

EDTECH CAPABILITIES AND LEARNING OUTCOMES

Global Survey | June 2018

Summary

A survey of 481 education leaders in 10 countries found **a link between schools' EdTech capabilities and their reported success in driving favorable learning outcomes.**

- The survey evaluated **22 evidence-based EdTech capabilities**
- The survey asked respondents to indicate **their success in achieving or advancing outcomes** including student test scores, teacher satisfaction, school rankings or ratings, and student career readiness.
- Schools whose leaders indicated high outcomes also reported higher development in all 22 EdTech capabilities, especially **those related to strategic and collaborative technology planning.**

Not all EdTech capabilities showed an equal impact on outcomes.

- Some capabilities were more strongly correlated to better outcomes. **Leaders who reported high outcomes in their schools were more likely to:**
 - **Have detailed technology visions and plans**
 - **Involve teachers and students in technology planning**
 - **Formally evaluate their technology's effectiveness**
- On average, schools are less developed in several of the capabilities that show the greatest relative impact.
- On average, schools are also not prioritizing several of the capabilities that show the greatest relative impact.

High- and low-outcomes respondents prioritized EdTech capabilities differently.

- High-outcomes respondents placed a **much higher priority on leadership vision and stakeholder alignment.**

High- and low-outcomes respondents indicated differences in their technology mix.

- High-outcomes schools indicated using **more software relating to assessment, game-based learning and student collaboration.**

The **USA and China** showed the highest stage of EdTech capability development. The UK, Spain, Germany and Canada fell near the mean, while respondents from the Netherlands indicated a stage of development slightly below the mean.

Research has shown that well-implemented EdTech can reduce costs in other areas.

A 2016 study showed that technology drives better learning outcomes when it is chosen to complement defined teaching practices.

The research continues online. Add your voice to the dialogue at www.smarttech.com/profile



Introduction

A survey of 481 education leaders in 10 countries found a link between schools' EdTech capabilities and their reported success in driving favorable learning outcomes.

Survey respondents who reported a high stage of development in 22 EdTech capabilities were more likely to indicate increased student test scores, improved school rankings/ratings, high teacher satisfaction, and advanced student readiness and digital competencies. Conversely, leaders who reported less developed EdTech capabilities indicated lower levels of success in these outcomes.

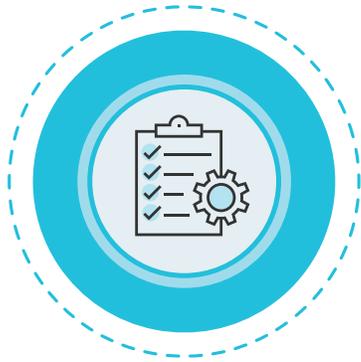
The survey also found that some learning capabilities have a greater relative impact on outcomes. Globally, the capabilities with the greatest relative impact are also those that many schools are challenged in executing or are not prioritizing.

The survey also revealed that the 19% of schools who achieved high learning outcomes prioritize the 22 capabilities very differently from the 14% of schools who reported low outcomes. These two groups of schools also showed different approaches to their classroom technology mix, with the high-outcomes group favoring technologies that promote progressive, student-centered pedagogies.

A link between EdTech capabilities and outcomes

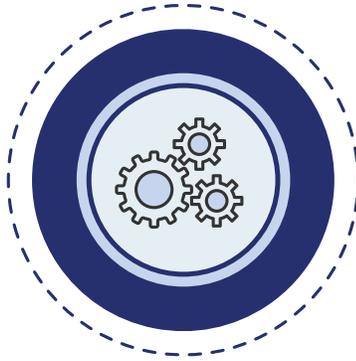
The survey polled leaders of one or more schools and asked them to evaluate their institutions' stage of development in 22 EdTech capabilities.

22
EDTECH
CAPABILITIES



STRATEGIC TECHNOLOGY PLANNING

- Leadership vision and stakeholder alignment
- Strategic planning
- Technology change management
- Evaluation of technology and implementation effectiveness
- Teacher participation in technology planning
- Student participation in technology planning
- Parent and wider community engagement
- Acceptable technology use policies



INTEGRATION OF TECHNOLOGY IN TEACHING AND LEARNING

- Embedding technology in teaching and learning
- Use of digital content and applications
- Assessment of student progress
- Support for Social and Emotional Learning
- Development of teacher and staff mindset



PROFESSIONAL DEVELOPMENT

- Professional development planning
- Focus of professional learning
- Training offerings and options
- Evaluation of professional development effectiveness
- Opportunities for collaborative professional development



TECHNOLOGY INFRASTRUCTURE AND MANAGEMENT

- Network infrastructure
- Design of learning spaces
- Technical support
- Compatibility of learning technologies

On average, survey respondents reported their mean stage of EdTech capability development at 63.03 on a scale of 100. They also indicated which capabilities they consider most important.

These EdTech capabilities are evidence-based and were identified through a literature review of education best practices, qualitative research with 17 education leaders, and input from 14 education technology consultants.

Secondary sources for education and EdTech best practices included the Friday Institute for Educational Innovation, ISTE NAACE, European Digital Competencies, UNESCO, CASEL, and many more.

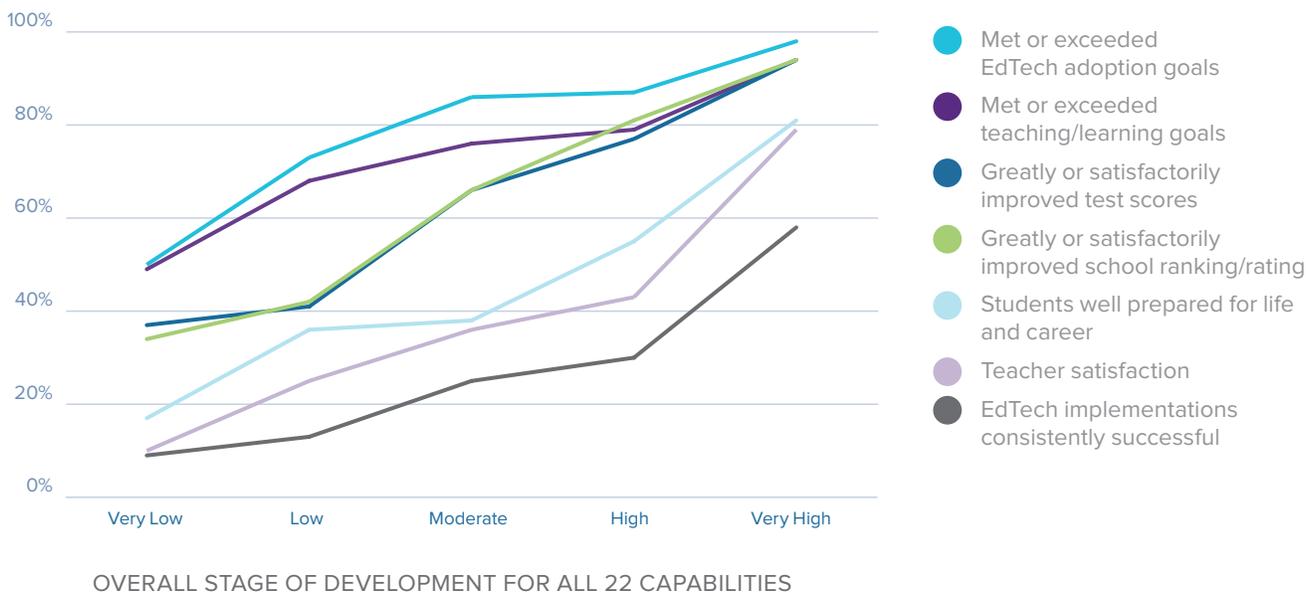
Learning outcomes

Survey participants were also asked to provide their perspective on the outcomes they see in their schools. Survey respondents evaluated:

1. The extent to which their schools met teaching and learning goals in the past year
2. The extent to which students' average test scores improved in the past year
3. Teacher satisfaction in their schools over the past year
4. Change in their schools' rankings or ratings upon last review
5. The extent to which their schools met technology implementation and adoption goals in the past year
6. Level of student preparedness to be active contributors to society and grow their well-being, life and social skills

The survey found that respondents at a high stage of EdTech capability development reported higher achievement and improvement in outcomes.

OUTCOMES ACCORDING TO STAGE OF DEVELOPMENT IN ALL 22 EDTECH CAPABILITIES



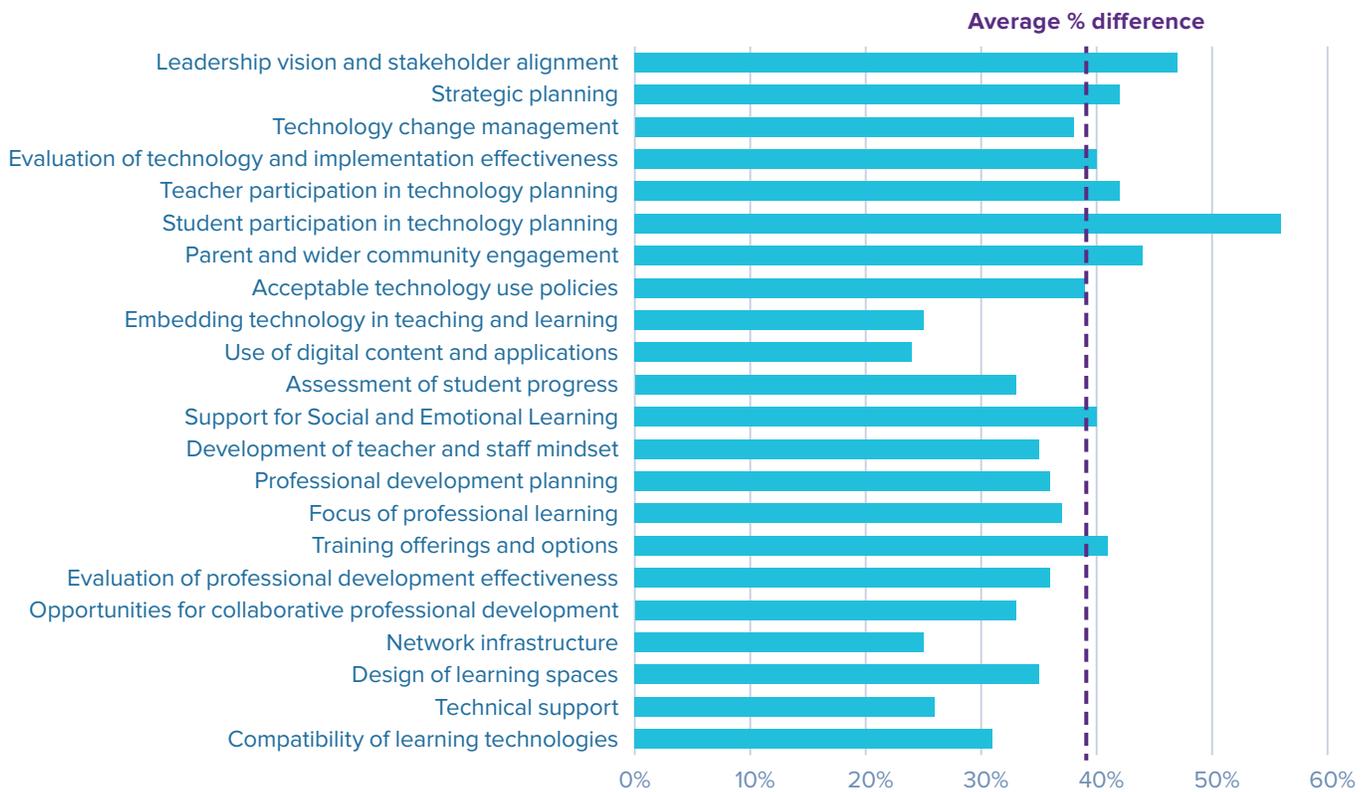
The group with the highest learning outcomes, which made up 19% of the respondents, performed significantly better than the group with the lowest outcomes, which represented 14% of respondents (see Appendix B).

Differences in EdTech capability of high- and low-outcomes respondents

High-outcomes schools indicate a higher stage of development in all 22 capabilities versus low-outcomes schools, with the greatest discrepancies in the areas of:

- Student participation in technology planning
- Leadership vision and stakeholder alignment
- Strategic planning
- Teacher participation in technology planning
- Support for Social Emotional Learning
- Evaluation of technology and implementation effectiveness

PERCENT DIFFERENCE IN EDTECH CAPABILITY DEVELOPMENT IN HIGH- AND LOW-OUTCOMES RESPONDENTS



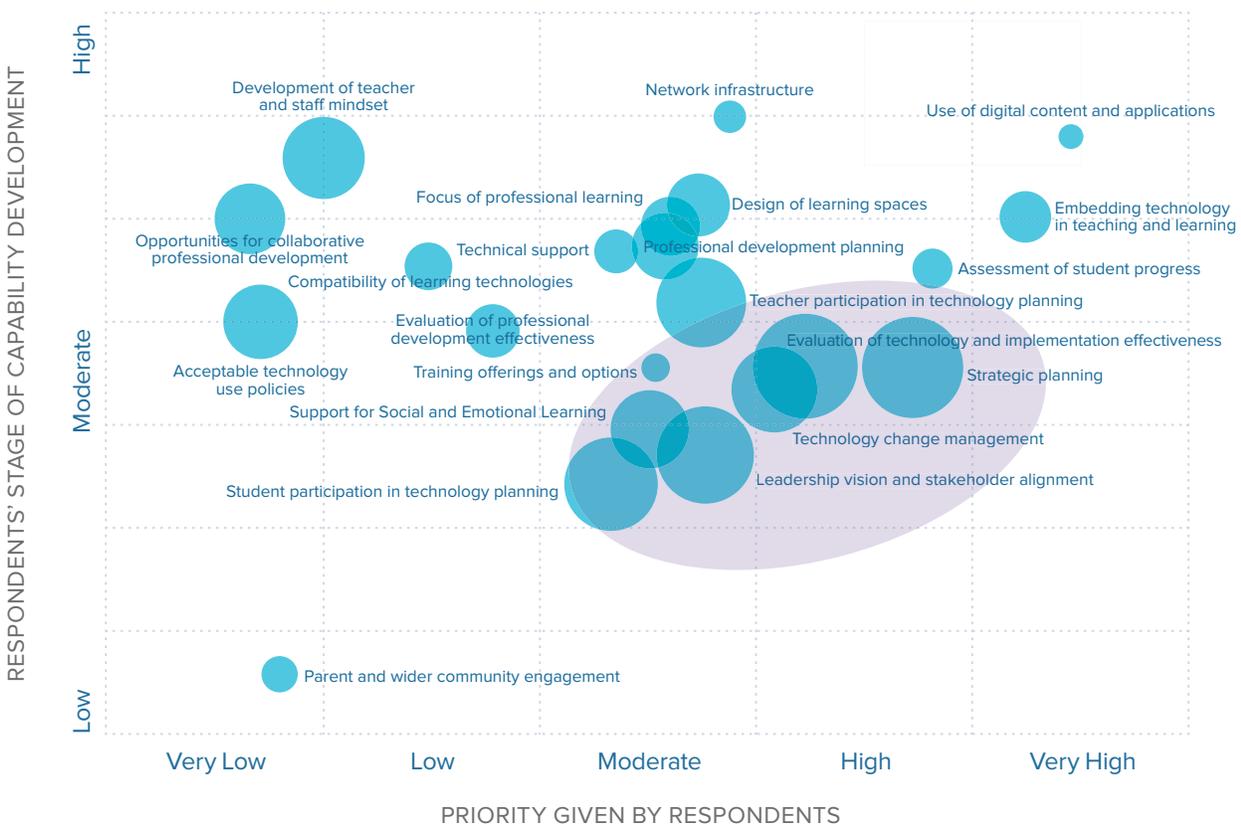
Not all EdTech capabilities have equal impact on outcomes

The survey found that some EdTech capabilities have a greater relative impact on outcomes than others. This was determined by correlating the relationship between each capability and respondents' outcomes scores, based on whether and how much the variables moved together. All 22 correlations were positive and significant at the .01 level, but some more than others.

The three capabilities that showed the highest relative impact on outcomes, indicated by the size of the circles in the graph, were:

- Evaluation of technology and implementation effectiveness
- Strategic planning
- Leadership vision and stakeholder alignment

EDTECH CAPABILITY DEVELOPMENT, IMPORTANCE AND IMPACT ON OUTCOMES



We observed an interesting trend in capabilities that showed high impact but for which respondents indicated lower capability and priority (shaded oval). These indicate that schools may benefit from developing capabilities related to strategy and planning, especially:

- Evaluation of technology and implementation effectiveness
- Strategic planning
- Leadership vision and stakeholder alignment
- Technology change management

Another trend in the data indicates that collaboration in the technology planning process may be an area of opportunity for schools, particularly in capabilities related to:

- Student participation in technology planning
- Teacher participation in technology planning

This data also tells us that schools are, on average, not giving high enough priority to some high-impact capabilities, including:

- Development of teacher and staff mindset
- Opportunities for collaborative professional development
- Acceptable technology use policies

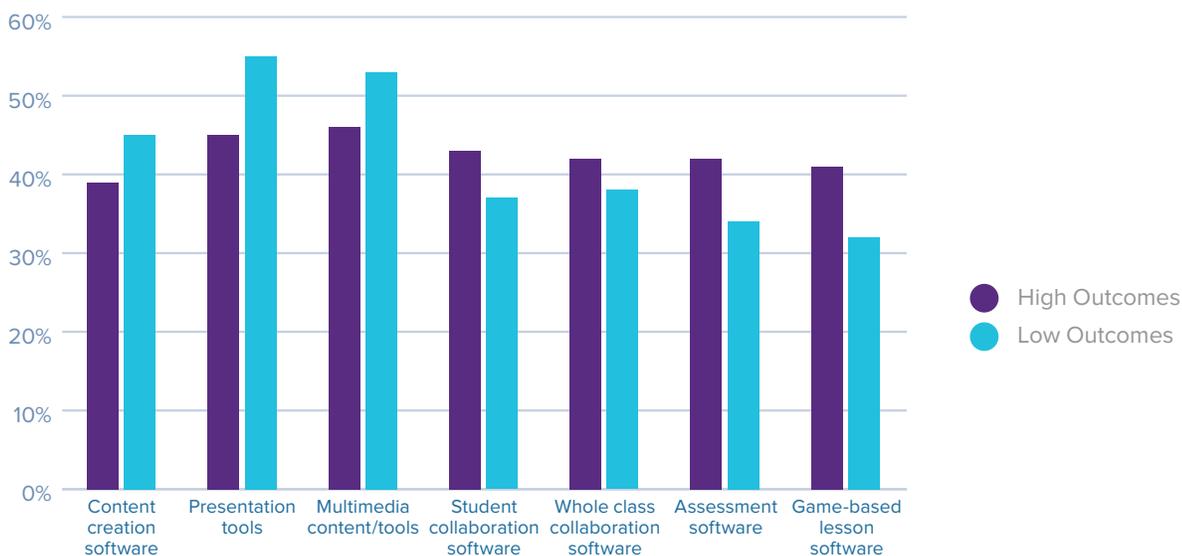
What high- and low-outcomes respondents are doing differently

The survey data provides compelling clues about what may make the difference between schools who are successful in their EdTech implementations and those who struggle.

Differences in technology used by high- and low-outcomes schools

We observed trends in the types of technologies used by high- and low-outcomes respondents. High-outcomes respondents reported more student assessment and collaboration software use than low-outcomes schools. This may reveal a tendency among high-outcomes schools to use student-centered pedagogies.

TYPES OF SOFTWARE USED BY HIGH- AND LOW-OUTCOMES RESPONDENTS



Differences in how capabilities are prioritized

High-outcomes respondents placed a much higher priority on leadership vision and stakeholder alignment, as well as on professional development planning.

Low-outcomes respondents, on the other hand, placed a much higher value on evaluating the effectiveness of professional development.

HOW HIGH- AND LOW-OUTCOMES RESPONDENTS PRIORITIZED THE 22 CAPABILITIES

22 CAPABILITIES	PRIORITY	
	High Outcomes Group	Low Outcomes Group
Embedding technology in teaching and learning	1	1
Use of digital content and applications	2	2
Leadership vision and stakeholder alignment	3	14
Assessment of student progress	4	3
Strategic planning	5	5
Network infrastructure	6	10
Professional development planning	7	17
Evaluation of technology and implementation effectiveness	8	4
Technology change management	9	6
Teacher participation in technology planning	10	9
Focus of professional learning	11	19
Design of learning spaces	12	13
Training offerings and options	13	8
Support for Social and Emotional Learning	14	11
Student participation in technology planning	15	14
Compatibility of learning technologies	16	16
Evaluation of professional development effectiveness	17	7
Technical support	18	12
Development of teacher and staff mindset	19	18
Opportunities for collaborative professional development	20	22
Acceptable technology use policies	21	20
Parent and wider community engagement	22	21

 High Outcomes Group
 Low Outcomes Group

Did you know?

Implementing EdTech effectively can lead to significant cost savings

Implementation has been called the “Achilles’ Heel” of education technology. Some schools struggle to effectively adopt EdTech due to gaps in areas like planning and professional development.

Studies have shown that well-implemented EdTech can not only transform learning outcomes, it can reduce costs in other areas. When schools choose difficult-to-adopt technology, these potential savings become costs that could have been avoided.

THE HIDDEN COSTS

According to a recent study, the total opportunity cost of ineffective education technology implementation can be as high as \$220 USD per student depending on the region.



For a school of 500 students, this could translate to up to \$110,000 in avoidable costs.

These costs may include:

- Added support costs
- Administrative costs/overheads
- Teacher attrition/turnover costs

It is vital to note that far more important than financial costs are the consequences to students when technology is not implemented effectively. Lost opportunities to increase student engagement, deepen social and emotional learning, and improve teacher effectiveness, leave learners with their potential unfulfilled.

Download this research at smarttech.com/hiddencosts

Sources

1. ISTE Standards Essential Conditions <https://www.iste.org/standards/essential-conditions>
2. UNESCO ICT Competency Framework for Teachers <http://unesdoc.unesco.org/images/0021/002134/213475e.pdf>
3. Naace Self Review Framework <https://www.naace.co.uk/wp-content/uploads/2016/01/Self-review-Framework-v1.67.pdf>
4. European Digital Competence Framework <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>
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NEXT STEPS

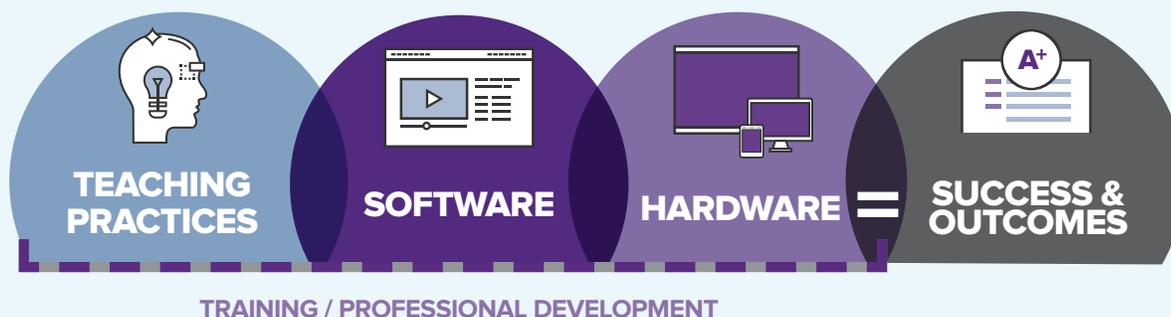
Schools who seek to drive better outcomes with their technology should consider:

- Looking for areas of improvement among high-impact EdTech capabilities
- Focusing more on strategic and collaborative technology planning
- Seeking technologies that support student-centered pedagogies. These include game-based learning, formative assessment and student collaboration software.

The research continues online. Find out where you stand and add your voice to the dialogue by taking the [EdTech Capabilities self-evaluation](#).

Did you know?

When schools choose technology, there is a formula for effective decision making that drives successful outcomes. Download the report at smarttech.com/TTL.

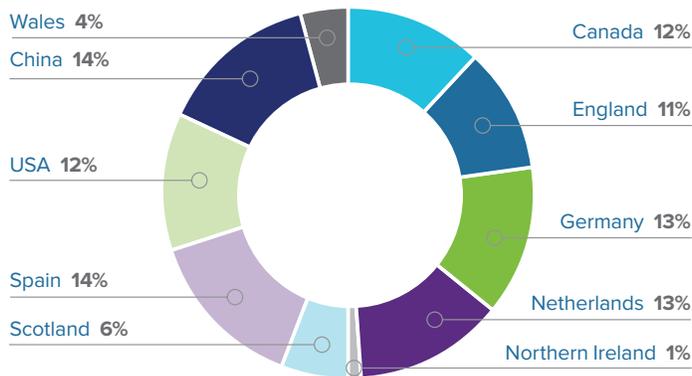


Geographic differences

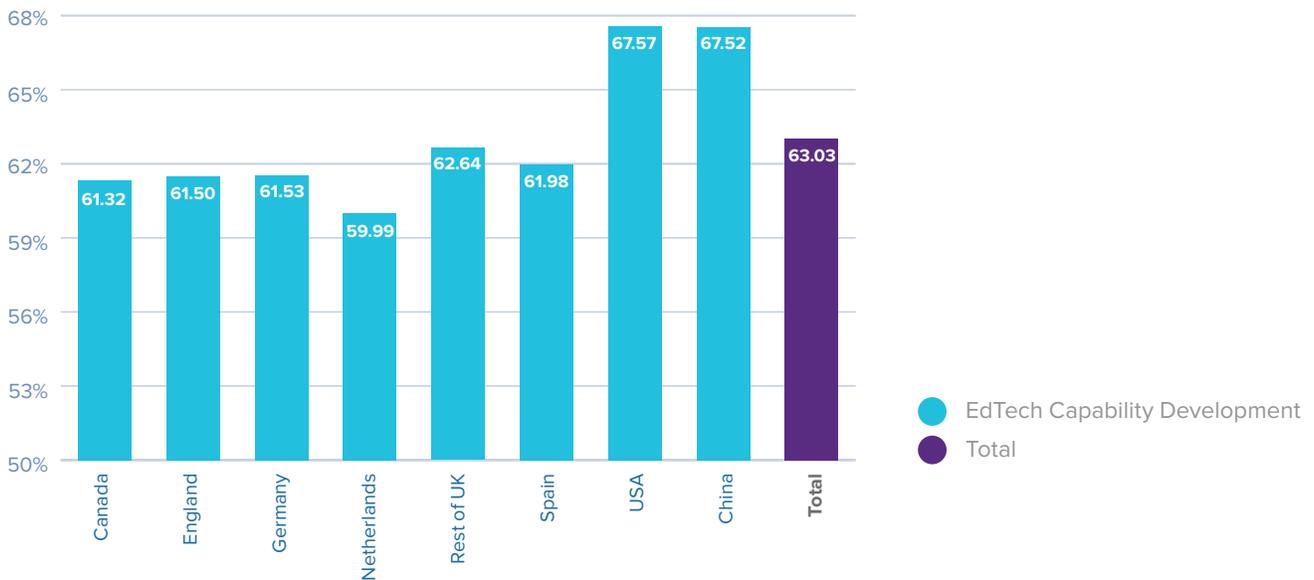
Survey participants

Participants were responsible for various areas of technology management in one or several schools, with a variety of student ages in primary and secondary education represented.

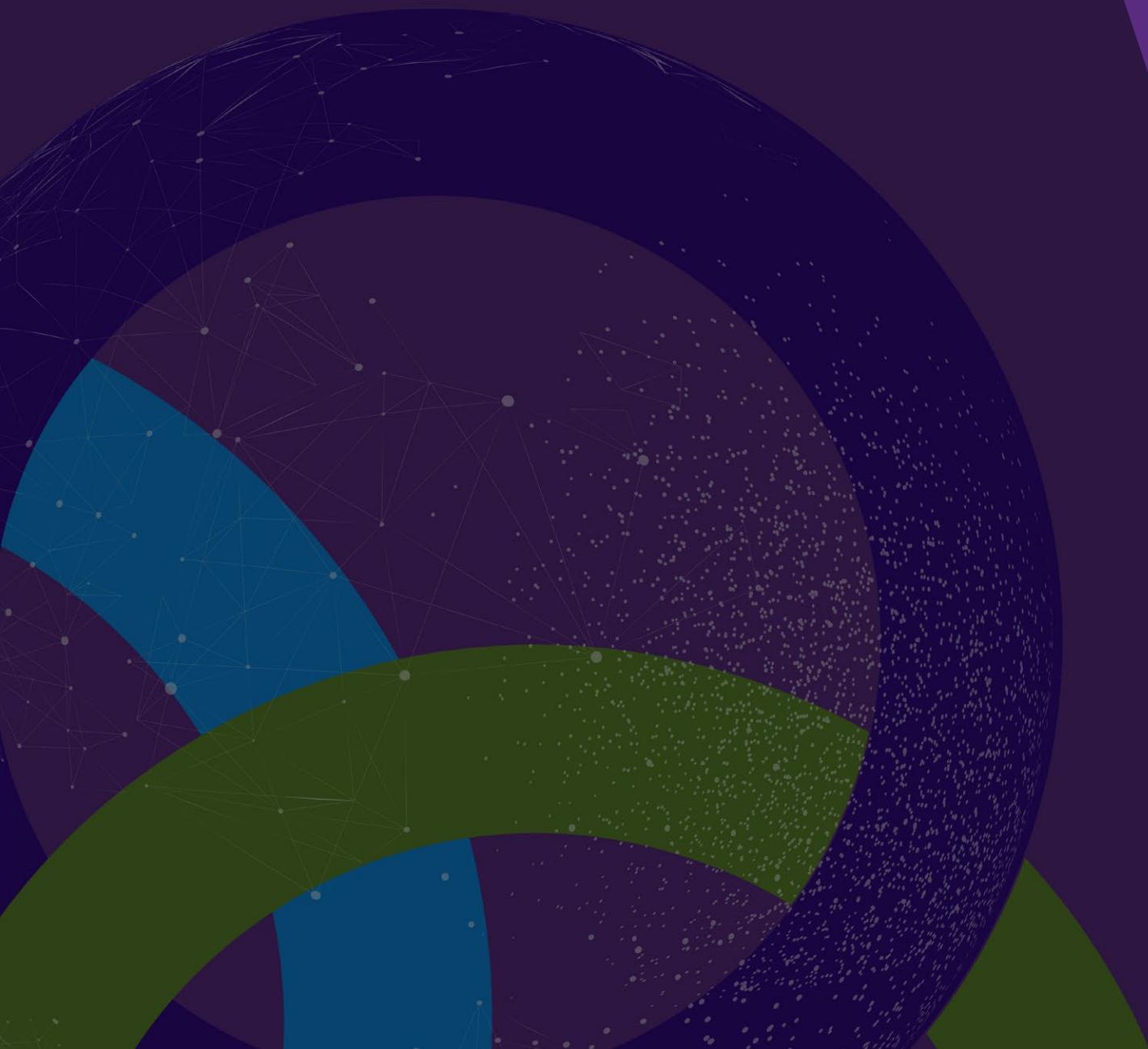
PARTICIPATING COUNTRIES



DIFFERENCES IN AVERAGE EDTECH CAPABILITY DEVELOPMENT BY COUNTRY

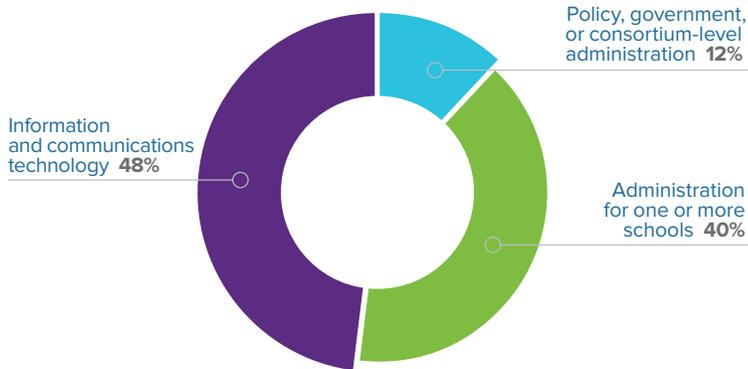


APPENDIX

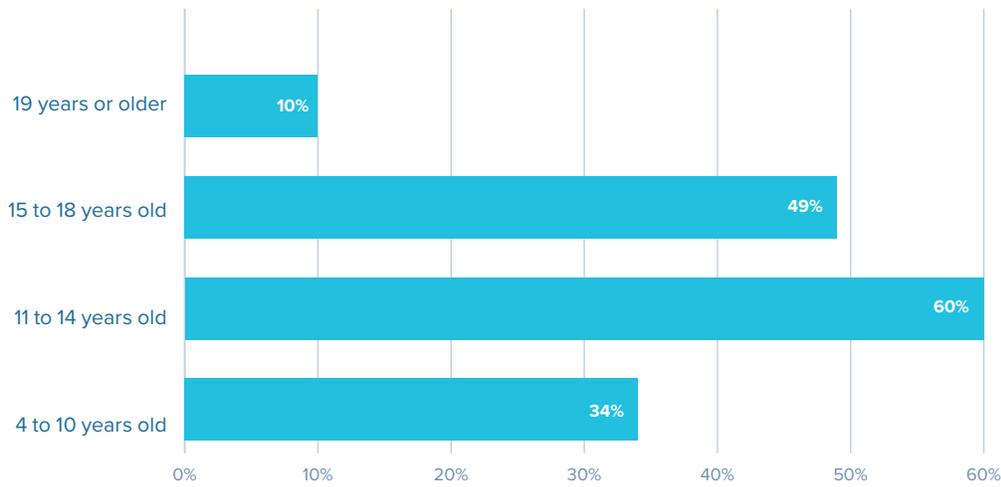


APPENDIX A: Other survey demographics

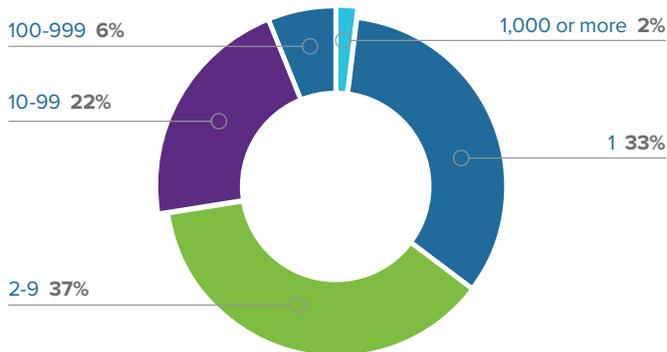
PARTICIPANTS' ROLE IN TECHNOLOGY LEADERSHIP



AGE OF STUDENTS IN PARTICIPANTS' SCHOOLS/DISTRICTS



NUMBER OF SCHOOLS UNDER PARTICIPANTS' LEADERSHIP



APPENDIX B:

Relationship between average EdTech capability development and specific outcomes

Schools or districts at a very high stage of development in the 22 capabilities were more likely to advance every type of learning outcome. The relationships are significant at the .001 level.

RESPONDENTS AT A HIGH STAGE OF DEVELOPMENT IN THE 22 CAPABILITIES, COMPARED TO RESPONDENTS AT A LOW STAGE OF DEVELOPMENT

To what extent have you met your teaching and learning goals in your school or schools in the past year?	6.6x as likely to exceed teaching and learning goals
To what extent have students' average test scores improved in the past year?	8.5x as likely to have greatly improved test scores
How would you rate overall teacher satisfaction in your school or schools in the past year?	8.1x as likely to have very satisfied teachers
How did your school or schools' ranking or rating change upon last review?	5.1x as likely to have greatly improved rankings or ratings
To what extent have you met your technology adoption goals in your school or schools in the past year?	8x as likely to have exceeded goals
How would you rate your overall impression of your school or schools' success in implementing learning technologies?	7.4x as likely to view implementations as consistently successful
To what extent do you feel your students are prepared to be active contributors to society and growing their individual well-being and social progress (i.e. life skills and social skills)?	5.2x as likely to view students as well prepared

