



SOUTH AUSTRALIAN DIGITAL YOUTH SURVEY

RESEARCH REPORT:
YEAR 3 RESULTS

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INTRODUCTION

The South Australian Digital Youth Survey (DYS) is a world-first longitudinal project exploring how adolescents use digital technology, and how this use changes over the course of adolescence. The project examines the links between how adolescents use technology and pathways into cyber risk-taking. In studying these links, this project seeks to identify the *technical, social, and individual* circumstances by which adolescents get drawn into cyber risk-taking. Understanding more about these circumstances will inform the development of prevention measures to mitigate such risk.

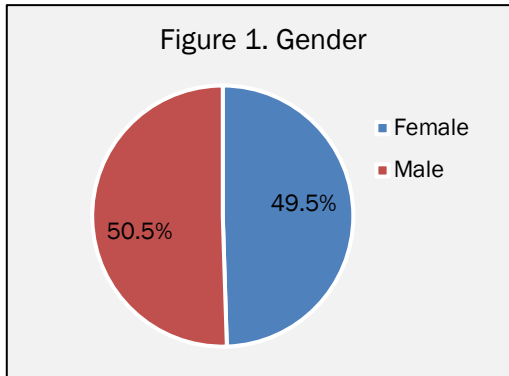
To accomplish this task, the DHS involves a longitudinal paper-based survey of a cohort of South Australian Year 8 students commencing in 2018. A total of 18 government schools from the Adelaide Metropolitan Region (i.e. located within 100 kilometres of the CBD) have participated in the project, with 1,887 participants completing Wave 1 in 2018, 1,251 participants completing Wave 2 in 2019, and 1,193 participants completing Wave 3 in 2020. This research report presents results from the Wave 3 survey when participants were in Year 10. For a valid comparison of changes in technology use and risk-taking across the years, we report on only those participants who completed all three waves of the survey (N = 882¹).

¹ Note: Sample sizes per analysis vary due to missing responses for select questions.

Snapshot of DHS Wave 3 findings:

- Participants demonstrate considerable variation in the types of devices they use, as well as the time spent using them.
- Participants' technical skills are improving.
- Participants frequently engage in routine tasks such as using social media and sharing images, and spend less time engaging in specialised tasks such as coding.
- Almost 90% of participants engage in at least one type of cyber risk-taking activity, the most common being viewing violent or hateful content online and digital piracy.
- A greater proportion of participants engaged in cyber risk-taking behaviour at Wave 3 compared to previous waves. The degree of increased engagement in cyber risk-taking varied depending on the type of activity – with the greatest increase at Wave 3 in the proportion of participants engaging in online fraud and viewing violent content.
- The key variables associated with cyber risk-taking are: engagement in physical risk-taking, the frequency of engagement in specialised (e.g., coding) and routine activities (e.g., emailing, watching videos) while online, spending increased amounts of time online and spending that time communicating with others or being physically alone, low self-control, and compulsive internet use.

PROJECT SAMPLE CHARACTERISTICS

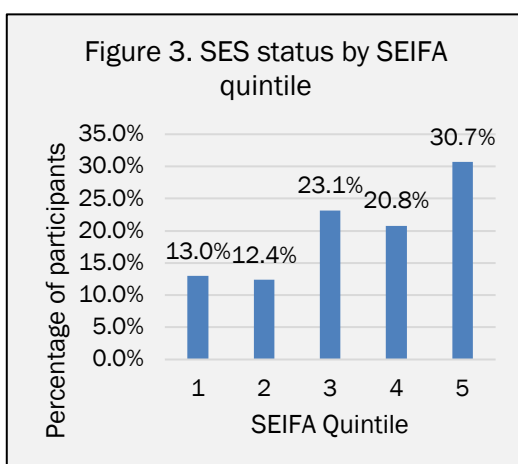
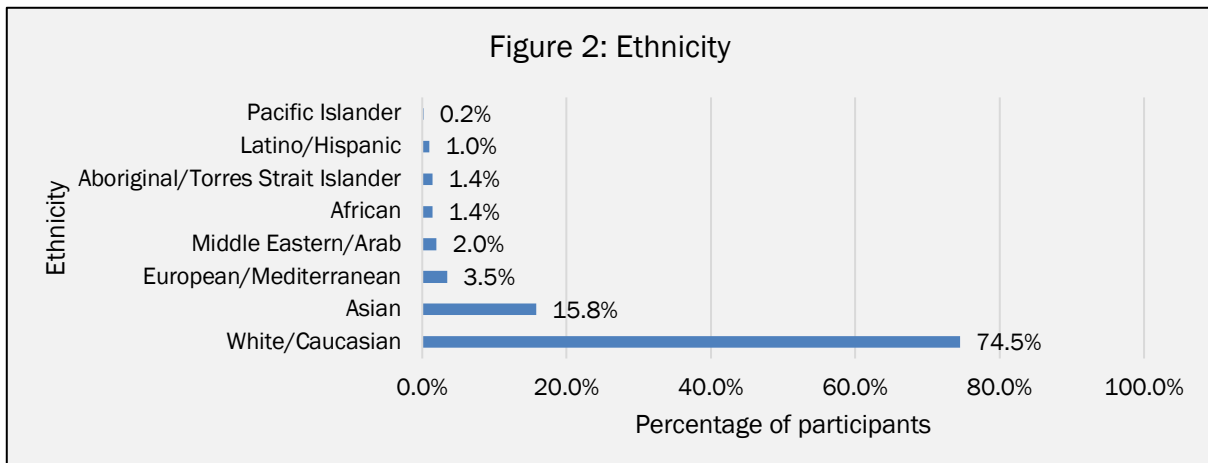


Gender

Figure 1 shows that the sample of participants who completed Waves 1, 2 and 3 of the DYS (N = 882) was evenly distributed with males constituting 50.5% and females constituting 49.5% of the sample.

Ethnicity

Figure 2 shows that over two thirds of participants reported Caucasian ethnicity (74.5%). 15.8% of the sample reported being Asian, while the remainder of the sample reported as being Mediterranean (3.5%), Middle Eastern/Arab (2%), African (1.4%), Aboriginal and/or Torres Strait Islander (1.4%), Latino/Hispanic (1%) or Pacific Islander (0.2%).



Socioeconomic Status

Figure 3 represents the participants' socioeconomic status as determined by data from the Australian Bureau of Statistics' *Socioeconomic Indexes for Areas (SEIFA)*. SEIFA indexes the average income and employment status of individuals living within geographical areas defined by postcode. SEIFA quintiles were derived from the 2016 Australian Census, and range from most disadvantaged (quintile 1) to least disadvantaged (quintile 5). While the results demonstrate full coverage of SES distribution, it is skewed left, with Quintile 5 (30.7%) being overrepresented, and Quintiles 1 (13.0%) and 2 (12.4%) being underrepresented.

KEY RESULTS FROM THE YEAR 3 SURVEY

Understanding how adolescents use digital technologies

Figure 4 shows the proportion of participants reporting daily usage of digital devices. Participants reported being online an average of 7.5 hours per day (up from 6.5 hours at Wave 2) with a standard deviation of 3.3 hours. Additionally, the number of participants using technology increased, with more participants using mobile phones (92.1%, up from 89.2%) and laptops or tablets (88.4%, up from 84.5%) on a daily basis. A further 26.2% (up from 25.8%) reported using gaming consoles, and 13.9% (up from 12.8%) reported using desktop computers on a daily basis.¹

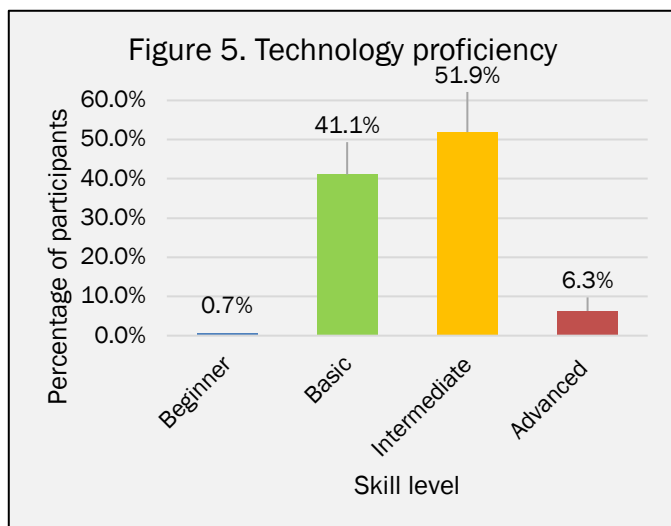
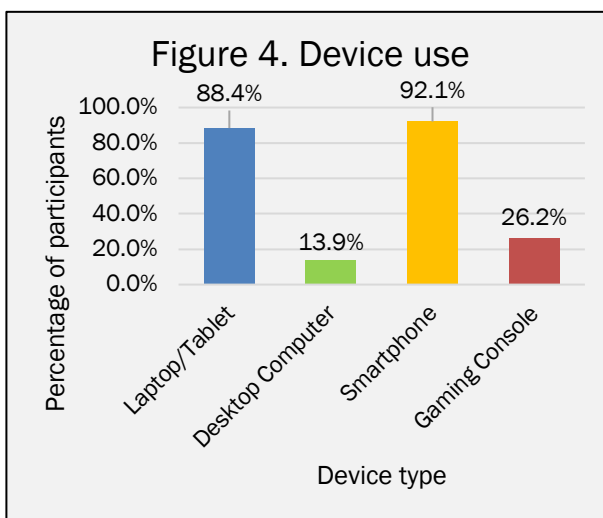


Figure 5 depicts the technical skills of participants, who were asked to rank their level of comfort and ability to perform various technical functions using software and hardware. Participant responses were categorised into four options. A participant was listed as a 'Beginner' if they indicated they did not use computers or mobile devices unless they absolutely had to. Participants with 'Basic' proficiency used the internet and common software but did not feel comfortable fixing their own device. 'Intermediate' users were

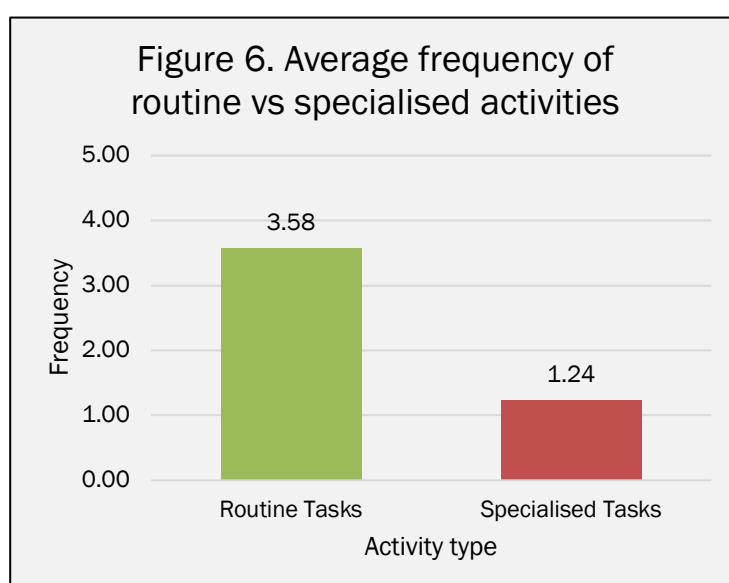
participants who indicated that they could use a variety of software and could also fix some computer/device problems they run into. Finally, 'Advanced' participants felt comfortable undertaking particularly complex tasks such as using operating systems like Linux and other advanced software in addition to fixing most computer/device issues they run into. Overall, technical proficiency has improved at Wave 3. Figure 5 shows that the majority of participants at Wave 3 reported intermediate (51.9%) technical skills, with many also reporting basic ability (41.1%). This indicated a shift in skill level compared to Wave 2, where a higher proportion of participants reported basic skills (44.5%), and lower proportion reported intermediate (47.7%). A slightly higher proportion of participants possessed advanced skills at Wave 3 compared to Wave 2 (5.7%). Consistently, fewer participants described themselves as Beginners at Wave 3 compared to Wave 2 (2.1%).²

¹ The increase in technology use from Wave 2 to Wave 3 was statistically significant only for laptop/tablet and smartphone use at an alpha level of 0.05.

² The changes in skill level from Wave 2 to Wave 3 were statistically significant only for the Beginner skill level at an alpha level of 0.05.

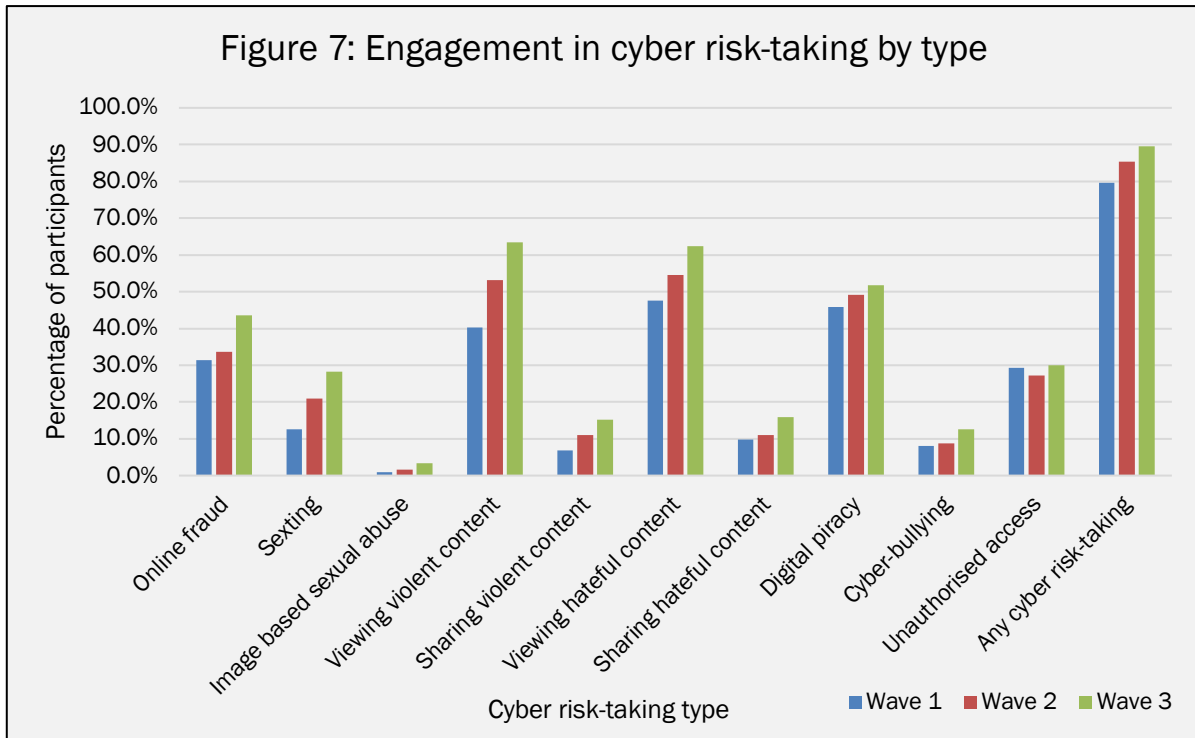
Understanding adolescent online engagements

Figure 6 shows the average amount of time per day that participants spent engaging in two broad types of online activities. These activities were categorised into: (1) routine tasks (e.g. sending and receiving emails, instant messaging, browsing social media such as Facebook, watching videos and movies, viewing images outside of social media, using cameras to take photos or record videos, sharing photos and videos on social media websites and listening to music); and, (2) specialised tasks (e.g. creating websites, file sharing, coding, posting on online forums, banking, using anonymisation software, online gaming). Frequency of engagement in the tasks was measured on a five-point Likert scale ranging from 0 = Never to 5 = Several times a day. The results show that participants reported spending significantly more time engaging in routine tasks compared to specialised tasks. This is consistent with Wave 2 (3.4 for routine tasks compared to 1.1 for specialised tasks).



Understanding adolescent cyber risk-taking

Figure 7 shows the proportion of participants who reported engaging in different types of cyber risk-taking across each wave. The labels on the x-axis represent a range of cyber risk-taking activities. Overall, there was increased engagement in each type of cyber risk-taking activity at Wave 3, with the likelihood of engagement at Wave 3 increasing dramatically where participants had reported prior engagement. Looking broadly at the proportion of participants engaging in any form of cyber risk-taking activity, this has consistently increased from 79.6% at Wave 1, to 85.4% at Wave 2, to 89.5% at Wave 3 – with those previously reporting engagement in any cyber risk-taking being 14 times more likely to engage again at Wave 3. For each specific type of cyber risk-taking activity there was variation in the degree to which engagement increased at Wave 3 and how that related to previous engagement – this is examined further below.



Online fraud refers to behaviours such as lying about one’s identity, buying and selling items illegally, and tricking another person or business into providing money, goods or services. The proportion of participants engaging in online fraud increased by 9.8% from 33.7% at Wave 2 to 43.5% at Wave 3. This was compared to the smaller increase of 2.3% from Wave 1 (31.4%) to Wave 2. An odds ratio analysis revealed participants were up to 6 times more likely to engage in this behaviour at Wave 3 if they had engaged in it previously.

Sexting refers to participants’ experiences with seeing sexual content of someone they know, as well as sharing sexual content of themselves. The proportion of participants engaging in this behaviour increased from 21% at Wave 2 to 28.2% at Wave 3. This marks a 7.2% increase between Waves 2 and 3, compared to an 8.5% increase between Wave 1 (12.5%) and Wave 2. Participants were 13 times more likely to engage in this behaviour at Wave 3 given previous engagement. *Image based sexual abuse* refers to sharing sexual content of someone else without their consent. The prevalence of this behaviour was low, but engagement in the behaviour accelerated across waves (0.9% at Wave 1, 1.6% at Wave 2, 3.4% at Wave 3). Participants who engaged in this behaviour previously were 6 times more likely to engage in this behaviour again at Wave 3.

Viewing violent content refers to viewing text, images or videos online that involve violence against individuals, as well as groups of people. The proportion of participants engaging in this behaviour increased by 10.3% from 53.1% at Wave 2 to 63.4% at Wave 3, consistent with the 12.9% difference reported between Wave 1 (40.2%) and Wave 2. Participants who engaged in this behaviour previously were 6 times more likely to engage in this behaviour again at Wave 3. *Sharing violent content* refers to sharing violent text, images or videos online. The proportion of participants engaging in this behaviour increased by 4.2% from 11% at Wave 2 to 15.2% at Wave 3, consistent with the 4.1% difference reported between Wave 1 (6.9%) and Wave 2. Participants were 9 times more likely to engage in this behaviour at Wave 3 if they had engaged in it previously.

Viewing hateful content refers to viewing text, images or videos online that make fun of, or discriminate against, an individual or group of people because they are different. The proportion of participants who engaged in this behaviour increased 7.8% from 54.5% at Wave 2 to 62.3% at Wave 3, consistent with the 7% difference reported between Wave 1 (47.5%) and Wave 2. *Sharing hateful content* refers to the sharing of discriminatory text, images or videos online. The proportion of participants engaging in this behaviour increased by 4.8% from 11.1% at Wave 2 to 15.9% at Wave 3, compared to the 1.3% increase reported between Wave 1 (9.8%) and Wave 2. Participants were 5 times more likely to have viewed or shared this discriminatory content at Wave 3 if they had done so previously.

Digital piracy refers to the downloading and sharing of copyrighted materials such as music, videos and software. The proportion of participants who engaged in this behaviour increased 2.6% from 49.1% at Wave 2 to 51.7% at Wave 3, consistent with the 3.3% increase reported between Wave 1 (45.8%) and Wave 2. Participants who engaged in this behaviour previously were 6 times more likely to engage in it at Wave 3.

Cyber-bullying and harassment refer to searching for and/or sharing harmful content to make others feel bad or scared. The proportion of participants engaging in this behaviour remained relatively stable between Wave 1 (8.1%) and Wave 2 (8.8%), with a slightly larger increase of 3.7% to 12.5% at Wave 3. Participants who engaged in this behaviour previously were 8 times more likely to engage in this behaviour at Wave 3.

Unauthorised access refers to accessing other people's devices or accounts without their permission. The proportion of participants engaging in this behaviour increased slightly from 27.2% at Wave 2 to 30% at Wave 3, after decreasing from 29.3% at Wave 1. Participants who engaged in this behaviour previously were 6 times more likely to engage in this behaviour at Wave 3.

In short, with consistent increases in the prevalence of different types of cyber risk-taking, the results suggest a large degree of continuity in online risk-taking behaviour among a small cohort of participants.³

³ The increase in cyber risk-taking at Wave 3 was statistically significant across all online activities at an alpha level of 0.05, except for digital piracy and unauthorised access.

Identifying factors associated with cyber risk-taking

In Wave 3 there were 8 key factors associated with the likelihood of engagement in cyber risk-taking. The most significant factor, similar to Waves 1 and 2, was engagement in risk-taking behaviours in the real world. As shown by the odds ratios in Figure 8, at Wave 1 and Wave 2 those who engaged in physical risk-taking were approximately 6 times more likely to also engage in cyber risk-taking. However, these odds doubled at Wave 3, with those engaging in physical risk-taking 13 times more likely to also engage in cyber risk-taking.

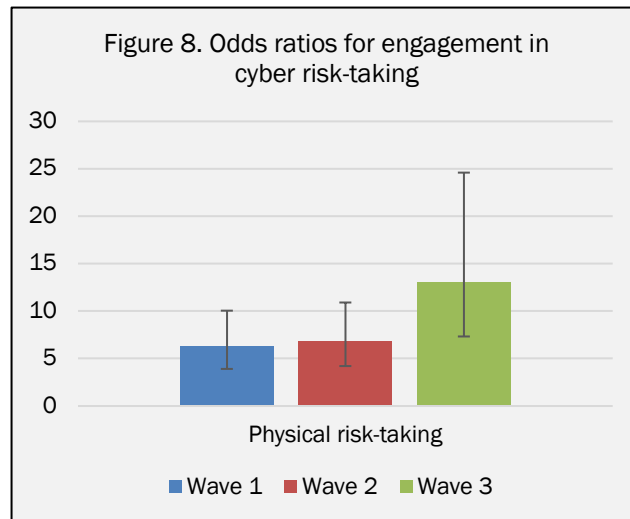


Figure 9 highlights the great prevalence of engagement in physical and cyber risk-taking behaviour at Wave 3, and the overlap between the two behaviours. Only 9% of participants did not engage in either category of risk-taking behaviour. Where participants did report engaging in physical risk-taking, the majority of those participants also reported engaging in cyber risk-taking (61.6% of all participants), with only a small percentage of participants engaging in physical risk-taking alone (1.5%). In comparison, a number of participants reported engagement in cyber risk-taking alone (27.9%), without engagement in physical risk-taking.

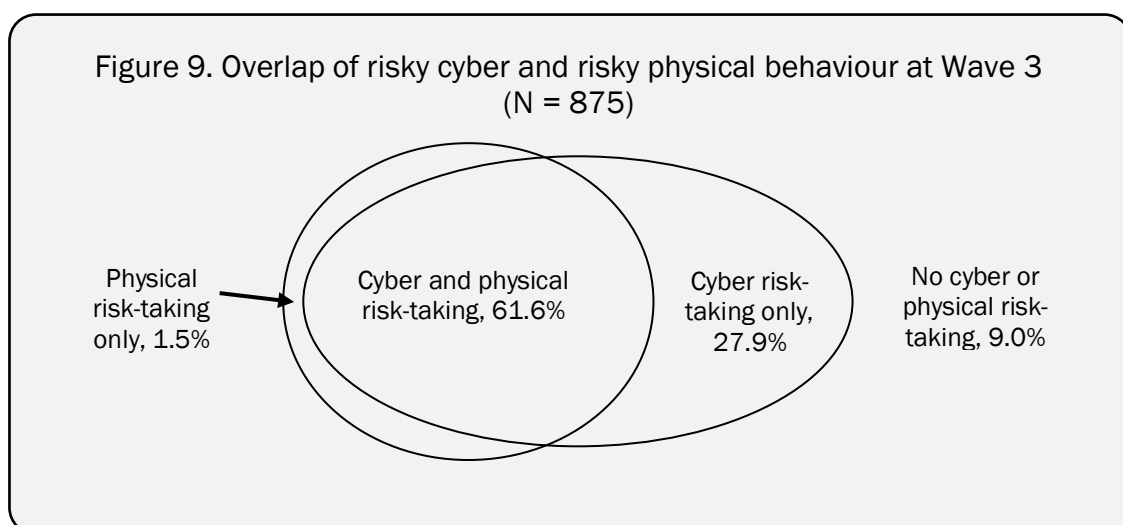
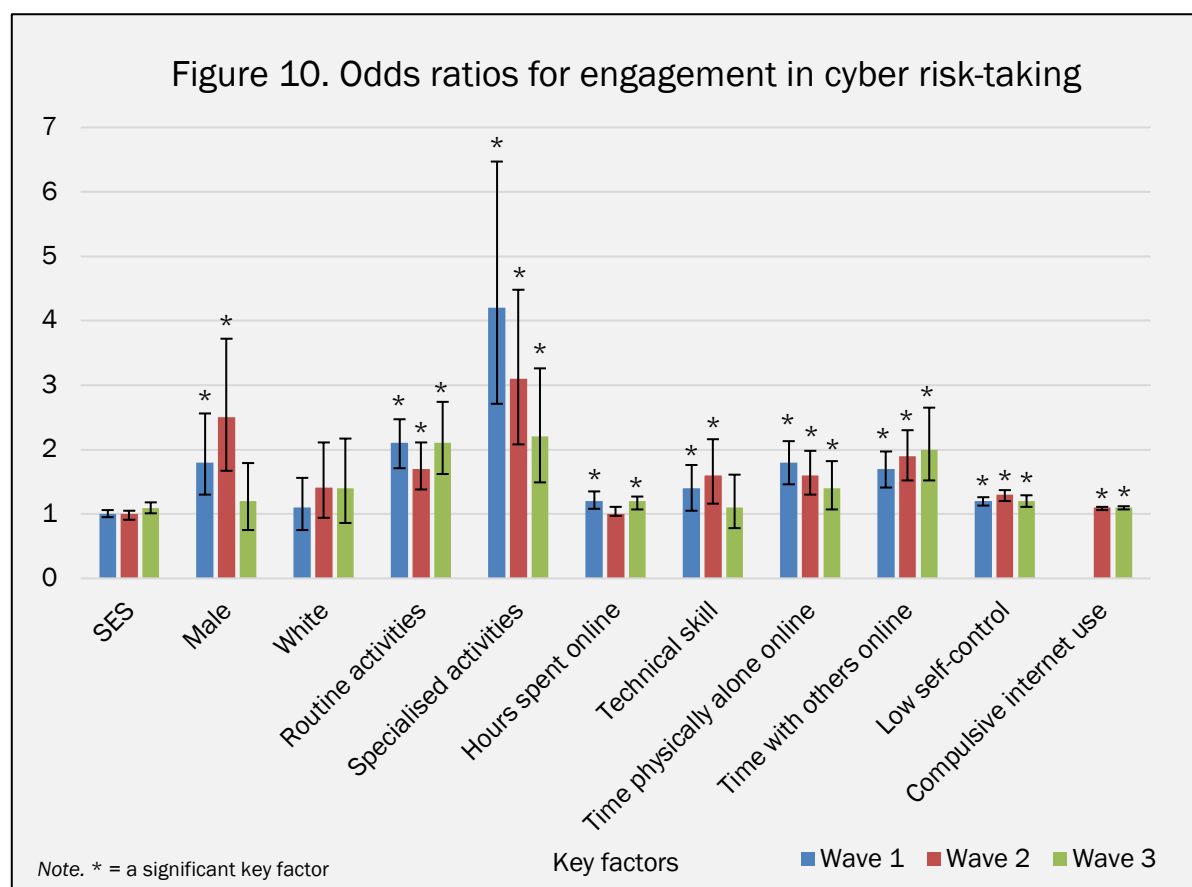


Figure 10 presents the likelihood of participant engagement in any cyber risk-taking across each wave, as related to a number of key factors. At Wave 3 there were 7 key factors (in addition to physical risk-taking) that were significantly associated with engagement in cyber risk-taking. Specifically, the likelihood of engagement in cyber risk-taking increased by approximately 1.4 to 2 times when participants more frequently engaged in specialised activities, routine activities, and time communicating with others online, and were more often physically alone while online. Furthermore, participants who had lower self-control, were online more frequently, and used the internet compulsively, were up to 1.2 times more likely to also engage in cyber risk-taking. In sum, at Wave 3 the key factors relating to greater likelihood of engagement in cyber risk-taking were those associated with *what* participants were doing while online—such as the types of activities being carried out, interaction with others, and whether they were physically alone—compared to *individual characteristics* such as self-control and compulsive internet use.



Over the waves there were fluctuations in the likelihood of engagement in cyber risk-taking as related to each of the key factors. In particular, at Waves 1 and 2, being male and having increased technical skill also significantly increased the likelihood of engagement in cyber risk-taking. However, these were no longer significant factors at Wave 3. Additionally, the pattern of odds ratios presented in Figure 10 suggest there was a reduction in the likelihood of engaging in cyber risk-taking in relation to engaging in specialised activities and being physically alone when online, while spending time interacting with others appeared to lead to a small increase in the likelihood of engaging in cyber risk-taking across waves. Across all waves, socio-economic status and ethnicity did not significantly relate to engagement in cyber risk-taking.

FUTURE DIRECTIONS FOR THIS PROJECT

The DYS provides a useful snapshot of self-reported digital uptake and risk-taking by adolescents from Years 8 to 10. We hope that this information will provide schools and parents with a better understanding of the different ways that adolescents use digital technology and the implications for risk-taking, both on- and offline. Our research enables the development of a nuanced understanding of the factors associated with each form of cyber risk-taking, and provides an evidence base for the development of targeted interventions. The efficacy of cyber risk-taking interventions is reliant on the identification of factors which have been empirically shown to correlate with the problematic behaviour. Our research demonstrates that a number of factors interact to increase the propensity for cyber risk-taking in adolescence. It is anticipated that the outcomes of this research will prove valuable for the design of targeted interventions to reduce the risk-taking behaviours of adolescents online.

Please visit our website to view our published research outputs from the DYS: <https://digitalyouthresearch.org/publications>

We have several upcoming DYS research outputs for 2021 on the following topics:

- Examining the relationship between mental health and cyber risk-taking
- Understanding the link between impulsivity and sexting
- Identifying risk factors that drive different trajectories of cyber risk-taking
- Exploring the relationship between physical risk-taking and cyber risk-taking
- Identifying how peer associations influence cyber risk-taking
- A systematic review identifying effective cyber-bullying interventions

Learn more about other current projects being carried out by the Digital Youth Lab: <https://digitalyouthresearch.org/projects>

- *Enhancing Tolerance and Diversity Online*. This research project explores young people's encounters with offensive and discriminatory content online. The project is particularly interested in the types of encounters young people have, how young people make sense of this content and the individual, social and technological factors which influence their response.
- *Youth Cybersafety and Digital Citizenship Project*. This research project will examine how young people use technology to engage in cyberbullying online. The project is particularly interested in how beliefs and attitudes held by young people shape the nature and extent of engagement in cyberbullying. An examination will also be conducted into youth awareness of, and exposure to, previous cybersafety education and social media design features which discourage harmful behaviours online.
- *Adolescent Misrepresentation Online*. This research project examines how and why adolescents misrepresent themselves online. In particular, this project considers adolescent experiences of circumventing and accessing online 'adult-based platforms' (e.g. a platform which requires users to be of, or above, the age of 18-years-old, including online adult dating sites and subscription-based accounts).

