

DO Impact (Part 1)

Digital Intelligence Quotient

URGENCY OF DIGITAL CITIZENSHIP

WHY 8-12 YEAR OLDS?

2016 SINGAPORE



Just as one needs to learn to be a safe driver before taking the wheel, children need DQ education before they can safely navigate the digital world.



ABOUT THE DQ INSTITUTE

Beyond IQ and EQ,



skills enable children to form healthy and resilient identities as digital citizens.

Empowering every individual with digital intelligence. Starting with children.

The DQ Institute™ is an international think tank that is committed to improving digital education, culture, and innovation by advancing ideas through cross-sector collaborations, global dialogue, and big data research, with the aim of building a comprehensive digital ecosystem of freedom, health, and security.

At the DQ Institute™ **we empower a digital community by setting the global standards of digital intelligence (DQ) – knowledge, skills and competencies required to create a healthy and prosperous digital culture and economy.** We define and assess research-based measures across all aspects of digital intelligence.

Our goal is to empower all individuals and organisations to equip themselves with the abilities to harness and maximise the positive outcomes of digital media and technology, while preventing and mitigating negative consequences. Starting with children.

As societies around the world grow rapidly hyper-connected with advances in digital media and technology, more and more children are left alone to navigate the harmful side effects of negative online experiences. Children are using digital technology at increasingly young ages and

are frequently – and unknowingly – exposed to widespread cyber risks including online strangers, game addiction, cyber bullying, sexual and violent content, and victimization. We are only just beginning to understand how these negative experiences can detrimentally affect a child's development, mental health, and future potential.

The need to equip children with digital intelligence is urgent. A child's DQ consists of the social, emotional, and cognitive abilities necessary to navigate the challenges and opportunities of their digital lives. These are the must-have competencies children need to thrive in the digital era.

Beyond IQ and EQ, DQ competencies enable children to form healthy and resilient identities as digital citizens. **With a solid DQ education, children can grow into independent critical thinkers who are capable of discerning technological opportunities from dangers, accurate info from misleading stories, and beneficial media from that which is useless, inappropriate, and harmful.** Furthermore, empowering our children is key to the sustainable growth of internet, communication, telecom, and technology ("ICTT") companies, of healthy media industries, and of capable and engaged communities.

In order to address this need, we help nations

1. implement a tested and proven comprehensive digital education solution for their public education system, and
2. build a holistic, healthy and secure digital ecosystem connecting schools, families, communities, ICTT companies, as well as governments.

We are also setting the standard for digital citizenship by developing the Global DQ Index, an objective standard to measure digital intelligence and improve its acquisition across the world – so that no child is left behind.

Technology offers great promises and great perils. It is our duty as caretakers of the next generation to help ensure children navigate this landscape safely. We are committed to building a safe and secure digital ecosystem that will impart our children with the digital intelligence they need.

In so doing, we hope that all children will be empowered, able to leverage digital technology in smart and responsible ways so that they may realize their true potential in this rapidly changing digital era.

OUR PRINCIPLES



1. Data-driven

We believe in objective measures of performance. The education framework and platform evolved out of academic research on childhood cyber wellness. The platform facilitates constant data collection in order to both refine the education provided and to identify areas and trends for further academic and public attention. The data is also used to provide assessment to ensure that lessons are effective and that each child is meeting DQ standards.



2. Value-focused

We believe that while technology may change, values are enduring. In order to foster healthy, ethical and confident behavior online, lessons must be rooted in basic human values such as wisdom, respect, integrity, resilience, self-control, courage and empathy. Whether online or off, children need to understand that the Golden Rule still applies: "treat others as you want to be treated".



3. Forward Looking

We are dedicated to continuously conducting high level research to understand upcoming technologies and trends in order to equip children with current and future-ready intelligence.



4. Digital Education for Every Child

Every child, regardless of where he or she lives in the world, should have access to the digital citizenship education that will support his or her development and future success. Currently the access to digital education is not evenly distributed and there are disparities both within and across countries. We believe that as part of their basic right to education, every child should have the opportunity to learn the skills to leverage and master digital media in order to facilitate their own personal growth and the development of their communities and nation.



5. A Healthy and Secure Digital Education Ecosystem

We believe that digital education should not be left strictly to schools. Rather, there is a need to build a safe and secure digital education eco-system of policies, programs and tools fostered by governments, ICTT companies, as well as families and educators.

OUR MISSION

Our mission is to ensure every child acquires the technical, social, and mental skills they need to be informed and discerning users of digital media and good digital citizens.

OUR PRIORITIES

—
To ensure every child has access to digital citizenship education.

—
To set the framework and global standards for digital citizenship education.

—
To provide nations with a comprehensive digital education solution that can be incorporated into public education systems.

—
To develop an alliance of public and private stakeholders invested in the creation of a safe and secure digital ecosystem for young users.

OUR STRATEGIC GOAL

Through our #DQEveryChild™ global movement, we aim to empower 20 million 8–12 year old children with DQ by the year 2020.

#DQEveryChild™:
A worldwide movement
to empower every child
age 8-12 years with
digital intelligence.



WHY FOCUS ON 8-12 YEAR OLDS?

Forming Discernment and Identity



On average, 9 year old children spend 3.4 hours per day on online entertainment.

At This Age, Children Are Forming the Sense of Discernment and Identity

Middle childhood, from about 8 to 12 years of age, has several distinguishing characteristics in terms of what children are now able to do and learn. In cognitive development, children begin to understand the distinction between appearance and reality and to look at more than one aspect of things at the same time. They also gain a sense of industry, defined as a basic belief in one’s competence, coupled with a tendency to initiate activities, seek out learning experiences, and work hard to accomplish goals¹⁸. Ideally, these lead to a sense of personal effectiveness.

In social development, learning how to form friendships is one of the most important tasks of middle childhood. This includes learning how to be part of a peer group and how to identify and adhere to group norms. These interactions foster the development of the self-concept, in which one’s sense of self is defined in part by the context of the peer group to which one belongs.

According to psychologists Sroufe, Cooper, and DeHart,¹⁸ the particular moral principles that children adopt are largely a product of their culture. Peer relations, therefore, are important for a child’s moral development because they impart cultural norms and values that reflect the cultures in which they exist. As these peer groups provide opportunities for children to see each other’s point of view and to empathize with each other, a child’s development moves into “conventional moral reasoning,” in which the child’s goal is to act in ways others will approve of and to avoid disapproval.

This has several important implications.

Children at this age begin to be highly sensitive to figuring out group norms for attitudes and behavior. Because the media acts as a type of “super-peer” and children spend so much time with digital media, the attitudes and behaviors shown in it will come to be seen as normative and appropriate, and will likely be adopted by children. This can be seen in children’s regular use of catch phrases from TV shows and video games, their posting and sharing of memes, and use of sarcasm as a form of humor.

Although people learn throughout their lives and can always change, it is likely that this age is the most important for establishing the boundaries of what is acceptable behavior. As children transition into adolescence, where they become more willing to take risks, the boundaries set in middle childhood will have a powerful influence on which risks they are willing to take.

There is another side to this coin. Because children at this age are so sensitive to group norms, a well-planned intervention that effectively shifts group norms can have a large impact on the children within this peer group. Thus, we can harness the power of peer group influence to impart positive and healthy norms instead of working against it. By adolescence, however, this opportunity may be lost as the growing children’s developmental focus moves on to forming intimate and committed individual relationships.

Children Age 8-12 Spend an Average of 24 to 46 Hours Per Week Online For Entertainment Use Alone

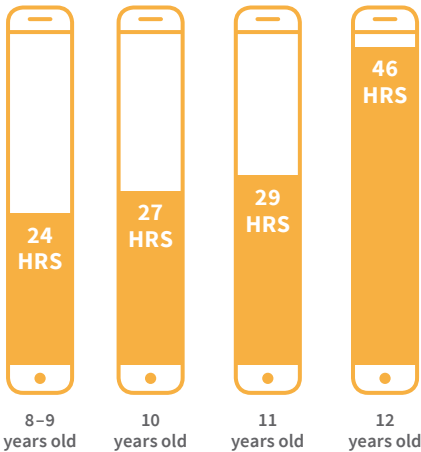
The DQ Pilot Study showed that children in this

age group already spend long hours on digital devices for entertainment use alone: by age 8-9, kids spend an average of 24 hours per week in front of digital screens; this increases by more than 90% over the next 3 years, to almost 46 hours per day by age 12. This amount grows even more when factoring in screen time for schoolwork and homework assignments. Taken together, our results show that the amount of time children spend with digital devices can be greater than amount of personal time they spend with parents and teachers combined.

Prolonged screen times can have negative impacts on children’s physical health and well-being, such as lack of sleep, impairment of brain activity, vision impairment, bad posture, and obesity due to physical inactivity.

Screen Time Spent for Entertainment Use Alone by Children Age 8-12

Average Screen Time (Hours/ Week)



The Start of Social Media Use

Children start actively using social media in the 8-12 years old age range

At this age, kids are also beginning to socialize through the use of chatting apps, social media platforms, and by sharing content (videos and pictures) with friends.

These social elements can be strongly influential. **The behavior that is modeled online, both by peers and strangers as well as the content they see, will heavily influence children's lifelong understanding of values,**

behaviors and norms. Children's exposure to false information, violence, obscenity, and hatred in videos, video games, and social media can have a particularly detrimental impact upon the psyche and values of children who are in this age range.

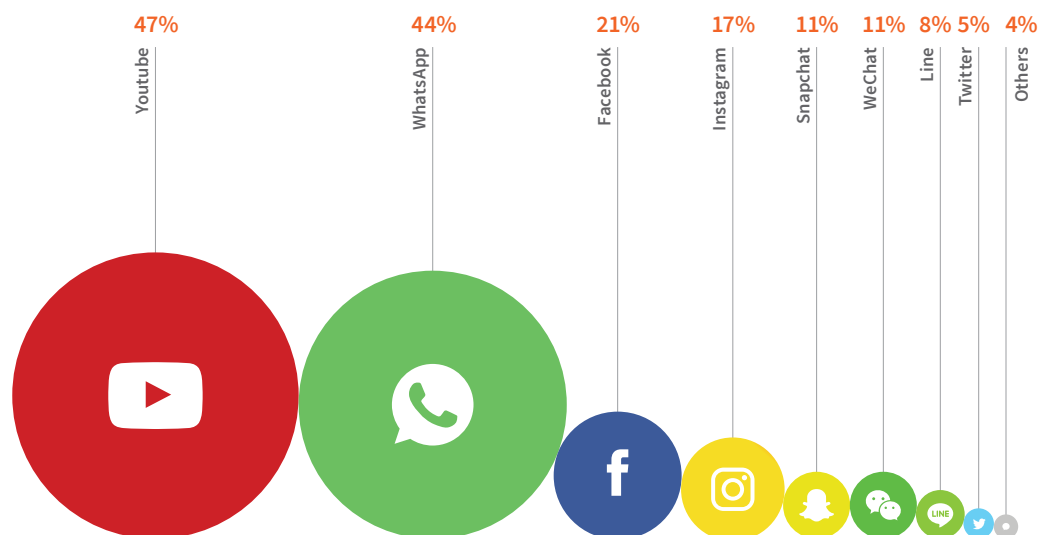
Despite most social media sites (including Facebook, Twitter, Instagram, Pinterest, Tumblr, Reddit, Snapchat, Secret and many more) having a minimum user age of 13 years old, the Pilot Study revealed that 55% of

8-9 year olds actively use social media and chatting apps. This climbs to 77% by age 12.

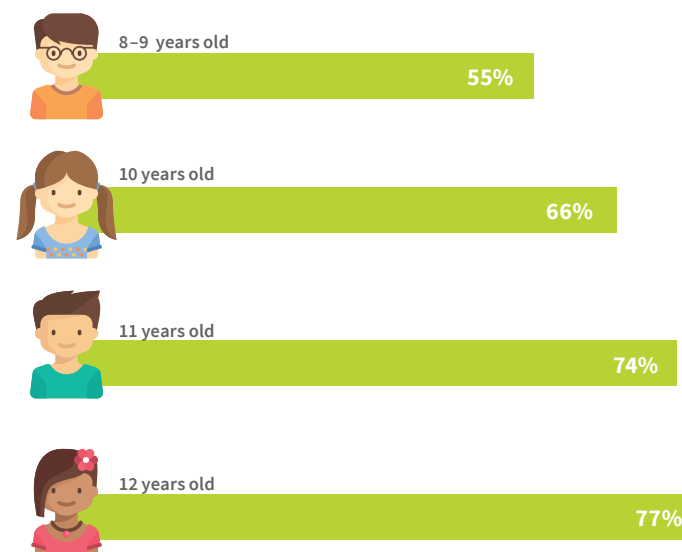
In this age range, YouTube is the most popular social platform, and kids become increasingly active users of mobile-based social media and chat apps, such as Facebook and WhatsApp, as they grow to teenagers. Such sites offer young people new ways of communication and entertainment, but they also expose children to potential cyber risks including cyber bullying, addiction, and exposure to inappropriate content.

These risks are exacerbated by their limited capacity for self-regulation and susceptibility to peer pressure²⁰. Moreover, both the United Kingdom Office of Communications and the Children's Commissioner of England recently published reports detailing how the majority of preadolescents and teenagers who share information on digital media do so without understanding, and often not even caring about, their privacy rights^{21,22}.

Social Media Sites Used by Children Age 8-12



Social Media Participation by Children Age 8-12



Increasing Ownership of Mobile Devices

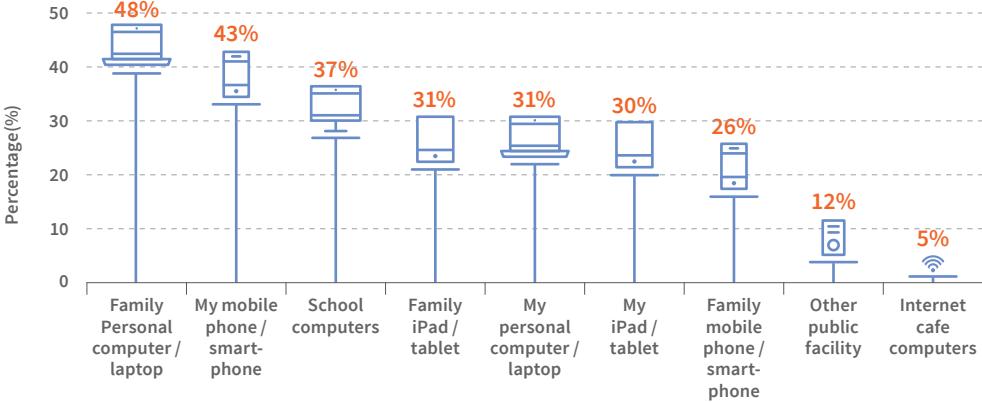
Children Increasingly Own Their First Mobile Device From 8 Years Old

Children who participated in the Pilot Study tend to use multiple devices – a family computer, their own mobile devices, and school computers

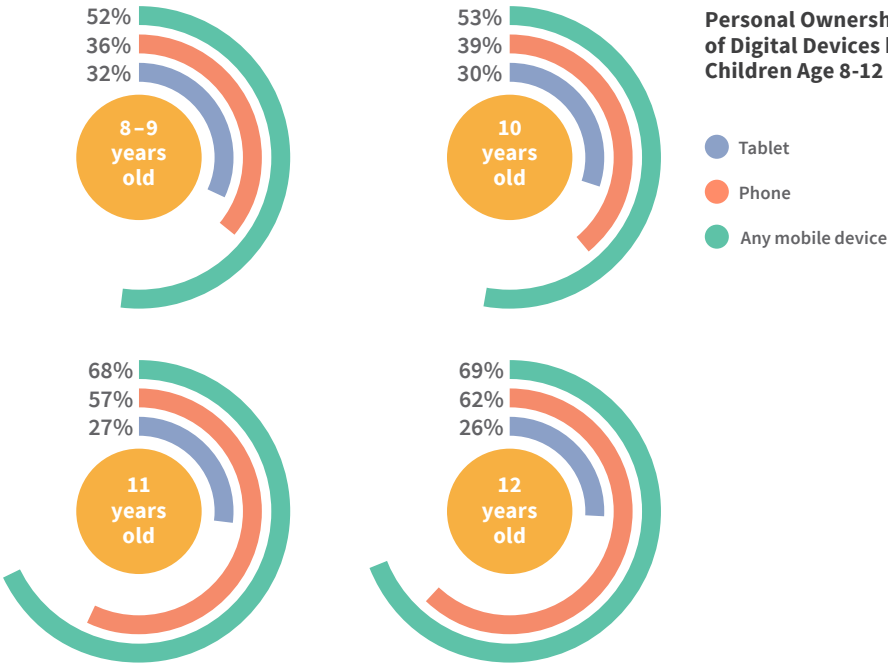
By age 8-9, 52% of children already have their own mobile device – either a tablet PC or phone. By age 12, this number increases to 69%. Ownership of these devices allows most young users unlimited access to the digital world at almost any time and any place.

In the “real” world – life offline – governments, communities, and families have explicit and implicit rules for protecting children from negative or inappropriate influences. These range from simple etiquette (e.g. “don’t swear around kids”), to more formal systems (e.g. movie ratings). However, **these safeguards are losing efficacy in an age where any child with a mobile device can access practically unlimited online content.** Without a solid digital education, today’s children will grow increasingly vulnerable to negative influences against which they have been protected for generations.

Digital Devices Used by Children Age 8-12



Personal Ownership of Digital Devices by Children Age 8-12



Exposure to Numerous Cyber Risks

Children Age 8-12 Are Already Exposed to Numerous Cyber Risks

The top 3 online activities of this age group are (1) using search engines, (2) listening to music and watching videos and (3) playing video games¹⁹. Some of these activities embed elements of nascent social media use: both videos and video games can have social elements as children watch, play, and engage with friends through embedded chat functions.

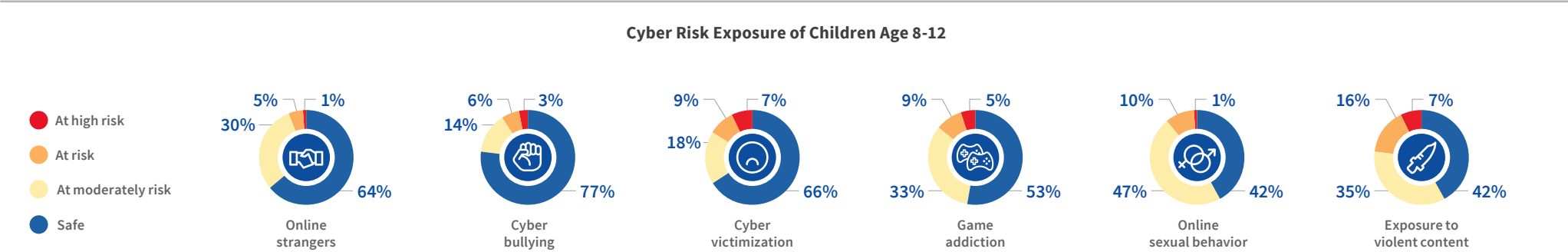
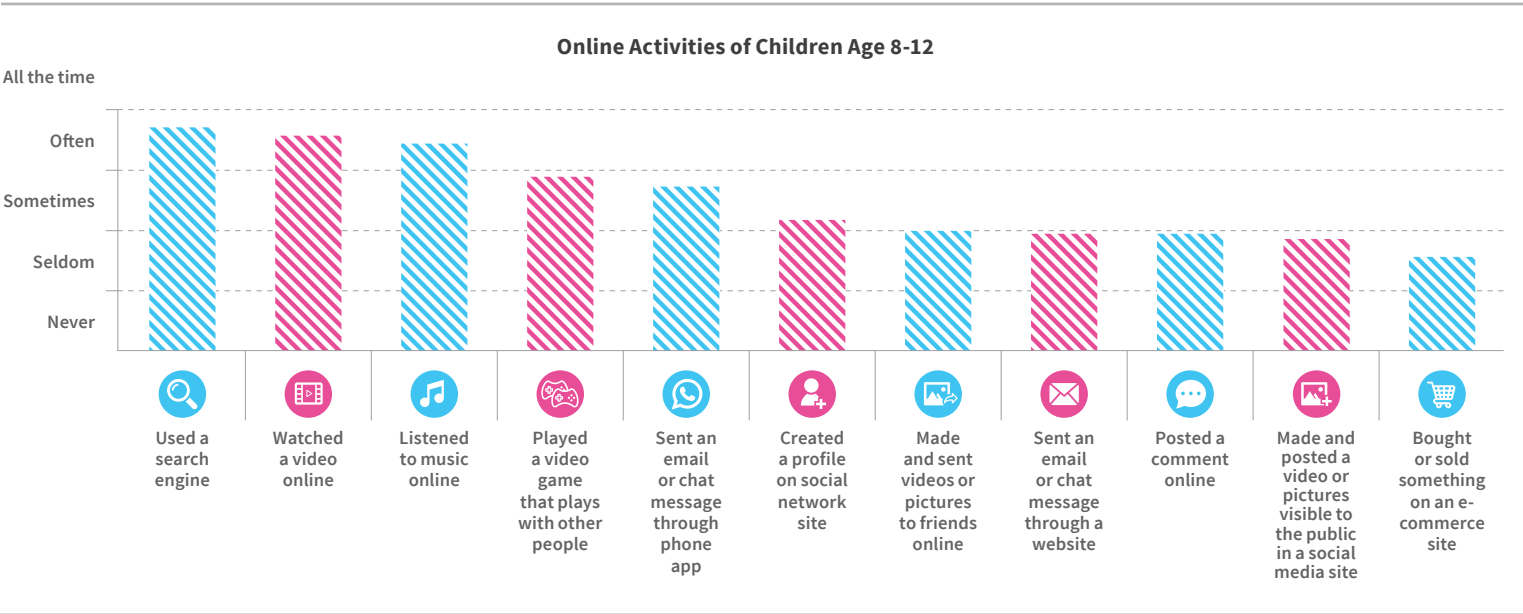
Numous studies show significant positive correlations between children’s digital media usage and exposure to various cyber risks that negatively impact their cognitive, emotional, and social development – including impairing their academic performance and relationships with family and peer groups ^{4, 7, 13, 16, 23}.

Excessive digital media use in children of this age group has been shown to negatively correlate with personal strengths such as self-regulation, critical thinking, and academic performance ^{17 24}.

This comes as another recent recently concluded that a growing proportion of 8-12 year old children are already engaging in various risky behaviors online¹⁹.

Furthermore, children who participated in our Pilot Study informed us that:

- 30-40% of participants have perpetrated, or been victimized by, cyber bullying.
- 23% have frequently consumed high degrees of violent content in online videos or games
- 11% have been involved in proactive online sexual behaviors such as searching/ downloading/sending/receiving adult content and/or having sexual conversations with online strangers.
- 6% have chatted with and met online strangers in real life.



Lack of Parental Mediation

The lack of parental digital mediation is problematic

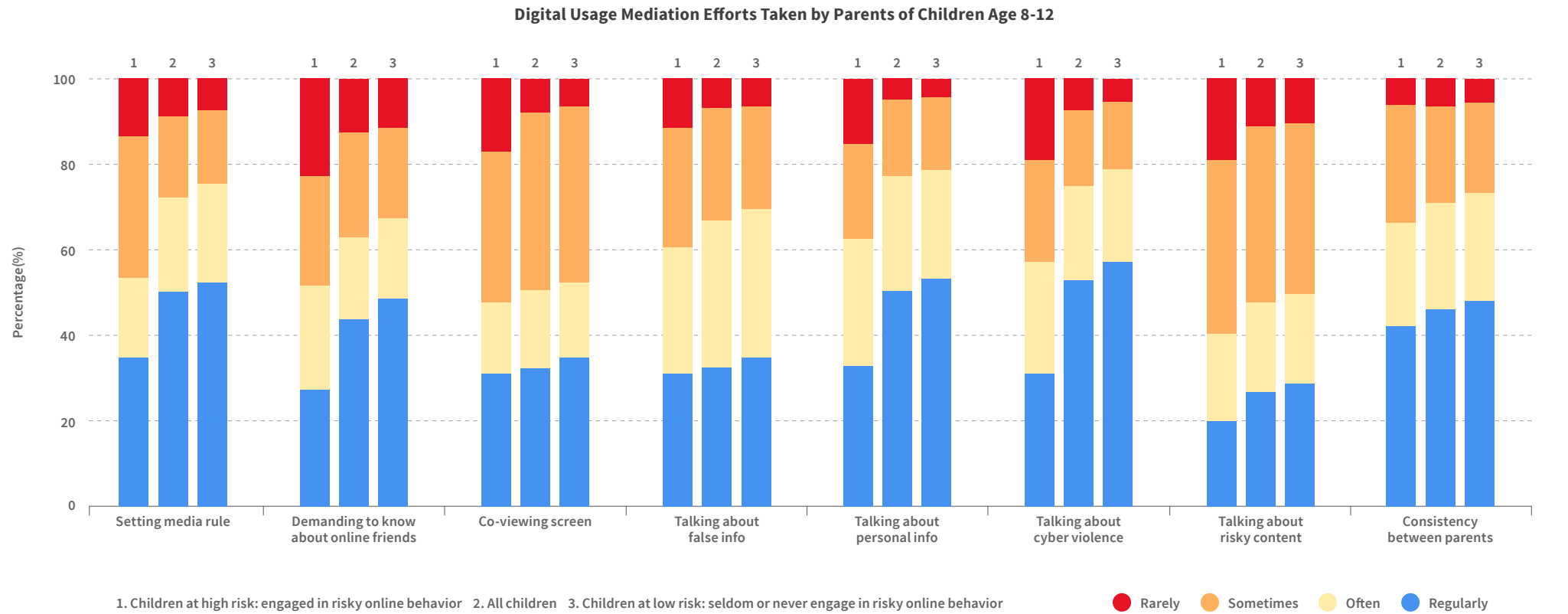
Parental digital media mediation is critically important in protecting children from cyber-risks. While parental influence is high, our Pilot Study indicates that less than 50% of the parents regularly talk to their children about digital media usage and how to mediate its inherent risks.

We also found that children were less likely to engage in risky activities online when their parents were more actively engaged in mediation of their behavior.

In summary, our Pilot Study confirms that the need to empower 8-12 year old children with digital intelligence is urgent. During this age

range, children increasingly own their first digital device and become active on social media, allowing them to “step into the digital world” and become exposed to numerous cyber risks. Most importantly, it is the critical age range during which children start to build formative peer relations, which influences their understanding of what is right and wrong amidst sorely lacking

parental digital mediation. **This is why we at the DQ Institute, through our #DQEveryChild worldwide movement, seek to empower with digital intelligence 20 million children ages 8-12 by the year 2020. In so doing, we will give them the crucial skills they need to navigate the challenges and opportunities of their increasingly digital lives.**





#DQEveryChild

IQ EQ



Digital Intelligence Quotient

THE URGENCY OF DIGITAL CITIZENSHIP EDUCATION

The Imperative

A generation ago, IT and digital media were niche skills. Today, they are core competencies necessary to succeed in most careers.

For this reason, digital skills are an essential part of a comprehensive education framework. Without a national digital education program, command of and access to technology will be distributed unevenly, exacerbating inequality and hindering socio-economic mobility.

The challenge for educators is to move beyond seeing IT as simply a collection of software and hardware tools or mediums of delivery. Instead, the goal is to nurture students' ability and confidence to excel in a world where digital media is an integral part of everyday life.

What's Your DQ?

Digital intelligence – or DQ – is the ability to use digital technology and media in safe, responsible, and effective ways. Like IQ or EQ, which are measures of general and emotional intelligence, an individual's facility and command of digital media and technology is a competence that can be measured.

Why Are We Neglecting Digital Citizenship?

More and more school programs are incorporating technology in a variety of ways: some use computers in the classroom, some make assistance available online to students, and some even teach coding and robotics.

But digital intelligence has often been overlooked by educators and leaders despite being fundamental to a person's ability to wisely use technology and live in the digital world – a need which now arises from a very young age.

Many educators believe children will pick up these skills by themselves or that these skills should be nurtured at home. However, due to the digital generation gap, with young children being the first to truly grow up in the era of smartphones and social media, neither parents nor teachers know how to adequately equip children with these skills.

Young children using digital media today are exposed to cyber risks such as technology addiction, cyberbullying, and predatory grooming. They can also absorb toxic behavioral norms that affect their ability to interact with

others. These risks are often amplified for vulnerable children, including those who have special needs, those who are minorities, and those who are economically disadvantaged. They tend to not only be more frequently exposed to risk, but also to face more severe outcomes.

Sooner Rather Than Later

A child needs to start learning digital citizenship skills as early as possible, ideally when one starts actively using games, social media or any digital device. Children today are already immersed in the digital world and influencing what that world will look like tomorrow. It is up to us to ensure that they are equipped as soon as possible with the skills and support needed to make it a place where they can thrive.

Digital Citizenship Skills™

All Children Need



8 Digital Citizenship Skills™ All Children Need

Digital intelligence (DQ) comprises the set of cognitive, social, and emotional abilities essential to digital life. It is the all-encompassing ability to have appropriate knowledge and skills, to adapt one's emotions, and to adjust one's behavior to deal with the challenges and demands of the digital era.

So, what should we be teaching our children as part of their digital citizenship? Our extensive research has led us to identify eight core Digital Citizenship Skills™:

Screen Time Management
The ability to manage one's screen time, multitasking, and engagement online with self-control

Cyberbullying Management
The ability to detect situations of cyberbullying and handle them wisely

Cybersecurity Management
The ability to protect one's data by creating strong passwords and to manage various cyberattacks

Digital Empathy
The ability to show empathy towards one's own and others' needs and feelings online



Digital Citizen Identity

The ability to build and manage a healthy identity online and offline with integrity

Privacy Management

The ability to handle with discretion all personal information shared online to protect one's and others' privacy

Critical Thinking

The ability to distinguish between true and false information, good and harmful content, and trustworthy and questionable contacts online

Digital Footprints

The ability to understand the nature of digital footprints and their real-life consequences and to manage them responsibly

The ability to use technology is now understood to be a basic and indispensable skill, and being able to use digital media prudently, safely, and confidently will mark the leaders of tomorrow. Digital intelligence is essential for our kids to become masters of technology, instead of being mastered by it. Crucially, in order for children to be nurtured as good digital citizens, these competencies need to be based on core values including wisdom, respect, integrity, resilience, self-control, and empathy.

Key Elements of a Successful DQ Education

01:



Comprehensive and Forward-looking Framework

Digital citizenship education needs to systematically address all the competencies necessary to manage the challenges of using technology and navigating the digital world. The framework needs to address all 8 Digital Citizenship Skills™ (detailed below). Likewise, it is imperative students learn to apply these skills to novel situations – like new apps and media – in order to adapt to inevitable changes in technology.

02:



Thorough Assessment and Detailed Feedback

A robust digital citizenship education must include opportunities for assessment and feedback. The assessment tools need to be comprehensive as well as adaptive in order to evaluate not only hard but also soft DQ skills. Ultimately, such assessments should serve as a means of providing feedback that gives children a better understanding of their own strengths and weaknesses, so that they may find their own paths to success.

03:



A Commitment by Policy Makers and Educators

National leaders need to understand the importance of digital citizenship as the foundation of digital intelligence, and Education leaders need to prioritize the implementation of digital citizenship programs as part of an overall DQ education framework.

The Goals of Comprehensive DQ Education

Children who have successfully completed their DQ education will be better able to:

- | | | | | |
|---|--|--|---|--|
| ✓ Create and manage digital reputation | ✓ Recognize and avoid phishing and scams | ✓ Build healthy online and offline identities with integrity | ✓ Know how data is collected and shared by devices and apps | ✓ Minimize the risk of contamination by viruses or malware |
| ✓ Communicate online with respect and empathy | ✓ Secure online accounts through the use of strong passwords | ✓ Protect themselves against the attempts of hackers | ✓ Seek assistance with bullying, abusive, dangerous or confusing online situations | ✓ Understand the risks of sharing images or information using digital technology |
| ✓ Understand the need for balanced screen time, and exert self-control over device use | ✓ Know that people online may not be who they claim they are, and avoid communicating with strangers | ✓ Cope with cyber bullying without escalating situations, and capably stand up for victims | ✓ Understand that information found online may be false or misleading, and know how to verify stories | ✓ Remain aware of media influence, and have a tendency to choose prosocial and beneficial digital media while avoiding violent and inappropriate content |
| ✓ Know what information should be kept private, and how to restrict the sharing of personal information | ✓ Share content prudently, fully understanding the impact of one's digital footprint | | | |

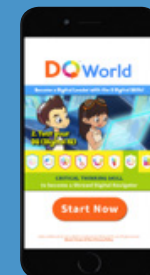
DQ WORLD™ E-LEARNING PLATFORM



Our internationally-acclaimed DQ educational initiative is driven by DQ World™, an innovative research-based e-learning platform specifically designed for young users of digital media. The online education program has been internationally recognized by two UNESCO international awards for its pioneering efforts to promote youth digital citizenship education. It can be easily incorporated within public education systems and be used by any teacher in any country to accelerate the national implementation of DQ education and risk assessment for all children worldwide.

- At its most basic, DQ World™ allows for enjoyable self-learning with minimal support from teachers or parents
- More detailed assessments are available for parents who want to get more involved in their child's DQ education.
- Additional teaching resources have been created to allow teachers to use the program proactively, incorporating DQ World™ in their classroom as an integral part of lessons and assessment
- Likewise, schools can use the assessment and metrics as part of school-wide DQ programs

DQ World™: Innovative Online Education Tools & Assessment



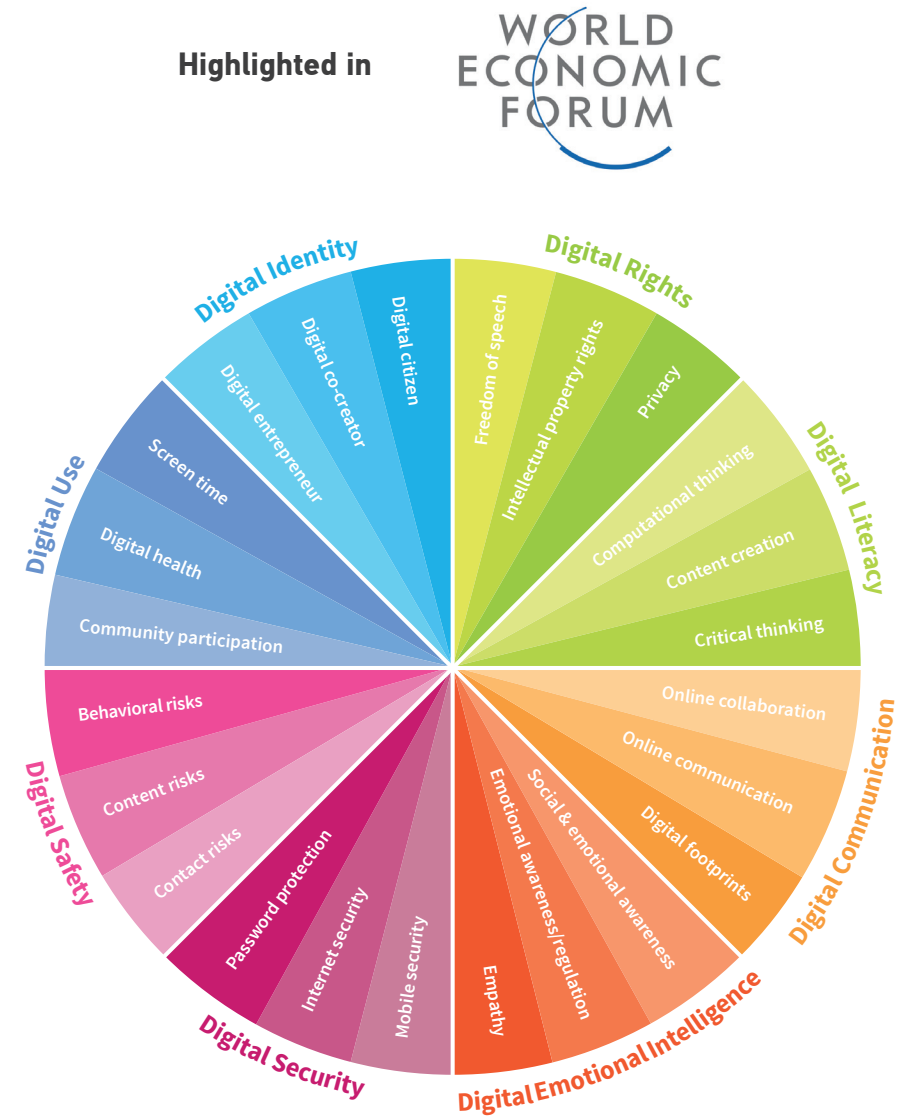
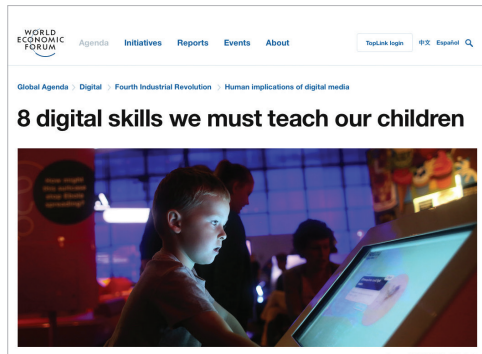
The four key characteristics of the program are as follows:

Holistic value-based curriculum

DQ World™ offers a cutting-edge comprehensive digital citizenship curriculum specifically targeting children age 8-12 who are starting to actively engage with the digital world.

Most national digital education programs are campaign-based, restricting their focus to narrow topic areas like cyber-bullying prevention, account security, or scam awareness.

However, it is important to ensure that our children's digital citizenship education covers all of the 8 digital skills so that they are not only informed and discerning users of today's technology, but also of tomorrow's. For digital citizenship education to be effective and adaptable, it needs to be rooted in concepts of identity, core values, and social-emotional skills.



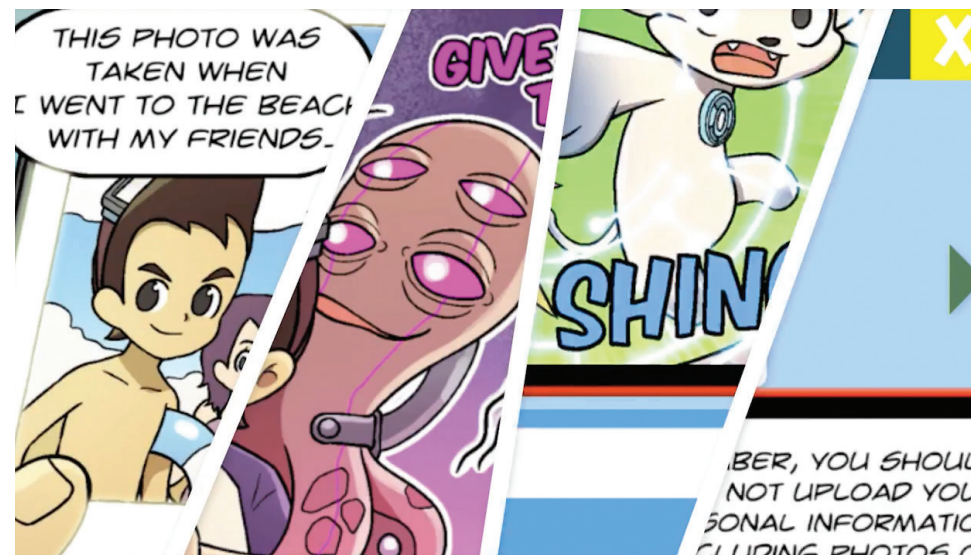
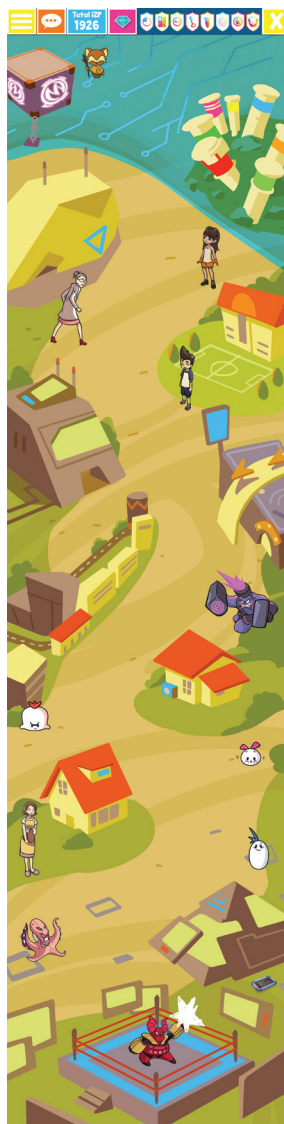
Gamified “Play & Learn” story-telling pedagogy

A major goal of the program is to create an environment that encourages self-learning, without the necessity of teacher or parental guidance. In this way, any child can benefit from the program as long as they have access to the site.

To do this, we made DQ World™ as fun and engaging as it is educational – so much in fact that students can’t wait to engage in and complete the program.

- 92% of children found DQ World™ helpful in learning how to use the Internet safely, and
- 90% of children said the program made learning more interesting and fun²⁴.

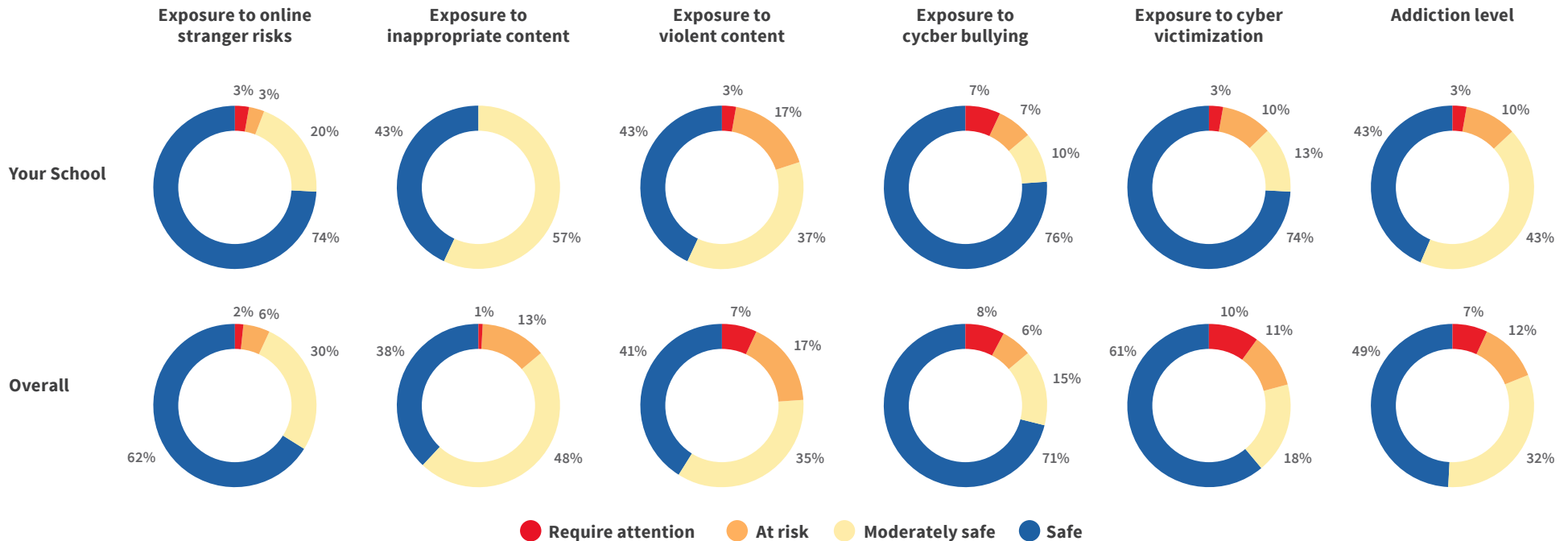
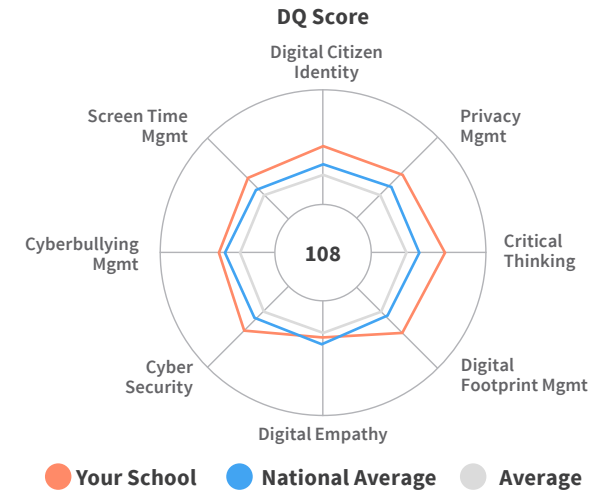
This was achieved through the creation of a varied multi-media experience: the DQ curriculum combines animated video storytelling and interactive learning quests that provide both educational and entertaining experiences. Progress through the program rewards each student with skill badges, character cards, and certificates of accomplishment after each phase of learning.



Research-based real-time DQ assessment

As the student engages in the various “missions” on the platform, he/she completes surveys and quizzes that reinforce the interactive activities. Each student’s responses are tracked in order to measure progress, assess risk, and generate the child’s DQ Profile™ and optional DQ reports. For those using the school-based platform, the system also aggregates results into a DQ School Report™ which is the collective DQ Profile™ score of all participating students in the school.

Snapshot of a Sample DQ School Report™ Detailing Skill Acquisition and Cyber Risk Assessment



Timely e-counselling interventions for at-risk children

DQ World™ has a unique system to detect a child's exposure to various cyber-risks, which can identify at-risk children and help schools intervene in a timely manner.

In addition the program can diagnose parents' digital media mediation style as well as assess support being provided by teachers and schools through internet safety education.

E-counselling services can be linked into the platform and triggered both voluntarily by the child (via a request for support) or automatically when exposures to risk factors are detected.

E-counsellors provide a timely and easily accessible avenue of support through the online platform. The 2015 DQ E-Counselling Study conducted by the National Institute of Education proved it to be effective in increasing happiness and self-regulation and lowering negative emotions of children exposed to cyber-risks^{25 26}.

