



2023

CS IN SCHOOLS

IMPACT REPORT, JUNE 2023

Since 2019, CS in Schools has supported:

75,000+
STUDENTS

200+
SCHOOLS

500+
TEACHERS

Data collated on 13 June, 2023. Note that students are counted once per year, regardless of how many courses they study. If they return in a subsequent year, they are counted again. School numbers are unique. More than 200 different schools that have used our materials since 2019. Teacher numbers are also unique. More than 500 teachers have taught our materials since 2019.

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CEO WELCOME

Our June 2023 Impact Report is a celebration of our accomplishments and a testament to the hard work, dedication, and collaboration between our team, schools, industry partners, volunteers, and supporters.

Our role at CS in Schools extends beyond teaching code—it's about kindling a love for problem-solving, encouraging students to envision a future in digital technology, and connecting education and industry to foster a diverse, skilled, and resilient digital workforce.



I'm humbled by the phenomenal growth and positive influence we've witnessed since our pilot programme with 8 schools and 841 students in 2019. We've now reached over 75,000 students, more than 200 schools from every state & territory across Australia, and have supported over 500 teachers in their digital technology teaching journeys. Driven more than ever by this progress, we are determined to achieve our goal of reaching every secondary school and their teachers and students across Australia.

As we build on our success, we remain committed to fostering a diverse and inclusive learning environment that ensures all students have the opportunity to thrive in this rapidly evolving digital landscape.

We're incredibly grateful for the teachers, volunteers, industry professionals and supporters who have dedicated their time, expertise and resources to make this possible.

Thank you for your support,

Selina Williams
Interim CEO and Co-founder, CS in Schools

A handwritten signature in a cursive, green ink, reading "Selina".

ACKNOWLEDGEMENT OF COUNTRY

CS in Schools acknowledges the Aboriginal and Torres Strait Islander peoples, the traditional owners of the lands that we live, learn, and work on. CS in Schools pays its respects to the Elders - those who have passed, those present, and those emerging - for their wisdom, bravery, and resilience.



```
repl.it
run ▶ 2

1
2  if device == "Mac":
3      macType = input("Do you have an iMac or Macbook or both?")
4      if macType == "Macbook":
5          print("Me too, aren't they awesome!")
6      elif macType == "iMac":
7          print("Hey, would you like to buy my MacBook?")
8      elif macType == "both":
9          print("No way! You are sooo lucky.")
10     else:
11         print("Sorry I don't understand.")
12
13
14  elif device == "PC":
15      print("I've never had a PC before!")
16  else:
17      print("Sorry I don't understand.")


```



*"The lesson materials, volunteer industry professionals, and the close partnership made for a **world-class professional development experience for our teachers**. Importantly, we know we're giving our students an **industry-relevant digital technologies education**."*

David Baker, Principal, Woodleigh School

GETTING FUTURE READY

WITH CO-FOUNDER AND CHAIR PROFESSOR HUGH WILLIAMS

I've always understood the power of technology.

From tinkering with a home-made computer as a kid to working for some of the world's biggest tech companies in Silicon Valley, **I've always had a passion for problem solving and for using technology to make our lives easier and better.**

An email from Bill Gates in 2004 convinced me to pack up my young family and move to Seattle and then Silicon Valley.

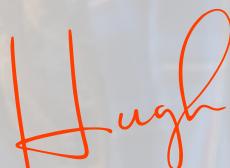
For 13 years I held senior roles at Microsoft, eBay, and Google, where I continued my childhood passion for using tech to solve big problems and to connect people. **I saw firsthand that when the right people, the right mindsets, and the right environment come together that great ideas come to life.**

After returning home to Australia in 2017, I realised there was an opportunity to support in-service teachers and their schools in giving their students a robust digital technology education.

We are not producing enough university graduates to fill the projected 286,000 new tech jobs that Australia will need to power our economy and allow us to compete globally.

I saw that Australia had a digital technology skills problem, and I wanted to give back and be at the forefront of the solution.

And that's how CS in Schools was born.



WHY WE EXIST

Australia's future prosperity relies on us having enough skilled and qualified workers to keep up with new and emerging technologies. We need to become a nation of tech creators and exporters, not just tech buyers and users.

But there's a looming challenge - a scarcity of students graduating with digitech skills. With an estimated 286,000* new digital technology jobs needed, the current annual IT graduate pool of approximately 7,000 falls significantly short. **We believe the problem begins at secondary school, where currently, only a small minority of students follow a digitech pathway:** less than 10% of students are studying STEM in later secondary school.

Secondary schools need to be equipped to teach digitech in a way that excites students, that helps them to understand how these skills apply to everyday life and that shows them the many exciting and impactful career pathways that digitech opens up.

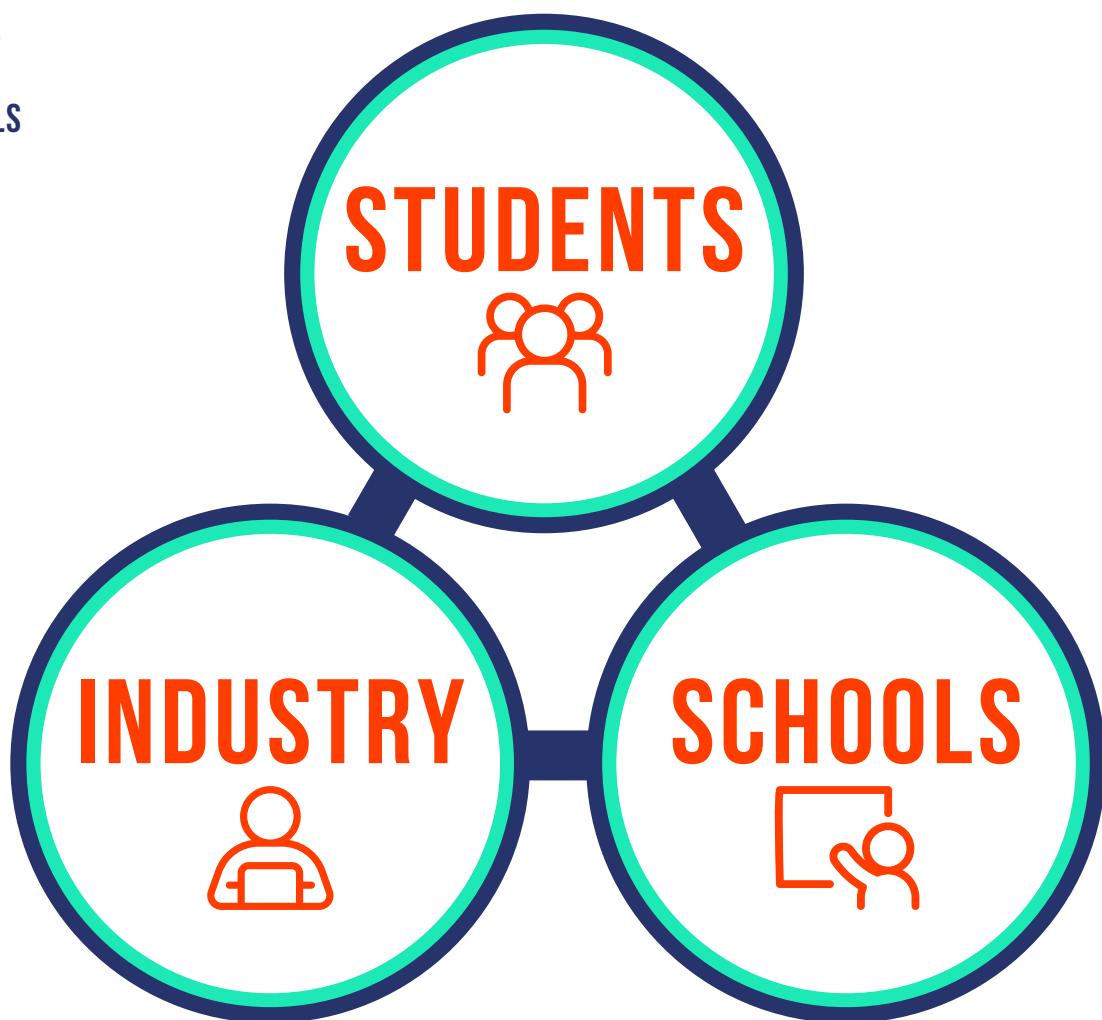
Currently, many secondary schools do not offer expansive digitech programs due to lack of specialist teachers or underestimation of digitech's relevance. CS in Schools is changing this by **increasing awareness of digitech's significance** for future employment, designing **hands-on digitech courses for students**, and **training teachers to confidently teach digitech.**



We're very optimistic about the next generation – we just need to provide them with the right environment and tools to help them become the innovators & creators our nation needs to develop bold ideas and solutions.

*<https://techcouncil.com.au/newsroom/2022-tech-job-opp/>

The **collaborative partnership between industry, schools, and students** is key to our vision at CS in Schools, forging a **future where digitech skills are as commonplace as literacy and numeracy** in Australia's workforce. Our industry partnerships ignite inspiration and create **practical opportunities for growth**.



WHAT WE DO

MISSION FOCUS

Build a stronger Australian economy by growing the digital workforce.

Growing the pipeline of IT professionals by building industry connections with schools and providing an engaging digitech pathway for students, supported by world-class professional development for teachers.

A complete digitech experience for schools, students & teachers.

Our program offers **relevant and exciting education** by drawing on tech industry experts who train and mentor teachers, to build their ability and confidence to teach digitech, as well as connect with students to **bring a career in digitech to life**.

We share **free and open teaching materials**, built by computer science and teaching experts. Our easy to implement, 'classroom in a box' includes teacher training videos, lesson plans, student videos and complete lessons that **meet the Australian digitech curriculum requirements**.

We succeed when a school is **independent and self-sustaining** without our support.



We are passionate about delivering CS in Schools to **rural, regional, girls and under-served schools** to bridge Australia's widening digital divide.



Our goal is to **double the number of schools engaged in the program every year** – reaching 512 by 2025, and ultimately all schools across Australia.



CS in Schools is an **independent charity** and all our **programs are free of charge**, thanks to the TDM Foundation and other **philanthropic supporters**.

OUR SUPPORTERS



CS in Schools would not exist without our supporters.

The meaningful impact we've achieved in schools, teachers, and especially students is a **direct reflection of our supporters' generous contributions**.

Their belief in our vision empowers us to transform the lives of students and teachers, and to **build a robust digital workforce**.

A heartfelt thanks for your ongoing belief & support.



ROB PHILLPOT

Entrepreneur, Investor,
Co-founder of Aconex

LEIGH JASPER

Co-founder and former
CEO of Aconex, Investor,
Chair of LaunchVic

MARTIN HOSKING

Investor, CEO and
Founder of Redbubble

"I feel a bit like one of those Angel Investors who achieves the very rare thing of actually backing a company that goes on to be a great hit. What a wonderful story and accomplishment... the whole team can be very proud."

Martin Hosking, Investor, CEO and founder of Redbubble

A SPECIAL THANK YOU TO THESE PEOPLE & COMPANIES FOR SUPPORTING CS IN SCHOOLS:

Adam Lewis

Chairman at Palette and Southern Innovation

Professor Martin Bean CBE

CEO of the Bean Centre and former Vice Chancellor at RMIT University

Ben Sze, Jeremy Cox, and Duncan Anderson

Co-founders of Edrolo

Roly Clifton-Bligh

Director CS in Schools and Head of Foundation at TDM Growth Partners

Kristy Kendall

Co-Founder & Director CS in Schools and Principal, Toorak College

Blaze Acumen Chartered Accountants



**Education
Perfect**



seek Domain



xplor



Australian Academy of
Technology & Engineering



**MOTOROLA SOLUTIONS
FOUNDATION**

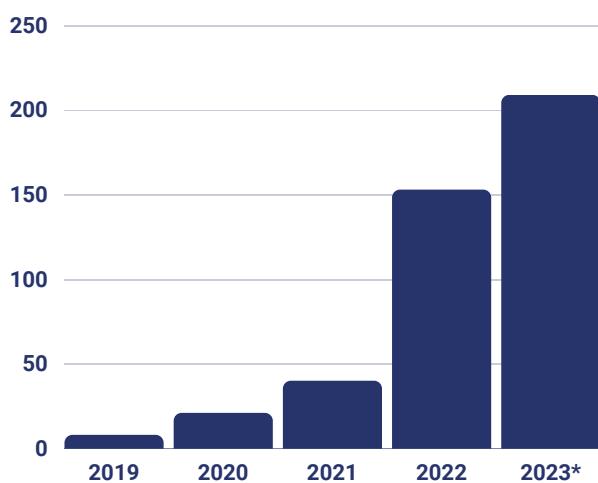


**BLAZE
ACUMEN**
CHARTERED ACCOUNTANTS

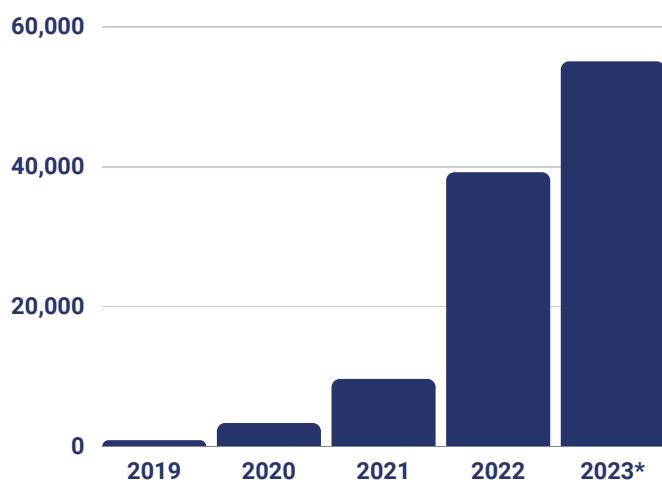
WORKING WITH SCHOOLS

Starting with just eight schools in 2019, CS in Schools has experienced **exponential growth**, more than doubling the number of schools we partner with each year, while focusing strongly **on regional, rural, girls, and underserved schools**. We currently engage 6% of Australian high schools and **20% of students**, planning to reach 50% by 2025.

SCHOOL GROWTH



STUDENT GROWTH



2023 forecast school numbers assumes a 38% growth year on year



**IN 2023, CS IN SCHOOLS IS ON TRACK TO WORK WITH
200+ SCHOOLS AND OVER 55,000 STUDENTS.**

Committed to gender equity, **CS in Schools** has enabled more girls than boys to study coding, by working with 15 all-girls schools.



INCLUSIVE EDUCATION

Given our **bias towards equitable access to education**, we are passionate about delivering CS in Schools to rural, regional, girls and under-served schools to bridge Australia's widening digital divide.

In 2022, of the schools we worked with:

35%

were **low ICSEA schools** (less than 1,000)

ICSEA gives an indication of the socio-educational backgrounds of students. The median in Australia is a score of 1,000.

27%

were **regional & remote schools**

48%

were **Government schools**

7%

had greater than 20% of the student population identifying as **Indigenous**

47%

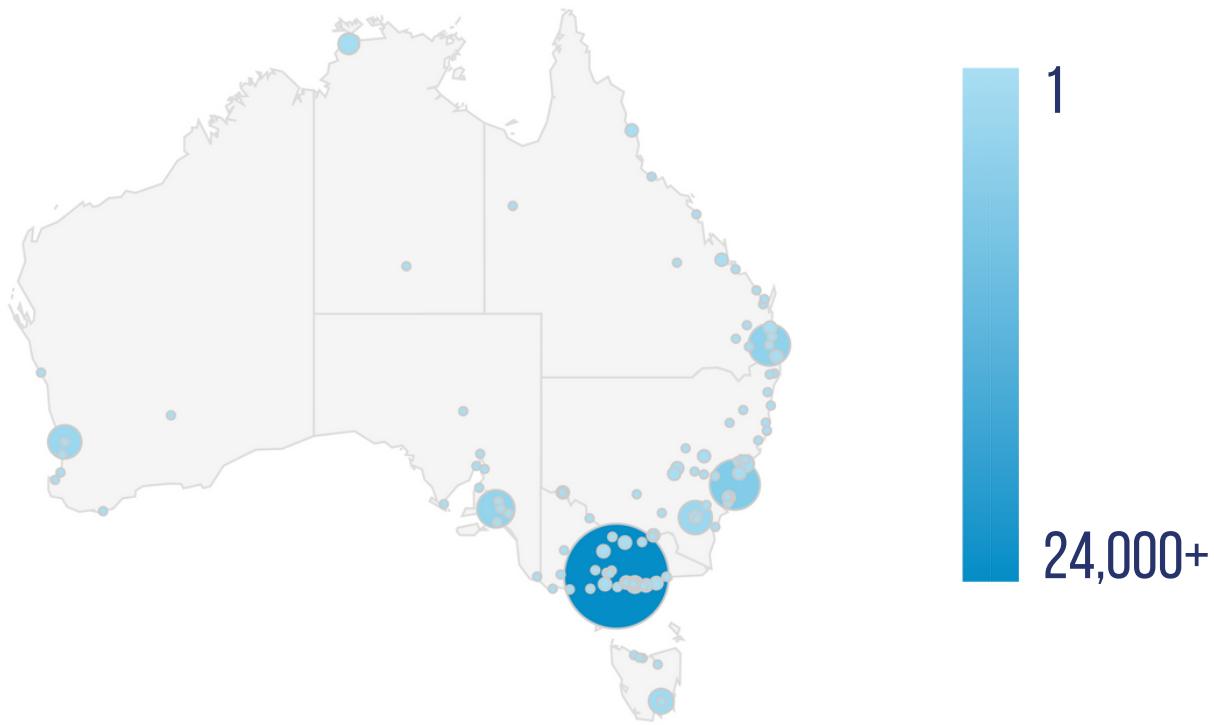
had greater than 20% of the student population with a **language background other than English**

"Students at Plumpton High School have really enjoyed the CS in Schools programme. They have enjoyed the variety of interactive learning activities within each unit that have been well structured, self paced, engaging and build upon concepts previously learnt. This has suited our diverse range of learners well. I can confidently say that all students engaged in the program have demonstrated significant growth and success in their digital learning."

Nigel Shakespeare, Head Teacher TAS, Plumpton High School

AUSTRALIA WIDE IMPACT

STUDENTS CODING ON THE CS IN SCHOOLS PLATFORM



Thousands of students from every state and territory have taken their first steps into the world of coding using our platform, <https://csinschools.io>.

The website serves as a vibrant hub for students to learn, explore, and **bring their ideas to life through code.**



CSINSCHOOLS.IO



*"I found all of the resources created incredibly easy to follow. I'd like to thank CS in Schools for providing me with the **confidence to teach coding effectively.**"*

All CS in Schools course material for students and teachers is accessed through our <https://csinschools.io> website, which includes our custom code Python programming language editor. Working with our own code editor enables us to **develop & iterate content faster**, add custom features to Python, and **work with external partners to reach more schools and students**.

32,000+

Number of students who coded at <https://csinschools.io> in 2022

20+ MINUTES

Average student session time on <https://csinschools.io> so far in 2023, **up from 14 minutes** in 2022

750,000+

Number of times students executed code in term 1, 2023, **up 70%** in term 4, 2022

COSTS TO DELIVER SUPPORT TO STUDENTS, TEACHERS & SCHOOLS

In 2022, it cost CS in Schools:

\$16

To deliver the CS in Schools program to a **student**

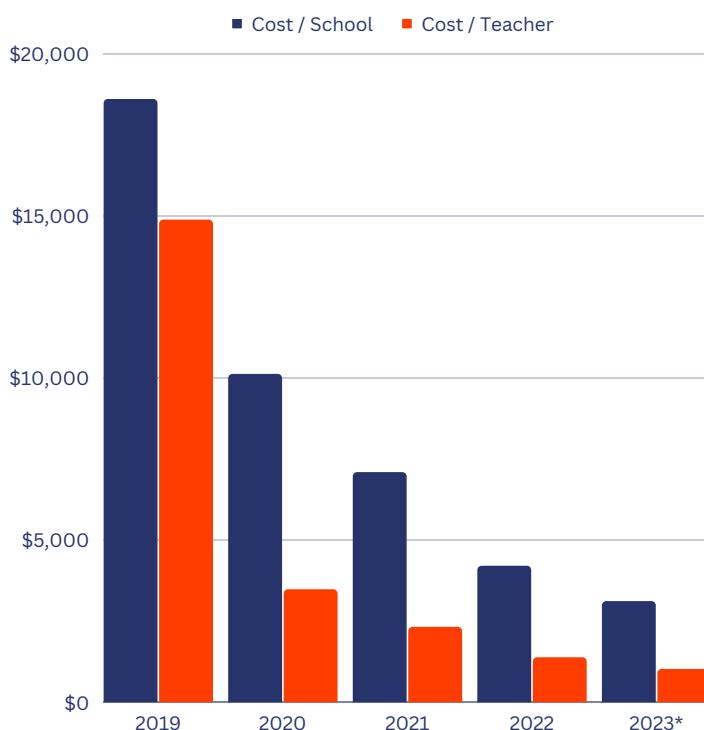
\$1,386

To upskill a **teacher** to confidently teach the Australian Digital Technology Curriculum

\$4,200

To deliver and support the CS in Schools programme in a **school**

COST PER SCHOOL / COST PER TEACHER



COST PER STUDENT



*2023 numbers based on Q1 & Q2 actuals and Q3 & Q4 forecast

FROM OUR SCHOOLS

MICAH WILKINS

HEAD OF DIGITAL LEARNING AND INNOVATION
CAMBERWELL GIRLS GRAMMAR SCHOOL

*The biggest impact is that CS in Schools is now a normal and natural part of what we do and who we are. **The language of coding, the technical and interpersonal skillsets being developed, the ways of thinking (systems, design, computational) are now embedded into the fabric of who we are and what we do.** In a very short space of time we have had all students (over 300) from Years 7-9 participate in the CS in Schools introductory course. This year we are also incorporating the Intermediate Course for Years 8-9 and have elective programs at Year 9 that use the CS in Schools micro:bit course. **Within a few years every CGGS graduate will have a baseline level of knowledge and skills. This gives them access to so many opportunities in the future.***

*We have only been able to do this due to the support from CS in Schools, from the online lessons and activities to the professional development and training sessions. **We have long-term relationships with industry partners introduced through CS in Schools.** We have over 10 teachers that have taught or at least participated in CS in Schools courses. We have embedded coding and computational thinking into our curriculum as well as across our co-curricular programs.*

We love CS at CGGS. Seline, Hugh, Toan and the team have been so supportive and we are ever so thankful.



IMPACT ON TEACHERS

The CS in Schools program was studied in 2019 and 2020. The study shows that the program is **popular with teachers**, that students find it **engaging**, and that it is **effective in upskilling teachers in coding**.

It was impractical to repeat the study during the COVID-19 lockdowns in 2021 & 2022. We will be repeating the study for 2023.

75%

Over 75% of teachers agreed the program had a **strongly positive impact on students**.

NPS 90

Teacher NPS was 90 at the end of the programme.

An NPS of 90 shows that nearly all teachers provide **strong endorsements for our programmes**.

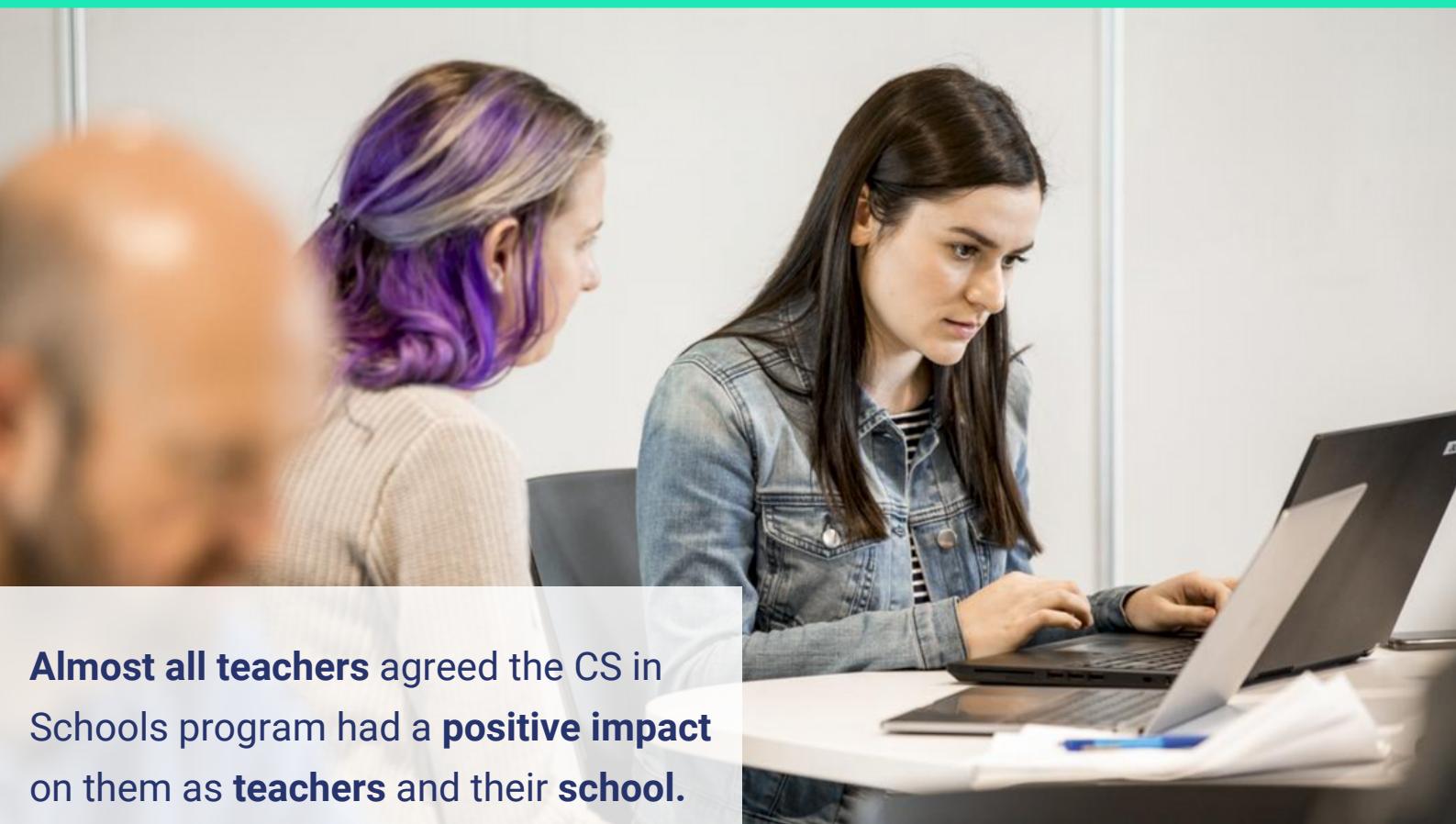
Before the program began **most teachers were not confident coders**.



After the program concluded **almost 90% of teachers had become confident coders**.



Most teachers finished the program confident they could inspire students to consider ongoing study in computing or a computing career.



Almost all teachers agreed the CS in Schools program had a **positive impact** on them as **teachers** and their **school**.

FEEDBACK FROM TEACHERS

*Thank you so much ... The program is **so professionally prepared and run**, the content is all fantastic and broken up into easily digestible parts. Thanks again.*



*Thanks for providing a free, accessible and quality program to teach **relevant coding and transferable skills**.*



*Once again thank you guys, I continue to feel very fortunate for my students and myself in this amazing learning opportunity that is so **incredibly relevant now and beyond**.*



My confidence has increased greatly after running the course for the first time.

Now I want to find the time to build my own knowledge of Python so that I am able to better assist students who want to extend themselves above and beyond!



*It's been great working with the volunteers. They've been **very active in supporting me throughout the program in the growth of my skills**. I recommend CS in Schools to every teacher who wants to build a great Digital Technology program for their students.*



The resources and support were fantastic! The content was engaging, fun and challenging for the students.

VOLUNTEERS & INDUSTRY CONNECTIONS

The significant contributions of CS in Schools volunteers, many **from Australia's top tech companies**, are instrumental in improving **teachers' skills** to teach digital technology. Their **industry insights** are invaluable to the programme, benefiting both teachers and the volunteers themselves. Teachers have also voiced **immense gratitude for the active support from volunteers**, which has aided their professional growth and improved their digital technology programs. This industry-education collaboration not only instils confidence in teachers but also **offers students a glimpse of potential computing careers**.



THE VALUE FOR VOLUNTEERS



*"CS in schools is a wonderful initiative to give young children a start into software technology. I enjoyed my time being a mentor and seeing the kids engage. **Some surprised even myself with the effort they put in beyond what was required.**"*

TriDat Tran, Software Engineer at Carsales

*"Reflecting on my own tech journey, I often wished I had been exposed to programming at a younger age so that I hadn't felt so intimidated when I started studying computer science in uni. CS in Schools plays an invaluable role by bringing tech professionals into classrooms, offering students a gateway into an evolving field. As a volunteer, I valued modeling what a tech career could look like, dismantling stereotypes and showcasing diverse paths available within the industry. **I hope I helped my students see that there are opportunities for them, no matter who they are, and that they left my class excited about what they were capable of doing!"***

Stephanie Sharp, Software Engineer at REA



Every year of volunteering with CS in Schools, I **walk away with something different to be proud of**. Some years it's showing girls who just assumed that this kind of computer thing isn't for them, that they might actually have a talent for it. Sometimes it's the really keen techy kids that relish in the opportunity of having a professional engineer to help them blow past the curriculum and build their crazy complicated personal projects. Sometimes it's just that everyone had a lot of fun along the way.

Bryce Kelly, Software Engineer at SEEK



FROM THE INDUSTRY



We've been a partner with CS in Schools for a few years now and we've been **amazed at the growth and the progress and influence that you're all having in the emerging talent in our digital space**. It's incredible work that you do and we're really proud to be a supporter of CS in Schools. We truly believe in what you're trying to achieve and we truly believe it's going to make a difference to the digital talent we get access to in the future. I love hearing from our volunteers about the excitement these students are having in the classroom - that they want more, that they want to keep learning about it. For someone who's in People and is looking at who we can bring into the organisation, that really excites me, because I know in many years to come we'll be hiring people who were involved in CS in Schools and that is so exciting.

Anthea Corridon, Head of People, Carsales

Domain

Finding tech talent is extraordinarily difficult: we just don't have enough of it in this country. That's why CS in Schools is incredibly important. We need to ensure that students are **not only interested in technology but seeing it as a pathway**. It's the only way we're going to be competitive on the world stage in a future economy. CS in Schools builds student **capabilities and skill sets, as well as a love of problem solving and building solutions**. CS in Schools is an incredible initiative and it is making a massive contribution to people's lives. It is fundamental to the future of Australia and our economic prosperity.

Jason Pellegrino, Domain CEO & Managing Director

WORKING WITH OTHERS

CS in Schools has initiated **key collaborations that significantly amplify our reach and impact nationally**. We are excited to build on these collaborations and to bring more technical education to classrooms across Australia.

EDUCATION PERFECT

CS in Schools has collaborated with Education Perfect to deliver our Introduction to Coding course through the EP platform to reach more schools across Australia.

In 2022, engagement with CS in Schools content through Education Perfect:



Education Perfect

530
schools

90
low ICSEA
schools

7,000
students

1,000,000+
CS questions
answered

AMAZON PILOT

We're working on a pilot partnership with Amazon Australia, **focusing on disadvantaged Western Sydney schools** close to the Amazon distribution centre. Through this program, teachers will gain confidence in delivering curriculum-aligned digital technology classes, guided by trained volunteer computing professionals. The effectiveness of the pilot will be assessed based on teacher retention, performance outcomes, and the level of volunteer engagement.





DAY OF AI

We have worked closely with our supporters the TDM Foundation to deliver the National Day of AI Australia in 2022 and 2023. It is a free, accessible, and interactive programme for secondary students and teachers Australia-wide to immerse themselves in AI. In 2022, DOAI reached schools in every state & territory:

200+
schools registered

23,000
students registered



EDROLO

CS in Schools and Edrolo have partnered to address the introduction of pseudocode in VCE Maths, a new topic for which many teachers may feel unprepared.

Leveraging CS in Schools' expertise in creating innovative lesson materials and Edrolo's established presence in over 1,000 Australian secondary schools, this new partnership aims to provide accessible resources to support teachers and enhance their ability to teach this new topic.

Through this pilot programme, schools engaged with Edrolo will gain access to the resources developed by CS in Schools, broadening the reach and impact of both organisations and potentially inspiring schools to further engage with CS in Schools' offerings. We are currently rolling out this pilot program, with hundreds of students and teachers already engaging with the content in the first month.



PEER-REVIEWED PAPER

Our approach been independently peer reviewed and the outcomes published in an international education conference.

We have shown that **our model of in-class, intensive, supported professional development is effective at developing digital technology teaching capability in early secondary teachers.**

We have shown that out-of-area teachers can effectively teach digital technology independently.



ABSTRACT:

Digital technology is compulsory in schools in most states at most year levels in Australia. However, a recent survey of over 400 Australian schools in 2019 found that 96% have had difficulty hiring qualified technology teachers and 39% of schools have reduced the amount of technology education they offer. We have observed that there is a shortage of teachers who feel qualified to teach coding.

To address this problem, we launched CS in Schools, a successful in-class professional development programme for teachers that helps schools build a robust digital technology capability in their students. Our programme matches pedagogy with content expertise, by matching a volunteer computing professional with a secondary school teacher, and helping that teacher develop their coding skills in the classroom over a six month period. This experience paper describes the approach we took in piloting our programme with 10 teachers in 8 schools who taught over 1,100 students in 2019. We also describe our current scale-up in 2020 to work with around 60 teachers, around 40 volunteers, over 25 schools, and more than 6,000 students. Our goal is to work with hundreds of schools in 2021.

TEAM



SELINA WILLIAMS

Co-Founder and Interim CEO

Selina is a co-founder and the Interim CEO. She leads the CS in Schools team towards its goal of successfully working with 128 schools in 2023. She has a background in finance and computing, and has Bachelor degrees in both Business and Computing from Monash University.



HUGH WILLIAMS

Co-Founder and Chair

Hugh is a co-founder and chairs the CS in Schools board. He's today focused on raising CS in Schools' profile and changing the national digital technology agenda. Hugh is an Enterprise Professor at the Melbourne Business School, and a company advisor and investor. He was formerly a VP at Google and eBay, and also previously held senior roles at Microsoft. He holds a PhD in Computer Science from RMIT University.



KRISTY KENDALL

Co-Founder and Director

Kristy is a co-founder and director of CS in Schools and also the 16th Principal of Toorak College in Victoria. With a background in Psychology, she completed her Masters of Education in 2013. Her particular expertise is VCE Psychology, and more broadly in curriculum development.



ROLY CLIFTON-BLIGH

Director

Roly is a Director of CS in Schools and the driving force behind the TDM Foundation. The Foundation is responsible for nearly \$2 million in impact giving annually and is the major supporter of CS in Schools. Roly brings to CS in Schools his experience at the TDM Foundation, his learning from Harvard, and 20 years of experience at the ABC and the State Library Victoria.



TOAN HUYNH

Director of Teaching and Learning

Toan is the Director of Curriculum. He is also the main author of our teaching materials. He is the former head of Digital Technologies at Haileybury and at the John Monash Science School. He is also a former Product Manager at eBay and Microsoft, and holds a Masters of Teaching and a Bachelor of Computer Science.



JENNIFER LING

Industry & Stakeholder Manager

Jen leads our industry and school recruitment. She is an experienced teacher with a demonstrated history of working in the education industry. She is skilled in Lesson Planning, Curriculum Development, Research, Educational Leadership, and Teaching. She graduated from La Trobe University (Education) and RMIT University (Applied Biology/Biotechnology).

CONTACT



If you would like to learn more or are keen to get involved as a school, teacher, volunteer, partner or supporter, please reach out - we'd love to hear from you!

CSINSCHOOLS.COM

More information

CSINSCHOOLS.IO

Courses



hello@csinschools.com



linkedin.com/company/csinschools



[@csinschools](https://twitter.com/csinschools)

