

# EDTECH CAPABILITIES AND LEARNING OUTCOMES

Global Survey | Australian Results | September 2018

## Summary

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**Technology can help transform learning.** But numerous studies have shown that **more technology in the classroom doesn't automatically yield better results.** Effective learning and technology use depend on complex systems and behaviours, and when the conditions are right, technology can advance learning significantly.

**Getting the conditions right is vital for the success of today's learners and teachers.**

- A survey of 55 Australian education leaders, part of a broader 11 country survey, found **a link between schools' EdTech capabilities and their reported success in achieving favourable learning outcomes.**
  - The survey evaluated **22 evidence-based EdTech capabilities.** These capabilities were identified through a literature review of education best practices from around the world, followed by consultation with education leaders and education technology consultants.
  - The survey asked respondents to indicate **their success in achieving or advancing outcomes** including student test scores, teacher satisfaction, school performance, and student career readiness.
- Trends in Australian education leaders' responses highlight the importance of:
  - **High-quality professional development for teachers**
  - **Engaging stakeholders in the technology planning process**
  - **Supporting Social Emotional Learning**
- **Australian schools whose leaders indicated high outcomes also reported higher development in all 22 EdTech capabilities,** especially those related to evaluating the effectiveness of their professional development, engaging a broad community of stakeholders in technology planning, supporting Social Emotional Learning, and managing technology infrastructure.
- **Not all EdTech capabilities showed an equal impact on outcomes.**
  - Some capabilities were more strongly correlated to better outcomes. Australian leaders who reported high outcomes in their schools were more likely to focus on their teachers' and students' use of digital content and applications, their assessment of student progress, the effectiveness of their professional development, and teacher and parent engagement in technology planning.

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## Introduction

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Technology can help transform learning. But as numerous studies have shown, more technology in the classroom doesn't automatically equal better results. Most notably, the Organisation for Economic Co-operation and Development (OECD) and John Hattie, Director of the Melbourne Educational Research Institute, have raised concerns that education spending does not equate to better outcomes.

Effective learning and technology use depend on complex systems and behaviours. When conditions are right, technology can advance learning significantly. Getting the conditions right is vital for the success of today's learners and teachers.

Earlier this year, SMART Technologies commissioned a global survey of 536 education leaders that found a link between schools' EdTech capabilities and their reported success in driving favourable learning outcomes. Education leaders from 11 countries participated, including Australia, the United States, China, the United Kingdom, Germany, Canada, the Netherlands and Spain. This white paper focuses on the 55 Australian education leaders who participated in the survey.

In Australia, as well as globally, survey respondents who reported a high stage of development in 22 EdTech capabilities were more likely to indicate increased student test scores, improved school performance, 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 EdTech capabilities have a greater relative impact on outcomes. In Australia, the 27% of schools who reported high learning outcomes prioritize the 22 capabilities very differently from the 22% 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 favouring 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 schools' stage of development in 22 EdTech capabilities.

These evidence-based capabilities were identified through a literature review of education best practices from around the world. This review sought to isolate capabilities that support any primary and secondary school's effective use of technology, regardless of where in the world the school is located, what pedagogies its teachers adopt, or its policy environment.

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.

The literature review was followed by consultation with 31 education leaders and technology consultants from 6 countries. Through this process, 22 capabilities in 4 categories were identified:

**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

Australian survey respondents reported their mean stage of EdTech capability development at 65.0 on a scale of 100.

**They reported very high levels of development in most of the capabilities related to professional development and student assessment.** They exceed the global average in professional development capabilities by twice as much as they exceed the overall capability average. They also reported above average development in their technology leadership and planning capabilities.

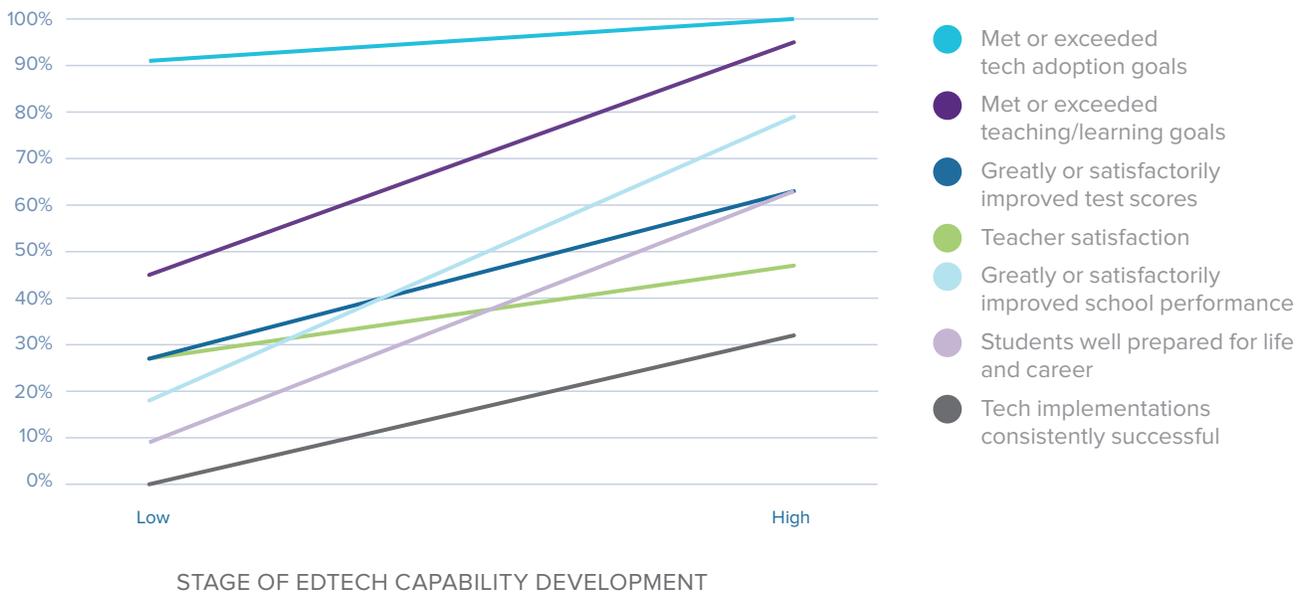
## Learning outcomes

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' **performance** 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 who indicated a high stage of EdTech capability development also reported higher achievement or improvement in learning outcomes.

### OUTCOMES AT LOW AND HIGH STAGES OF DEVELOPMENT IN ALL 22 EDTECH CAPABILITIES FOR AUSTRALIA



The differences were all statistically significant at the .10 level or better except for teacher satisfaction due to the wide distribution of the data (see Appendix B).

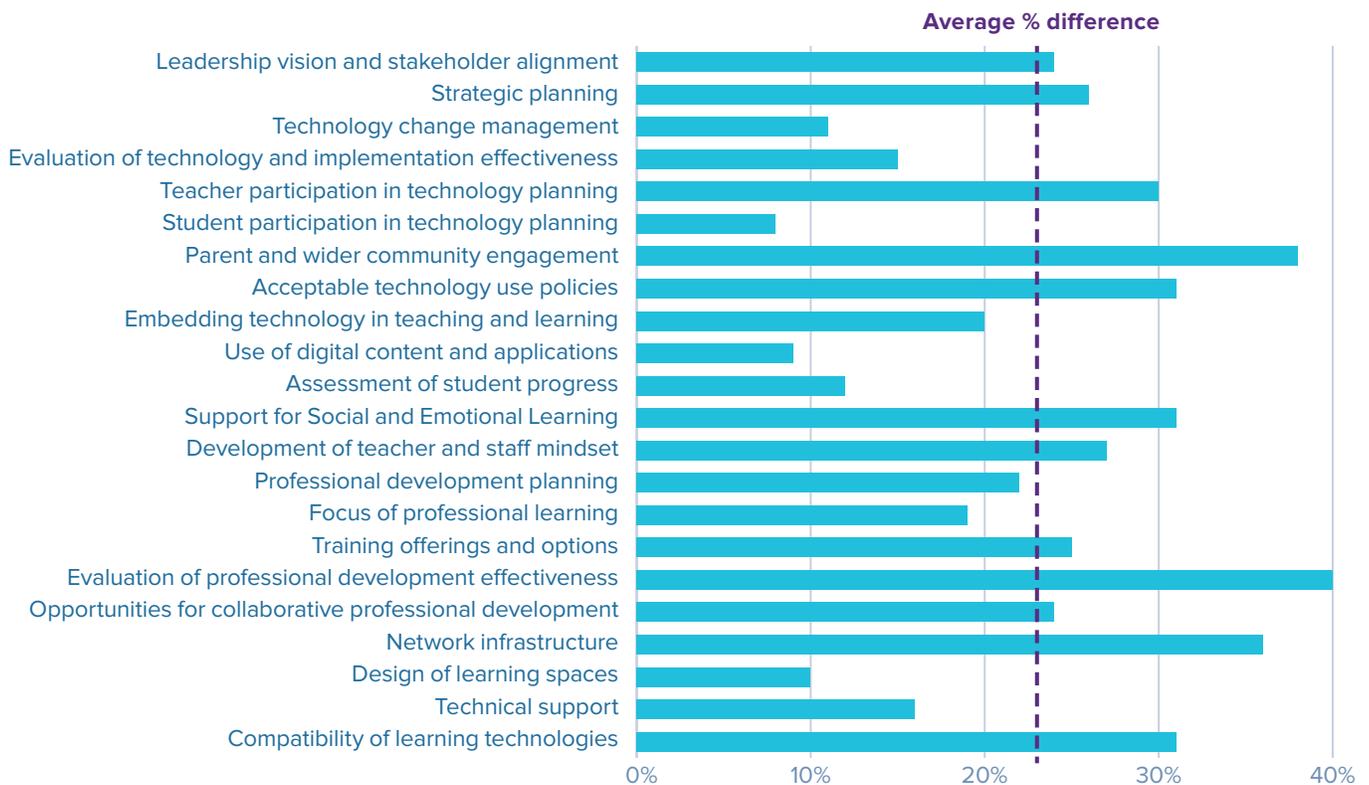
## Differences in EdTech capability of high- and low-outcomes respondents

School leaders in Australia who reported high outcomes also indicated a higher stage of development in all 22 capabilities versus schools who reported low outcomes.

The high and low groups show the greatest discrepancies in their capability to:

- Evaluate the effectiveness of their professional development
- Engage parents and the wider community in technology planning
- Encourage teacher participation in technology planning
- Support Social Emotional Learning
- Build a robust network infrastructure
- Ensure the compatibility of their learning technologies
- Establish acceptable technology use policies that are flexible to learning needs

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



Both the high- and low-outcomes respondent groups indicated high levels of development in their professional development capabilities. These included their capability to plan professional development; integrate technology, curriculum and teaching practices; support teacher collaboration; and provide a broad range of training offerings.

## Not all EdTech capabilities have equal impact on outcomes

The survey found that some EdTech capabilities have a greater relative impact on reported outcomes than others. This was determined by correlating the relationship between survey participants' responses about each capability and their learning outcomes, based on whether and how much the variables moved together.

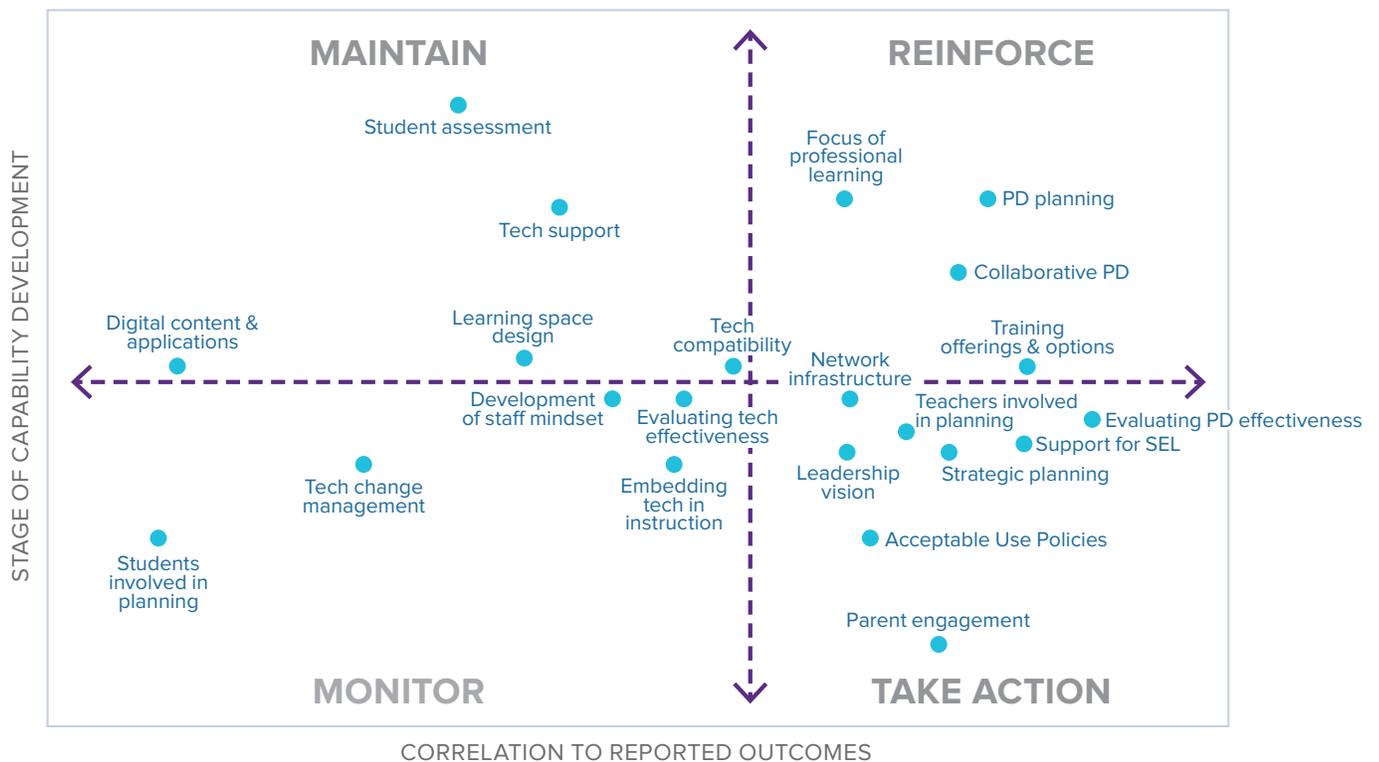
In Australia, all 22 correlations were positive and significant at the .10 level (except student participation in technology planning). Some were stronger than others.

Some capability responses were more strongly correlated to outcomes responses than others. The capability responses most strongly correlated to outcomes responses include:

- Evaluating professional development effectiveness
- Providing a range of training offerings and options
- Supporting Social and Emotional Learning
- Planning professional development
- Providing opportunities for collaborative professional development

**This further supports the link in Australian responses between high reported outcomes and a very strong focus on professional development and Social and Emotional Learning.**

### CORRELATION OF SURVEY RESPONSES ABOUT EDTECH CAPABILITY DEVELOPMENT AND OUTCOMES



We observed an interesting trend in capabilities that were strongly correlated to higher outcomes responses, but for which respondents indicated lower capability development (lower right quadrant).

Based on the average reported development in capabilities, and the correlation between it and reported outcomes, Australian schools may **benefit from further developing their engagement and planning capabilities, as well as those related to supporting Social and Emotional Learning.**

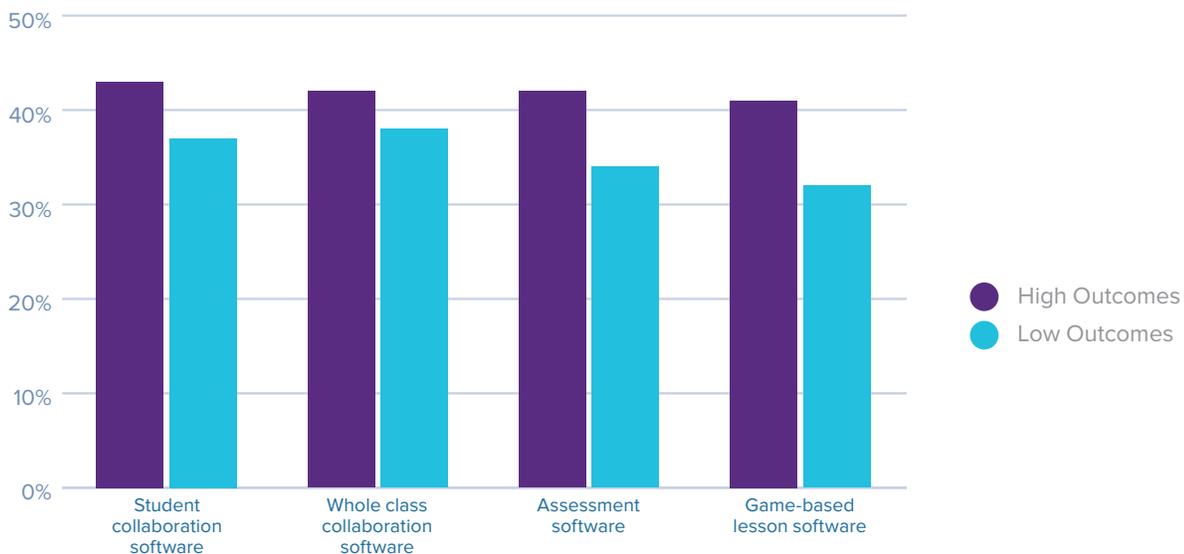
## What high- and low-outcomes respondents are doing differently

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

In the global survey, we observed trends in the types of technologies used by respondents who reported high and low outcomes. 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

Compared with low-outcomes respondents, Australian respondents who reported high outcomes placed a **much higher priority on evaluating the effectiveness of their professional development, supporting teachers' and students' use of digital content and applications, assessing student progress, and encouraging teacher participation in technology planning.**

Both high and low-outcomes respondents in Australia placed a very high priority on providing a range of training offerings and support for Social and Emotional Learning. This trend suggests that these capabilities are key areas of focus for Australian schools.

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

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

- High Outcomes Group (1=highest)
- Low Outcomes Group (1=highest)

## 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>
5. European Digital Competence Assessment <https://europass.cedefop.europa.eu/resources/digital-competences>
6. The Friday Institute NC Digital Learning Progress Rubric [http://region3.ncdpi.wikispaces.net/file/view/NCLTI-DLPR\\_2013\\_Aug2013.doc](http://region3.ncdpi.wikispaces.net/file/view/NCLTI-DLPR_2013_Aug2013.doc)
7. Education Counts NZ E-learning Maturity Model <https://www.educationcounts.govt.nz/publications/e-Learning/58139>
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9. 2015 CASEL Guide: Effective Social and Emotional Learning <http://secondaryguide.casel.org/description-of-tables.html>
10. OECD: Social and Emotional Skills, well-being, connectedness and success [http://www.oecd.org/education/school/UPDATED%20Social%20and%20Emotional%20Skills%20-%20Well-being,%20connectedness%20and%20success.pdf%20\(website\).pdf](http://www.oecd.org/education/school/UPDATED%20Social%20and%20Emotional%20Skills%20-%20Well-being,%20connectedness%20and%20success.pdf%20(website).pdf)

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## NEXT STEPS

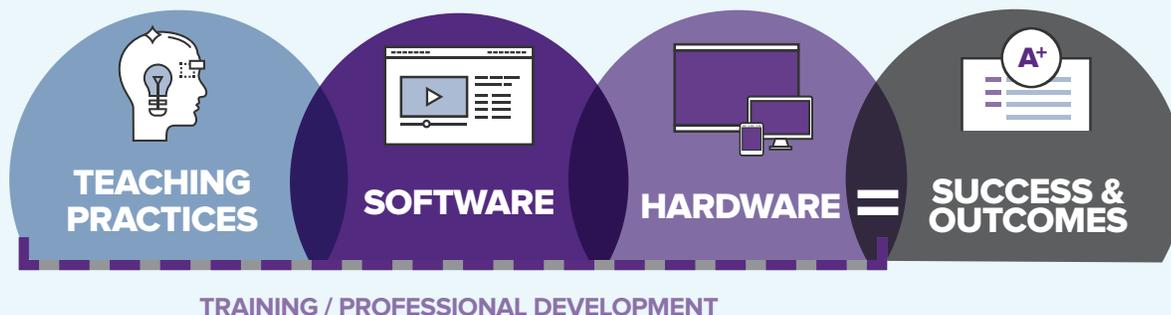
Schools who seek to drive better outcomes with their technology should consider:

- Looking for areas of improvement among high-impact EdTech capabilities.
- Focusing on improving professional development, stakeholder engagement in technology planning, and support for Social Emotional Learning.
- 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 [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](http://smarttech.com/TTL).

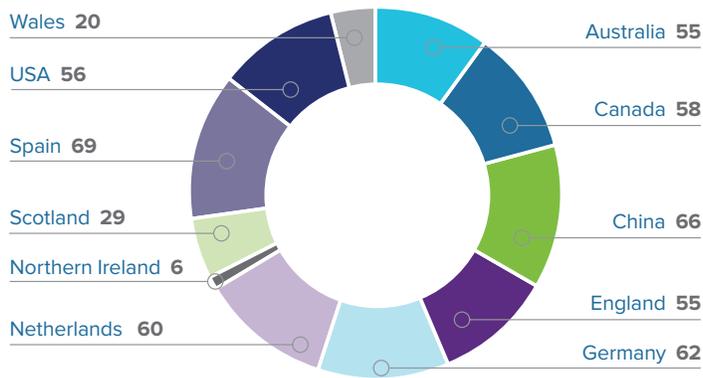


# Geographic differences

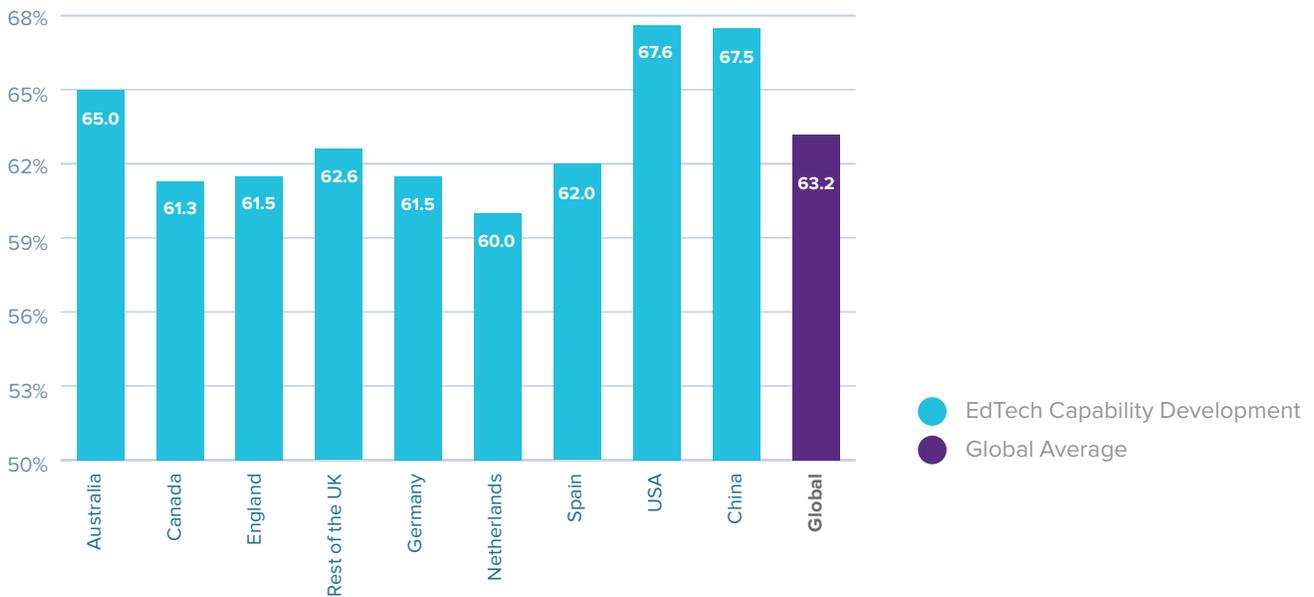
## Survey participants

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.

### NUMBER OF SURVEY RESPONDENTS BY COUNTRY

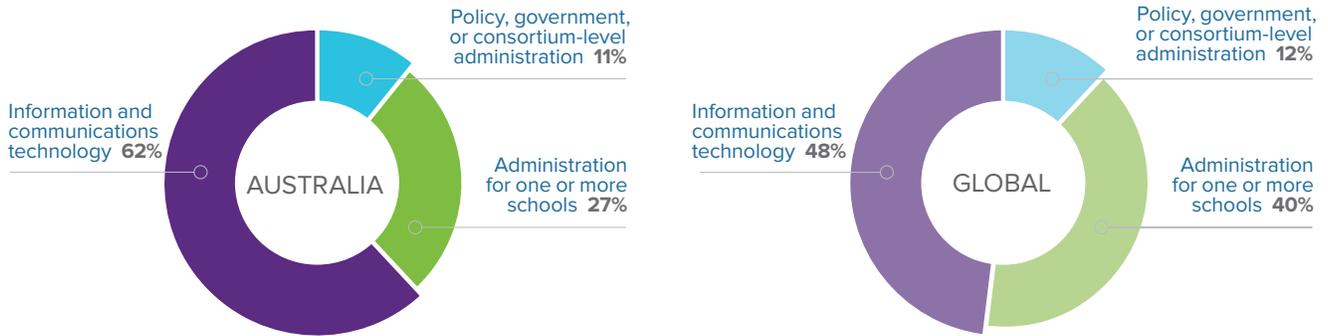


### DIFFERENCES IN AVERAGE EDTECH CAPABILITY DEVELOPMENT BY COUNTRY

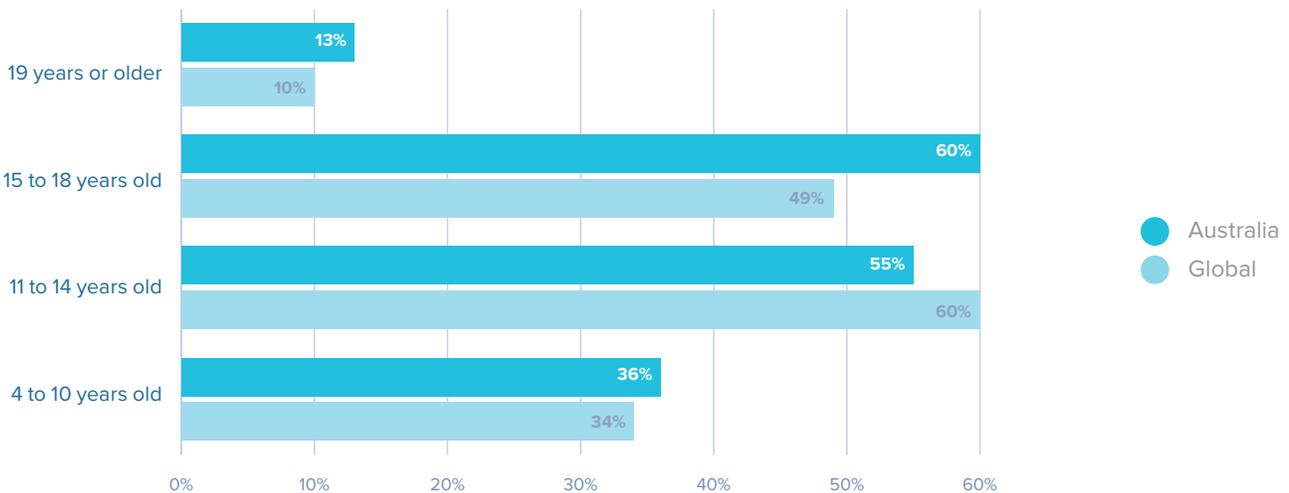


# APPENDIX A: Other survey demographics

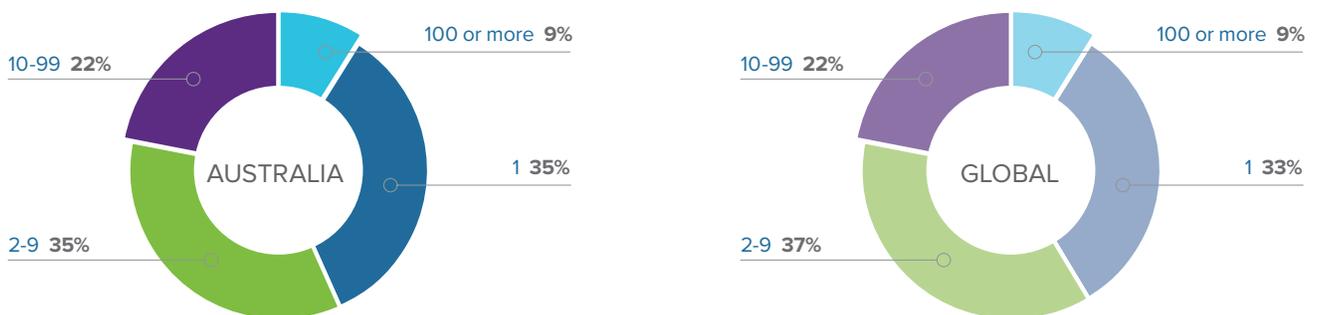
## PARTICIPANTS' ROLE IN TECHNOLOGY LEADERSHIP



## AGE OF STUDENTS IN PARTICIPANTS' SCHOOLS/DISTRICTS



## NUMBER OF SCHOOLS UNDER PARTICIPANTS' LEADERSHIP



## APPENDIX B: Relationship between average EdTech capability development and specific outcomes

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Australian schools or districts at a very high stage of development in the 22 capabilities were more likely to advance every type of learning outcome reported. The relationships (except for teacher satisfaction) are statistically significant at the .10 level or better.

### AUSTRALIAN RESPONDENTS AT A HIGH STAGE OF DEVELOPMENT, COMPARED WITH RESPONDENTS AT A LOW STAGE OF DEVELOPMENT

<b>To what extent have you met your teaching and learning goals in your school or schools in the past year?</b>	<b>2.1x</b> as likely to meet or exceed teaching and learning goals
<b>To what extent have students' average test scores improved in the past year?</b>	<b>2.3x</b> as likely to have greatly or satisfactorily improved test scores
<b>How would you rate overall teacher satisfaction in your school or schools in the past year?</b>	<b>1.7x</b> as likely to have satisfied teachers
<b>How did your school or schools' performance change upon last review?</b>	<b>4.3x</b> as likely to have greatly or satisfactorily improved performance
<b>To what extent have you met your technology adoption goals in your school or schools in the past year?</b>	<b>1.1x</b> as likely to have met or exceeded technology adoption goals
<b>How would you rate your overall impression of your school or schools' success in implementing learning technologies?</b>	<b>2.5x</b> as likely to view implementations as consistently successful
<b>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)?</b>	<b>6.9x</b> as likely to view students as well prepared

