

Digital Thumbprint Evaluation Report

Creating a safer online environment
for young Australians

February 2018





Acknowledgements

Optus would like to acknowledge all of the schools, teachers and students who participated in the Digital Thumbprint evaluation, which made this learning possible. We are sincerely grateful for your support.

Foreword



Optus' digital citizenship mission is to create empowered and responsible digital citizens who thrive in today's world of technology. To help us achieve our mission, Optus launched its Digital Thumbprint program in 2013 with the aim of educating young people on how to be digitally safe and savvy, while encouraging them to build a positive online presence.

Today, Australians spend an average of 10 hours a day online, and we spend more time on our smartphones than talking to our family or friends. With our world now being 'everything digital', our focus is to give young people the ability to manage their digital presence in the best possible way, while avoiding the perils and pitfalls that are becoming all too common for young people online.

Digital Thumbprint, our award-winning and government accredited program, has reached 170,000 secondary students in New South Wales, Queensland and Victoria through free, in-school workshops. With the assistance of education experts, content was developed for three, age-appropriate workshops, which are delivered by trained facilitators in classroom sessions.

This evaluation report finds that while it is illegal for anyone under the age of thirteen to have their own social media account, almost all secondary school students use social networking sites. Eighty percent of those in Years 7 – 8 are already online. This highlights the importance of educating students as early as possible to ensure they have the skills to safely and responsibly interact online.

Digital safety for young people is not only a growing issue in Australia, it is a global one. As part of the Singtel Group, Optus and Singtel have joined forces to reach half a million students by 2020. We recognise that it takes a holistic approach, and a range of solutions to create positive change in the way people interact online.

Along with Singtel, our Associate Companies and key stakeholders such as Globe Telecom (Philippines), government, educators, youth counsellors, law enforcement agencies and community partners, we are collaborating to create a positive digital experience for young people and parents and teachers. Our program includes a range of tailored resources including face-to-face workshops and digital tools and guides.

Engaging our employees and community partners is essential to deepening our impact.

Digital Smarts Day, launched in 2017, brings together Optus people, community partners and students. Through fun, interactive activities we are highlighting the importance of digital safety and supporting all with strategies to navigate today's digital society.

Optus also trained a number of employees to become Digital Thumbprint Facilitators. The employees underwent a rigorous training program and then piloted their skills at one of our partner high schools. These employees will go on to deliver more sessions, utilising Optus technology to reach students in rural and regional Australia.

Additionally, we invested in a detailed evaluation of our Digital Thumbprint program over the 2017 school year. We connected with over 1,500 students and nearly 900 teachers who participated in the evaluation, and undertook quantitative and qualitative research.

The evaluation results in this report, confirm students are learning new skills and knowledge, and the topics covered in the three workshops are impactful and highly effective. The report demonstrates the validation from the teachers who have assessed the program, and are very satisfied with the content and delivery.

I'd like to thank those involved in developing this report; the schools who participated, the teachers who gave us their time and feedback, our Digital Thumbprint facilitators and the students who showed their enthusiasm and energy for this important issue.

I hope you will find this evaluation report interesting and informative as I have. I look forward to seeing the Optus Digital Thumbprint program expand and evolve to support more young people and adults as they engage in the digital world.

Paul O'Sullivan
Chairman

OPTUS



Table of contents

01 Introduction to Digital Citizenship

- 02 Key issues in the digital world
- 03 Optus and digital citizenship
- 06 About Digital Thumbprint
- 07 Our approach
- 09 Workshop learnings and key findings

11 Evaluation Report

- 12 Before Digital Thumbprint
- 18 After Digital Thumbprint
- 32 Focus on participant experience

33 Appendix: Evaluation Methodology

- 38 Evaluation methodology
- 39 Understanding statistical significance
- 40 Logic model



Introduction to Digital Citizenship

Key issues in the digital world

1.



Bullying and harassment

Around 40% of kids say they have seen their friends behave badly online – this is the most common problem faced by young people in digital space.¹

2.



Sexualisation of content and behaviour

45% of 13 to 18 year olds have sent sexually explicit images to another person.¹

3.



Privacy and personal security

Young adults are those most likely to have at least some key personal information about themselves online.¹

4.



Data explosion

With the explosion of data available online it can be hard to tell fact from fiction, requiring greater discernment and critical thinking.¹

5.



Pressure to constantly be online

63% of teens feel worried or uncomfortable when they cannot access their social media accounts, and 23% of parents cite issues related to the overuse of digital devices as their biggest concern about their children's use of technology.¹

1. Optus (2017), Digital Citizenship Research Findings and Recommendations 2017, <http://www.digitalthumbprint.com.au/digital-citizenship-research-2017>.

Optus and digital citizenship

AT OPTUS, WE KNOW THAT IN ORDER TO MAKE A VALUABLE CONTRIBUTION TO SOCIETY, IT IS CRITICAL THAT WE UNDERSTAND AND ADDRESS THE ISSUES SURROUNDING DIGITAL TECHNOLOGY IN THE LIVES OF YOUNG PEOPLE.

As good corporate citizens it is our responsibility to help young people become good citizens themselves in this rapidly changing digital world.

The social issues affecting young people coupled with the rise of the digital native represent a compelling case for Optus to support digital citizenship and positive online social behaviour.

There is much to be celebrated and embraced in the online world. The combination of mobile devices, the internet and social media provide unprecedented opportunities for individuals to communicate, to create and share content, and to innovate and build connections.

Despite these opportunities, researchers and program designers have frequently focused on the negative issues faced by people online (refer to page 2 for key issues in the digital world).

Our response is to invest in programs and partnerships that bring digital education to students in a fun, interactive and accessible way, with an aim to create empowered and responsible digital citizens who thrive in today's world of technology.

The bulk of this report will focus on the Optus Digital Thumbprint program which targets secondary students across New South Wales, Queensland and Victoria.

In addition to our core program, we have collaborated with several organisations to build partnerships that allow us to extend our collective reach even further.

Digital Thumbprint with Kids Helpline is a free program that supports primary school students Australia-wide. Kids Helpline counsellors deliver in-classroom support programs via video conferencing technology. There are eight curriculum-aligned topics that aim to promote digital respect, responsibility, resilience and empathy and online safety.

The Office of the eSafety Commissioner (the Office) is committed to empowering all Australians to have safer, more positive experiences online. The Office was established in 2015 with a mandate to coordinate and lead the online safety efforts across government, industry and the not-for-profit community. A responsibility of the Office is to certify providers of online safety programs. The Certification scheme has been created to provide schools with the certainty that they can access online safety education providers. Optus's Digital Thumbprint program is certified by The Office of the eSafety Commissioner.

DQ Institute is an international think tank committed to improving digital education, culture, and innovation through cross-sector collaborations, global dialogue and big data research. Singtel and Optus are proud to be the strategic partner of DQ Institute and the education movement #DQEveryChild which aims to empower every child with Digital Intelligence or "DQ".

We believe our people are integral to the success of these initiatives and make sure to engage and involve them wherever possible.

Digital Smarts Day, launched in June 2017, is a major event to bring together Optus people, community partners and students. Our Sydney campus welcomed 96 secondary students and 77 primary school students from a range of schools. Through fun, interactive activities we highlighted the importance of digital safety and supported all participants with strategies to navigate today's digital society. In 2018 Digital Smarts Day will become an annual event and we plan to increase its reach into other states.

From October to December 2017, five Optus employees were trained by the Optus Organisational Capability team and Karrikins Group to deliver Digital Thumbprint workshops to IEC (Intensive English Centre) students at Chester Hill High School in New South Wales. The school has since requested more workshops for the general high school.

In December, four of these trained staff delivered "Keeping Kids Safe Online" seminars to 36 Optus employees, providing tips and information about how to keep children safe online.

Digital citizenship describes being part of a digital society and is a broad concept that encompasses not just the dangers of the online world, but the benefits and opportunities it creates.



Digital citizenship refers to the attitudes, skills, knowledge and behaviours that enable people to enjoy the full benefit of digital devices, while minimising the danger to themselves and others.



A good digital citizen is someone whose participation in the online space enhances the wellbeing of themselves and others.

Our programs and partners

Digital Thumbprint

DQInstitute
Leading Digital Education, Culture, and Innovation





About Digital Thumbprint

DIGITAL THUMBPRINT WAS LAUNCHED BY OPTUS IN 2013 TO ADDRESS THE GROWING NEED FOR EDUCATION AND SUPPORT FOR DIGITAL CITIZENSHIP.

Digital Thumbprint was created in collaboration with experts in education and behavioural change to enable students to harness technology in support of their studies and careers in a discerning, responsible and safe manner.

Digital Thumbprint covers a range of topics from information security, cyber safety and positive online behaviour to productivity in a technology-heavy environment. The objectives of the program are:

- To increase students' awareness of the advantages of a positive online presence.
- To arm students with the facts they need to stay safe online in a way students can understand, use and enjoy.

Underpinning the program is the belief that addressing issues of digital citizenship in a positive and realistic way will equip students with the confidence to use technology appropriately, while still making them aware of the risks technology use entails. This theory of positive behaviour change makes clear and measurable links between the activities and outcomes of the program.

Students attend interactive and engaging workshops, each covering a different aspect of digital citizenship. Below are details of what each workshop includes.

Digital Thumbprint is currently being delivered by world-class facilitators to around 40,000 students annually across Australia. For more information about Digital Thumbprint, please see www.digitalthumbprint.com.au. For the program's logic model, or 'theory of change', please see the Appendix.

Our workshops

Digital Insight ("Insight")

Years 7-8

Information privacy and safety online, specifically, effective personal security practices, terms of service and online business models.

Digital Impact ("Impact")

Years 9-10

Impact students' choices have on themselves and others, including the concept that there is no distinction between the consequences of actions done online compared to those done 'in real life'.

Digital Ambition ("Ambition")

Years 11-12

The concept that technology can facilitate both productivity and also procrastination, giving students a toolkit to identify and change unproductive behaviours.

Our approach

Purpose of this report

THIS REPORT SUMMARISES THE RESULTS FROM THE OUTCOMES EVALUATION OF THE OPTUS DIGITAL THUMBPRINT PROGRAM.

Outcomes evaluation looks at the impacts, benefits or changes to stakeholders as a result of the program, both during and after their participation. Evaluation also helps us understand the performance and effectiveness of the program, and identify areas for improvement.

This evaluation was designed to understand the end-to-end experience of students who participate in the program, and to determine what changes for students as a result.

Specifically, we hope to better understand:

- What skills, attitudes and knowledge related to digital citizenship do students have before they participate in the program?
- What impact does the program have on the attitudes, skills and behaviour of participating students?
- What is the experience of students who participate in a Digital Thumbprint workshop?

This report presents a summary of the findings and recommendations for the future, based on research undertaken between July and December 2017.

Evaluation methodology

THE 2017 DIGITAL THUMBPRINT EVALUATION USED A ROBUST MIXED-METHODS APPROACH WHERE WE INTENSIVELY WORKED WITH A SET OF SIX PARTICIPATING SCHOOLS AND THEIR STUDENTS.

Students and teachers were surveyed at three points during the program, see the timeline on your right for our evaluation approach.

This data was complemented by in-depth qualitative analysis on a smaller student and teacher sample in focus groups and interviews.

In total, Optus worked with almost 560 students and 20 teachers to compile the data for this report. For a more detailed breakdown of methodology, participation rates in each survey and our tests for statistical significance, please see the Appendix.

Evaluation approach timeline:

Checkpoint 1

Evaluation conducted 2 weeks prior to Digital Thumbprint workshops

- Pre-workshop student surveys
- Pre-workshop teacher surveys



Checkpoint 2

Students and teachers attend Digital Thumbprint workshops

- Digital Impact
- Digital Insight
- Digital Ambition



Checkpoint 3

Evaluation conducted immediately after Digital Thumbprint workshops

- Immediate post-workshop student surveys
- Immediate post-workshop teacher surveys



Checkpoint 4

Evaluation conducted 2-4 weeks after Digital Thumbprint workshops

- Post-workshop student surveys
- Post-workshop teacher surveys
- Focus groups



Workshop learnings and key findings

Beforehand

Confidence is high

89/100 ✓

Average student self-efficacy Insight workshop.

82/100 ✓

Average student self-efficacy Impact workshop.

56/100 ✓

Average student self-efficacy Ambition workshop.

"I kind of guessed it was from the ads because when you go on YouTube and then your favourite YouTuber's blogging or something and they mention other companies because they pay them. I kind of knew about that from apps but then I hadn't really thought about it and I did wonder why some apps get so much money when they don't sell anything and it's all free and what they get back from it, now obviously I know they can look at our information and get ads for us and they get paid ..."

Student, Insight Workshop

During

Loving the workshop

Students

97% 💡

of students learned something they can apply.

88% 🛡️

of students gave a trust score of 7 or higher out of 10.

87% 👍

of students found the workshops engaging.

88% 👤

of students reported great rapport with the facilitator.

Teachers

46% 💬

of teachers report students raising digital citizenship topics more.

74% 📖

of teachers will increase teaching of digital citizenship topics.

100% 🏆

of teachers reported high student engagement.

100% 📝

of teachers agreed the content matched their students' needs.

"I think it was very informative for the kids, especially letting them know, basically, who can see what they're doing and how much information they're actually putting out there. I think that was very confronting and eye-opening for them. And the thing that was really good was it was relatable. So, you know, the presenter was very good with relating to the kids ... [the facilitator] definitely engaged them, that was great."

Teacher observation

After the workshop

Behavioural change is clear

1 in 2

students acted on or applied learning.



of Impact and Insight students checked their privacy settings.



of all students applied something they learned.



of Insight students removed some online content.



of Impact students removed some online content.

Positive impact

Observed positive changes as a result of the program.*

Avoiding negative online interactions.



Ability of teachers to teach students to stay safe online.



Understanding of the impact of online interactions.



Discussion and teaching of digital education in school.



Consider what is shared online.



Online interactions have an impact.



Understanding that 'Online material is not an accurate reflection of real life'.



Understand that free online services sell user information.



"Checked my social media account and made sure to delete any personal pictures."

"I accepted less people and blocked unknown dm's."

"I change my Snapchat and Instagram account passwords frequently."

"I have changed my username on some sites to a different one and made an email address that is not my name for signing up to things."

"I have deleted online apps that can affect my safety. I also watch what I say and post online."

"I thought more carefully about the things I was posting - if it was kind and could offend people."



* All of these changes were statistically significant.



Evaluation Report

Before Digital Thumbprint

STUDENTS SPEND A LOT OF TIME ONLINE, AND ARE ALREADY SKILLED IN THIS DOMAIN (OR THINK THEY ARE).

Our evaluation revealed that online interactions are a major part of students' daily lives and the use of technology is an integral part of a normal day in Australian schools. Of the teachers surveyed, 95% reported Wi-Fi is available at the school, with some restrictions on student use. Of the students surveyed, 84% reported having their own profile on a social networking site (Figure 1).

While it is illegal for anyone under the age of 13 to have their own social media account, the data suggests that almost all high school students use social networking sites. When social media usage was broken down by age, slightly lower levels of social media usage amongst Year 7-8 students (80%) were found compared to Years 9-10 students (92%) and Year 11 students (93%) (Figure 2).

This highlights the importance of educating students as early as possible to ensure that they have the skills to safely and responsibly interact online before they begin using social media.

Figure 1: Do you have your own profile on a social networking site that you currently use?

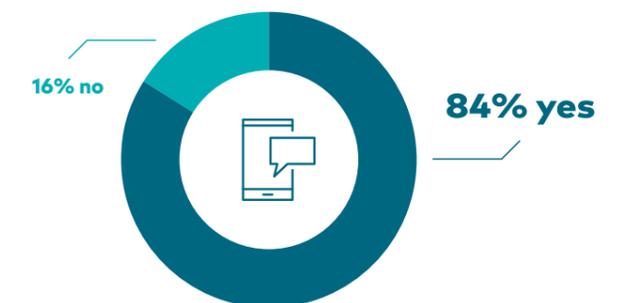
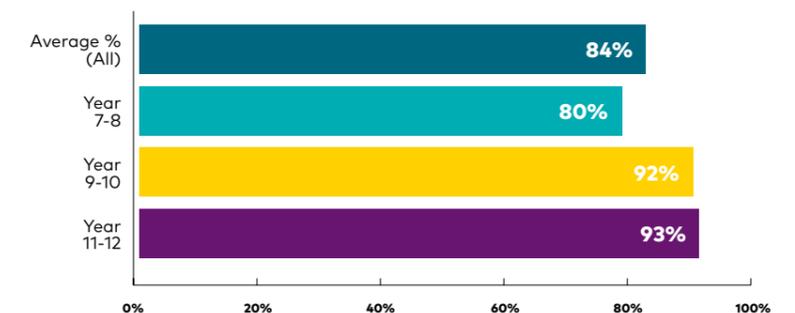


Figure 2: Social Media Usage by Year Level (%)



“[Learning about digital citizenship is] pretty important. Considering it takes up a third of our life nowadays, it’s kind of important to know what we’re supposed to be doing, what we can be doing.”

Digital Insight participant

Given how much time students spend online, it is perhaps unsurprising that many already report having the skills to operate productively in this domain. The students surveyed believe they are highly capable with respect to key digital citizenship skills.

When students were asked to score out of 100 their confidence in their ability to be good digital citizens, for example, their ability to keep their personal data secure or to stay safe online, they overwhelmingly reported high levels of confidence, before having seen a Digital Thumbprint workshop. On average, students surveyed prior to seeing the Impact and Insight workshops gave themselves scores between 80 and 90, while students in the Ambition workshop gave themselves scores between 65 and 70, see Figures 3, 4 and 5. Previous studies suggest that a score of 50 represents an individual being 'moderately certain' that they can perform a task, while a score of 100 represents 'complete assurance' in an individual's confidence that they can complete a task.² The tasks we asked students to rate themselves on were workshop specific.

It is possible that the lower confidence scores observed by students participating in the Ambition workshop reflect the students' relatively lower confidence in their ability to study well, compared to their confidence online. It is also possible that changes in confidence are age related, with students showing more caution as they get older. These results are worthy of further research.

It is unclear whether students' reports about their digital capability are actual representation of their abilities or whether they represent overconfidence and a lack of self-awareness. Student belief is discussed further on page 22 of this report.

Students' confidence in their ability to perform certain actions, measured before participation in our workshops.

Participants were asked to rate how certain they were in doing each task out of 100 (0 being very uncertain and 100 being very certain).

Figure 3: Insight Questions

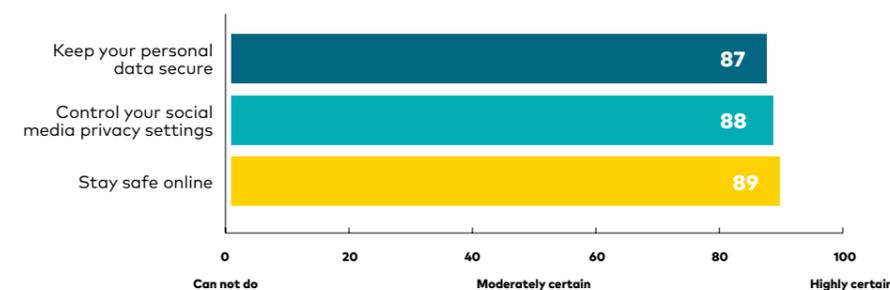


Figure 4: Impact Questions

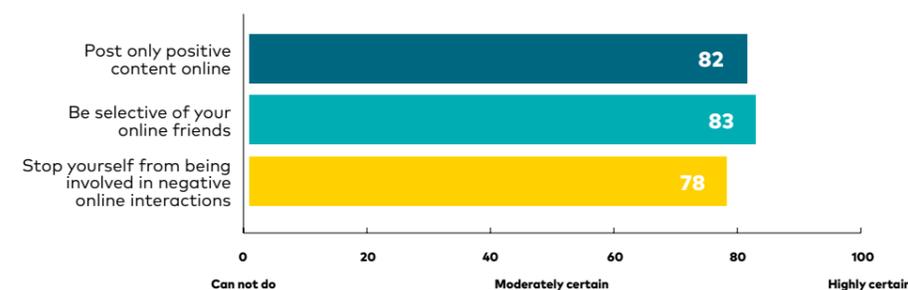
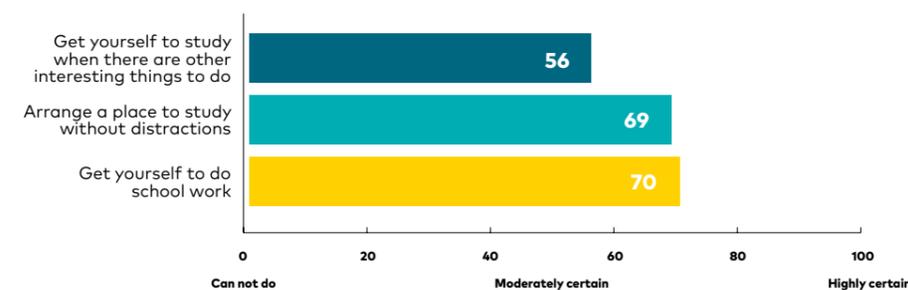


Figure 5: Ambition Questions



2. A. Bandura (2005), Guide for Constructing self-efficacy scales, <https://www.uky.edu/~eushe2/Bandura/BanduraGuide2006.pdf>



5% of students have learned about online safety outside of school. Compared to 90% of students that received guidance from teachers.

STUDENTS ARE GETTING EDUCATION IN DIGITAL CITIZENSHIP, BUT THIS EDUCATION IS PIECEMEAL AND OFTEN FEAR-BASED.

There is no argument that the teaching of digital citizenship is a must for students and that school is the obvious place for it to be taught. But what is the best approach to teaching students these skills, and which faculty within schools should take the lead?

One aim of the evaluation was to understand the current state of teaching and exposure to digital citizenship education for the students and schools taking part, and also to determine if Digital Thumbprint extends current learning and whether our approach aligns to or differs from students' current experience.

We found that most students are receiving some digital citizenship education, with 90% of students receiving guidance by teachers about staying safe online. Only a small minority (5%) of students have learned about staying safe online in a course outside school. Therefore, the majority of education on these topics appears to take place in school.

Our research² found a large disconnect in the way that teachers want to teach digital citizenship skills, and the way that students want to learn them.

Students were uniformly critical of the negative and fear-based way that digital citizenship topics are generally taught; most of their education consisted of being told the dangers of the online world with no constructive support on how to positively engage and stay safe online.

Conversely, teachers of the same students felt that the Digital Thumbprint program did not highlight the dangers in enough detail. In their opinion, students need to be shocked and scared to prevent them engaging in negative online behaviour, see below for comments from students and teachers.

Our 2017 research review³ found that fear-based methods are less effective than positive education at effecting behaviour change, which highlights the importance of moving away from fear-based programs as the basis of digital citizenship education. A fundamental shift in the way that teachers think about and approach digital citizenship education is needed. The research also highlights the need for the provision of positive, empowering and constructive programs to give students the digital education that teachers do not provide.

Student comments on digital education:

"We just learn about internet and how dangerous it can be if you used it wrong."

"We learned lots about cyberbullying. It was a big topic. Literally the topics that were covered about internet hackers and stuff, it was just cyberbullying."

"Yeah, they were just like, 'Be careful about what you post online these days,' ... It was cheesy kind of video series and then you have worksheets and a really weird game to play about emails ... We didn't even finish it!"

Teacher thoughts on digital education:

"Because, the thing is, they don't understand danger at that age. It's the whole frontal cortex thing. You know, they don't understand danger at any level so you have to reinforce it so much before they really understand that this is a dangerous thing. It has consequences for the rest of your life."

"If there was some sort of online simulation that they could do that would give them that negative experience and that shock factor."

3. Optus (2017), Digital Citizenship Research Findings and Recommendations 2017, <http://www.digitalthumbprint.com.au/digital-citizenship-research-2017>.

"I changed my passwords and made sure they do not involve personal information and reduce the amount of my personal information that's online."

Digital Insight participant

After Digital Thumbprint

The impact of our program

DIGITAL THUMBPRINT IS DESIGNED TO DO MORE THAN IMPART KNOWLEDGE, IT IS DESIGNED TO CHANGE BEHAVIOUR.

Our logic model (see the Appendix), illustrates the program's theory of change: if you increase participants' knowledge and skills, impart the correct attitudes and leave them with a 'call to action' (i.e. you create an intent to change behaviour combined with specific ways to do it), you are likely to drive behavioural change.

To validate the program model we need to measure the change across all four of the domains we intend to affect (attitudes, knowledge, self-efficacy and behavioural intent), as well as measure actual changes in behaviour that have occurred as a result of the program.

Digital Thumbprint strives to achieve positive outcomes on:

1. Attitudes
(Transforming attitudes) 

2. Knowledge
(Informed, skilled users) 

3. Self-efficacy
(Students believe in their skills) 

4. Behavioural intent
(Intent leads to change) 

Transforming attitudes

FOR STUDENTS TO BE RESPONSIBLE DIGITAL CITIZENS IT IS ESSENTIAL TO HAVE THE RIGHT ATTITUDES INFORMING THEIR BEHAVIOUR. WE AIM TO TRANSFORM STUDENTS' ATTITUDES IN RELATION TO A CORE SET OF DIGITAL CITIZENSHIP TOPICS.

Immediately after the workshops, students were asked a single workshop-specific attitude question:

- Insight – nearly 87% of respondents strongly agreed with the statement 'I think my information is valuable'.
- Impact – just over 93% of respondents agreed with the statement 'I think my online actions have an impact on others'.
- Ambition – 98% of respondents agreed or strongly agreed with the statement 'I think technology can help my education'.

The results for Ambition were noticeably higher in the level of agreement to attitude change than those for Insight and Impact.

The results from the pre- and post-workshop surveys showed varying levels of change in attitudes, with particularly strong results for the Impact workshop. All three attitude indicators for Impact showed a significant change between the pre- and post-workshop survey responses.

The three indicators were:

- Sharing with my friends is sharing with the world.⁴
- Every time you interact online you have an impact.⁵
- Do you consider the impact of your online posts?⁶

There was one attitude indicator for Insight that demonstrated a significant change in students being more aware that online material is not accurate reflection of their whole life.⁷ There were no consistent changes in any of the attitude indicators for Ambition.

The program appears to be having varying levels of success in changing students' attitudes, see below for comments from students.

Student comments post-workshops

"Making sure to have your password strong and your account has to be secure, so make it private, like don't let strangers into your account and stuff."

"I have definitely become more aware of what I do on social media because I have a lot of social media accounts so it kind of just made me aware of, that my accounts are private and I only add people that I know to my friend's lists and stuff like that."

4. This difference is statistically significant (paired t-test, p = 0.005).

5. This difference is statistically significant (paired t-test, p = 0.001).

6. There is a marginally statistically significant positive shift (paired t-test, p = 0.01).

7. p = 0.004, McNemar's test comparing No to Yes and Don't know combined.



87%



Of respondents who attended Insight strongly agreed with the statement:

"I think my information is valuable."

93%



Of respondents who attended Impact strongly agreed with the statement:

"I think my online actions have an impact on others."

98%



Of respondents who attended Ambition strongly agreed with the statement:

"I think technology can help my education."



Through our evaluation we wanted to see if students value the information passed on.

Informed, skilled users

YOUNG PEOPLE ARE USERS OF EVER INCREASING AND RAPIDLY CHANGING ONLINE PLATFORMS. WE WANT STUDENTS TO BE INFORMED USERS WHO HAVE THE RELEVANT KNOWLEDGE TO ENGAGE CONFIDENTLY AS DIGITAL CITIZENS.

Our workshops aim to provide students with insight into how the online world operates, how they engage with that online world responsibly and how they can benefit from this digital environment in a positive way. Through the evaluation we could observe whether or not students value the information received, and determine if they have been able to use that information effectively.

Positive shifts in knowledge were observed in the following indicators:

- Online services that students use for free sell their information.⁸ (Insight)
- Awareness of sharing their location. (Impact)
- Awareness of who can see what they post online. (Impact)

Insight was the only workshop with a statistically significant change in student knowledge. There was a remarkable increase in the level of agreement that online services used by students for free sell their information. Many of the students in the focus groups appreciated knowing how online services make money and say they are now better informed about what their information is used for and its value. Although a number of students felt these types of commercial activities were not clearly outlined when you sign up to use their services, there was general recognition that it is a trade for getting a service for free.

There was one surprising result. There was a marginally significant negative shift in student responses to the question 'not asking permission to share pictures of their friend' from those students who attended the Insight workshop. We can only hypothesise that after the workshop students had an increased awareness that they share photos without permission. It is one of the findings that we intend to investigate further.

Student insights on what they learned from workshops

"What surprised me was that they actually – third parties bought your information to use for their own benefit. I didn't actually know they bought your information."

"So basically I learned we don't know who exactly is seeing what we post or what we put up and we need to be careful."

"I learned that you can simplify the terms and conditions so you don't have to read a lot of writing."

8. This result was highly statistically significant (paired t-test on responses converted to numeric values, $p < 10^{-16}$).

Student responses to self-efficacy questions

Students' confidence in their ability to perform certain actions, measured before and after participation in our workshops.

Participants were asked to rate how certain they were in doing each task out of 100 (0 being very uncertain and 100 being very certain).

Figure 6: Insight questions

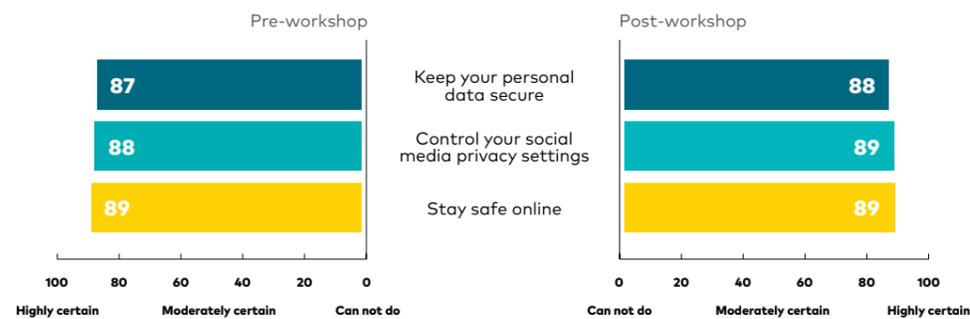


Figure 7: Impact Questions

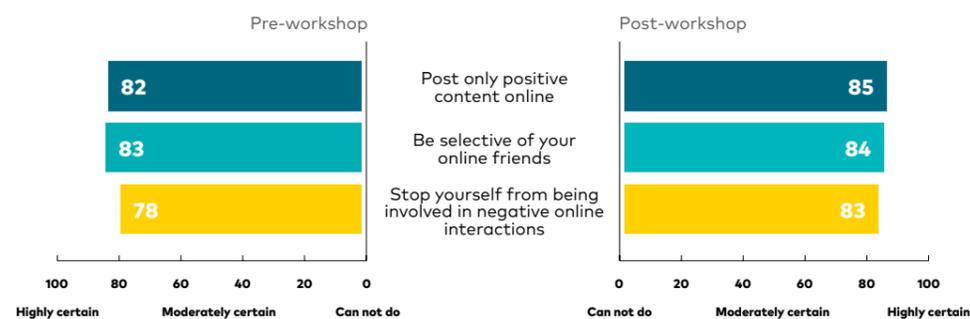
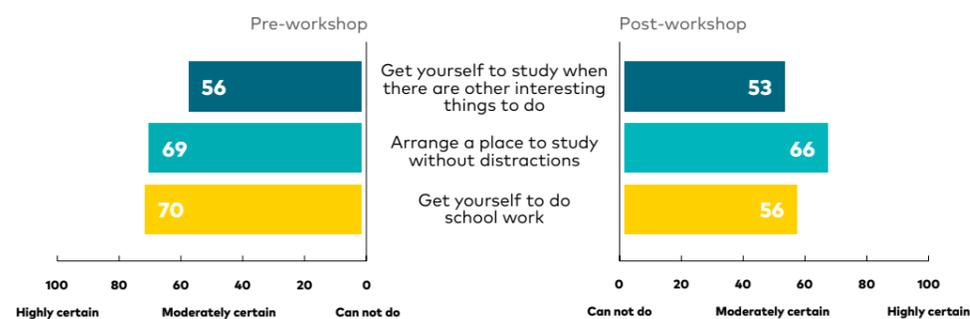


Figure 8: Ambition Questions



Students believe in their skills

STUDENTS WHO HAVE A TENACIOUS BELIEF IN THEIR CAPABILITIES WILL PERSEVERE IN THEIR EFFORTS DESPITE INNUMERABLE DIFFICULTIES AND OBSTACLES. THEY WILL NOT BE EASILY DISSUADED BY ADVERSITY.

One of our aims is that students participating in Digital Thumbprint leave the program with the belief they can effectively manage the challenges involved in being a good digital citizen.

To better understand this belief, self-efficacy before the program and how students' levels of self-efficacy changed immediately after and in the weeks following the workshop were measured.

In order to most accurately measure the specific impact of our programs, students were asked unique self-efficacy questions tailored for each workshop, see Figures 6, 7 and 8.

As reported on page 12, students' self-efficacy levels were already high before the workshops. The post-workshop ratings for students remained high and were consistent with the pre-workshop scores with one exception – in the Impact workshop, the rating for 'Stop yourself being involved in negative online interactions' had a marginally significant positive shift.⁹

It is unclear whether students' reports about their digital capability are actual representations of their abilities, or whether they represent overconfidence and a lack of self-awareness. In our interviews and surveys with teachers, we found that teachers have a markedly different assessment of the students' skill levels.

For instance, of teachers surveyed both pre- and post-workshop, none ranked their students' skills as digital citizens as 'Very Good'. Only 38% of teachers pre-workshop believed that their students had a 'Good' understanding of digital citizenship skills; this increased to 77% post-workshop.

The disconnect in how students and teachers assess student abilities is worthy of further investigation. It is possible that teachers have low visibility of their student's abilities and that students are savvier than teachers may realise. Conversely, students may be overconfident, which in turn could lead them to engage in riskier behaviour online.

Teacher insight on student digital citizenship confidence

"[Students need to be] confident in a good way, as in they can be confident but they can be the person who is doing all the harm to the other people, so you need confident as in a safe user."

⁹ The increase is marginally statistically significant for Stop yourself from being involved in negative online interactions (paired t-test, $p = 0.02$).



For every two students who attend the program, one student will act on or apply what they learned from the Digital Thumbprint workshop.

97%



Of attendees across all workshops reported learning something they could use, regardless of which workshop they attended.

29%



Of attendees in the Insight workshop removed content from their profiles after a workshop session.

58%



Of attendees in the Insight and Impact workshops reported checking their privacy setting.

92%



Of attendees in the Insight workshop said they will check the security information online.

97%



Of attendees in the Impact workshop said they would consider the impact they have online.

96%



Of attendees in the Ambition workshop responded with they will use strategies to keep them on task.

Intent leads to change (behavioural intent)

AT THE CORE OF DIGITAL THUMBPRINT'S DESIGN IS THE ASSUMPTION THAT THE BEHAVIOURAL INTENT (THE INTENT TO ACT) CREATED BY AN ENGAGING, CATALYTIC WORKSHOP PROMOTES BEHAVIOUR CHANGE IN THE WEEKS FOLLOWING THE PROGRAM.

To test this assumption, students' behavioural intent was measured immediately after the workshop and then measured through self-reported behaviour change several weeks after the program.

Behavioural intent was measured using two questions. One was a generic intent question ('I learned something in the workshop that I can use') delivered to all program participants, which measured the program's success in creating any desire to act; the second was a workshop-specific question to measure the program's success in creating an intended desire to act.

All three workshops were found to be successful in creating both a general and a specific desire to act. An overwhelming majority of students (92% and over) responded positively to every behavioural intent question asked.

Almost all students (Insight - 96%; Impact - 100%; and Ambition - 98%) reported learning something in the workshop that they could use, regardless of which workshop they attended.

The workshops were also successful at creating a specific desire to act.

In Insight, 92% of students said 'I will check the security of my information online'. In Impact, 97% of students said 'I consider the impact I have online'. Finally, in Ambition, 96% of students said 'I will use strategies to keep me on task'.

We also found evidence that the Digital Thumbprint program drove actual behaviour change in the majority of program participants.

All three workshops were found to be successful in creating both a general and a specific desire to act.

In the post-workshop survey administered several weeks after the workshop, 52% of students reported that they had applied something learned in the workshop in their lives, that is, they had changed their behaviour in some way. The likelihood that students would apply information they learned differed between the workshops, and seemed to decrease with age. Of the Insight participants, 55% applied something they learned, while only 47% of Impact participants and 30% of Ambition participants did.

To understand the specific behavioural impacts of our program, students were asked to report on whether they had performed specific actions in the weeks following the program.

We found that students were engaging in a number of positive digital citizenship behaviours. For instance, 58% of students who attended either Insight or Impact reported checking their privacy settings, and almost one-third of students (29%) who attended Insight removed content from their profiles, as did 19% of those who attended Impact.

Students who participated in focus groups provided examples of the other changes made since the workshops. The students' examples relate directly to the key behavioural outcomes embedded in the content of each workshop, see below for what students had to say.

We wanted to better understand how behavioural intent immediately following a workshop converts directly into action. Of the students who reported they will use what they learned in the workshop 'right away', 58% also reported in the follow-up survey that they had already applied something they learned in the workshop in their lives.

For every two students who attend the program, one student will act on or apply what they learned.

Student insights on what they learned from workshops

"I have been more careful about what I do online, what photos I take and what websites I trust. I also am a little more wary of snapchat."

"I changed my passwords and I also went and checked all my privacy settings and everything."

Teenage girls and boys do interact differently online

TEENAGE GIRLS ARE MORE SAFE AND SAVVY, REPORTING HIGHER AWARENESS OF THEIR ONLINE IMPACT ON OTHERS AND WHAT IS AND ISN'T SAFE ONLINE.

Female

71%



My actions have an impact on myself and others

63%



I can post only positive content online

77%



I can be selective of my online friends

81%



Sharing my current location or where I have been online is unsafe

74%



I consider the impact of my online posts

68%



I know which information I should and shouldn't share online

Male

53%



My actions have an impact on myself and others

37%



I can post only positive content online

53%



I can be selective of my online friends

70%



Sharing my current location or where I have been online is unsafe

59%



I consider the impact of my online posts

48%



I know which information I should and shouldn't share online

Socio-economic factors do play a part in digital awareness

STUDENTS FROM LOW SOCIO-ECONOMIC SCHOOLS MAY NEED FURTHER SUPPORT TO ENGAGE POSITIVELY IN THE DIGITAL WORLD.

Advantaged students

Disadvantaged students

Students that are less likely to report their social media posts as being a realistic view of their lives.

35%

26%

Students reporting that they know which information they should and shouldn't share online.

90%

70%

Students that are checking their social media channels while studying.

22%

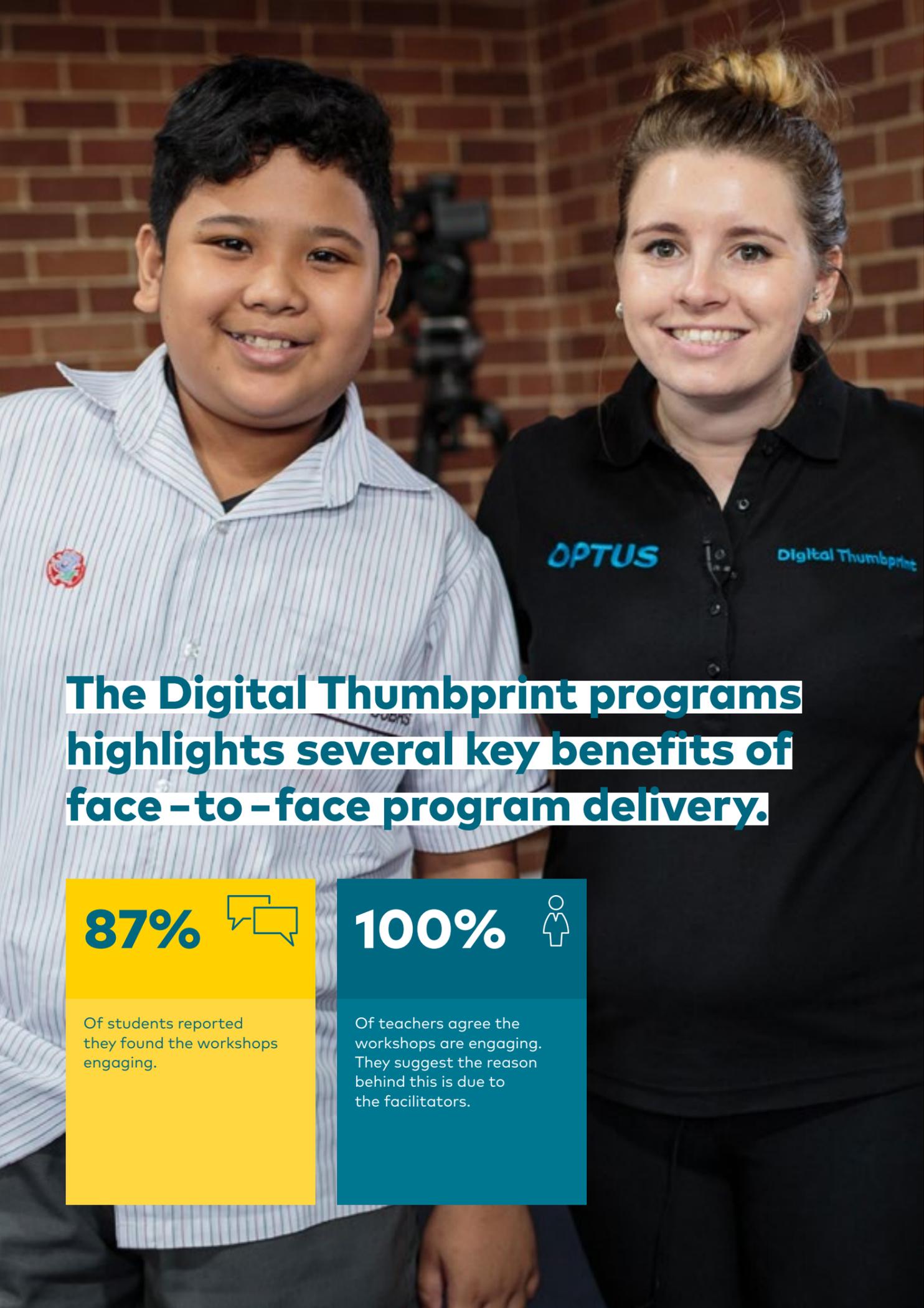
66%

Exploratory analysis

The main focus of the evaluation was to understand the impact of the Digital Thumbprint program on the students who participate.

In addition, we carried out exploratory analysis looking for interesting trends or differences in the sample group. This analysis indicates that a student's gender and socio-economic background are important factors in how they engage in the digital world.

As a result of these findings, we may increase our focus on these factors in future evaluation studies.



The Digital Thumbprint programs highlights several key benefits of face-to-face program delivery.

87%



Of students reported they found the workshops engaging.

100%



Of teachers agree the workshops are engaging. They suggest the reason behind this is due to the facilitators.

Focus on participant experience

A KEY TENET OF THE DIGITAL THUMBPRINT PROGRAM IS THE USE OF ENGAGING, PROFESSIONAL FACILITATORS DELIVERING A CURRICULUM THAT IS CONSTRUCTIVE AND BEHAVIOURALLY-FOCUSED, RATHER THAN TAKING AN APPROACH BASED ON FEAR. WE ASKED A SERIES OF QUESTIONS ABOUT THE WORKSHOPS TO STUDENTS AND THEIR TEACHERS TO HELP US BETTER UNDERSTAND THE EFFECTIVENESS OF THE APPROACH.

Highly engaging and trustworthy facilitators

The facilitator is designed to be a catalyst for change. The evaluation evidence shows that the engaging style of delivery is recognised by both students and teachers who attend the program.

We found strong evidence that our facilitators built a strong rapport with the students participating in our program. In surveys delivered immediately after the workshop, 87% of students reported that they found the workshops engaging. Similarly, our focus group data revealed that students liked the way the facilitators talked to them on their level, were able to answer their questions and created a safe environment to explore sensitive topics.

Our focus groups also highlighted several key benefits of face-to-face program delivery compared to the more common e-learning digital citizenship programs. Specifically, in one student focus group there was a discussion about another program that students had participated in the previous year, which was delivered in an e-learning format. Students spoke of their frustration with the program, including not understanding the content of the lessons, and having no ability to ask questions to clarify the meaning of certain points or to extend understanding to their own

lives. Students also indicated that the course had limited effectiveness because of how unmemorable it was – in the focus group discussion, students struggled to remember if they had even finished all the modules.

All the teachers agreed with the students that the Digital Thumbprint workshops are engaging, and they suggest the primary reason is due to the facilitator. In focus groups, teachers suggested that in their experience students are more trusting of advice from guest speakers viewed as experts and are thus more likely to embrace the key lessons and take-away messages from the workshops.

Both teachers and students reported that facilitators have a unique stature with students as external experts, which, combined with their presenting style and subject specific expertise, led to high levels of engagement.

Students' view

"And it was more interactive, so it was more working with the students, rather than just telling us stuff."

"I think it was more of an open space, so the guy who was speaking really wanted us to talk and engage in conversation, so it was very open."

Teachers' view

"I really liked it. The presenter was amazing, really enthusiastic, engaging with the kids, remembered everyone's names. Very impressive."

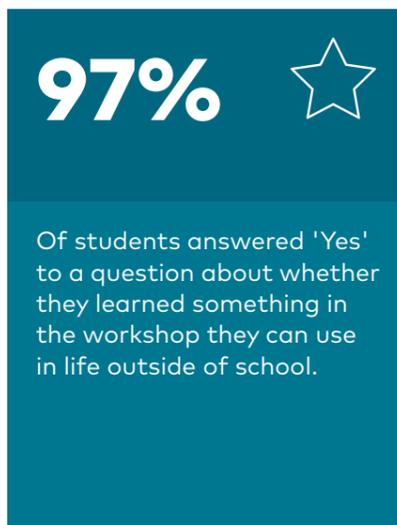


Students find the workshop content relevant and useful

Any face-to-face program needs to be relevant and useful to the audience. We wanted to understand whether or not our program delivers information at the right time and is immediately useful to the target year groups.

We expected to see high levels of relevancy and utility of the content as it is important students can use what they learn in the short term. Research on similar programs shows that participants need to be able to activate the learning and translate it into specific actions quickly, as learning decay rapidly increases in the weeks following an intervention.

Almost all students (97%) at the end of the workshop answered 'Yes' to a question about whether they learned something in the workshop they can use. There was some variation in the two follow-on questions about when they will be able to use this knowledge. These results varied across the three workshops with Insight being the most useful, followed by Ambition and Impact.



Clearly, we are delivering relevant content that students see benefiting them in the immediate future. We know how important it is that students take personal meaning from the content and put it into practice right away.



Students and teachers trust information provided by the program

Trust is vital to the program success. We need students to trust the advice presented to them and we need teachers to trust us to educate their students. Academic research has shown students are willing to trust new teachers even more than their parents, and the level of trust in the teacher by a student determines whether the student will remember the information later.¹⁰

In our evaluation both students and teachers were asked to rate their level of trust in our program and students were asked to what extent they trust the information presented. Teachers are also asked a set of satisfaction questions and the teacher Net Promoter Score (NPS) was calculated.

Students reported high levels of trust in both our facilitators and most importantly in the information presented to them at the workshops.

Students were asked on a scale of 0 to 10, where 0 is 'very unlikely' and 10 is 'very likely', how much they agreed with the statement 'I trust the advice in the Digital Thumbprint program'. Of the students surveyed, 88% scored 7 or higher.

Our data suggests that teachers are highly likely to recommend the program to other teachers and schools. Teachers who participated in this evaluation gave the Digital Thumbprint program an NPS of 92 compared to an education sector average NPS of 68.

Interestingly, this NPS score is also markedly higher than the NPS score for the program over the 2017 academic year – which is 77.¹¹ It is unclear why the program scored so much higher amongst teachers who participated in this evaluation than amongst teachers as a whole. It should be noted that participation in this evaluation required distinctly more engagement and interaction with Digital Thumbprint staff than is typical.

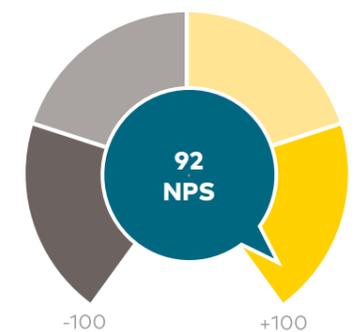
It is possible that the increased touch points and the higher level of engagement these schools had with the program and evaluation activities increased teacher satisfaction with the program, driving an increase in the NPS score. It is also important to note the comparatively small sample size of teachers who participated in the evaluation.

Digital Thumbprint NPS Score

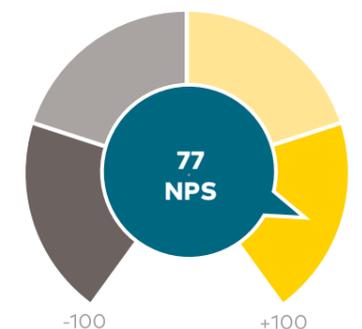
NPS is an index ranging from -100 to +100 that measures client satisfaction, with scores of +50 or above being considered exceptional.

In this case, the NPS score represents teachers' willingness to recommend this program to other schools.

NPS Score from teachers who participated in this evaluation.

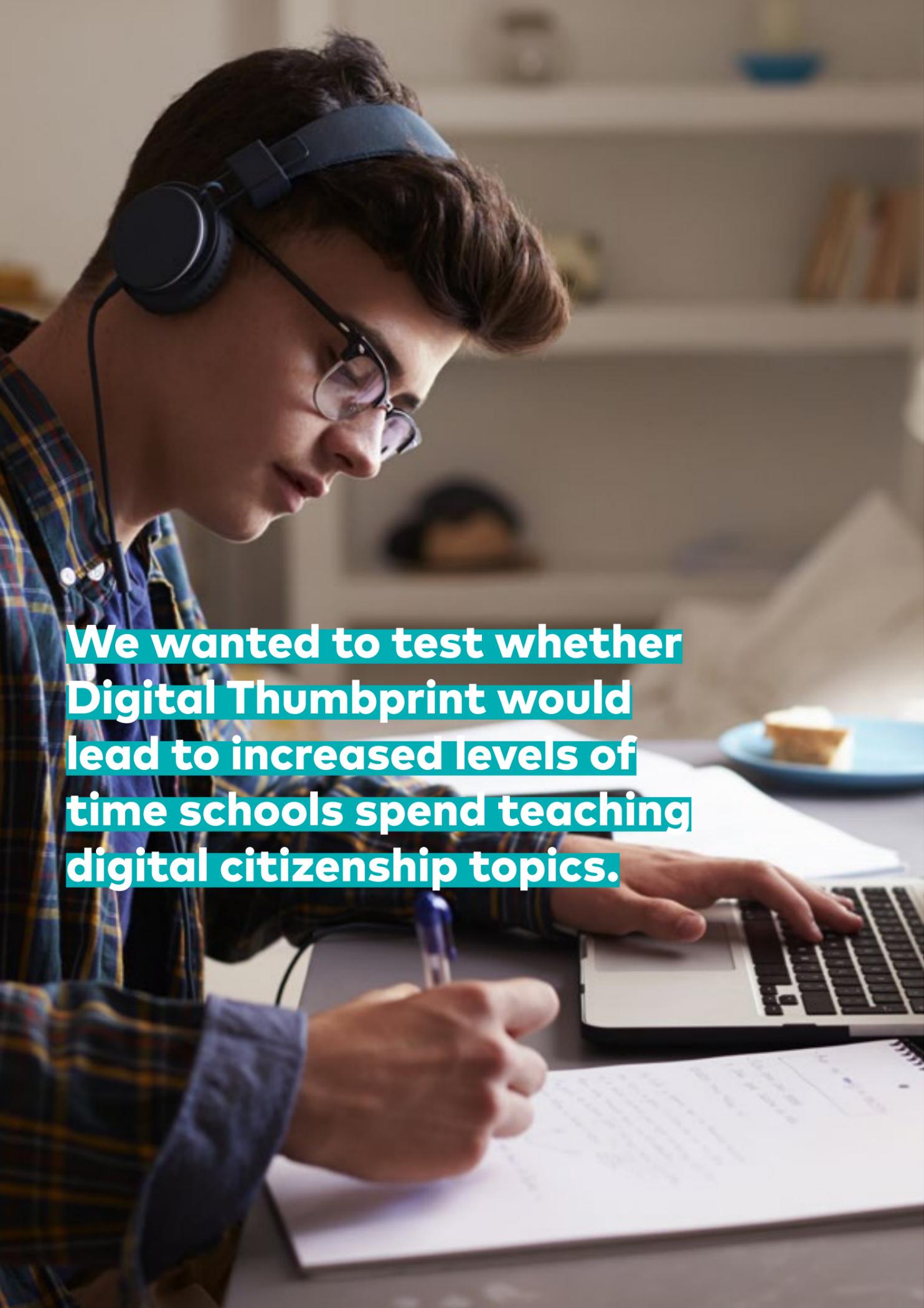


Digital Thumbprint NPS Score over the 2017 academic period.



10. https://www.huffingtonpost.com/david-desteno/why-trust-early-childhood-education_b_4738206. Need to locate original academic papers though. Mark Sabbagh (Queens University) and Paul Harris (Harvard Graduate School of Education).

11. 2017 academic year teacher NPS sample size, n = 996.



We wanted to test whether Digital Thumbprint would lead to increased levels of time schools spend teaching digital citizenship topics.

Knowledgeable, open teachers

Although the primary focus of Digital Thumbprint is students, the program also aims to increase discussion and teaching of digital citizenship in the schools visited by supporting teachers to improve their own skills through observation.

In surveying teachers before and after program delivery, we wanted to see if there were increases in teachers' confidence to teach digital citizenship topics. We also wanted to test whether Digital Thumbprint would lead to an increased level of time spent teaching the topics in schools.

What is worrying from our evaluation is that 62% of teachers reported these topics would not have been taught without Digital Thumbprint coming to their school.

But encouragingly the teachers surveyed reported a positive change in their confidence to teach the following digital education concepts:

- Teach students to stay safe online.¹² (Insight)
- Get students to take responsibility for their online interactions. (Impact)

With respect to increased teaching of digital education as a result of the program, 74% of teachers reported they plan to include more digital education in their teaching, and 57% reported that the workshop had motivated them to want to teach more about digital education.

The paired pre- and post-workshop results for the question on 'discussing and teaching digital education related content and topics' showed a marginally statistically significant result.¹³

Teachers are not the only ones driving the increase in discussion about digital education in schools. 46% of teachers report their students are raising topics from the workshop either in class or informally outside the classroom.

It is encouraging to see the program building behavioural intent in teachers, and even more satisfying to see an increase in teaching and discussion of these topics in schools after Digital Thumbprint workshops.

12. This was marginally statistically significant (Wilcoxon rank sum test, $p = 0.03$).

13. (Paired t-test, $p = 0.01$) increase.



Appendix: Evaluation Methodology

Evaluation methodology

Convenience sampling was used to ensure evaluation did not reduce the reach or impact of the program. We stratified the sample across Australian states where possible and tracked participants anonymously using unique identifiers.

The sample size of the evaluation broken down by instrument is detailed in Figure 1.

Figure 1: Sample size of evaluation

| Evaluation instrument | Student Sample Size (n=) | Teacher Sample Size (n=) |
|--------------------------------|--------------------------|--------------------------|
| 2 week pre-workshop survey | 559 | 19 |
| Immediate post-workshop survey | 544 | 13 |
| 2-4 week post-workshop survey | 483 | 15 |
| Focus groups | 57 | 4 |
| Interviews | - | 6 |

Understanding statistical significance

Results of statistical tests are presented as 'p-values', which represent the probability of observing a result at least as extreme as the one actually observed, if there was no true difference between the groups being tested. The point at which a result is considered statistically significant is subjective, but in many fields a p-value below 0.05 is taken as indicating a statistically significant result.

Because of the large number of questions in this dataset, the probability of obtaining a statistically significant result purely by chance for at least some of the questions is greater, and so some caution has been used in interpreting the results of statistical tests. The levels of statistical significance assigned to different p-values are detailed in Figure 2.

Figure 2: Levels of statistical significance assigned to different p-values

| Range of p-values | Interpretation |
|---------------------------------------|---|
| Greater than 0.05 | No evidence for a difference between groups |
| Less than 0.05 but greater than 0.01 | Marginally statistically significant |
| Less than 0.01 but greater than 0.001 | Statistically significant |
| Less than 0.001 | Highly statistically significant |

Logic Model





Uses