feel more comfortable with uncertainty and change. 'Futures thinking' - a process that allows you to imagine and plan for possible futures – can unlock this. We have already used this process with some of our schools to help

understand the futures of learning, and are working on how to share this concept more widely with our community.

As well as equipping students academically for their futures, it is vital that we support their wellbeing, not least by enabling them to have meaningful conversations and build productive relationships. We are planning to extend our award-winning Wellbeing curriculum to make it relevant for students aged 14 and over. We will also prioritise collaborating with schools to develop a shared language of wellbeing and collaboration.

These are just a few of the many initiatives that will be enriched when we look to the outcomes of this report, and we will keep our community up to date with our progress over the coming months.

Above all, though, what shines through the thousands of interactions we have had throughout this work is the insight and energy of the students, the enthusiasm, commitment and empathy of their teachers, and the passion for education shared by everyone we have spoken to. It is a huge privilege to be part of this inspiring education community and to be able to play a part in enabling students all over the world to shape their own futures.

This is just the start of the conversation. We will continue engaging with students, educators, and the wider international education community and beyond in a deeper discussion of the insights and action outlined in this report and in further reports. To keep up to date on our progress, and find opportunities to be part of these conversations, go to cambridge.org/ future-ready-learners.

'The findings already offer powerful signals for what education must confront and design for. With deeper multi-stakeholder integration and a bold, future-oriented lens, this work has the potential to influence global practice at scale.'

> Dr Iwan Syahril, Global Education Advisor and former Director General of the Ministry of Education, Indonesia.



Teaching and learning resources

This section highlights the Cambridge resources available now from the Leading, learning and teaching with Cambridge section of our website. These will help teachers and school leaders start putting into practice what they have learned from the report.

Ready for the future?

Active learning

Active learning involves learners participating in the learning process by building knowledge and understanding through activities intentionally designed by their teachers to engage them in constructing knowledge.

This approach is important because active engagement develops critical thinking and problem-solving skills, which are essential for adapting to a rapidly changing world.

Explore more about active learning in our education brief, Getting Started guide, podcast and animation:

www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/activelearning/

Inclusive education

Inclusive education ensures all learners regardless of their cultural background, language, socio-economic status, additional learning needs, disabilities or any other factors - have access to meaningful and supportive learning. It focuses on removing barriers so that every child can reach their full potential.

A key part of this is recognising neurodiversity - the natural variation in how brains function and process information. This includes autism, attention deficit hyperactivity disorder (ADHD) or dyslexia. Neurodiversity-aware teaching uses flexible approaches that remove barriers and build on each learner's strengths and needs.

It is important to foster collaborative, respectful learning environments in school and to prepare learners to thrive in diverse, inclusive workplaces in the future. Explore this further in our Neurodiversity podcast part 1 and part 2, and the Getting Started With Inclusive Education guide:

www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/inclusiveeducation/

Learner wellbeing

Learner wellbeing encompasses how individuals feel and function cognitively, physically, socially and emotionally within the learning environment, including recognising and managing emotions, and engaging in purposeful activities that support healthy development.

Supporting wellbeing ensures learners are resilient, motivated and mentally ready to navigate future personal and professional challenges.

Explore more through our Wellbeing animation and Learner Wellbeing education brief: www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/learnerwellbeing/

Subject knowledge and skills

Al in the classroom

Al in the classroom involves using artificial intelligence tools and platforms – such as online resources, Al-driven teaching assistants and learning analytics – to enhance and support effective teaching and personalised learning.

Integrating Al prepares learners to interact with emerging technologies and harness digital tools that will shape future workplaces.

To explore our recommended key principles and practical strategies, see our Getting Started With AI in the Classroom guide:

www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/Teachingwith-technology/

Assessment for learning

Assessment for learning is an integral teaching approach that uses ongoing, formative feedback from both students and teachers to improve learning outcomes and guide learners' next steps, fostering reflective practice.

This approach equips learners with selfawareness and the skills to take ownership of their learning by understanding what skills they are using, what knowledge they are gaining, how to assess their own progress, learn from peers, and effectively implement feedback to improve continuously across subjects.

To see this approach in action, explore our Assessment for Learning animation, education brief and Getting Started guide: www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/assessmentfor-learning/

Climate change education

Climate change education involves teaching the causes, impacts and responses to climate change, emphasising real-world relevance and active learning strategies to empower learners to understand and act.

This practice equips children with essential knowledge about global challenges and the skills to think critically and creatively about solutions. An interdisciplinary/multidisciplinary approach to climate change education helps learners recognise how science, geography, economics and ethics connect, encouraging them to make interdisciplinary links.

For further insight, explore our Getting Started With Climate Change Education guide, and listen to our podcasts on Teaching the Climate **Emergency and Global Perspectives** approaches to climate change: www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/curriculum/



Communication and interpersonal skills

Bilingual learners

Supporting bilingual learners through language awareness nurtures their cultural identity and self-confidence, empowering them to value their unique voices and engage confidently in diverse learning environments and communities.

Bilingual learners benefit from using two or more languages, which enhances not only cognitive flexibility but also their ability to navigate diverse social and cultural contexts. By developing skills in multiple languages, learners become more adept at understanding different perspectives and communicating across cultures - an essential skill in today's globalised world.

This practice also supports confidence in social interactions, helping learners overcome potential challenges such as social anxiety linked to language barriers and promoting inclusive, empathetic communication. We emphasise that nurturing bilingualism prepares learners to engage meaningfully in multicultural workplaces and societies.

To explore this further, see our Bilingual Learners education brief.

www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/inclusiveeducation/



Language awareness

Language awareness develops learners' ability to consciously reflect on how language functions in different settings and how it shapes communication and meaning. This metalinguistic understanding fosters greater sensitivity to tone, context and audience, which is critical for effective interpersonal communication.

With the rise of digital communication, including social media where misinterpretation is common, language awareness helps learners navigate and manage interactions thoughtfully and respectfully, reducing conflicts and misunderstandings. We highlight that this skill is vital for building respectful dialogue and managing diverse social situations in their future personal and professional lives.

Learn more in our Getting Started With Language Awareness guide: www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/inclusiveeducation/

Oracy

Oracy, the ability to use spoken language clearly and confidently, is central to developing strong communication and social skills. Through structured speaking and listening activities, learners build the confidence to express ideas, negotiate meaning and participate in discussions - even in situations that might provoke fear of disagreement or conflict.

In an era dominated by digital devices and online interactions, oracy encourages face-toface communication skills and emotional intelligence, helping learners manage social anxiety and develop empathy. We believe that oracy equips learners to collaborate effectively and lead in varied social and professional contexts, preparing them for future success.

To deepen your understanding, explore our Oracy animation, read the Oracy education brief, and access the Getting Started With Oracy quide:

www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/oracy/

Self-management skills

Play-based learning

Play-based learning is an educational approach that uses play as the primary method for learning, encouraging exploration, creativity, problem-solving and social interaction in a developmentally appropriate way.

Play-based learning supports self-management by allowing learners to practise decisionmaking, regulate emotions and collaborate with others, all of which build resilience and adaptability essential for future success.

To explore this further, see our Getting Started With Play-Based Learning guide: www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/activelearning/

Behaviour for learning

Behaviour for learning focuses on developing learners' behaviours in relation to themselves, others and the curriculum, fostering positive attitudes, engagement and readiness to learn.

Developing positive behaviours for learning helps students cultivate self-discipline, motivation and social skills, which are foundational for effective self-regulation and lifelong academic and personal achievement.

Learn more through our Behaviour for Learning podcast and Behaviour for Learning education brief:

www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/behaviourlearning/



Metacognition

Metacognition involves learners being aware of and regulating their own thinking and learning processes by planning, monitoring, evaluating, and adjusting strategies to become more effective and independent learners.

Metacognitive skills enhance learners' ability to self-regulate by encouraging reflection and strategic thinking, empowering them to adapt and succeed in complex and evolving future environments.

For additional insights, watch our Metacognition animation, read the Metacognition education brief and consult the Getting Started With Metacognition guide: www.cambridgeinternational.org/supportand-training-for-schools/leading-learningand-teaching-with-cambridge/ metacognition/

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Dr Gareth Morgan,

University of Leicester.

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Professor Barbara Oakley,

Oakland University.

Dr Jonnie Penn,

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Professor Jaideep Prabhu,

Cambridge Judge

Business School.

Dr Mitch Prinstein.

American Psychological

Association.

Dominic Regester,

Salzburg Global.

Dr Fiona Rogers,

Council of British

International Schools.

Jean Satrijo Tanudjojo,

Senior Advisor.

Andreas Schleicher,

OECD.

Steven Shannon.

Fleming Island High School.

Luis Silveiro,

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Private School.

Claire Sinnema,

University of Auckland.

Michael Stevenson,

OECD.

Dr Manju Surendran,

Fravashi International

Academy School.

Dr Iwan Syahril,

Global Education Advisor.

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Author.

Euan Wilmshurst,

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Project team

Caroline Gavine Clare Amlinger **Haddy Ndure**

Derek Ballantyne Sweet Gill Amin Neghavati

Zahara Ansary Jade Glennon Christine Özden

Abigail Barnett Caroline Greener Jo Piper

Dr Tom Benton Ian Harris Silvia Pirola

Dr Karen Birmingham **George Hones** Sarah Robson

Dan Bray **Debbie Howes** Ishka Rogbeer

Rob Briggs Dr Sarah Hughes Kagendo Salisbury

Amy Budd Emma Johnson Dr Ben Schmidt

Susan Burns Natasha Schonfeldt Lyn Jones

David Campbell Alyce Judge **Rod Smith**

Elizabeth Cater Laura Kahwati Adam Steele

Charlotte Colucci Emma Ketteringham Dr Irenka Suto

Dr Filio Constantinou Jihye Kim Suzannah Taylor

Dr Lilian Dogiama Dr Anna Kingsley **Megan Thomas**

Paul Ellis Kathlia La Torre Carolyn Tiller

Rob Linsdell Lucy Eyre Ellyn Tipple

Sophia Feng Jane Mann **Heather Tsonopoulos**

Andrew J. Field Steve McKenna Claire Varlet-Baker

James Furness Chris Wareham Lindsay Nadin

Judith Gaskell

