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A library in your hand: Resources for meaningful play and early literacy

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Public libraries provide both online and offline spaces where families can explore reading and early digital literacy. Many public libraries provide a range of digital resources to their members, which can usually be accessed through the library's website. In addition, some libraries offer regular programmes or activities which give children, families and educators access to digital devices or resources.

For library members with access to the internet, most of Auckland Libraries' Digital Library is available outside of the library setting and can open up a range of opportunities for families and early childhood educators to play and learn with stories and images, words and animation. Staff at Auckland libraries are also continuing to explore new ways to engage children who take part in regular library pre-school programmes, by utilising new digital devices and resources.

This paper examines the resources for young children in Auckland Libraries' Digital Library which are accessible by library members with internet access. The paper will also share details, opportunities, and learnings from some of the library pilots developed to use a range of digital tools and applications in library programming for children, families and educators, including collaborations with third party providers. The library programmes described are typically attended by library members but are also open to non-members visiting the library.

Auckland Libraries' Digital Library:
http://www.aucklandcitylibraries.com/digitallibrary.aspx

Introduction

Auckland Libraries is guided by its ten-year strategy, *Te Kauroa – Future Directions*, which aims to focus on providing members with digital resources that are as accessible as possible. A second key focus area for Auckland Libraries is to work with *whānau*, carers and educators to strengthen family literacy and to support and stimulate imagination, creativity and learning for young children. Where these two focus areas meet there is a wealth of opportunity to provide resources and library activities that build family digital literacy and that allow children and *whānau* to explore new technology and tools.

Auckland's 55 public libraries provide a range of free programmes to pre-schoolers and their families, including story times and a Wriggle & Rhyme, a programme developed in partnership with Sport Auckland to promote active movement for early learning. These programmes are regularly offered in the libraries themselves, but also by librarians who take the library out into the community through visits to ECE centres, through pop-up story times in parks and public spaces. Additionally, partnerships have resulted in Wriggle & Rhyme sessions at Auckland Zoo, local parenting hubs as well as at the Auckland Women's Regional Corrections Facility. Sessions such as story times are very adaptable in format and are readily able to incorporate digital elements.

As well as regular activities, the libraries provide physical resources such as parenting collections, picture books and board books, and digital resources which include e-books, e-magazines and multimedia story collections. Most of these digital resources are freely available to library members with internet access through the library website, 24 hours a day. My paper gives an overview of the kinds of free digital content and resources accessible to library members, with a focus on three resources aimed at pre-schoolers and their families and educators; OverDrive e-books, Bookflix and Tumblebook Library. I will also discuss the use of technology within pre-school programming at Auckland Libraries, and some of the learnings shared by library staff.

Overdrive:
http://www.aucklandcitylibraries.com/DigitalLibrary/resourcepages/Downloadable-media.aspx

Bookflix:
http://www.aucklandcitylibraries.com/DigitalLibrary/resourcepages/BookFlix.aspx

Tumblebook Library:
http://www.aucklandcitylibraries.com/DigitalLibrary/resourcepages/tumblebooks.aspx

Universal access principles

Auckland Libraries seek to apply three universal access principles to library services, programmes and resources. These principles help to shape choices about what the libraries offer, and can be a useful lens to use when looking at assessing technology for use with pre-schoolers and families.

1. Is the technology or resource *accessible*? Does it work on a range of devices and on a variety of technical set-ups with minimal barriers: for example - cost, network speed required, times of availability? Accessibility can be a major limiting factor with technology, whether it be the type of computer or device needed to use resources or content; prohibitive pricing; or something that requires people to be in a specific location to use.

2. Is the technology or resource *understandable*? How simple is the interface to use? Is it something that can easily be figured out through trial and error? Are there aspects that children themselves can have a go at, as they're learning to become users of technology?

3. Finally, is the technology or resource *appealing*? Will it look like fun and be attractive to pre-schoolers and their families? Will it make early learning fun and be engaging giving library members a positive experience?

The Digital Library

Auckland Libraries provide communities with free access to technology in its public spaces; this includes the provision of free wi-fi in all 55 libraries, as well as public computer systems with internet access and a variety of software installed. Libraries are also starting to explore potential methods for offering a range of devices, such as tablets and e-readers, for public use within the library. Pilot ideas have included leaving tablets with pre-installed apps out as free-play devices or running *whānau*-centric learning sessions. Some library staff have been introducing tablets into their regular story times as well.

Digital access is also provided through the Digital Library, a virtual collection of content and resources accessible via the Auckland Libraries website. With library membership, internet access, and a compatible device, most of the resources in the Digital Library are available 24 hours a day. All of the resources are accessible in the library during opening hours, and most are also available from home, from an ECE centre, or from a mobile device. A small number of resources are not accessible outside of the library due to vendor restrictions. When it comes to providing resources for pre-schoolers and their families and educators, there are two main collections available in the Digital Library: e-books, and subscription-based e-resources for children.

E-books

Following the global rise in the publication of digital content, e-books, e-magazines and downloadable e-audiobooks are an increasing part of the library's collections, with thousands of library titles available freely online to members with internet access. There are hundreds of digital picture books and early readers available to borrow, which can be read on a computer, tablet or mobile device. This digital content is provided to library members through multiple vendors via proprietary online platforms, all accessible through the Digital Library and each has a different range of authors and titles available.

OverDrive is one of these platforms, and it offers the largest range of children's picture books in digital format: around 470 titles and growing. Library members are able to browse and borrow from the OverDrive children's collection of e-books and e-audiobooks, downloading digital content to a computer or mobile device; or, with some combinations of file format and computer or device, reading through a web browser.

E-books can be great resources for adults and children to explore together. The benefits of shared book reading by adults and children have been well-established, and include the promotion of oral language skills, vocabulary growth and phonemic awareness (Sim & Berthelsen, 2014). As well as offering a different set of book handling skills as children learn to navigate a digital

interface, e-books allow the same potential for shared book reading as more traditional print publications.

Children's e-resources

While the e-book collections are essentially very similar to print picture books in a different format, a second type of resource in the Digital Library makes more use of multimedia content and the interactivity that the digital format can offer. These resources are accessed through the category *Children's e-resources*, and include Scholastic BookFlix and TumbleBooks.

Scholastic BookFlix is an online literacy resource that offers paired books focussing on a range of different themes, with one fiction and one non-fiction title in each pair. It is designed to build a love of reading in children, and it is a strength of the product that it includes both fiction and non-fiction, enabling children to find their personal connection to reading and literacy in multiple ways. BookFlix allows families and children to explore and engage with scientific enquiry about the world around them, as well as fictional stories.

BookFlix uses a mixture of animation, read-aloud functionality and interactive games to offer different experiences around reading and literacy. BookFlix has nine overall themes, such as 'Animals and Nature', and within each theme there are multiple pairs of fiction and nonfiction titles. Each fictional story is animated and read aloud, and can be watched over streaming video. Each non-fiction book is in a flip-book format, with a read-aloud option. Key vocabulary is highlighted and linked to spoken definitions. In addition, some pairs are linked to educational games that follow a similar topic and further web links for more exploration.

TumbleBooks provides access to a collection of animated, talking picture books and non-fiction, including maths stories to help with early numeracy. The books are aimed at a range of ages and abilities, and can be sorted by reading level.

Users of TumbleBooks have the choice between two options: having the book read to them via a recorded voice, or reading the book themselves. These choices allow for adults and children to explore TumbleBooks together at their own pace and in their own way. Once a title is selected, the user can play it through an interface that lets them turn the narration on and off, and switch the option to turn the title's pages from automatic progression through the story to manual control. Some of the books also offer links to interactive games and puzzles based on the content of the stories, for building memory and literacy skills.

TumbleBooks storytimes

The staff at Blockhouse Bay Library have been using TumbleBooks on a tablet alongside more traditional print picture books as part of their regular pre-school story time. The children's librarian described the interactivity as excellent for gaining and holding children's attention, especially if there were story elements that they could touch and cause to move. She valued the stories on tablets as an excellent tool to help develop behavioural skills, such as turn-taking. The high

desirability of manipulating interactive story elements or advancing the story helped motivate children to engage with turn-taking:

> I use the eBooks to encourage mat skills (i.e., waiting for your turn, putting up your hand, etc.) to come up the front and interact with the animations or press the button to turn the pages. When I first do digital story times with pre-schoolers they are all about charging up the front and clicking everything but as time goes on it's more about turn taking and waiting to be chosen. (Blockhouse Bay Librarian, 2014)

Having delivered story times both with and without narration turned on, she had a preference for using TumbleBooks without the narration, describing some children's tendency to disengage from the story and become passive listeners, as they might in front of a television. She also cited children's lack of familiarity of the American accents used in TumbleBook narration as a barrier to comprehension for some children.

Conversely, she found that reading the story aloud to the audience allowed for more connection with the story, the audience, and herself, and created opportunity for valuable discussion between adults and children. An additional recommendation was the use of a projector for larger audiences, to avoid children not being able to see the small tablet screen.

After story times, she offered the opportunity for children to hold the tablet and explore the story for themselves, or to find other stories that drew their attention. As a result, she reported:

> It was cool to see how their understanding *[of how to interact with the technology]* evolved from being really apprehensive at first to being confident enough to grab and experiment. (Blockhouse Bay Librarian, 2014)

Imagistory

Story times at Auckland Libraries have also drawn on free or low-cost non-subscription digital resources, such as the locally-made app 'Imagistory'. Created by Auckland-based developer Nick Barratt, Imagistory offers wordless picture books in a digital format, with additional functionality that allows children and adults to create and record their own narration. Recorded stories are saved for later playback in a library on the device. The app itself is free and installs with two free picture books, although subsequent books come with a small cost for those libraries choosing to use additional stories, or to library members who decide to make personal use of the app and are looking for additional content beyond the installed titles.

Trials of Imagistory demonstrated the value in piloting a new digital resource using different types of session structure, with the involvement of the developer present. While Imagistory was in development, Nick Barratt visited Waiheke Library to trial the app with the children's librarian at a story time session. A small regular group from a local ECE centre visited for the story time, which also included casual attendees who were visiting the library at the time.

The structure of the story time was based on a traditional print story time, with the librarian holding the iPad up to show the children as she would with a print book. She began with a printed picture book that invited the audience to call out choices and answers to questions, to encourage them to respond verbally to what they were seeing and hearing. She then took the children through two wordless picture books on Imagistory, showing them the images and inviting them to discuss what was happening and what might happen next. The recording feature was not used during the story time, though the children's librarian discussed this feature with teachers and parents afterwards.

In a pilot session at another Auckland branch, the staff at Birkenhead Library sought the developer's permission to print enlarged single pages from one of the Imagistory picture books and displayed them during the school holidays. Children of all ages were invited to write or orally dictate their own sentences about what was happening in the pictures. At the end of the holidays, library staff gathered up the sentences and made a print-based collaborative picture book from them. They coupled this print activity with one-on-one recording sessions, with any children who were interested in recording a story on Imagistory, allowing families to explore the app together.

A third location, Highland Park Library, used a mix of the two approaches. After getting the children started with an interactive print story session, they used Imagistory on an iPad projected onto a screen and asked children to call out what they thought was happening. Afterwards, they took children for one-on-one sessions where they could record their own versions of the story. The children's librarian reported that most children wanted to try telling a story more than once as their confidence grew, and their stories grew more linguistically complex. The librarian said:

> This is such a great tool for kids' imaginations and to help them learn about storytelling. A child's narration of a story would change if they had already gone through all the pages and knew what was coming next – they were learning to adapt their storytelling style to not give away what was coming up, or to set up the story in a different way. (Highland Park Librarian, 2014)

One very useful aspect of Imagistory is the ability for families to tell, record and share stories in any language; at Highland Park Library, one boy was able to record the story in Korean, for example.

Hello Ruby

As well as using technology and new devices to tell stories that have traditionally been told orally or in print, non-digital media can be used to help children learn about new technologies, and to build the cognitive skills that are useful when thinking about and creating digital resources. Linda Liukas, a Finnish coder and author, is currently working on a picture book called *'Hello Ruby'*. With prior experience in teaching coding to young children, she is interested in building skills and knowledge about the basic ideas that underpin computer programming, through a picture book story with exercises.

As her project has developed, Liukas has shared related resources online (http://www.helloruby.com/), including a plan for play-testing some of the ideas behind computer and game design with pre-school children. Her play-test resources are paper-based, and involve children thinking about and discussing both the parts which can come together to form a computer – for example: a screen, something to type on, a brain to think with – as well as what the children like to do on computers, and what they might like to do in the future. The play-test session she provides, gives children the chance to dream of the future, to invent, and while the content is very much focussed on technology, the activity only requires paper and scissors and crayons.

Liukas has been providing updates on the content of her picture book that demonstrates a similar mix of new ideas and technology and the use of older, more traditional methods of passing on technological learning. Activities include using a dance party to teach the concept of 'looping' in programming, and a paper doll that will teach the basics of Boolean searching.

colAR Mix and augmented reality

colAR Mix is another app that was developed in New Zealand and has been widely used in public libraries across the country. The app's name references the act of colouring in that forms part of its use, while the AR stands for *augmented reality*, defined by the Oxford Online Dictionary (http://www.oxforddictionaries.com) as: 'A technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view' (Oxford Online Dictionary, n.d.). colAR Mix offers a range of images for colouring in – some free and some at a cost – and includes local New Zealand content such as pukeko and kea images. Children print out and colour in the pictures on paper; when they view the pictures through a tablet's camera using the app, the images stand out in 3D displaying the colours that the children have applied and animating the images in pre-programmed ways. The camera on the tablet can then be used to photograph the children with their 3D, augmented reality creations to create a composite image of the real and digital world.

Auckland Libraries staff typically use colAR Mix as a fun, engaging activity that builds excitement amongst young children as their pictures come to life. Some library staff also reported that, because augmented reality is still a new development for many, colAR Mix offers an excellent opportunity to share new technology with whānau or teachers who attended story times. They believe apps such as colAR Mix give adults and children alike the chance to explore one possible evolution for printed book content. A session with colAR Mix can easily be coupled with shared learning about e-books and animated picture book resources such as TumbleBooks, for example.

Auckland Libraries has several borrowable print children's titles with associated augmented reality content. Titles such as *'iDinosaur'* and *'iSolar System'* (Carlton Books) work with tablets or mobile devices via a free app, offering a mix of free 3D, animated content and additional content that is available through in-app purchases to the library member borrowing the book and installing the app. Aimed at slightly older children, Shirin Yim Bridges' '*Horrible hauntings: An augmented reality collection of ghosts and ghouls*' shows a selection of historical

ghosts and figures from urban myth that allow for limited interactivity through the tablet's touch-screen. Other titles in the library collection draw on popular culture favourites such as Disney princesses, Ice Age or Moshi Monsters, and require a computer and a webcam to come to life.

Learnings

When offering library activities involving new technology to young children, staff at Auckland Libraries have learned the power of collaboration. Through conferences and *hui*, mailing lists, social media and through formal and informal professional networks, librarians talk to other librarians. Many public libraries in New Zealand are facing similar challenges and learning curves while exploring the same technology and changes to traditional models of publishing. When a library staff member from Christchurch City Libraries demonstrated the colAR Mix app at the Auckland Libraries' Children's and Youth Hui a couple of years ago, or another staff member ran training sessions on delivering digital story times to pre-school audiences, librarians become empowered to continue to share their new skills. The more libraries and librarians can share learnings and skills, as well as recommended resources and innovative ways to use them, the more confidence and familiarity grow and the more ideas and tools librarians and library members will have access to.

When thinking about collaboration, libraries and librarians have learnt the value of looking beyond the library industry, identifying potential partners who may be interested in sharing the path to similar outcomes such as school readiness, or creating more equitable access to technology or building digital literacy with children and *whānau*. As well as creating connections with local organisations and developers, libraries' expanding their interface with the internet offers the ability to connect with people and resources from across the world. Initiating relationships with resource creators can also be a good way of experimenting and exploring what's possible, and even helping shape the kind of resources that are created. Developers, educators and resource creators often welcome feedback and may be open to sharing technological ideas and resources for low cost, or for free.

Other learning has focused on finding new digital resources and on their use in designing and running activities for young children. As well as the e-books and subscription-based resources in the Digital Library, as outlined above, there are many free or cheap apps and browser-based tools available. Library staff can identify potentially useful apps and other resources for use within library activities through conversation with other practitioners; through websites, journals, blogs or columns that review digital resources; through crowd-funding sites such as Kickstarter (http://www.kickstarter.com) that profile innovative projects while still in the development phase. As the librarians' experience with apps and online resources grows wider, they will increasingly be capable of making recommendations to library members.

Conversation and interaction are the keys to gaining the maximum benefits from digital resources. Technology can be a wonderful tool to excite children about learning and literacy, as it enables children and adults to have conversations that build language skills and understanding. New resources can stimulate discussion, imagination and creativity, but sessions ideally should be structured

in such a way that children are not merely a passive audience but where interaction is encouraged.

It has been useful to discover that there are multiple ways of using any digital resource, depending on the size of a group of children, the technology available, or the level of interaction and exploration desired. As with the Imagistory examples, different staff may bring entirely new approaches to the same piece of technology or the same digital tool, and most resources are adaptable enough to bring different sets of benefits when used in different ways. Sharing the learnings about how a session was structured and what the outcomes were will be helpful in making the best use of new resources.

As well as using digital resources in multiple ways, there can also be benefits in mixing up digital and non-digital resources and play opportunities. It can be as fun and relevant to learn digital skills with toys and words and paper and dance as it is to explore on a tablet, computer or other device. Learning can take place in many ways.

Lastly, as with any programming of events and activities for young children, when libraries volunteer to be a pilot site for something new, or to become a play-tester, both the libraries and their patrons enjoy mutually valuable benefits. Testing new digital resources has allowed staff to learn more about what works well with their local community and to try adapting sessions, searching for new resources accordingly. Libraries have also learned that it is not essential that they themselves know every aspect of a new resource in order to use it with children. Rather, they can learn enough to get activities started and then learn alongside children, or allow children to take the lead in how a resource might be used.

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