

| NSW Department of Education

# Challenges and Rewards of a Collaborative Teaching Environment

Narelle Walton and Kieran Sly reflect on the planning and implementation of a team teaching approach to a new learning space at Harbord Public School.

Harbord Public School in conjunction with the NSW Department of Education had been in the process of planning, designing and constructing an extension to the school for several years, which comprised interconnected classrooms and practical activity spaces. These new learning spaces were open at the beginning of the 2017 school year and thus necessitated plans for teaching and learning in the 'futuristic' environment. Initially decisions were made about which grades should occupy the 18 classrooms in the new three-storey building, as the structure had been purpose built to facilitate cutting-edge teaching and learning styles. In addition, the school executive was required to select 18 of the 45 classroom teachers to fill the positions in the new building.

Prior to the opening of the building, we (Narelle Walton and Kieran Sly) discussed the possibility of teaching collaboratively in the new learning spaces. We understood that it would involve teaching year 3, 5 or 6 as they were to be the only three grades in the new building. Our next step was convincing the executive team that we were compatible and would be able to work in harmony with each other 6-10 hours a day for a year – the Principal (Craig Davis) and the executive agreed. Thus, we were both placed on year 3 and given two adjoining classrooms with new furniture and new technology, along with the huge challenge of planning and reprogramming for a fresh approach to teaching and learning.

The other rooms in the block were allocated to teachers willing and able to experiment with the logistics of the modern classroom features. All of the teachers selected to work in these spaces were excited to see what the new building, new furniture and new styles of teaching would bring in 2017. Some decided to team teach on occasions, or to try other ways of adapting their current pedagogy to suit the new learning environments. However, we felt that what would work best for us was to team teach on a permanent basis, that is, to keep our classroom doors open and allow students from each of our class groups to interact and collaborate at all times. As the year progressed some teachers continued to pursue the flexible opportunities, afforded by the open spaces, while others returned to the style of teaching they knew best and were comfortable with.

Professional development is a vital component of any initiative and while teachers at Harbord Public School supported each other and frequently exchanged ideas on strategies that they discovered worked in the new environment, more focused professional development for the new environment was not part of our learning at that stage. Individual teachers, who elected to do so, were able to engage in professional development programs on pedagogical styles that could be adapted to teaching in the new environment.

The NSW Department of Education does not have expectations about how the new building is used and so it is flexible and specific to the school community as to how the learning environment is created and worked in. At the time of its design the school had no way of knowing what classrooms of the future would entail but thought if the building remained 'flexible' it could be adapted as changes occurred.



Figure 1. Children from 3W and 3S working on iPads in a quiet area.

## Working in tandem

After agreeing to work together we had a meeting regarding our own expectations about the changes required in pedagogical practice. Kieran had already worked in a team teaching environment with another colleague at Harbord Public School in the previous year and had seen the benefits of this style of teaching, not only for the students, but also for the teachers involved. However, we needed to make sure that our teaching philosophies were compatible and consider whether we would remain open minded enough to work together over a year. We acknowledged that we were both bringing different types of experience to the table and were excited about learning new things from each other.

Over several informal meetings we spoke about what we expected from each other and during these discussions realised that teaching in this style would require an ongoing commitment. We established goals that we would need to achieve in order to make it work, including:

- being adaptable,
- showing each other respect as professionals,
- listening to one another's ideas as well as ideas from executive staff and other teachers,
- preparing for lessons separately and together, and
- continuing to value our individual differences as teachers.

We wanted this opportunity to be of benefit to our students and ourselves, both professionally and personally.

In terms of preparation of lesson material, we spent a good deal of time developing units that were interesting, educational, entertaining and enjoyable. Initially, we were perhaps a little too concerned about being judged by one another, but this uneasiness abated as we became aware that the focus of our preparation was quite obviously our students. We shared leadership in relation to programming and delivering aspects of all key learning areas throughout the year, so we both achieved a well-rounded knowledge of current and new programs. Our Deputy Principal

(Lisa McKenzie) was also able to timetable our release from face to face so that we were off class at the same time for two 40 minute sessions per week. This enabled us to prepare and plan together and it also meant that both classes were nearly always in the classroom at the same time as each other. We have had a very supportive supervisor (Tanya Scicluna) and network of teachers around us, which has made achieving our goals easier than it may have been.

Despite changes that occurred during the year in other classrooms, we remained dedicated to our initial goal of maintaining a fully collaborative learning and team teaching environment. Throughout the year we altered aspects of the classroom layout, our own pedagogical practices, and our team teaching style as necessary, but we managed to be consistent with the way our students collaborated and experienced the learning environment as we had envisaged it at the beginning of the year.

## Student reactions to the new learning environment

At the beginning of 2017, our classes came to us very excited about being in the new building. Most students had only experienced a traditional classroom setting. They were most surprised about not having assigned seating and not being told how they had to sit or how to use the furniture. One of the major strengths of the open plan learning environment is that it accommodated a wide range of pedagogical modes and learning styles.



Figure 2. Employing flexible learning spaces during NAPLAN testing.

In the first few weeks we saw that the new environment was not only a positive one, but that the students adapted readily to the style of the new classroom environment. They enjoyed the flexibility of a learning space where they were able to choose where to sit, how to sit and who to sit with. After each lesson we would reset the room 'back to base', meaning that each piece of equipment had to be returned to its place, so the room would be tidy. This did not take long for the students to become accustomed and we would often hear students telling one another, 'That doesn't belong there!' By resetting the room after each session, it enabled students to reconfigure their seating arrangement as they wanted it for the next session.

Taking into account the new curriculum and focus on independent learning through project-based tasks, the new environment was particularly accommodating as it allowed students to work in spaces that physically contributed to collaboration and teamwork. We completed many projects throughout the year with most incorporating the use of technology. Students worked in a variety of different collaborative teams that helped facilitate their learning. They also enjoyed having the opportunity to rearrange and place the furniture to best suit their specific lesson requirements. Allowing students flexibility and giving them ownership of their learning spaces fostered open-minded, creative and independent learners.

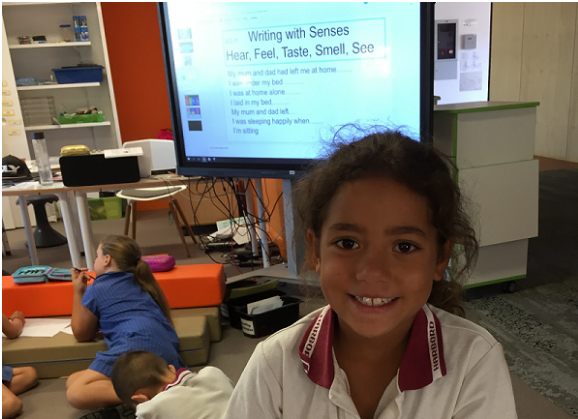


Figure 3. Student working at a height adjustable individual desk and in the background, students created their own workspace using 'Gen-ga Blocks'

Something that surprised both of us was the positive impact that having two teachers had on the students. We realised that students are drawn to particular teachers and teaching styles. As our styles, approaches and personalities are different, we had students from each other's class connecting with the other teacher. Narelle's expertise in and passion for learning support and Kieran's drive for extending students, we felt, complemented and supported the individual learning needs within our 'extended family' classroom. During particular lessons such as those in literacy and numeracy, students were able to choose

- whether they needed support,
- were happy working at grade level, or
- if they required a greater challenge.

It was interesting to observe students self monitoring and choosing to move between the three groups based on their understanding of a particular topic.

## Parent reactions to the new learning environment

When we faced the parents at the parent information evening, early in the new year, some were a little nervous about the 'new set up'. They were excited about having a new building at the school, but they were not so sure about how their child would cope in an environment that appeared to have many distractions as well as having two teachers in the same space.

A few parents found it difficult to see how it could be a positive and productive learning space, especially when comparing their own school experiences to this new environment and its facilities. The classrooms were brightly coloured, had writable desks and walls, chairs that revolved and were on wheels, portable desks and chairs, soft padded blocks to lie on, and learning pods that

provided for individual or small group work. It presented a very significant difference to parents' experiences of schooling. Generally, they were enthusiastic, but some considered the space to be distracting and over stimulating.

Another concern for some parents was having two teachers and 50+ students in one shared learning space. They were not sure how their child was going to cope with having two teachers and were concerned how they would know whom to go to for assistance. Many were worried that their allocated teacher would not get to know their child's strengths and weaknesses. There was also a worry that having so many students in the one room was not going to be a positive experience. However, as the year progressed and on reflection at the end of the school year, all parents agreed that their child having two teachers and being in this new learning environment was a positive one. Parents acknowledged that having two teachers with different teaching styles and interests added to their child's educational experience. It was not uncommon for a parent to say to us, 'I was skeptical at first, but my child has had the most amazing year'.

## Challenges and rewards for students and teachers

Reflecting on a year of team teaching in a contemporary learning environment, we believe the rewards far outweighed the challenges for students and teachers. We have mentioned a few of the challenges, which needed to be addressed before starting to work with a colleague on a permanent basis, but there are other issues to consider. For instance, each member of a teaching duo needs to be very well prepared for their own and their partner's benefit. You never have time to be off task because there are 50+ children waiting for you to give them something to do and another teacher relying on you to be well organised for the lesson. However, the reward was that you generally only prepare half the lessons because your colleague is preparing the other half. Sharing the load is something that we think is the most important part of team teaching, especially as demands on teacher time becomes even more overloaded. We had certainly not cut our conventional workload in half as we have been creating new lessons to suit the new programs and the new learning environment, but what we have created is definitely more comprehensive than we could have managed had we been doing it all on our own.

Having so many students in one environment usually means that sound levels will increase quickly in most circumstances. We needed to re-evaluate what we deemed appropriate working noise levels. What we found was that if we prepared lessons with collaborative properties, then the students would spend their time talking about the task so the volume relating to interactivity became somewhat irrelevant as they all remained on track. The important thing was that a teacher needed to be flexible and allow students to discover and learn how to remain on task in a less restrictive environment. This took our students and ourselves a few weeks to get used to initially.

Some teachers may find it daunting having another professional present in the room the whole time, but we found having someone to constantly bounce ideas off was definitely rewarding. We both learned so much from each other during the year, including teaching techniques, different ways of managing students' behaviour, how to better interact with parents, how to use technology in different ways, how to support and mentor each other, and most importantly how to respect teaching styles different to your own. We also found it mentally beneficial. It is not uncommon for a teacher to feel overwhelmed at times and having another colleague in the classroom allowed us to discuss the demands of the profession.

Another reward we discovered was getting to know all the students across two classes. Generally, this made assessing and reporting easier. We always graded and reported on our own class, but we had the input of the other teacher if we were deliberating over a student's capabilities. We found that with two teachers in the room there was a lot of time available for one teacher to be observing and informally assessing the students.

We both agreed that the positives far outweighed the negatives, but we were also mindful of the fact that this learning environment does not necessarily suit all students. We learned fairly quickly which students were struggling in this space and that it was our task to provide the best outcomes for each and every one of the students. For some students, we had to make sure there were independent tasks and quiet time available throughout the day as well as spaces that suited their more independent learning style.

Also, as mentioned earlier, at times the sound level was of concern to some students. It was important to be mindful of the way sound carried throughout the building. Clear expectations about the level of noise expected for particular lessons was needed on a regular basis. Occasionally we had to interrupt lessons to regroup and discuss the noise level and moderate the volume.

Being in a large class did not suit all students. There was frequent movement and a good deal going on at any point in time. There was less chance for student voices to be heard, particularly during direct instruction sessions when they wanted to share ideas and responses. Quieter students found it difficult initially, but over time they adapted to the new setting and style of learning.

We believe there are many rewards for the students being in an open space and having two teachers. It gave students a degree of choice about which teacher they felt more comfortable with or related to better in regard to personality. They understood that there were always two sets of eyes on them and they could never 'hide' within the classroom. Over time the students felt they were part of a very unique class. They had the opportunity to create larger friendship groups and were happy to mix within the class during project based learning and other core curriculum components.

The most rewarding part for the students was that they felt they had a say in how they wanted to learn. Giving them the freedom to sit where they wanted and how they wanted became a positive experience for the class. Students respected the classroom and its furniture. They had some control and learned that the teachers would respect and affirm sensible choices.

## Evaluation of the experience

After reflecting on the year we decided that we would not change anything we did, but we will attempt to tweak and refine some aspects for this year. Fortunately, we will be working together again and on the same grade. This will give us the opportunity to consolidate everything we have worked so hard to establish last year. It will also give us an opportunity to mentor other teachers and offer professional development relating to the experiences we encountered during the year.

Last year we worked extremely hard to establish a good grounding for what we plan to do in years to come. It has been a rewarding experience and we would highly recommend it to any teachers who are open to change. You do not need a new building or new furniture to achieve the results

we have achieved. We just used it as an excuse to try something new and different. The students we had this year loved the teaching and learning environment that was created and we have received plenty of positive feedback from parents, teachers, executive staff, NSW Department of Education representatives and even the Premier and Minister for Education.

### **Tips, suggestions and ideas for other teachers who may find themselves in a similar position**

Based on our positive experience, we would encourage any teachers who have the opportunity to accept the challenge. The most important factors to bear in mind are

- wanting to team teach and
- having a similar teaching philosophy to your colleague.

You do need to be mindful of each other's space and respect your colleague's teaching style even though it may be different to your own. It is also very important to keep the communication channels open and frequently confer with one another in a positive way. That is not to say that you cannot give constructive feedback when necessary. It is crucial to be flexible, cooperative and open minded and to let go of the reins and allow the students to guide you. It has been a wonderful experience to watch our classes thrive, collaborate and take charge of their own learning. This learning environment has created independent learners and happy teachers with a positive work-life balance.

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## Expert insights into education for positive digital footprint development

Peer reviewed article

Dr [🔗 Rachel Buchanan, Associate Professor Erica Southgate, Dr Jill Scevak and Dr Shamus P Smith](#) present their research on digital footprints.

Children and young people are spending more time online. Face-to-face interactions with friends are being supplemented with digital communication. Australian children are particularly prolific users of the internet (Green et al, 2011). This online activity creates digital footprints. Digital footprint refers to the information and data that people generate, through purposive action or passive recording, when they go online (Thatcher, 2014). Digital footprints now play a role in people's employment and educational opportunities (Black and Johnson, 2010). In this context not having a digital footprint can be as serious as having a badly managed one. One way to address this is for schools to explicitly teach students how to develop positive digital footprints that will help, rather than hinder, them in the future.

Many schools have yet to respond to the challenge of helping students develop reputational management skills. Schools are caught between children's and adolescents' existing social and recreational uses of the internet and their responsibility to protect their students both on and off line (Luke et al., 2017). On the one hand, schools are tasked with giving students 21<sup>st</sup> century skills - the knowledge and practices required for participation and success in a technological world. On the other hand, concerns about digital footprints, bullying, privacy, safety and risk have led school systems to respond with prohibitions that attempt to govern students' online exchanges (Selwyn, 2010). Given the emerging importance of digital footprints, expert insight can be utilised to provide guidance to teachers around this vexed issue.

The 'Best Footprint Forward' project involved a survey of digital experts and career advisers to get their perspectives on digital footprint education in the Australian school context. This article reports on the following research questions:

1. what do experts know about digital footprint management; and
2. what are their suggestions for education?



Despite the increasing social and professional significance of digital footprints, expert perspectives on education for digital footprint management are not well known. We move now to detail the literature, reviewing what is known about children and adolescent internet usage, the professional implications of digital footprints, and digital footprints and the Australian curriculum. After providing an overview of the findings of the survey of experts, we conclude by describing the implications of this for schools, and for teachers' practice.

## **Literature review**

### **Australian children's and adolescents' internet use**

Today's children growing up as part of the mobile generation are in constant communication with their peers and thereby creating new standards of behaviour and communication. Participation in this digital culture is facilitating cognitive, social and emotional development (Yan, 2018). In 2011, Green et al noted that Australian children (aged 9-16) are some of the highest users of the internet in the world, with 76% accessing the internet daily for approximately an hour and a half each day - using the internet for "schoolwork (86%), watching video clips (85%) playing games (78%), emailing (67%) and social networking (63%)" (p. 8). Since then, this usage has increased with 83% of Australian adolescents going online 3 or more times daily (ACMA, 2016). While children under the age of 12 are breaching the terms of service, a quarter of Australian children between 8-13 years of age are on Facebook, and a fifth are using Instagram (Holloway, 2014). Children's social networking profiles are predominately private (ACMA, 2013a). The catalyst for creating a social media profile is as children reach high school, when there is a significant increase in social networking. Most Australian children and adolescents access the internet in their homes (98%), while only 64% report accessing the internet at school in the past 3 months (ACMA, 2016).

Children and adolescents in higher socio-economic status [SES] homes use the internet in more sophisticated and creative ways than their lower SES counterparts (Dolan, 2016). High SES children are more likely to receive assistance in developing their understanding and usage of the internet, as they have more frequent access to it, as well as adults who can assist them (Livingstone et al., 2011). As digital literacy and computer skills are becoming increasingly valued, low SES children can be at a disadvantage (OECD, 2016). This potential disadvantage extends to those who are not educated about digital footprints. Research with Australian 10 - 12 year old children in 3 schools in NSW indicates that they have been taught cyber safety and can describe the negative aspects of a digital footprint, but they are not aware that a digital footprint can be positive (Buchanan et al., 2017). Schools play an important part in reducing this disadvantage through teaching digital skills to all children regardless of background.

### **Professional implications of a digital footprint**

While young people are frequently online, they do not consciously consider how their usage affects their digital identity (Oxley, 2010). For Australian children and adolescents, communicating with others via social networking services is one of the most popular uses of the internet (ACMA, 2013b). This contributes towards an individual's online identity and digital footprint (Van Dijck, 2013). Children and young people are building a larger and more diverse digital identity than any other group previously, as they have been online from younger ages. Digital footprints can potentially affect children's future education and employment prospects. The media has recently focused on instances where individuals have lost their jobs or been discounted from higher education programs, based on content found on their social media accounts (Cooper, 2015). Such stories have led to a negative emphasis on children's and adolescents' use of the internet.

Consequently, many children and teenagers are being discouraged from freely using the internet, in an effort to protect them from making mistakes (Ferriter, 2011). Media stories that unduly focus on the dangers posed by the internet (stalking, identity theft, cyber bullying, and internet addiction, for example) frame children as passive, vulnerable consumers of digital culture endangered by the online environment (Facer, 2012). This portrayal of children as powerless victims rather than resourceful participants (Stakrun & Livingstone, 2009) overlooks the multiple ways children use the internet to establish their identities, build skills, communicate, and engage in their social worlds (Boyd, 2014).

Human resource practitioners are using social media in selection, recruitment and hiring (Black and Johnson, 2012). McDonald, Thompson and O'Connor (2016) estimate that 55% of organisations now have a profiling policy detailing how they will use candidates' social media profiles to determine their employment suitability. Given the importance of the internet for employment and career development (Hooley, 2012), curation is an important skill for young people in terms of managing their digital footprints. Curation involves the deliberate generation and maintenance of an online presence that is designed to showcase an individual's achievements, skills, identity and interests. It involves judgment about what is kept private and what is suitable for a public persona. Curation is considered a "core competency" for online presence (Mihailidis, 2016). Young people should be taught to curate a positive digital footprint to maximise their life opportunities and career development (Camacho, Minelli & Grosseck, 2012), yet educational institutions are not addressing this (Benson, Morgan & Filippaios, 2014). While the prevailing discourse around digital footprints suggests that these represent a liability to be avoided (Camacho et al., 2012) a positive digital footprint can be understood as an asset, a "personal brand" that allows others to see your interests, achievements and skills. A digital footprint allows for a quick "google" to verify identity, competency and experience.

## **Digital footprint and the school curriculum**

Within Australia, the Australian Curriculum, Assessment and Reporting Authority (n.d.a) has recognised the importance of digital literacy and being able to interact online by including digital/online texts as a required text of study in all year levels. Yet education on digital footprints is currently not explicitly included in the Australian National Curriculum (ACARA, n.d.a). Instead, each State or Territory has policies in place to guide schools on teaching content about a digital footprint. Such content relates to the issues of cyber bullying, harassment, internet addiction and the implications of 'sexting', as these are viewed as the prevalent issues relating to children's and young people's use of the internet (Livingstone et al., 2011). A positive digital footprint can showcase the skills and achievements of an individual and signal engagement with and proficiency of internet technologies; a current mandated educational outcome and a desirable attribute for the 21<sup>st</sup> century (Van Ouytsel et al., 2014).

## **Methodology: Best Footprint Forward project**

The aim of the Best Footprint Forward project was to investigate child, parent/carer, teacher and expert knowledge, awareness and attitudes towards digital footprints and strategies used to manage these in the Australian context. In this article we report on the subset of the results from an expert survey. Given the predominantly negative messages about children's digital footprints that exist in the media and the growing importance of having a positive digital footprint, the aim of the expert survey was to canvass experts and gather collective wisdom about this issue. The research questions that we are reporting are: (1) What do experts know about digital footprint

management; and (2) what are their suggestions for education? This paper focuses on what would be relevant for Australian teachers – that is, what do they need to know so that schools can successfully educate children and adolescents about digital footprints.

## Recruitment

The study was approved by the University of Newcastle's Human Ethics Research Committee [HREC approval number H-2015-0271]. Using LinkedIn, the research team created a list of professionals whose public profiles suggested expertise in digital education and/or university careers advice. The experts were predominately Australian – with education policymakers, teachers and university careers professionals recruited from Australia. Academics and researchers with expertise in digital footprint management were recruited from Australia and internationally. From this list, potential participants were emailed an invitation to participate in the survey. The email contained a link to Survey Monkey, where participation was anonymous. Over 200 invitations were issued and 53 people chose to participate.

## Expert survey

The survey was designed as an initial exploratory survey to gather a sense of the issues and possible solutions from career advisers and digital experts. The survey consisted of four demographic questions, nine open ended questions and an opportunity for general comments. The demographic questions were: gender; occupation; years of experience in current professional role; and highest educational qualification. The open-ended questions were:

- How would you explain digital footprint to the person in the street?
- What are the top issues around digital footprint for children (5-12)?
- What are the top issues around digital footprint for young people (13-25)?
- What do you think educators should know about digital footprints?
- What approaches should be taken to educate children, young people and students about digital footprints?
- What approaches should be taken to educate parents and carers?
- What do you think children, young people and students need to know about digital footprints?
- Who is responsible for providing education on an individual's digital footprint?
- Do you think there are any social justice/equity issues regarding digital footprint?
- Any other comments?

The responses to the open-ended questions were firstly inductively coded manually, then sorted into themes (Creswell, 2012).

## Participants

Of the 53 participants, 23 were men (43%) and 30 were women (57%). There were 24 university careers advisers (45%); 23 digital technology academics (43%); 5 researchers (9.4%); 2 education policymakers (3.8%); 2 consultants (3.8%); and 1 teacher (1.9%). Participants had been in their current roles for between 1 and 25 years; with the average time in the current role being 8.9 years. All participants had post-school educational qualifications, ranging from graduate certificates to PhDs.

## Findings: What did the experts say?

Digital footprints were described as the traces, trails, or footprints that people leave when they go online, e.g. “The traces of yourself that you leave online perpetually”. While most responses gave variations on this simple definition, some were more comprehensive and detailed the extensive technology use that generates digital footprints:

A digital footprint is a trail left by your interactions in a digital environment, including your usage of TV, mobile phone, devices and sensors such as wearable tech like FitBit and Smart watches and the internet, mobile web, and it can be the history of your browsing/the comments you leave on a social network – newspaper/blog, your conversation via instant messenger/twitter, your shopping history or the record of what you read on your Kindle, the films and music you access (illegally or otherwise) and your browsing and shopping history.

Some responses incorporated the theme of identity, the sense that your digital footprint says something about you, into their definition; such as: “A digital footprint is information about an individual that can be found online. It can convey positive and/or negative messages about their professional and personal identities”.

The following themes were also found in the answers given about what are the top issues around digital footprints for children (5-12), and young people (13-25):

- permanent traces;
- the scope of the how they generated;
- the potential negative consequences; and
- the potential to positively portray an individual’s identity;

An additional theme of children and adolescent development was also evident.

## Top issues around a digital footprint

The most salient themes in the responses were themes on the permanency of digital footprints and the negative issues associated with digital footprints. These answers: “Security of personal information, not understanding the risks of stalkers or cyber bullying, leaving an indelible record of their activities;” and “securing communications and understanding the permanency of online actions” exemplify the way the negative aspects were often (but not always) coupled with the theme of permanency. The negative aspects also included safety and exploitation, security, privacy, abuse, cyberbullying. Responses such as these, echo the media portrayal of the potential negative consequences associated with badly managed digital footprints.

The positive advantages of digital footprints were also articulated, but with a sense that these are not being taught and are not well understood. In addition to curation and a proactive contribution to a positive digital presence, respondents noted the potential for reputation and image management, creative expression, learning support, digital literacy, social community building and the broader capacity for digital skill building that comes with online activity:

written literacy versus new multimodal literacies: many of the literacy strengths of this group are possibly not measured in current academic terms, the extent to which games are building conceptual skills in spatial reasoning, problem solving, etc.

The scope of how digital footprints are generated was noted as an issue, especially in reference to passive digital footprints – data you don’t actively choose to put online, but which contributes to your digital footprint (Hengstler, 2011) e.g. “parents’ photos”, “Facebook photos, whether children have given permission for this data to be shared”. For some respondents, the children and young people’s lack of control over their digital footprint was the most serious issue.

The final theme identified was the issue of children’s and adolescents’ developmental stages. Many respondents noted children’s lack of understanding, stating: “Children are too immature to take a long-term view of the potential long-term consequences of their online actions”; and “too young to fully understand the implications of online”. Adolescent development was likewise described as being an issue:

Young people are not aware of the potential consequences of logging into new platforms such as AskFM using their Facebook profiles and are not as savvy as they could be with regards to the fact that it is virtually impossible to anonymise their actions online. They are often immature, impulsive, hormonal, labile, occasionally under the influence of substances such as alcohol or emotion (!) and are not consciously creating a digital footprint that will enhance their employability not inhibit it.

## Education for digital footprint management

Respondents were also asked about key aspects for education: what educators and students should know; possible pedagogical approaches for students and parents; and who should be responsible for digital footprint education. The responses suggested holistic approaches would be the most appropriate and that digital footprints are a societal problem for which there should be collective responsibility. Key themes about educational knowledge, approaches, and responsibility are summarised below in Table 1.

**Table 1.** Key themes for educating about digital footprint management

<p><b>Teachers should know</b></p>	<ul style="list-style-type: none"> <li>● How to model good digital citizenship</li> <li>● School/Departmental policies</li> <li>● How their students are using digital technologies</li> <li>● How to curate positive digital footprints</li> <li>● Risks and ethics of digital participation</li> </ul> <p>What is appropriate for the learners in their care</p>
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**Table 1.** Key themes for educating about digital footprint management

<p><b>Students should be taught</b></p>	<ul style="list-style-type: none"> <li>• Digital citizenship/digital literacy</li> <li>• Privacy, safety and data management</li> <li>• Digital curation</li> <li>• Implications of longevity</li> <li>• Ethics of digital life</li> </ul>
<p><b>Pedagogical approaches for students</b></p>	<ul style="list-style-type: none"> <li>• Case studies – with examples of good and bad footprints</li> <li>• A “digital selves” well-being approach</li> <li>• A digital game based approach</li> <li>• Students “googling” themselves</li> <li>• Critical discussions</li> <li>• Embedding this information in the curriculum</li> <li>• Workshops (also with parents and carers)</li> </ul>
<p><b>Educational approaches for parents/carers</b></p>	<ul style="list-style-type: none"> <li>• Information sessions at schools</li> <li>• Online learning</li> <li>• Brochures/newsletters</li> <li>• Community education and media campaigns</li> <li>• Case studies – with examples of good and bad practice</li> </ul>
<p><b>Whose responsibility is digital footprint education?</b></p>	<ul style="list-style-type: none"> <li>• Teachers, Schools</li> <li>• Home, Parents/Carers</li> <li>• Universities</li> <li>• Employers, Corporate sector</li> <li>• Government</li> <li>• Social media providers</li> <li>• Careers professionals</li> </ul>

## For Practice: What does this mean for education for positive digital footprint development?

Given that Australian children and adolescents are such prolific users of the internet, but the guidance that they get from home is uneven and divided along SES lines (Dolan, 2016) it is important that they receive guidance from schools. The end goal is students being able to curate their own positive digital footprint. As they work toward this, teachers can help students build

upon their existing knowledge in ways that allow for safe and positive online participation. As Australian children and teens spend so much time online (ACMA, 2016), many students have a knowledge base that can be productively built upon.

Children in the latter years of primary school (Stage 3) and beyond could be taught that while it is appropriate that some online activities be private (communications with friends, for example), not all that they do online needs to be hidden. They could be taught that some digital artefacts, such as those that demonstrate their interests, achievements and skills could be both public and identifiable. Digital artworks, stories, school projects and awards would be examples of things that would be appropriate to have attributable to them. Teaching children to curate their achievements and aspects of their digital identity would prepare them with the skills needed to maintain a positive online presence. Stage 3 marks the time when many children start using social media (Holloway, 2014) and so would be an appropriate time to teach children about both the positive and negative aspects of their digital footprints.

A positive digital footprint is not merely an online or digital CV. It is a way of conceptualising online presence which emphasises the importance of that presence being coherent, positive and purposefully created. It is a set of skills, including communication and curation, that reframe a digital footprint from something to be avoided to something that individuals have some control over. A synthesis of the experts' views on digital footprints and educational approaches yields guiding principles for digital footprint management education. Such education should incorporate:

- Age/stage appropriate guidance
- Existing pedagogical models and curriculum outcomes
- Ethical communicative norms
- A community based approach

## **Age/stage appropriate guidance**

Suggesting that children and young people be taught to develop a positive digital footprint doesn't mean that everything that they do online be public. Children have been shown to have strategies for managing their digital footprints, by striving to minimise them (Buchanan et al., 2017). Direct messaging their friends for private conversations, maintaining password integrity and not making public their addresses nor birthdates are all appropriate management strategies. Also appropriate is the use of pseudonyms, which teaches children how to maintain a stable digital identity - a useful skill for when it becomes suitable for older teens to use their real names online. Digital footprint management education should be conducted in an age/stage appropriate manner so that children are scaffolded in the development of their reputational management skills. The ability to maintain their digital footprint in a positive manner is something to work towards, rather than being a starting point. Just as children's online activities change as they get older (Livingstone et al., 2011), so too should the guidance they are given.

## **Use existing pedagogical models and curriculum outcomes**

The Australian Curriculum has been characterised as being "overcrowded" (APPA, 2014) but digital footprint education need not be thought of as yet another thing that has to be added in. A positive digital footprint is a concept that could be productively incorporated into existing technology-focused curriculum outcomes in a variety of KLAs. Teaching students to create a digital footprint addresses several of the ICT general capabilities as outlined in the National

Curriculum (see Figure 1). A well-curated positive digital footprint demonstrates the ability to: apply social and ethical protocols and practices when using ICT; manage and operate ICT; to communicate with ICT; and to create with ICT.



Figure 1. General capabilities: ICT capability  
(from ACARA, n.d.b.)

Likewise, pedagogical models such as the QTM (NSW DEC, 2003) and Project Based Learning (Larmer & Mergendoller, 2010) have scope for digital artefacts to be designed and assessed. These could be used to showcase students' digital skills and demonstrate the general capabilities of investing and creating with ICT.

## Ethical communicative norms

Digital footprint management goes beyond meeting the legal obligations of protecting children, following the code of conduct, and complying with computer usage policies. Most schools are not only fulfilling these legal requirements but are educating their students about cyber safety. Education for the development of a positive digital footprint doesn't finish at teaching students what they cannot do but builds productively on this by letting them know what they can do to develop an online presence that will be an asset to them in the future. This represents a shift from a model based on compliance to one based on ethical management.

Luke et al. (2017) state "the educational challenge raised by digital culture is not one of skill or technological competence, but one of participation and ethics" (p. 251). A digital footprint is not just a record of digital artefacts attributable to an individual. Not only posts but also comments on social networking sites, YouTube clips, news articles, reviews, and gaming chat are all a part of an individual's online presence. This communicative aspect of a digital footprint also needs attention. Children and young people should be taught to communicate and participate online in an ethical manner. In this way, they can be taught to build their online presence in a manner that demonstrates good digital citizenship.

## A community based approach






There are a variety of parental and carer approaches to children's and teens' use of digital technologies (Livingstone et al., 2011). While some parents and carers are happy for their children to have a visible online presence, others prefer that their children not be online. Likewise, not all children like others (schools and parents, for example) contributing to their digital footprints (Buchanan et al., 2017). If teachers and schools seek to make a determined effort to build positive digital footprints for and with their students, they would need to ensure that the school community, including parents and carers, are comfortable and can understand the potential advantages that a proactive positive approach brings.

## Conclusion


One of the respondents wrote of "the immediacy and longevity of digital engagement". Consideration needs to be given as how to best educate for digital footprint management so that these features of immediacy and longevity become assets rather than liabilities for students. This is not to claim that positive digital footprint education is not already happening in schools, but with this issue there are opposing perspectives. We present the findings from a survey of experts to inform teachers and give them options for the development of their practice in this area. While the experts make clear that there are negative aspects that must be attended to when considering digital footprints, there is also the opportunity to teach students how to build a positive online presence that can benefit them into the future. Such an education would turn Australian students' advanced internet usage into an asset rather than a liability.

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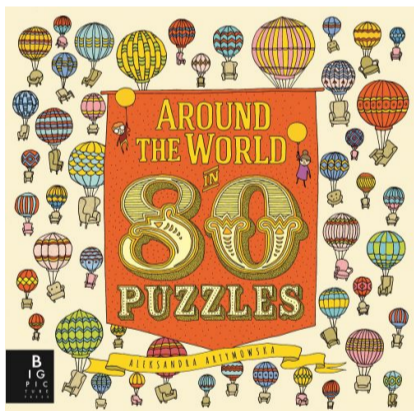
## SPaRK - Around the World in 80 Puzzles

By [June Wall](#) - Library Coordinator, Learning Systems.

### Resource overview

A Shared Practice and Resource Kit (SPaRK) for geography Stage 3 and science and technology Stage 3, Years 5-6.

'Around the World in 80 Puzzles' by Aleksandra Artymowska, Big Picture Press, London, 2017.



Puzzle books are always of interest to children and this one uses the storyline of a famous novel by Jules Verne as a background to the puzzles. Journeying around the world in a range of vehicles, with questions posed for the reader, provides an interactive and fun way to solve the puzzles. By re-reading the book, children can challenge themselves and find out more.

### Educational significance

Students learn through inquiry and curiosity. This book allows students to follow inquiry lines and curiosity through the travels of a small boy who starts his journey with a balloon.

### Suggestions for using this text


There are many ideas in this book, such as journeying to another country and the building materials and engineering associated with travelling from one place to the next. The book could be used as a catalyst for an inquiry unit in either geography or science and technology. It could also be used to stimulate curiosity and inquiry for an independent research project using the inquiry process.

While this SPaRK does not outline visual literacy ideas, the book could also be used with younger students for pattern recognition. Additionally, it could provide inspiration for older students creating their own journey using images and clues.

Initially, share the book with the class to stimulate curiosity. Ask questions such as:

- What strategy could you use to find the end of the path on this page?
- How else could the little boy travel to this country?
- What do you know about this form of transport?
- What do you know about this region or country?
- If you don't know something, how do you find out?

## Teaching activities

For the purpose of this SPaRK, The [Murdoch inquiry process](#)  has been used and matched to the NSW Department of Education [information process](#). You may select one of the following topics and related syllabus outcome or you may divide the class into 4 groups (self-selected) for each group to work on one topic. An inquiry model of learning aligns with the geographical skills of:

- observing, questioning and planning
- collecting, recording, evaluating and representing
- interpreting, analysing and concluding
- communicating
- reflecting and responding.

In science and technology, Stage 3 students investigate by posing questions, including testable questions, making predictions, and gathering data to draw evidence-based conclusions and develop explanations. The following inquiry process allows both geography skills and science and technology skills to be integrated within a framework of curiosity.

## Tuning into students' thinking or the Define stage

Using an inquiry model of learning, brainstorm questions from the book about:

- other countries and cultures
- transport methods – best ones to use
- types of materials used in getting from one place to another
- problem solving – how are the puzzles solved?

## Finding out or Locate stage

Students explore the selected topic to discover their burning questions – for all in the group to answer. They will need access to the school library and online resources, as well as any local expertise within the community.


## Sorting out or the Select and Organise stages

Locate and record information based on questions developed. Download a sample [notetaking template](#) [13 KB] for students to record information as a group.

## Going further

Re-visit found information. Each student develops a burning question that he/she is interested in and can research further. Each student needs to check in with the teacher to justify their question for further research.

## Synthesising and reflecting

As a group, share information or data and develop conclusions or ideas to move forward. Use a collaborative tool such as [Google docs](#)  or a wiki to capture whole group and individual information.

## Acting and applying or the Present stage

Present information as a group. This may involve, for example, developing a prototype of a transport form, creating an experiment in materials or an algorithm for solving puzzles, or digitally presenting a country's geographical perspective.

## Assess stage

Students complete a journal entry about what they learnt, liked and could investigate further.

## Syllabus links



Geography K-6

- GE3.1: A student describes the diverse features and characteristics of places and environments.
- GE3.2: A student explains interactions and connections between people, places and environments.
- A diverse and connected world. Connections shape perceptions:
- Students investigate how connections influence people's perception and understanding of places, for example (ACHGK036) identification of factors that influence people's perceptions of places eg media, culture, education, travel.

Science and Technology K-6

- ST3-14BE: A student describes systems in built environments and how social and environmental factors influence their design.
- Social and environmental factors influence the design of built environments.
  - Students develop designs and solutions to meet specific social or environmental needs of users, eg an energy-efficient building or high-traffic airport terminal/train station.
- ST3-2DP-T: A student plans and uses materials, tools and equipment to develop solutions for a need or opportunity.
- ST3-3DP-T: A student defines problems, and designs, modifies and follows algorithms to develop solutions.

## Experimenting

Inspired by the puzzles from the book and [BrainBashers](#) , students could work in pairs to develop a simple game on [Kahoot](#) . All student puzzles could then be collected as one Kahoot activity.

A geography focus for this task could involve using the puzzles that show regions or countries as the catalyst. Then ask students to create a game, giving them some questions to answer:

1. How is this region represented in the media?
2. What are 3 main points of culture for this region?
3. How would you plan a trip to this region?

A science and technology focus could involve students designing a flowchart of one puzzle, showing the problem and a solution. Ask students to represent this graphically.

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