'What is the impact of the South Auckland Geek Camps in developing young people's confidence in the application of their digital competencies?'

by

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3.   Abstract

Auckland Libraries is the largest public library system in Australasia. Mangere Town Centre Library, a community library located in South Auckland, embarked on a journey to reposition itself as an innovative digital space in 2015, working collaboratively with NGO *Accelerating Aotearoa* to deliver a series of community digital events called Park Jams and Geek Camps.

NGO Accelerating Aotearoa has delivered Geek Camps in Mangere, Otara, Manukau, and Clendon over the past four years. "Geek camps," are essentially makerspace sessions where young people have the opportunity to engage with digital technology and are inspired to think about the possibility of a future career in the digital field.

This qualitative research examines the impact of these South Auckland Geek Camps in developing young people's confidence in the application of their digital competencies. Research methodology consisted of two semi-structured interviews

conducted with six purposefully selected intermediate-aged students before and after a Geek Camp, together with observations of the participants at the "Geek Camp" and the "Celebration of Learning" event. A content and thematic analysis of the interview transcripts, and responses from a Likert Scale questionnaire, supported by student observations, confirmed that students' digital confidence levels grew, as a result of attending a Geek Camp, and the newly acquired digital skills were likely to be applied in the future.

Keywords: Libraries, Digital literacy, makerspaces, young people, learning, confidence

4. Introduction

Libraries are the heart of many New Zealand communities. Traditionally they have been a place where families have accessed literature to support pre-school literacy development, a place where reading can be nurtured through a generous and diverse book collection, and a space to connect with others via regular programmes, services and events that are offered.

In recent years there has been an increase in demand for computer access and digital learning support, particularly at libraries across South Auckland. According to the 2013 Mangere-Otahuhu Local Board Quick Stats, for example, 62% of the people who live in that area do not have access to the internet at home (Statistics NZ, 2013), indicating that over a third of the households in the catchment have limited or no access to the internet.

As a way to assist bridging the growing "digital divide," the Mangere Town Centre Library Manager was keen to explore new and innovative ways to connect meaningfully with their community members through the provision of "maker space" programmes and events,." Wikipedia describes makerspaces as locations where people with common interests can meet to collaborate, build and make things. A well-known advocate of Makerspaces, Lauren Britton, endorsed makerspace programmes because they "give people the opportunity to see the world around them differently, to explore and imagine new possibilities for a future they help to create" (Britton, 2010).

Towards the end of 2014, founder and CEO of *Accelerating Aotearoa*, Judith Speight, was introduced to the Mangere Town Centre Library Manager and a few months later in April 2015, the opportunity for the library to host a community digital event became a reality.

At the "Mangere Park Jam" event, visitors to the library and surrounding environs can observe and participate in a range of digital workshops that are delivered by *Accelerating Aotearoa* and their collaborative partners, alongside Auckland Libraries staff. NGO *Accelerating Aotearoa* is an organisation that "focuses on increasing digital capability where it is most needed – in under-served communities," as stated on their website.

The library's central location to four Primary schools, two Intermediate schools and one Secondary School, makes it an ideal and accessible location for people to participate in free programmes that could enable digital literacy acquisition. Author of "The atlas of new librarianship," refers to the core mission of the library in the following quote:

Knowledge, its facilitation and dissemination, is the business of libraries" (Lankes, 2011).

Zurinski also supports this notion when he said that "libraries are encouraged to be the centre of community life, going beyond traditional services, to be community builders and places where people get involved" (Zurinski, 2013)

Community digital events like Mangere Park Jam event and the "Geek Camp" for young people help to reposition the library, and enabling it to become a community space where access to digital technology is provided, participation around new technologies is encouraged, and the dissemination of ideas and inspiration for future generations of library users is possible.

4.1. Topic Statement

Maker spaces in libraries are a growing world-wide trend (Peppler & Bender, 2013; Ginsberg, n.d.; Wong, 2013. The "Maker space Playbook School Edition, 2013 contains a useful definition, not only emphasising the value of the personal interaction between the learner and the expert, but also aspect of the making.

"Maker spaces serve as gathering points where communities of new and experienced makers connect to work on real and personally meaningful projects,

informed by helpful mentors and expertise, using new technologies and traditional tools. " - Maker Media (2013)

This study investigates the impact of the makerspace called "Geek Camp" which was delivered at Mangere Town Centre Library in August 2016. The Geek Camp programme for young people is delivered collaboratively with the *Accelerating Aotearoa* team and their partners, volunteers, and the support of Auckland Libraries staff across the library network.

The focus of this research is to qualitatively evaluate the impact of the "Geek Camp" in developing young peoples' confidence in the application of their digital competencies.

4.2.   Problem Statement

"Research shows that in large urban centres people do not die from lack of food; they die from lack of opportunity. This is what leads them to criminality, violence, and drug trafficking. Information technology provides a tool for breaking the cycle of poverty and misery. Knowing how to use a computer substantially increases chances of competing in the job market."

(Digital Transformation: a framework for ICT literacy, p 13)

Seeking to enhance the Mangere Town Centre Library's profile in the community, the library successfully hosted two community digital events called "Park Jams" in April and November, 2015, in collaboration with the NGO *Accelerating Aotearoa* team, Auckland libraries staff and volunteers. More than two thousand people visited the library for the April Mangere Park Jam, and twice as many visitors attended the second Park Jam in November. These significant visitor numbers confirm that there is a strong interest in digital technology within the community.

Following the "Park Jam" events a "Geek Camp" is organised for intermediate-aged students. A web article published on the Auckland Library website entitled, "Libraries help accelerate digital dream of Auckland Kids," provides an explanation of what a "Geek Camp" is:

"Geek Camps are designed "to ignite young people's educational success by providing opportunities to explore digital creativity and develop digital skills"

(Jacob & Buchan, 2015)

The activities offered at a "Geek Camp" include robotics, coding, augmented reality, animation, movie-making, gaming and music labs. Lauren Britton, author of "The making of maker spaces," says about makerspaces that:

"Maker spaces" promote learning through play; have the potential to demystify science, math, technology, and engineering; and encourage women and under-represented minorities to seek careers in those fields."

(Britton, 2012)

Two Geek Camps were delivered in the library during 2015. Thirty-four young people attended a two-day Geek Camp in the library during the April school holidays, after the Park Jam event. The second Geek Camp in November had more than 60 students in attendance, and took place over two consecutive Thursday nights in the library. At the end of each "Geek Camp," participants prepare a digital record of their learning which is "show-cased" at a special "Celebration of Learning" event. Positive feedback has been received from the students who have attended these "Geek Camps" over the past four years.

While it is evident that the students attending the Geek Camp have fun engaging with a range of digital technologies, do the students actually learn any digital skills that will be useful to them in the future?

There has been no formal research on the educational value of the "Geek Camp" programme, pioneered by NGO *Accelerating Aotearoa*. Founder and CEO, Judy Speight, has given her support for this research project and permission was obtained from Auckland Libraries to conduct the research project in the library, for the purpose of evaluating of the impact of the South Auckland Geek Camp in developing young peoples' confidence in the application of their digital competencies.

This research will contribute to the body of knowledge about "maker spaces" and provide useful information for library managers who are contemplating the addition of a

"maker space" programme to enhance their current library offer, from a New Zealand context.

Given the significant capital expenditure and the staff training required to deliver makerspace programmes, this research will provide useful information for the library governing body regarding the holistic value of "Geek Camp" makerspaces.

> *"Undoubtedly, one of the most vital elements in preparing the young to meet and cope with questions that cannot now be foreseen is this: unless people are willing to face the unfamiliar they cannot be creative in any sense, for creativity always means the doing of the unfamiliar, the breaking of new ground. It is from this creative element, which we should be stimulating now, that all the new ideas of the future will come."* Eleanor Roosevelt

5. Literature Review

5.1 Introduction

This literature review has been separated into three sections to provide a contextual framework to inform readers as to where this research will sit within the existing body of knowledge about makerspaces in libraries. The first section examines research on makerspaces and the value they can contribute to libraries, followed by literature demonstrating the positive connections associated with digital literacy and makerspaces, and lastly literature exploring methods that have been employed to evaluate student confidence and competency when it relates to digital literacy acquisition.

5.2 Benefits of maker space programmes

For communities with limited or no access to the internet, members run the risk of being excluded from social, educational, cultural and economic benefits which has "adverse effects on their educational outcomes, employment prospects and other aspects of wellbeing (Australian Bureau of Statistics, 2003)." Phillip Torrone, MAKE magazine writer, advocates that libraries need to transform themselves into places where users have access to the tools that they need to learn and make things. This viewpoint lines up with the library's historical role of being a place where the "tools of knowledge" were available for its users.

Rowley in her article, "Should the library have an innovation strategy?" also recommended that "libraries need to be innovative and embrace new ways in which to engage with people by providing tools for their communities and this will secure a new future for them." (Rowley, 2011).

Well-know blogger, Buffy Hamilton, in "The unquiet librarian," compares the role of makerspaces with Andrew Carnegie's vision of libraries, saying "maker space culture supports the mission of libraries to enable lifelong learning and to support knowledge creation in their communities" (Hamilton, 2012).

Matt Enis, in the journal article, "Meet your maker," similarly supports Rowley's argument for "maker spaces" adding that they not only provide tools for hands-on learning and creative projects, but they are a way forward for libraries seeking to redefine their role in 21st-century communities." (Enis, 2015).

Andrew Kelly, eServices Co-ordinator at Town of Victoria Park Public Library, presented a paper at the 2013 ALIA National Library & Information symposium entitled, "Why do we need one of those? The role of the public library in creating and promoting makerspaces." Kelly's qualitative research not only explored the role of library maker spaces in Australian libraries, but included information about the pilot maker space he organised for primary-aged students where they could learn basic electronics (soldering), programming (Arduino) and 3D design/printing. Like the Geek Camp programme, the makerspace was a collaborative partnership between the library, Ursula Frayne Catholic College, the Artifactory, Curtin University and Altronics - an electronics supplier. The research emphasised the importance for libraries to work collaboratively with skilled members of the community and the need to develop beneficial community partnerships. Observations and feedback received from children, teachers and parents participating revealed that students not only enjoyed themselves, but they learned new skills and different ways of thinking (deep learning) that would help them succeed in their future learning.

Makerspaces can have a significant impact on community because they can provide opportunities for digital literacy improvement, connection, collaboration and co-creation with others, especially in low socio-economic communities where access to internet or digital resources is limited.

5.3   Digital Literacy and learning

Much has been written about the importance of digital literacy. Because this project is evaluating the impact of the Geek Camp in developing young peoples' confidence in their digital competencies, it is important to define what is meant by the term "digital literacy," and what is meant when describing a "digitally literate" person.

In 2006, The National Library of New Zealand's developed a Strategic Framework for public libraries. They defined digital literacy as being, "the skills needed to use the technology, whether that is a computer, a handheld device or some other technology used to access content." Martin's 2006 document, "A European framework for digital literacy," stated that digital literacy relates to an individual's ability to use ICT and the internet to achieve outcomes.

In the 2010 publication, "Digital information literacy: supported development of capability in tertiary environment," the authors added the aspect of "confidence" in their definition of what constitutes a digitally literate person:

> *Digitally literate people confidently use, manage create, quote and share sources of digital information. (Heggarty et al, 2010).*

Jones-Kavalier & Flannigan in their 2008 document, "Connecting the digital dots: Literacy of the 21st century," stated that a digitally literate person is one who is capable of reproducing data and images through digital manipulation, and able to apply new knowledge gained from digital environments."

In the article, "Can we teach digital natives digital literacy?" author Wan Ng wrote that digital literacy is "the individual's ability to understand and comprehend information through ICT use, in a manner that facilitates their own objectives." (Ng, 2012). He surveyed a group of second-year undergraduate Australian students regarding their use of educational tools, and asked them to rate their digital literacy skills at the beginning of the course and at the end of the course. He discovered that while students regularly used technology in their daily lives, such as Facebook and YouTube, many of them were unfamiliar with educational technologies, such as Prezi and Google Docs. Also students were not receptive to adopting new learning

technology, unless they had a reason to do so. Ng analysed the survey data through the lens of a digital literacy model that he devised, which encompassed the technical, social-emotional, and cognitive dimensions that support digital literacy acquisition. The results showed that students' feelings towards digital literacy improved during the course of study due to the required use of educational technologies in the classroom. The digital literacy model will be useful research, as there are similarities in the focus as the development of student confidence is connected to digital literacy development.

Scientific communities have not yet reached a consensus about how makerspaces serve as effective learning environments, but librarians have observed that makerspace participants develop new skills such as problem identification, refinement of creative ideas, enhanced communication, collaboration and peer learning, and the evaluation of outcomes. This is confirmed by Ruth Small, author of the 2014 article entitled, "The motivational and information needs of young innovators: Stimulating student creativity and inventive thinking," published in the School Library Research Journal. She surveyed 90 children from grades 4 – 8 and the data collected using descriptive statistics (data coded and content analysed). Small concluded that "innovation spaces" fostered curiosity and exploration, and "students exposed to this model of teaching demonstrated increased motivation and remained in charge of their information needs throughout the innovation process" (Small, 2014).

David Kolb, a Professor of Organisational Behaviour at Case Western University, devised a theory about experiential learning in 1984. He believed that the creation of knowledge occurs through the transformation of experience, specifically around the learner's internal cognitive processes. The "Geek Camp" programme developed by the *Accelerating Aotearoa* team is all about "experiential learning," as students have access to a range of digital tools and are able to work alongside digital experts, so they can develop skills to improve their digital literacy.

The *Accelerating Aotearoa* website explains their "Geek Camp" rationale below:

> *"We are working to connect young people to the digital world through hands-on activities showing how digital tools fit into everyday life. We believe that*

*increased digital access and skills will directly impact improved success at
school and access to skills work... a pathway to prosperity."*

5.4   Evaluating makerspaces

Calvert & Goulding, in their 2015 research paper, "Narratives and stories that capture
a library's worth," stated that there were "few studies of impact assessment
undertaken in New Zealand libraries, and generally they were limited to evaluations
of specific services. Impact was defined as being "the effect of the service on
individuals or groups" and is therefore about identifying and evaluating change
(Streatfield & Markless, 2009). Collecting rich narratives can be a way to measure the
value of libraries and its services. Personal anecdotes will contribute to the analysis of
the Geek Camp's impact in developing young peoples' confidence in the application
of digital competencies. This research about the impact of Geek Camps will be a
useful study as it will be evaluating a library-delivered programme for young people.

There are two pieces of New Zealand research written on the makerspaces activities at
Auckland Central Library which will be discussed as a useful point of reference. In
2014 a paper was presented at the LIANZA Conference entitled, "Making the makers: an
exploration of a makerspace in a city library" by Dugmore, Lindop & Jacob. They explored
the successes and challenges associated with the implementation of the maker space
programme at Auckland Central Library. The researchers sought to assess the
effectiveness of the various makerspace activities, using four qualitative measures aligned
to resilience, engagement and growth potential. Each measure had three metrics; a bottom
line result (or minimum requirement); a topline goal (aspirational, but achievable), and
the third indicator being a P & B line – akin to the notion that the maker pace is so
successful that it will ultimately "take over the world!" The (humorous) measures to
identify success were as identified as:

Grow-like-a-weed-itude - Measuring the resilience and sustainability of the maker
space idea from a staffing and library management perspective

Social-interesting-ness - Measuring the ability of the maker space ideas and
activities to engage the community's imagination

Filling-in-form-ability - Measuring the rigour behind the thinking and the quality
of the Business model

> *What-would-Andre-say?* - Measuring the social and environmental impacts of the
> maker space

The "Grow-like-a weed-itude" measurement revealed that participation at maker space programmes grew by 25% over the year, indicating that there is a growing interest in creative digital workshops. The measurement tool, "What would Andre say?," revealed that makerspaces also played an important role in supporting the most vulnerable in society, in terms of personal empowerment and community connection.

A second recent research conducted by Pia Gahagan in 2016, entitled, "Evaluating makerspaces: exploring methods used to assess the outcomes of public library makerspaces," used a two-case case-study design to compare the Auckland Central Library's makerspace with the 4th Floor makerspace at Chattanooga Public Library in Tennessee, USA. Data was collected from interviews, documents and archival records. She concluded that there were efforts being made to develop a suitable and effective measurement tool, but methods and techniques being employed currently are predominantly quantitative and informal. Recommendations included the need for libraries to determine how best to gather evidence so an effective data collection technique can be implemented to bring greater validity and application to the data being captured. (Gahagan, 2016).

Marilyn Arnone, Rebecca Reynolds and Todd Marshall published a 2009 research paper in the School Libraries World-wide journal entitled, "The effect of early adolescents' psychological needs satisfaction upon their perceived competence in information skills and intrinsic motivation for research," Their study investigated the basic psychological needs of autonomy and self-determination and how these factors influence student motivational behaviour and achievement. When students were engaged in tasks they were interested in, there was a sense of enjoyment, satisfaction and challenge, causing students to become "intrinsically motivated." Intrinsic motivation contributes to the development of student confidence and positive learning outcomes. Students who don't feel confident or competent were less likely to experience successful learning outcomes. (Cheong, 2008; Nahl, 1993).

A subsequent research paper published by Arnone, Reynolds and Small in 2010, explored student confidence further with the purpose of developing an evaluative

measurement tool for "perceived competence" (P.C.I.S), an important indicator associated with self-determination theory (SDT), which assesses levels of student motivation. (Deci & Ryan, 2008). SDT theory suggests that young people's "perceptions of competence," influence their feelings of confidence and self-efficacy. The study explored other motivational factors such as value, enjoyment, feelings of choice, curiosity, which combined together, represents the latent variable of "intrinsic" motivation. In the development of the PCIS measurement tool, data was collected via student questionnaires, observations and feedback. This research paper was useful in proving an insight into the barriers that can impact student learning outcomes and confirmed the measurement tools that were employed in this research project.

This literature review provides a range of articles that provide useful insight and information regarding the methodologies that could be employed to collect data as well as the various tools that can assist with the measurement and analysis of the data, to assist in the answering of the primary research question and the sub questions that have been posed.

6.   Research questions & objectives

6.1   Research questions

This research project will endeavour to answer the question:

> *"What is the impact of the South Auckland Geek Camps in developing young people's confidence in the application of their digital competencies?"*

Sub research questions that will assist in answering the primary research questions are:
> *"What exhibited behaviour or actions reflect their digital confidence?*

> *"What is the extent of their digital knowledge at the end of the Camp compared to what they knew at the start?"*

Hypothesis
> *South Auckland Geek Camps do not have an impact in developing young people's confidence in the application of their digital competencies.*

To answer these questions, three different qualitative methodologies were employed:

1.   <u>Informal discussions (survey)</u>

Participants were interviewed via informal questioning before and after the Geek Camp experience to obtain an insight into the learning the student(s) have acquired during the "Geek Camp." They also answered a Likert Scale questionnaire so affective data could be collected.

2.   <u>Observations</u>

Students were observed over the course of three consecutive evenings a week apart. This time-frame allowed the researcher time to probe or "tweak" specific questions prior to the follow up interview which were conducted after the "Celebration of Learning."

Below are some indicators that helped guide the evaluation as to the degree of learning and confidence in digital skill acquisition:

Interactions – Are their peer- peer interactions positive and productive? Are they asking questions? Seeking reassurance that they are on the right track? Showing others what they have learned? Checking in with their tutor about what they need to be doing etc.

Body language – Do the students appear relaxed or comfortable in the learning environment? Are the students exhibiting positive learning behaviours? What sorts of expressions could be seen on their faces? Were they asking questions and focussed on task at hand, or were they wandering around looking at what other students were doing? These particular observations can be a good indicator that participants understand the task and that learning is taking place.

Engagement - Are they able to "put into words" what they have learned? How confident are they in explaining what they have learned" Can they demonstrate to their peers the task or skill they have learned? How are they relating to others in their group and with their tutor?

3. <u>Celebration of Learning Feedback</u>

Participants share their learning outcomes with family, friends and community members at the "Celebration of learning" event. Visual clues that the researcher will be noting could include the following:

Did the participant appear confident sharing their learning with the audience? Were they the "spokesperson" for the group? Were the participants sharing their new digital skills with their friends or family members? Did they appear excited or enthusiastic about the "Geek Camp" at the "Celebration of Learning" event? Where there other clues that could infer that there has been growth in their confidence with digital skills and their application?

7.   Research design & theoretical framework

A qualitative, empirical interpretivist approach has been adopted for this research project.

The Geek Camp is a socially constructed environment. The goal is to understand how the Geek Camp has an impact on the development of confidence, so the epistemology is dependent on the learning environment, the collection of information is co-created between the researcher and the participant, and subjectivity will be required by the researcher in the interpretation of the findings. To assess the impact of the Geek Camp activity, the participant behaviours will be observed and analysed, and there will be a need to explore intentions and emotions to "make sense" of the data, watching out for bias.

Toulmin (1958) proposed a model for argument that has been useful in writing research reports. Argumentation theory says that a problem is the core motivation for any study (Levy & Ellis, 2006). Williams & Colomb's 2003 argument model built upon Toulmin's premise, which stated that a claim is the initial step in the argument process, and a proper argument process follows this sequence,

"[claim] because of [reason] based on [evidence]"

(Levy & Ellis, 2003, p.42)

The claim being researched is whether Geek Camps develop young peoples' confidence in the application of the digital competencies.

This research question needs to be answered because investment has been made in sourcing equipment, staff training, as well as the time and energy involved in the these Geek Camp programmes in South Auckland over the past four years.

Do young people get tangible benefit from attending these digital makerspace sessions, or are they simply just having fun, tinkering with technology?

Evidence that would prove this claim would be along these lines:

- Students were able to explain the digital tasks that they learned at the Geek Camp
- Students were able to verbally recall the steps that they took to achieve the learning outcome
- Students were confident in sharing what they learned at the Geek Camp with other people i,e showing people the website
- Students demonstrated their effective learning achievements at the "Celebration of Learning" event.

Interviewing is a prominent method employed in qualitative research as the narratives yield a lot of useful information (Bryman, 2008; Silverman, 1993).

A trial of the first survey questionnaire was conducted with two students attending the "Geek Camp" in Otara on 19 & 20 May to "test" of the survey tool. After an analysis of the narrative, changes were made to the questionnaire to facilitate more open-ended questions.

Two open-ended, semi-structured interviews were conducted with six purposely selected student participants prior to the first Geek Camp session in August and after the Geek Camp's Celebration of Learning event held in 1 September 2016.

The first series of interviews were conducted with participants at Mangere Town Centre Library on 18 August 2016 to determine the extent of participants' prior knowledge and experience with digital technology. Summaries of this information can be seen in the Appendices (Table 2).

Follow up interviews were conducted at the participants respective schools after the Celebration of Learning event. The focus of these interviews was to assess the learning that had taken place as a result of the Geek Camp workshops. Summaries of the transcripts can be seen in the Appendices (Table 3)

Participants signed consent forms which included permission to share the results in presentations and publications. Educational institution consents were also obtained from the schools with students participating in the research project.

Ethnography, with its emphasis on participant observation is suited to qualitative research, where students' body language, engagement with the task, and their interactions with their peers and tutor, can provide visual indicators that could prove or negate the hypothesis. During the August "Geek Camp" participants were observed undertaking their learning tasks and sharing about their learning journey at the Celebration of Learning event. Summaries of the observations are contained in the Appendices (Table 5)

A Likert Scale questionnaire was also completed by participants with prepared statements like, "I am confident in my ability to do well in the activities" to reduce the cognitive load for young people providing feedback, and obtain additional data which provides affective feelings about the Geek Camp experience.

This measurement tool will be discussed later in the report and a copy of this questionnaire is contained in the Appendices.

8. Methodology & analysis

8.1 Population and sample

The population was predominantly Pacific intermediate-aged students from schools located in Mangere - Robertson Road Primary School, Rise Up Academy, Good Seed Trust and Viscount Intermediate School. The six participants were purposefully selected from a total population of 30 students, recommended by their school leaders to be involved in the research. The sample comprised an equal mix of male and

female students and research results should be able to be generalised back to reflect the population as a whole.

Students were provided with a $20 Whitcoulls voucher as an acknowledgement of their willingness, time and contribution to this research project.

8.2   Data collection

Data collection was achieved through open-ended interviews, observations and a Likert Scale questionnaire. Interviews were conducted in person (face-to-face) at Mangere Town Centre prior to the Geek Camp to assess the student's prior knowledge or exposure to digital technology. The use of open-ended questions ensured that participants were free to share their thoughts, rather than being limited by closed questions (yes/no answers), or a prescribed set of answers that are provided, such as multi-choice answers. "Non-verbal" clues can also be picked up by the researcher which may contribute and support the overall findings.

The second interview conducted at the participants' respective schools after the Celebration of Learning event. The interviews lasted between 5 and 20 minutes they were recorded on a smart phone to aid in the accuracy of data processing. The interviews were transcribed shortly after the face-to-face interviews.

Surveying students enabled the researcher to generate credible data, build rapport and trust with respondents, and the opportunity to clarify any questions they may not understand, in the first instance. The guiding interview questions and follow-up interviews are included in the appendices.

The survey tool facilitates the gathering of student narratives to determine what the individual students learned through the "Geek Camp" experience. These narratives will provide rich data from which themes will be identified, analysed and conclusions made. The summation of these results will help confirm that confidence in digital literacy has increased due to the "Geek Camp "experience.

Student observations were undertaken during the Geek Camp to gain further insight into the nature and scope of the digital learning taking place - paying close attention to

their level of engagement and participation in the learning environment, to assess confidence, as well as the quality of the work being produced.

8.3   Ethical considerations

Ethics approval was gained from the Victoria University Ethics committee to commence this research. It was necessary given the age of the participants involved in the research project. Approval was obtained from Auckland Libraries to proceed with this research project. Alan Pickard, author of the book, "Research methods in information," advocates that researchers "need to be careful about an individual's right to privacy" and to consider how the proposed research may invade their privacy (Pickard, 2013, pg 88). Permission was obtained from the schools that the participants attended. Informed consent was obtained from the parents or caregivers of the students involved, as well as permission from the participants prior to the commencement of the Geek Camp. This was necessary to gain their trust so they are willing and comfortable to share honest feedback, not just what they think the researcher wants to know.

8.4   Data analysis

Data analysis, as recommended by Creswell, involves the following steps:

1. *Organise the data collected in a logical sequence.*
2. *Categorise the data into meaningful groups i.e age of student; pre-test digital skill results and post-test results.*
3. *Interpretation of qualitative data and interview comments.*
4. *Narrative analysis. It is usually necessary to keep asking follow-up questions to stimulate the flow of details and impressions.*
5. *Identification of any key findings or themes from surveys and interviews.*
6. *Synthesis of results so a conclusion can be derived from collected data.*

(Creswell, 2007).

This outline is considered alongside the iterative analysis - Figure 1 (Refer to application of research model and theory – 10.1, pg

9.   Discussion

Participants details and information were kept confidential by allocating an alpha-numeric code to refer to participants, so they could not be identified i.e $A_1, B_1...$

Data sources included transcribed interviews, participant observations and a Likert Scale Questionnaire. The use of multiple sources of data improves construct validity, (Yin, 2003).

Semi-structured, open-ended interviews were chosen to align with complexity theory idealogy. The Geek Camp is an innovative digital event to engage with young people, outside of the traditional school environment. This type of "hands-on", experiential learning appeals to a variety of learning styles, where the learning is technically specialised, and delivered in a series of small group workshops. The social aspect where students come from different schools, makes the Geek Camp an exciting and interesting event, undermining the generalizability from experts about 'what works" and making room for creative, innovative teaching in new learning environments. The diagram below summarises the many complexities that might impact or influence or inform a research scenario.

Figure 1: Components of complexity theory
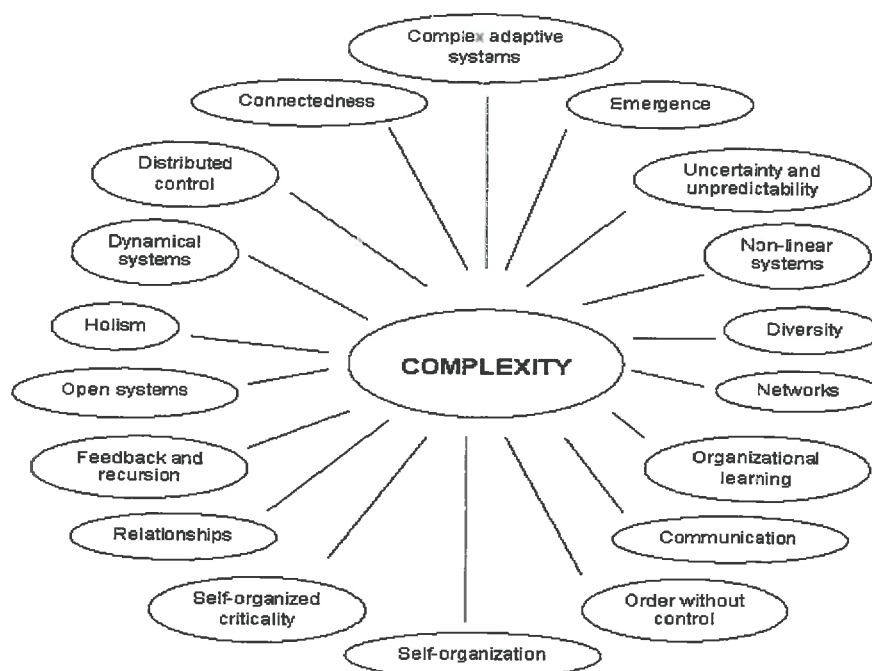
9.1 Kvale's interview guidelines

When preparing for the interview process, reference was made to Kvale's interview guidelines. He said that in a postmodern approach, the qualitative interview appears as a construction of knowledge (Kvale, 1996). A book Kavle published in 2008, entitled, "Doing interviews," provided an interesting and insightful perspective about the interview process, as shown below:

"An interview is literally an inter-view, an interchange of views between two persons conversing about a common theme." (Kvale, 2008, p 24)

Table 1   Planning for interviews using Kavle's guidelines

Kvale (1996)	Interview methodology
Structured and clear (making clear the purpose of the interview and keeping to the point)	The purpose of the research and the reason for the interview was outlined with the participants prior to the commence of the interview. A written copy of the questions was used by interviewer at the face-to-face interviews which were conducted at Mangere Town Centre Library on Thursday 18 August 2016.
Gentle, open and sensitive (ensuring participants were able to share what they wanted in their own time and in their own words)	Interviews were semi-structured and questions were designed to be short, straight-forward and easy-to-answer so participants didn't feel overwhelmed or too nervous, given their young age and emotional maturity. There was no specific time-limit so interview went at the pace that was appropriate for the participant being interviewed.
Remembering (providing a visual reference of possible terms and words to help prompt responses to interview questions)	A series of questions prepared and peer reviewed in advance to help guide the direction of the interview and to help prompt participants with their re-collection
Interpreting and questioning (clarifying, confirming with participants answers to elicit further information	Extra questions were asked to stimulate additional content or clarification from the interview participants. Each interview was audio-recorded so the interviewer was able to focus on the answers to the questions being asked, and to facilitate accurate transcription after the interview. At the second interview following the Geek Camp, participants were given the typed transcript to be remind them of what had been discussed previously, and all participants signed the transcript acknowledging that it was a true and accurate copy of what had been shared.

The initial interview questions were designed to provide the researcher with an indication as to the extent of each participants prior knowledge or experience with regard to digital technology and digital devices. At the conclusion of the initial interviews, it was apparent that the six selected participants had experience with using digital technology due to their learning at school.

The second set of interviews post-Geek Camp, took place a week after the Celebration of Learning event and the interviews were transcribed within a week ready for the next phase of the research process.

The results from the Likert Scale questionnaire were useful in assessing participants' digital confidence, revealing their feelings about the Geek Camp, and whether they felt that they had learned a skill they didn't know or have before.

9.2   Learning outcomes

Due to the restriction of time available at a Geek Camp, and the varying nature of the workshops, it was not possible or practical to conduct a post-test to assess the participants' achievement of learning outcomes. Maki's 2004 paper, "Assessment for learning" provides guidelines for teachers when developing and writing learning objectives, particularly the use of an outcomes assessment as an evaluation tool for programme improvement.

In terms of the evaluation of the participants' confidence, interviews and observations is an effective measure to indicate student's perceptions about their learning. The assessment of participant narratives after thematic content analysis will assist in the evaluation of the impact of the Geek Camp in developing the participant's confidence in the application of their digital competencies. Affective values will be derived from indirect assessments.

Feedback from participant interviews, together with the observations, not only reveal the way the participants engage with the learning task, but also how they engage with their peers and their tutor. Learning domains associated with the digital tasks undertaken, assist with the identification of key themes that will demonstrate that confidence and digital literacy competency has been achieved.

"Learning outcomes can fall into one of three domains: the cognitive domain, which included both knowledge base and the process of knowing; the psychomotor domain, which includes the development of physical movement, co-ordination or a set of skills; and the affective domain, which included the development of values, attitudes, and commitments." (Maki, 2004)

For example, if the digital task involves critical thinking, and the participant narratives confirm that they have successfully completed the task, and they have reflected on their progress, understood what they have learned and can communicate that effectively, while also seeing themselves applying that skill in their future learning, cognitive learning has occurred and competency has been achieved.

If the participants have achieved a task which required the use of physical skills such as co-ordination, dexterity, manipulation or actions which demonstrate the fine motor skills such as use of precision instruments, or delivered an effective oral presentation, psychomotor learning has occurred.

Affective learning can be identified in the narratives from participants when they comment about how the Geek Camp was fun, how they enjoyed meeting new people and making new friends, and reflect about how they felt about what they had achieved etc.

9.3 Digital Learning Matrix

A simple tick or cross method was used to indicate the progress made by the six participants, referring to the descriptors Starkey used in her Digital Age Learning Matrix, i.e doing; thinking about connections; thinking about concepts; critiquing and evaluating and sharing knowledge. The second interview provided some useful evidence from the narratives, as well as the levels of confidence retrieved from the Likert Scale results to determine the level of cognitive thinking developed together with categories of digital technology use. Questions actively elicited information from the participants at the follow up interview, to ascertain the extent of their understanding about the digital skill being taught at the workshop they selected.

For example, could the participants recall the steps involved to demonstrate or apply the digital skills learned, and could they also explain what they had learned, if they were to show a friend, and how confident were they if they were to demonstrate that digital skill(s) again in the future. Was this new digital skill(s) going to be useful to them in their future learning, was a way to assess participants' higher order thinking process. A copy of the second semi-structured interview questions is contained in the Appendices.

Selected sentences from all of the participant transcripts were copied into one document to identify key themes and narratives. These sentences were also entered into a Google Drive "word cloud" tool to generate a word picture, displaying the most commonly occurring words obtained from the narrative data collected from the second set of interviews. Narratives from participants helped to reveal complexities that exist that the researcher may not have thought about, or prompt the researcher to ask another question to explore the information further.

The search for "repetitions" is one of the ways in which themes can be identified (Ryan and Bernard, 2003). Similarities and differences, metaphors and analogies can also indicate patterns or possible themes. Visual data displays are helpful in the analysis process as they aid in the creative thinking process, clarify and summarise themes and supplements the narrative text.

9.4   Likert Scale measurement tool

The Likert Scale is widely used for research and it doesn't take a lot of time to complete or too much cognitive thought. Wikipedia defines a likert scale as "a psychometric scale involved in research involving the use of questionnaires." The Likert Scale measurement tool was introduced at the commencement of the second interview was to capture additional information not acquired through the surveys, and the answers provided, capture of participants' affirmative feelings regarding the development of their confidence in the application of their digital competencies.

Diagram can be seen in a later chapter where questionanire results are discussed

10. Analysis and presentation of data

The iterative flowchart below shows the process that was followed after the data was collected.

Figure 1   Flowchart depicting the iterative analysis process
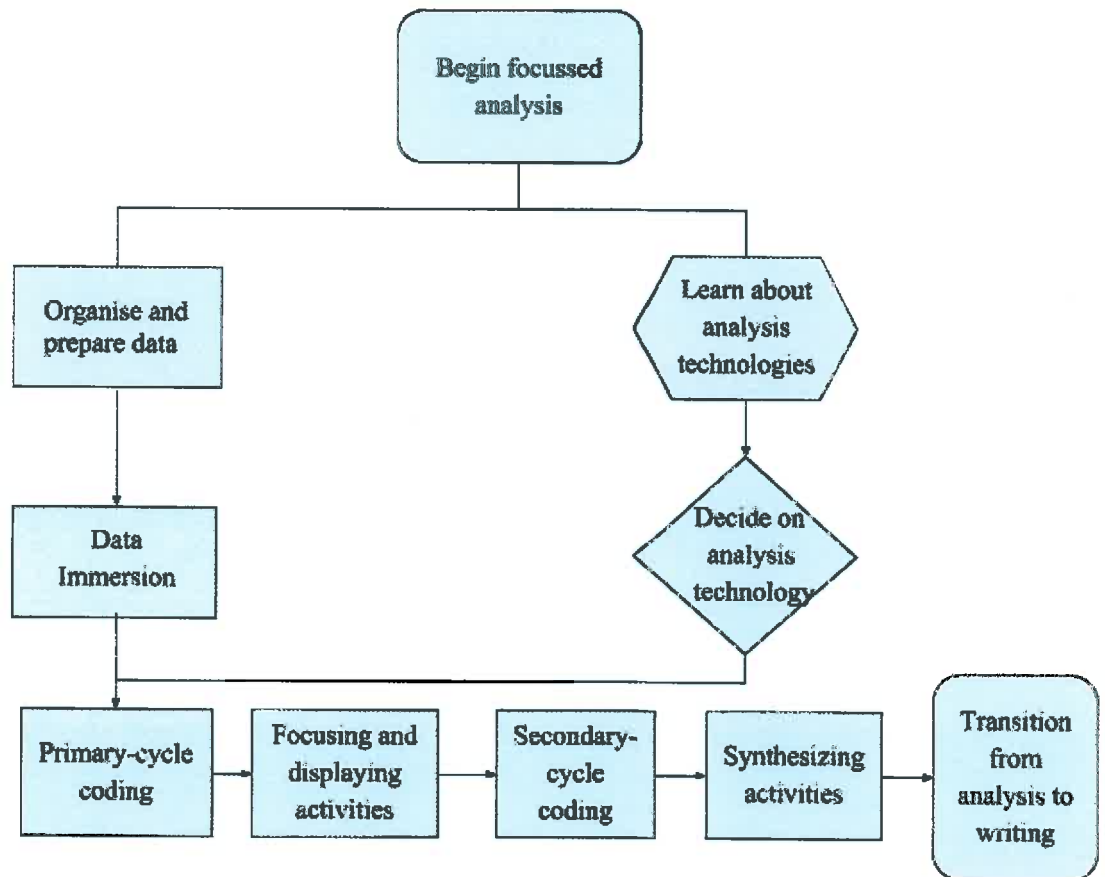
10.1 Content and thematic analysis

"Content analysis and thematic analysis approaches are robust enough and suitable for conducting an introductory study on a novel phenomenon, for qualitative researchers at the beginning of their research careers" (Vaimoradi et al, 2013). A theme is defined as "a coherent integration of the disparate pieces of data that constitute the findings" (Sandelowski & Leeman, 2012). In the field of research, there can be overlaps between content analysis and thematic analysis. The interview transcripts were read through several times to identify participants' emotions during the data gathering process to assist in the identification of themes based on the frequency of key words or phrases occurring in the text (Vaismoradi *et al.*, 2013).

A characteristic of analysing data using thematic analysis is the construction of a thematic map to visually present themes, and the identification of codes and how they are connected, including a detailed account and description of each theme, examples and comparative details. Themes can be abstract so they can be difficult to identify (DeSantis & Noel Ugarriza, 2000; Spencer *et al.,* 2003).

The first cycle thematic analysis was conducted to assess the level of prior knowledge and experience that the participants had coming into "Geek Camp." The narrative material was broken into "chunks" of narrative and then those statements, based in the actual language of the participant (called an *in vivo* term), were inputted into a spreadsheet and themes were concepts were derived.

Below are two examples of how participant narrative was analysed and the generation of content and key themes:

B1	*I showed a friend.... the star in the new tab...that when you click it, it stays on your tab (tool bar)*	Demonstrates digital knowledge with others	Digital confidence
B1	*We use Google slides... Send them your email*	Communicates learning outcomes	Digital competency

The key concepts that came through indicated that the participants were digitally literate. They were familiar with digital devices at home and had used various learning digital platforms at school. Codes that became apparent from an analysis of the text were :

- Uses digital technology
- Digitally literate
- Digital competency
- Digital learning is a way of life

These key phrases from all participants were "content" analysed using Google Crive word cloud app (http://wordcloud.booogle.net/) This visual display summarises the prior knowledge that the participants possessed, prior to "Geek Camp" and confirms that participants are "digitally literate."

In the article, "Attitude, digital literacy and self efficacy: flow-on effect for online learning behaviour," the authors devise a conceptual model about the effects of student attitudes on self-efficacy , meaning the beliefs that students have about their ability to successfully learn. Arbaugh and Bernard's research proved that student attitudes influence learning behaviour. Where students are interested in what they are learning, and they are enjoying what they are learning, they are going to be engaged in the learning process and will be more achieve positive learning outcomes. "High self-efficacy is closely associated with feelings of autonomy and the ability to self-regulate a learning process" (Bernard at al, 2004). One of the participants acknowledged that they had got distracted, but encouragement from a library staff member, helped refocus them back on the task. Participant shared in the second interview that they were proud that they made that decision to "re-focus." Another participant shared that one of the key learnings from the Geek Camp experience was the aspect of "self-management." Given the age of these participants, these comments indicate that their digital literacy is increasing, indicated by their learning behaviour. Behaviours that reflect digital confidence could include "on task" behaviour and remaining focused and engaged with the set task for long periods of time. Student observations of the six participants over the two nights of the Geek Camp confirmed the fact that these young people were engaged in the learning process.

"Self-efficacy is identified as the way to summarise the beliefs an individual has about their ability to successfully learn from a course of study" (Shen, Cho, Tsai & Marra, 2013). As such, self-efficacy is an important part of their self-concept, as shown in the diagram below:

Figure 2 – Conceptual model showing impact of attitude and digital literacy on the development of self-efficacy (confidence)
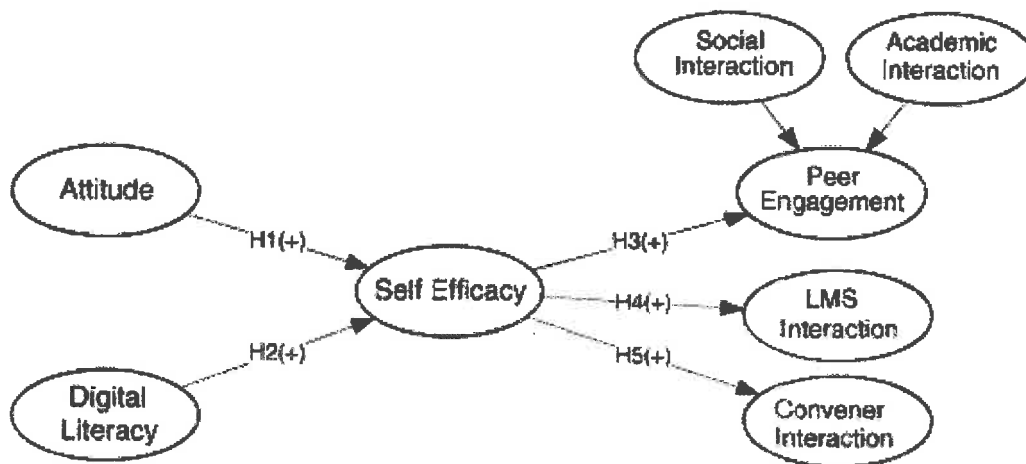
Because the participants come to "Geek Camp" with an attitude to learn, and they possess a reasonable standard of digital knowledge, discovered from the first interview, these learning dispositions come together and result in positive thinking and feelings about the activities. Attitude is an important learning influence. (Arbaugh, 2000, 2010). The observations from the two evening sessions and the Celebration of Learning event, confirmed that the participants enjoyed positive interactions with their peers, their tutor, their personal learning self-management. "Student attitudes that associate learning processes with positive attributes such as person interest and enjoyment are more likely to support positive learning behaviours." (Prior et al, 2016).

Responses from the Likert Scale questionnaire, confirm that the participants "felt more confident about learning digital skills" because of [the] Geek Camp" experience. These responses were analysed and the summaries are shown below.

The above actions conclude the primary cycle of coding.

The second cycle of coding involved the analysis of the follow up interview transcripts. Participant comments were then copied into a table to assist in the identification of any significant themes that would reveal the impact of the Geek Camp as a valid learning model, being the focussing and displaying activities.

The secondary cycle of coding involved re-examining the narratives of the second interviews of the six participants, in order to identify key ideas or themes.

Table 2   Second cycle coding – Narrative Analysis

Learning Outcome	Personal Reflection Affirmative feelings	Feedback from others Cognitive thoghts	Collaboration Physical actions	Competency	Confidence
Make a movie using captions and music	I recommend it to my friends (Geek Camp)	They were amazed	We put it together....	I was able to demonstrate how..	I could challenge people!
Learn new things	It's really fun	They will be surprised	You can share ideas		Very confident
You have those skills remembered	A lot of people should go to Geek Camp	Other people thought this was a really good game	Everyone brain-stormed	I showed them how to create a loop	If they ask me how to make a movie, I'll tell them!
Learn new skills	It was really good		We added the spoken words	How to do the animations	Know what you want to do....
You can make a game	[The Geek Camp] it is really teachable	My mum – she tried playing it and she kept laughing	Build it and them programme it	Explain how we did it	I have been trying to "self-manage" lately
Getting to make music	You make lots of friends		Explain what we did	I had to show them	My contribution was to show...
Make the robot	More inspirational		Meet new people	You can activate music	
Make a short film	I really learned a lot		We took photos		
Learn different skills	....the game was fun				

The narrative analysis was achieved by entering all the selected phrases from the six participants into one document (Table 2). These "chunks" were further categorised to establish further themes and finally analysed using the Google Drive "Wordcloud" tool to create a visual display of the themes pertaining to Geek Camp.

The observation notes of participants written over the three evenings and the results of the Likert scale matrix, and the completion of the Digital Learning Matrix, provided several useful sets of data which was able to be collated and analysed prior to the report write-up.

To assess the participants development of digital competencies, Louise Starkey's

"Digital Age Learning Matrix" was used as the framework to assess whether the six levels in the digital learning process, could be applied to the Geek Camp digital learning workshops. Starkey stated that "the six different levels of learning when using digital technologies, incorporates critique, collaboration, connections and creating knowledge. The researcher made a subjective judgement of the participant's learning progress and the level of learning that they achieved during the Geek Camp, based on participant interviews, observations of the student and the Likert Scale questionnaire. Table 5 shows the results as shown below:

Table 5   Summary of research participants cognitive learning using Starkey's Digital Learning Matrix

Cognitive processes	Digital skills being learned	Thinking about connections	Thinking about concepts	Critiquing and evaluating	Creating knowledge	Sharing knowledge
Explanation of level of learning	Focus on completing a measurable task	Simple connections made within the learning context. Compare and share	Develop conceptual understanding of "big ideas."	Evaluating and critiquing to explore the limitations and potential of information, sources or a process	Creativity - Applying ideas, processes and/or experiences to develop a new reality	Sharing the new knowledge through authentic contexts and gaining feedback to measure value of learning
A1	GAMING Make your own computer game using Createria	✓	✓	✓	✓	✓ Co-presenter at Celebration of learning
B1	MOVIE-MAKING Use movie-maker to create digital content for Geek Camp News	✓	✓	X	✓	✓ Multi-media presentation Celebration of learning
C1	ROBOTICS Use coding language to programme an m-bot (SMINKS Lab)	✓	✓	X	X	✓ Demonstrated learning at Celebration of learning
D1	MUSIC LAB Create a music recording using Soundtrap	✓	✓	✓	✓	✓ Audio broadcast at Celebration of learning
E1	GAMING Make your own computer game using Createria	✓	✓	✓	✓	✓ Shared about learning Celebration of learning
F1	ROBOTICS Use coding language to programme an m-bot (SMINKS Lab)	✓	✓	X	X	✓ Demonstrated learning to another participant at a Geek Camp session

Bloom's Revised Taxonomy also organises cognitive thinking skills into six levels, from the most basic through to higher order thinking, as shown in the diagram below. The levels and corresponding definitions were a useful guide to evaluate the digital and learning progress that each participant made during the Geek Camp, from low level thinking, such as remembering and understand, to the higher levels of evaluating and creating.
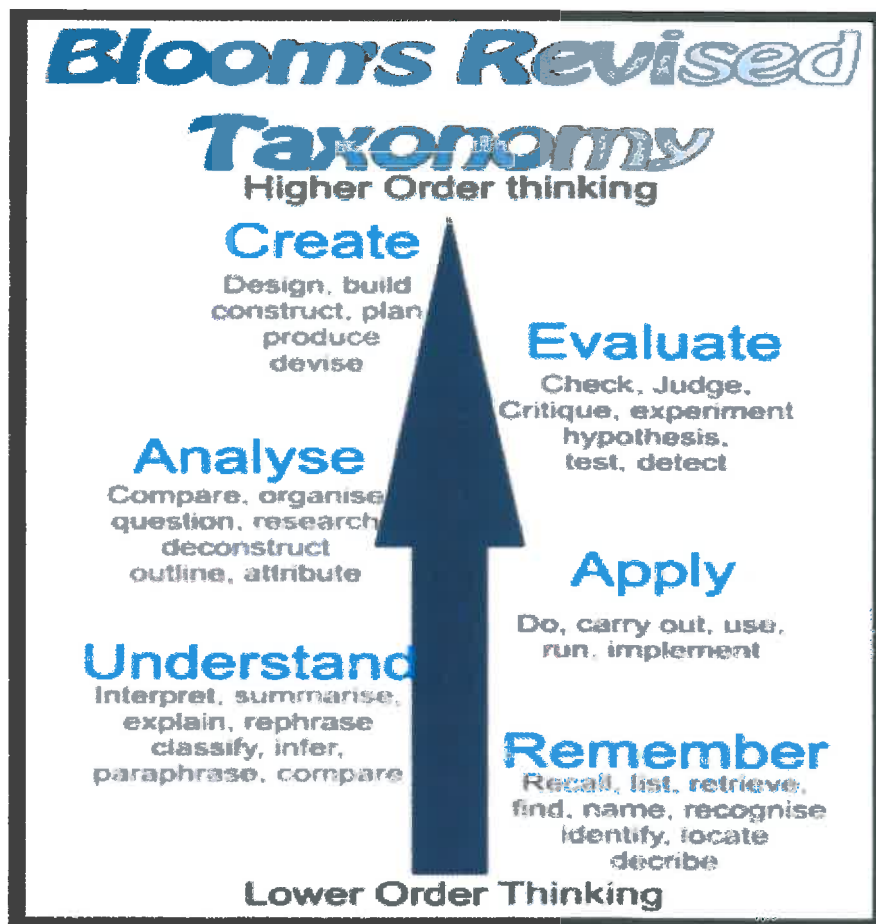
Figure 3   **Bloom's Revised Taxonomy**

10.2 Application of research model and theory

Reference was made to Rui Wang's "Research Readiness" model in the preparation of a Geek Camp Impact Evaluation model. This diagram incorporates the critical components of the learning process being affirmative feelings, cognitive thoughts and physical actions. These particular components are also significant in evaluating the impact of the Geek Camp developing confidence in the application of digital competencies, so the diagram has been modified to reflect this learning context.

If participants have employed cognitive thinking, displayed affirmative feelings and undertaken any physical actions, in the digital learning at Geek Camp, then it can be concluded that participants are digitally literate and are displaying self-efficacy. The narratives received from the Likert Scale will also prove that participants confidence in repeating learned digital skills and more confident with digital technology overall.

Figure 4 – Concept model demonstrating assessment of digital confidence
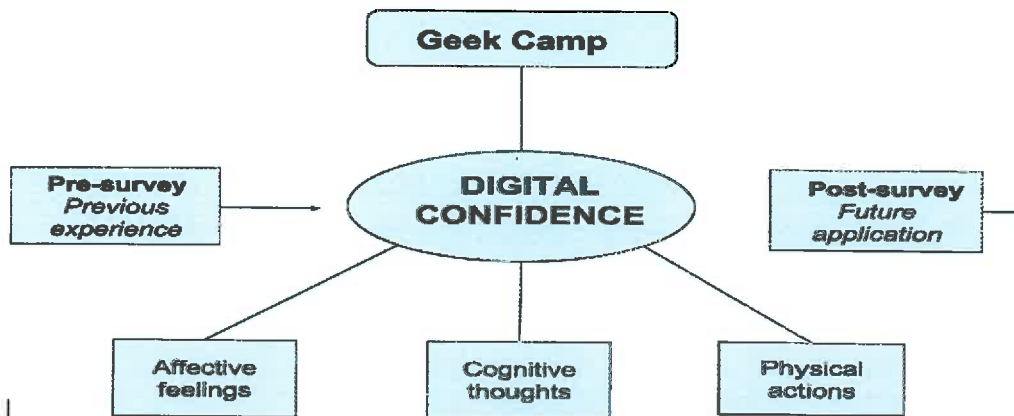
In the article, "Can we teach digital natives digital literacy?," Ng surveyed the students self-rated digital literacy skills at the beginning of the course and at the end of the course. The survey was formatted around Ng's digital literacy model, which encompasses the technical, social-emotional, and cognitive dimensions of digital literacy. Digital literacy sits at the centre where the three key aspects of the learning state intersect, as shown in the diagram below:

Figure 5 – Digital literacy and the relationship with learning domains

Ng's digital literacy model suggests that digital literacy is enabled and achievable when the social-emotional, technical and cognitive aspects of a students' mental disposition is in a positive and supported learning environment i.e sits at the centre. Failure to take account of the learning environment and the students' well-being can

contribute "off-task" behaviour. Before all the Geek Camp sessions, participants were well nourished with hot dogs, fruit and a water pump provided by the *Accelerating Aotearoa* team and volunteers.

Rogers revised, "Student outcomes and performance indictors" paper provides comprehensive definitions regarding the various learning states shown in the above diagram. (Key Definitions in the appendices provides a broader definition of affirmative, cognitive and physical learning indicators). Student outcomes provide general information about the focus of the student learning, not usually measured, while performance indicators are concrete measures that a student is expected to be able to demonstrate as an indication of the achievement of competency.

This information contained in the digital learning matrix, in consideration with the above diagrams, helped to inform the assessment of confidence regarding the learning progress made by the participants in their digital literacy and confidence, before and after the Geek Camp digital learning experience. This was evidence to answer the sub-questions, "What is the extent of their digital knowledge at the end of the camp compared to what they knew at the start?"

Second cycle analysis assisted in answering the sub research question, "What exhibited behaviour or actions reflect their digital confidence?" The participants' narrative was broken down and were coded to generate themes and further refined to align with the learning domains - Cognitive thoughts/Affirmative feelings & physical actions. The results are shown in the appendix (Table 4)

This step in the iterative analysis was required to gather information about content and themes to answer the primary research question and the sub questions. As outlined previously, chunks of the participants' narrative were entered in word cloud to identify the most commonly re-occurring words.

Similarly, participant narratives were assessed as part of the second-cycle analysis. Phrases were assigning a code and a relevant learning behaviour i.e cognitive/Affirmative/physical according to the level of thinking to establish themes.

Braun & Clark, co-wrote an article, about the use of thematic analysis, and they outlined the necessary steps being:

1. *Understanding the data*
2. *Generating initial codes*
3. *Searching for themes*
4. *Reviewing themes*
5. *Defining and naming themes*
6. *Producing the report*   (Braun & Clark, 2006)

10.3   Analysis of Themes

Iterative analysis is where the researcher visits and revisits the data, connects them to emerging insights, and then refines in the search for greater understanding. Participant narratives were broken down into learning areas as outlined in the concept model, which supports the acquisition of digitally literacy. These are some of the recurring statements, summarised from the concept to the coding process:

Cognitive
- Understanding learning objectives
- Describing learning outcomes
- Reflecting on learning progress
- Recalling learning steps
- Digital learning is a way of life
- Digital competency
- Evaluating learning outcomes
- Ownership of learning
- Future digital aspirations

Affirmative
- Positive learning experience
- Social value
- Pride in achievement
- Meaningful engaging content
- Educational value
- Confidence
- Fun

Physical
- Application of digital skills in the future
- Communicating the learning process (presentation at Celebration of learning)
- Demonstrating digital learning outcomes i.e programming robot
- Creating an object or programming a computer

Clear themes that appeared from an analysis of the data collected from interviews, observations and the Likert Scale questionnaire were:

- Enjoyment
- Learning new skills
- Positive learning experience
- Confidence
- Success

10.4   Google Drive Word cloud

The Drive word cloud generator allows the creation of a visual from any text in Google Drive. Word cloud was helpful in generating visuals from the participant narratives to highlight the most frequently occurring words. It was used firstly to summarise the first interview prior learning, where the key words or thoughts have been displayed in a pictorial format.

Key words identified regarding participants prior knowledge and experience with digital technology, were the words:

Google/ YouTube/Tablet/laptop/use/website/communicate

These key words reveal that participants are digitally literate according to the definitions provided earlier in this report

The word cloud generator was again used to summarise the key words and phrases from the participant narratives in the secondary cycle coding.

Lastly, Drive word cloud was used to analyse the individual transcripts of the participants so that the visual word cloud can be given to the participants, as a reminder of the Geek Camp, when they receive the completed copy of the research report.

11.0 Results

11.1 The Sub Questions

Study results are organised into sections based on the major research question and the Sub- research questions to answer the primary research question:

1.   *What exhibited behaviour or actions reflect their digital confidence*

Data collected from participant observations, shown in the Appendices, Table 6, and information for the narratives, confirm that positive attitudes, periods of intense concentration on the tasks, limited "off-task behaviour and the completion of learning outcomes, answer the sub question, *"What exhibited behaviour or actions reflect their digital confidence?"*

Exhibited Behaviour/actions

- Asking questions (peer & tutor)
- Using the equipment & tools to achieve learning goals
- Creating content and physical objects (m-bots)
- Observing what their colleagues are doing and contributing ideas
- Working collaboratively with their peers
- No wandering around to see what others students are doing
- Completing learning outcomes
- Looking interested and having fun (smiles & on-task conversation)
- Sharing about the digital skills they have learned with others at the Celebration of Learning event and in the "Geek Camp news" movie.

2.   *What is the extent of their digital knowledge at the end of the Geek Camp compared to what they knew at the start?*

The answers to the interview questions from the face-to-face interviews was in some cases, brief and limited in content due to their age and maturity, and some-times not always understanding what information was being sought by the interviewer, even after clarifying or re-phrasing the question.

Primary cycle content analysis using word cloud revealed that the participants had a sound knowledge of digital experience. To assess the knowledge gained from the "Geek Camp" there is strong evidence to support that their digital knowledge has increased.

This additional data contributed in providing evidence to prove the hypothesis, and sits alongside the collected narratives and the observations to improve the validity of the research process.

11.2   Primary research question

"What is the impact of the South Auckland Geek Camps in developing young peoples' confidence in the application of their digital competencies?"

This hypothesis took the negative position stating that there was no impact. Data collected via survey, observation and questionnaires indicate that the digital event, Geek Camp, has a positive impact on the development of confidence in the application of their digital competencies. Participants loved the Geek Camp. They enjoyed working with specialised digital equipment and interacting with peers their own age. They all indicated that they had learned a new skill and the analysis of content and questions, suggest that they are more confident about learning digital skills because of the Geek Camp experience.

The research model shown below was utilised to provide a conceptual framework in which the achievement of digital literacy could be demonstrated, which would then be a strong driver to demonstrate evidence which would indicate that participants confidence had developed over the course of the Geek Camp.

The research gathered has demonstrated that participants at the Geek Camp demonstrated that they used these learning domains in the digital workshops they attended. Participants were able to explain what they had learned (cognitive), state what they liked about the Geek Camp (affirmative) and they were able to demonstrate competency in the application of their digital skills (physical). This was evidenced at the Celebration of learning where their achievements were able to be seen.
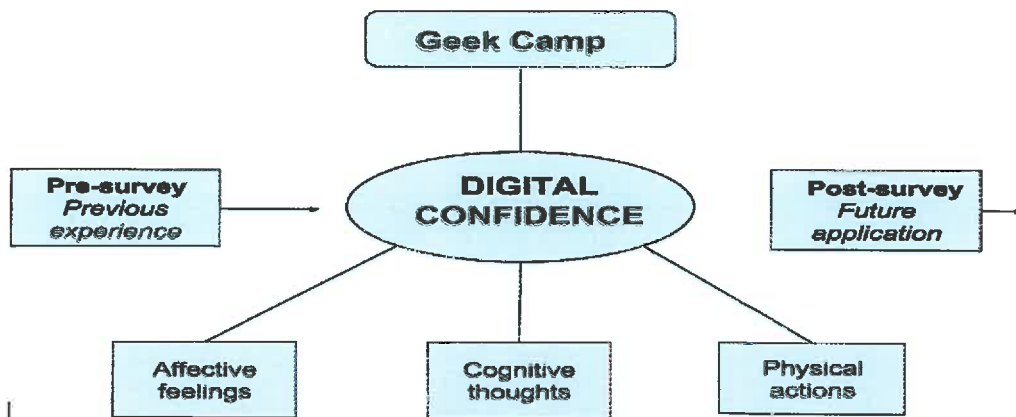
11.3   Likert Scale Questionnaire

The participant responses to the Likert Scale questionnaire provided additional evidence together with the observations, to prove that participants' confidence in applying their digital competencies has been impacted positively. It was a quick survey that gave supporting evidence on a variety of aspects of the Geek Camp, that wasn't collected from the interviews.

How competent do I feel about my digital literacy skills as a result of my Geek Camp experience?				
Please tick the best answer	Strongly disagree	Disagree	Agree	Strongly agree
1. I have learned a skill that I didn't know before attending Geek Camp				
2. I feel confident that I can repeat the skills or tasks that I have learned at the Geek Camp				
3. I can demonstrate to others the skill or task that I learned at Geek Camp				
4. I will be able to use the skill (s) that I learned at the Geek Camp in the future				
5. I feel more confident about learning digital skills because of my Geek Camp experience				
6. I recommend Geek Camp as a programme that helps students improve their competency in digital skills				

1. I have learned a skill that I didn't know before attending Geek Camp

Five participants strongly agreed and one participant agreed that they have learned a skill that they didn't know prior to this Geek Camp.

2. I feel confident that I can repeat the skills or tasks that I learned at the Geek Camp

Four participants strongly agreed and two participants agreed that they can repeat the skill or task that they learned at the Geek Camp workshop they attended.

3. I can demonstrate to others the skill or task that I learned at Geek Camp

Four participants strongly agreed and two participants agreed that they can demonstrate to others the skills they learned at the Geek Camp.

4. I will be able to use the skill(s) that I learned at the Geek Camp in the future

Five participants strongly agreed and one participant agreed that the skill(s) they learned at the Geek Camp workshop they attended, will be useful to them in the future.

5. I feel more confident about learning digital skills because of my Geek Camp experience

Four participants strongly agreed and two participants agreed that they feel more confident about learning digital skills because of the Geek Camp experience.

6. I recommend Geek Camp as a programme that helps students improve their competency with digital skills

All participants strongly agreed that they would recommend the Geek Camp as a programme that helps students improve their competency in digital skills.

Discussion

Five of the participants (83%) strongly indicated that they learned new digital skills and the other participant developed their understanding and application in a digital skill set, due to their involvement in the Geek Camp programme. The digital skill(s) they learned would be useful to them in the future.

1. I have learned a skill that I didn't know before attending Geek Camp

Five participants strongly agreed and one participant agreed that they have learned a skill that they didn't know prior to this Geek Camp.

2. I feel confident that I can repeat the skills or tasks that I learned at the Geek Camp

Four participants strongly agreed and two participants agreed that they can repeat the skill or task that they learned at the Geek Camp workshop they attended.

3. I can demonstrate to others the skill or task that I learned at Geek Camp

Four participants strongly agreed and two participants agreed that they can demonstrate to others the skills they learned at the Geek Camp.

4. I will be able to use the skill(s) that I learned at the Geek Camp in the future

Five participants strongly agreed and one participant agreed that the skill(s) they learned at the Geek Camp workshop they attended, will be useful to them in the future.

5. I feel more confident about learning digital skills because of my Geek Camp experience

Four participants strongly agreed and two participants agreed that they feel more confident about learning digital skills because of the Geek Camp experience.

6. I recommend Geek Camp as a programme that helps students improve their competency with digital skills

All participants strongly agreed that they would recommend the Geek Camp as a programme that helps students improve their competency in digital skills.

Discussion

Five of the participants (83%) strongly indicated that they learned new digital skills and the other participant developed their understanding and application in a digital skill set, due to their involvement in the Geek Camp programme. The digital skill(s) they learned would be useful to them in the future.

Four participants (67%) felt very confident about the fact that they could demonstrate their newly acquired digital skills learned at the Geek Camp and two others were fairly confident that they could demonstrate the digital learning in front of others.

An analysis of these survey results reveal that all the participants felt that the Geek Camp was a positive learning experience, and that they would recommend this programme to other students.

At the Celebration of Learning event, most of the participants demonstrated what they had learned at the Geek Camp by sharing about the learning process or demonstrating what they had created i.e music recording or programming m-bots or demonstrating the rudiments of the game they had created.

12.   Conclusions

Makerspaces can enhance the traditional library offer for a new generation of users, by providing opportunities for people in low socio-economic areas to access innovative programmes where they can engage with digital technologies and develop important cognitive skills that can positively contribute to improved learning outcomes.

Referring back to argument model, proposed by Williams and Colomb, the evidence from the range of data collected provides strong evidence to refute the hypothesis that the South Auckland Geek Camps do not develop young people's confidence in the application of their digital competencies.

When considering the definitions about digital literacy and being digital literate, the participants were able to use ICT and the internet to achieve outcomes, such as making a movie with Windows movie-maker or a game using Createria. Other participants were able to write computer code using Scratch to programme m-bots, and create a piece of music using the Soundtrap computer application.

Connecting back to the publication, "Digital information literacy: supported development of capability in tertiary environment," and the aspect of "confidence," the narrative analysis, observation notes and Likert Scale questionnaire results, confirm that the participants developed confidence in the application of their digital competencies. This aspect of confidence being present, was also confirmed from the

second interview transcripts, where you can see that the word "confidence" visible in the word cloud using the Drive word cloud tool.
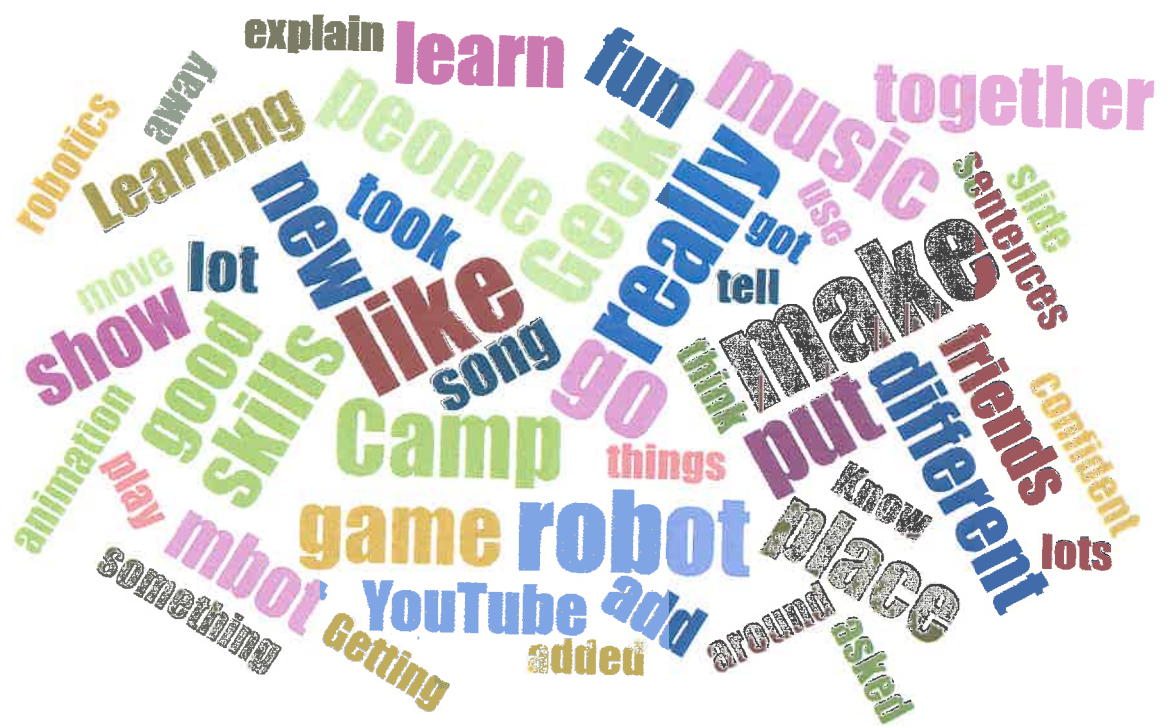
Figure 6 – Second cycle content analysis of participant interviews

The evidence in support of the claim that the South Auckland Geek Camps develop young people's confidence in the application of their digital competencies can be concluded in the following ways:

- Students unanimously responded that Geek Camp experience was a positive learning experience.
- Students expressed an interest in learning more about the digital area that they had selected i.e gaming, movie-making, robotics & soundtrap music lab
- Key words generated from the second-cycle analysis of the interview transcripts revealed the following re-occurring words, in support of the claim that young people are actively engaging with the learning process and doing something with their learning. i.e "like" ,"learn", "know", "skills", "fun", "confident", "use", "think", "show", "explain" etc.

12.1 Recommendations

Geek Camps are an effective way to engage young people in experiential learning which can assist in the development of their digital competency and confidence. They also provide opportunities for students to engage with peers from other schools, develop higher levels thinking and creativity skills, and they can enjoy learning in a space that is different from their traditional learning environment.

Libraries also have a great opportunity to become innovative learning spaces in the local community for people of all ages to connect, learn, create and share ideas. This research project provides evidence in support of the adoption of makerspace programmes, particularly in low socio-economic communities where access to gadgets and gizmo's to "make, hack and tinker," can contribute meaningfully and purposefully in the necessary acquisition of digital literacy skills, and even spur them on to a world of possibilities!

Learning outcomes are usually communicated in the programme description and stated in terms that inform the students about the general purpose of the programme and the expectations of the Geek Camp organising team and volunteers. The information sheet that is distributed to parents and students about the Geek Camp programme could be improved with the inclusion of student outcomes expected from participation in the programme.

Below is a sample of possible student outcomes that could be adopted:
- Students will work effectively as a member of a team
- Students can apply the principles of math and science to a technical problem
- Students will acquire digital skills that will be useful in their future learning
- Students will be able to demonstrate their learned skills with others
- Students will be able to communicate or share their learning with others

12.2 Research Limitations

This research project had a small sample size of six participants.

- Results could be more conclusive if the sample size was larger.
- Participants interviewed had a reasonable degree of prior experience with digital technology at home, and at the schools they currently attend.
- Results could be less conclusive if participants have been randomly sampled, rather than purposeful selected.
- Students could be inclined to provide the answers that they think the researcher wants to hear, rather than commenting on what was actually true for them.

For the purpose of this research project, the sample size was manageable. If more participants has been included it could have proved problematic, given the short time frame available to conduct the observations and the fact that the six participants were spread across different workshops.

12.3 Further comments

Repeating this research methodology on another group of intermediate-aged students at another South Auckland library site, such as Otara, would increase the generalizability of the results.

Obtaining feedback from the tutors would be useful on providing another source of data from a teaching perspective. Their feedback regarding the development of digital literacy skills and growth in confidence during the Geek Camp, would provide a qualified or reliable opinion to strengthen and improve the reliability of data, to sit alongside the narratives provided by participants.

The time-frame of the Geek Camp learning experience is approximately five hours of guided tuition, broken into 2.5 hours sessions after school on two consecutive Thursday evenings. The learning outcomes achieved by these intermediate-aged students in the time available, given time-frame is a notable accomplishment, especially when you consider that fact that the Geek Camp took place after a full day of schooling.

12.4 Further Study

It is recommended that another Geek Camp in another part of South Auckland would be undertaken to provide further evidence to support of the claims in this research project, as it would provide useful data to confirm or negate these research findings, given the small size of the sample, and the prior experience that these young people had acquired, which may not be the case with another group of young people.

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14. <u>Definition of key terms</u>

Affective learning - Learning is demonstrated by behaviours indicating attitudes of awareness, interest, attention, concern, and responsibility, ability to listen and respond in interactions with others, and ability to demonstrate those attitudinal characteristics or values which are appropriate to the test situation and the field of study.

Cognitive learning - knowledge recall and the intellectual skills: Comprehending information, organising ideas, analysing and synthesising data, applying knowledge, choosing among alternatives in problem-solving and evaluating ideas or actions.

Collaboration – Being in partnership with schools, libraries, community organisations and other institutions

Digital Divide – Limited resources and opportunities to play and use technology

Digital Literacy – The ability to use digital technology, communication tools or networks to locate, evaluate, use and create information.

The ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers. (Glister, 1997)

Engagement – Self-driven projects and interest-driven learning

Geek Camp – An activity designed to ignite young people's educational success by providing opportunities to explore digital creativity and develop digital skills.

Learning Outcomes – Developing skills such as problem identification, problem-solving, critical thinking, effective communication and refinement of ideas, evaluation

Maker movement – A trend whereby education is promoted through tinkering and creating

Maker spaces – Places where people can create, build, construct, do and express personal and collaborative products.

Meaningful Play – to make construct, tinker, experiment, invent, create and learn.

Psychomotor learning (Physical) - Learning is demonstrated by physical skills: co-ordination, dexterity, manipulation, grace, strength, speed; actions which demonstrate the fine motor skills such as use of precision instruments or tools or actions which evidence gross motor skills such as the use of the body in dance or athletic performance.

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Participant Information Sheet

Research Project Title: What is the impact of the South Auckland Geek Camps
in developing young people's confidence in application of their digital competencies?

Researcher: Sonia Munro, School of Information Management, Victoria University of Wellington

As part of the completion of my Master of Information Science, I am conducting a research study designed to investigate the impact of the South Auckland Geek Camps in developing young people's confidence in the application of their digital competencies.

Sub-questions being explored are - *"What is the extent of their digital knowledge at the end of the Geek Camp compared to what they knew at the start?"* and *"What exhibited behaviour or actions reflect their digital confidence?*

Six young people aged between 11 - 13 years of age from four local schools will be invited to participate in this research study. They will attend an August Geek Camp which runs over two consecutive Thursday evenings at the Mangere Town Centre Library from 4 - 6.15 pm, on 18 & 25 August. In order to answer the research question, participants will be asked to take part in a two semi-structured interviews that will take about 10 - 15 minutes.

The first inteview will take place at the student's school where they will be interviewed prior to the 18 August 2016 Geek Camp to determine the extent of their prior knowledge and experience in using digital technology.

The second interview will take place following the 25 August Geek Camp to establish or determine any new digital skills they may have learned as a result of their participation in the Geek Camp programme.

The students will also be observed during the Geek Camp sessions and at the Celebration of Learning session where students will report back about the learning they have acheived over the two Geek Camp sessions. This event will be held on 1 September, from 5.30 pm - 6.45 pm.

This research methodology will enable the researcher to gain as much information as possible to determine whether the students' participation in the Geek Camp programme has led to an increased in their confidence and competency in using these newly acquired digital skills in their lives.

Victoria University requires, and has granted, approval from the School's Human Ethics Committee. Auckland Libraries has also granted permission for this research to be conducted. A Health and Safety risk analysis has been prepared for the Geek Camp programme and all students involved in the Geek Camp will be signed in and out of the Library at the end of each of the Thursday Geek Camp sessions.

Permission will be asked to record the interview, and a transcript of the interview will be sent to participants for checking.

Participation is voluntary, and participants will not be identified personally in any written report produced as a result of this research, including possible publication in academic conferences and journals. All material collected will be kept confidential, and will be viewed only by myself and my supervisor Dr Philip Calvert, - Senior lecturer, School of Information Management, Victoria University. The research report will be submitted for marking to the School of Information Management, and subsequently deposited in the University Library.

Should any participant wish to withdraw from the project, they may do so until 30 August 2016, and the data collected up to that point will be destroyed. All data collected from participants will be destroyed within two years after the completion of the project.

If you have any queries about the ethics of this research project, Victoria University HEC Convener, Associate Professor Susan Corbett, can be contacted by email at susan.corbett@vuw.ac.nz or by phone on (04) 463-5480.

If you have any questions or would like to receive further information about the project, please contact me at munrosoni@myvuw.co.nz or telephone 09 275-9294/0212432643, or you may contact my supervisor Dr. Philip Calvert, Senior lecturer, School of Information Management, Victoria University, at philip.calvert@vuw.ac.nz or telephone 463-5235.

Thank you

Sonia Munro

Participant Consent Form

Research Project Title:

What is the impact of the South Auckland Geek Camps in developing young people's confidence in application of their digital competencies?

Researcher: Sonia Munro, School of Information Management, Victoria University of Wellington

I have been given and have understood an explanation of this research project.

I understand that this research has been approved by Victoria University of Wellington Human Ethics Committee.

I have had an opportunity to ask questions and have had them answered to my satisfaction.

I understand that I may withdraw myself (or any information I have provided) from this project, without having to give reasons, by e-mailing munrosoni@myvuw.ac.nz by the 30 August 2016.

I understand that any information I provide will be kept confidential to the researcher and their supervisor.

The published results will not use my name, and that no opinions will be attributed to me in any way that will identify me.

I understand that the data I provide will not be used for any other purpose or released to others without my permission

I understand that, if this interview is audio recorded, the recording and transcripts of the interviews will be erased within 2 years after the conclusion of the project. Furthermore, I will have an opportunity to check the transcripts of the interview.

Please indicate (by ticking the circles below) which of the following apply:

O   I agree to this interview being audio recorded.

O   I would like to receive a summary of the results of this research when it is completed.

I understand that if I have any queries about the ethics of this research project, I can contact the Victoria University HEC Convener, Associate Professor Susan Corbett, by email at susan.corbett@vuw.ac.nz or by phone on (04) 463-5480.

If you have any questions or would like to receive further information about the research project, please contact me at munrosoni@myvuw.ac.nz, or by telephone on 09 275-9294/ 0212432643. Alternatively you can contact my supervisor, Philip Calvert - Senior lecturer, School of Information Management, Victoria University, at philip.calvert@vuw.ac.nz, or by telephone on 04 463-5235.

Thank you for your agreement and support to enable this study to take place.

Name of participant: ....

Signed: .... Date: ....

Parent/Guardian Informed Consent Agreement

I am a student in Victoria University of Wellington and I am conducting a research study to investigate the impact of the South Auckland Geek Camps in developing young people's confidence in the application of their digital competencies. Sub-questions being explored are - *"What is the extent of their digital knowledge at the end of the Geek Camp compared to what they knew at the start?" and "What exhibited behaviour or actions reflect their digital confidence?*

Your child will be interviewed before the August 2016 Geek Camp to determine the extent of their prior knowledge and experience in using digital technology. They will then be interviewed again after the Geek Camp to establish or determine any new digital skills they may have learned as a result of their participation in the Geek Camp programme.

The first interview will be taking place at Robertson Road Primary School and he/she can skip any question that makes them uncomfortable, and they can stop the survey at any time. The interview will take about 10-15 minutes of their time. There are no anticipated risks in this study.

The second interview will take place at the Māngere Town Centre Library. This follow up interview will assist the interviewer to discover whether the students' participation in the Geek Camp programme has led to an increased confidence and competency in using these newly acquired digital skills to their lives.

The information that your child will be sharing at the interviews will be handled confidentially. Your child's data will be anonymous - which means that the data collected will be reported in a way that will not identify either you or your child.

Personal information collected will not be kept for longer than necessary to complete the research project and to allow for academic examination, challenge, or peer review.

Research results will be reported back to those who are participating in the August Geek Camp. If you would like a copy of the research findings, please indicate this by answering the question below (Please circle the answer that applies)

> I would like to receive a copy of the research report   Y / N

I understand that if I have any queries about the ethics of this research report, I can contact the Victoria University HEC Convenor, Associate Professor Susan Corbett, by email at susan.corbett@vuw.ac.nz or by phone on (04z0 463-5480.

If you have any questions or would like to receive further information about the research project, please contact me at munrosoni@myvuw.ac.nz, or by telephone on 09 275-9294/0212432643. Alternatively you can contact my supervisor, Philip Calvert – Senior Lecturer, School of Information Management, Victoria University, at philip.calvert@vuw.ac.nz, or by telephone on 04 463-5235. Thank you for your agreement and support to enable this study to take place.

Signature: .... Date: ....

Educational Institution Informed Consent Agreement

I am a student in Victoria University of Wellington and I am conducting a Masters Research Project exploring the questions, *"What is the impact of the South Auckland Geek Camps in developing young people's confidence in the application of their digital competencies?"*

Sub-questions being explored are - *"What is the extent of their digital knowledge at the end of the Geek Camp compared to what they knew at the start?"* and *"What exhibited behaviour or actions reflect their digital confidence?*

I would like to interview some students from your school as part of my research project.

As the Community Library Manager at Māngere Town Centre Library, I have appreciated the involvement we have had with your school and I would like to continue to support your students by offering an opportunity for some of your students to attend a Geek Camp that is being run in August 2016 at the library. The Geek Camp entails two digital technology sessions being held after school on Thursday 18 August and Thursday 25 August, from 4 – 6 pm. After the Geek Camp, I would like to host a "Celebration of Learning" at our Library on either Thursday or Friday, 1 or 2 September starting at 5.30 pm.

For the research project itself, I would like to interview at least two of your students to assess their prior digital knowledge before the Geek Camp sessions and then afterwards, to assess whether the students participation in the Geek Camp programme leads to an increased confidence to apply what has been taught in their ongoing learning kete.

The initial interviews will need to take place sometime in in early August before the first Geek Camp session on 15 August and then a second interview after the 25 August Geek Camp session. The second or follow-up interview will take place in the week beginning Monday 25 August to assess their confidence and determine their learning from the Geek Camp experience.

I would like to do these interviews at school as I feel that the students will feel more comfortable at school to answer questions about their learning experience.

The students can skip any questions that may make them feel uncomfortable, and they can stop the survey at any time. I envisage that the interviews will take about 10-15 minutes of their time. There are no anticipated risks in this study.

The information that your students will be sharing at these interviews will be handled confidentially. The data will be anonymous - which means that their names will not be collected or linked to the data.

All data collected will be reported in a way that will not identify the student, but your school will be acknowledged, in the sense that you are participating in this research project.

At the Geek Camp sessions the students will be able to select from a range of digital session, including:

- Social media – how to create a website and create content (Coconut Wireless)

- Stop animation (Auckland Libraries)

- Gaming – How to create your own game (Auckland Libraries)

- Robotics - SMINKS lab

Afternoon tea will be provided for the students and parent will be able to collect their children from the Library after 6 pm on the Thursday evenings.

I understand that if I have any queries about the ethics of this research project, I can contact the Victoria University HEC Convener, Associate Professor Susan Corbett, by email at susan.corbett@vuw.ac.nz or by phone on (04) 463-5480.

If you have any questions or would like to receive further information about the research project, please contact me at munrosoni@myvuw.ac.nz, or by telephone on 09 275-9294/ 0212432643. Alternatively you can contact my supervisor, Philip Calvert - Senior lecturer, School of Information Management, Victoria University, at philip.calvert@vuw.ac.nz, or by telephone on 04 463-5235.

Thank you for your School's agreement to be part of this research project and your support to enable this study to take place.

Sonia Munro

SCHOOL NAME: ....

Key Contact: ....

Position: ....

Signature: ....   Date: ....

12 July 2016

Dear Sir or Madam,

I understand that Sonia Munro, Community Library Manager of Māngere Town Centre Library, is currently undertaking a qualitative research project exploring the question: "*What impact do the South Auckland Geek Camps have in developing young people's confidence in the application of their digital competencies?*"

As part of this project, Sonia will need to obtain specific research from the Geek Camp to be held at Māngere Town Centre Library in August 2016. This will entail interviewing a number of students between 11 and 14 years of age to assess whether the learning that takes place at the "maker space" sessions (Geek Camps) actually contributes to an increase confidence and competence in applying these skills after the workshops. Shona intends to conduct this research over two consecutive late nights (Thursday 18 & 26 August from 4.30 – 6.30 pm).

As Acting General Manager of Libraries and Information at Auckland Council, I fully approve and support Shona completing this element of the research.

Yours faithfully,

Mirla Edmundson
Acting General Manager Libraries and Information
Auckland Libraries and Information - Ngā Whare Mātauranga o Tāmaki Makaurau

Monday June 20, 2016

Sonia Munro
Mangere
Mangere Town Centre Library
Mangere
Auckland

Dear Sonia

Congratulations on your decision to undertake your Masters qualification - I am sure this post graduate study will afford you significant learning in your professional life and will enable you to serve your communities with increasing insight.

The letter confirms our recent discussions regarding you undertaking a research project with student participants ant our forthcoming Geek Camp 275 in August.

Subject to the required agreement of family and participating schools, we are very pleased to work with you to support your study. Having a research based understanding of the impact of Geek Camp participation on student learning will provide us invaluable insight.

Accelerating Aotearoa is a Charitable Incorporated entity working to ensure all New Zealanders, no matter what their background, have all the knowledge and every tool they need to access skilled work. Our Accelerating Auckland programme is a unique and fully integrated approach to inclusion, engagement and talent utilisation supporting this kaupapa. With a focus on South Auckland we are working alongside communities to support pathways to educational achievement as the foundation for equity in Aotearoa.

5 interconnected workstreams comprise Accelerating Auckland where **19,000 South Aucklanders have now participated in Accelerating Auckland** since 2014. Accelerating Auckland workstreams include:

- **Digital Stories** - short film competitions engaging youth through their own stories through digital media
- **Park Jam** - free family digital events building connections with skilled work; Local, hands on digital engagement for the whole community.
- **Geek Camp** - free digital youth workshops igniting educational success. Focusing on early teens to support career decisions, Camps connect local students and digital enthusiasts to create digital projects, a glimpse of the future!
- **Access2Employment** (A2E) - a unique approach to employment comprising a series of workshops **connecting local jobseekers with skills, services, local employers and local jobs.**
- **Innovation Spaces** -Community creative co-working, co-learning hubs. A foundation hub has been established at Ōtara on Lovegrove Crescent.

Our very best wishes for the success of this study Sonia - please do not hesitate to contact me should further information be of assistance

With very warm regards,

Judy Speight
Founder and Chief Executive, Accelerating Aotearoa Inc

Initial Student Interview -

Name ....   Age ....

Gender ....   School...

Do you have a computer or device at home   Yes/No

What device have you used in the past?

O   Cell phone   O   Smart phone   O   iI-phone
O   Tablet   O   I-pad   O   Laptop
O   Notebook   O   chromebook   O   MS Surface

O   Other ....

From the list below, which computer programmes have you heard about or used?

PC based word processing programmes
O   MS Word   O   Xcel   O   MS Powerpoint
O   Publisher   O   Adobe photoshop   O   Moviemaker/ I-movie
O   Flickr
O   Other ....

Social Media
O   Facebook   O   Instagram   O   Snapchat
O   Facetime   O   YouTube   O   podcast

O   Other ....

Web based Search engines/learning platforms
O   Smartboards   O   Google classroom   O   Edmodo

O   Other ....

Digital communication tools
O   Text messaging   O   SMS via internet   O Email
O   Skype   O   Video conferencing

O   Other ....

Gaming
O   Mindcraft   O   Candycrush   O   Mobile strike

O   Other ....
Where have you learned about digital technology?

O   Use the programmes at school   O   After school programme
O   Friends   O   Parents/relatives
O   self taught/exploration   O   At the library i.e school holiday programme

O   other ways ....

How do you feel about digital technology?

....

How confident do you feel when it comes to learning new digital skills?

....

Can you share with me a time when you may have shown a friend or family member how to do something on a computer or digital device?

....

....

Can you describe the steps that you took to show them that skill/task?

....

....

....

....

Why do young people need to have digital skills or be able to use digital technology?

....

....

....

Would you like to work in the digital field when you leave school? Why?

....

-

GEEK CAMP INTERVIEW 2   **Name** ....

What did you enjoyed about the Geek Camp? ....

....

Which Geek Camp activity did you participate in?

O   Social Media I ?
O   SMINKS lab (MBots) Robotics
O   Game design (Scratch - coding)
O   Music - Audacity or garageband or other
O   Moviemaking
O   Other

Where do you think these digital skills might be useful in the future ?

....

....

In what ways do you think these new digital skills might help you with your studies?

....

Would you like spend more time learning more about this field/discipline?   Yes/No   Why?

....

How confident do you feel that you might be able to explain or show some-one else what it was that you learned at the Geek Camp? (repeatability)

....

Would you recommend the Geek Camp programme to your friends?   Yes/No   Why?

....

Were you involved with the celebration of learning?   Yes/No

....

What was your contribution to the celebration of learning presentation?

....

....

Any other comments that you would like to share about the Geek Camp programme?

....

LIKERT SCALE QUESTIONNAIRE

How competent do I feel about my digital literacy skills as a result of my Geek Camp experience?

Please tick the best answer	Strongly disagree	Disagree	Agree	Strongly agree
1. I have learned a skill that I didn't know before attending Geek Camp				
2. I feel confident that I can repeat the skills or tasks that I have learned at the Geek Camp				
3. I can demonstrate to others the skill or task that I learned at Geek Camp				
4. I will be able to use the skill (s) that I learned at the Geek Camp in the future				
5. I feel more confident about learning digital skills because of my Geek Camp experience				
6. I recommend Geek Camp as a programme that helps students improve their competency in digital skills				

Table 2 : Primary cycle coding   FIRST INTERVIEW

Theme: Degree of prior knowledge or experience with digital technology

Source	Quote	Concepts	Code
A1	*A Windows PC* *A tablet*	Familiarity with digital devices (home & school)	Uses digital technology
A1	*We use YouTube and podcasts.* *We do project-based learning*	Awareness and familiarity with using web-based platforms for learning	Digital learning is a way of life
A1	*We would publish it on our website* *We use email* *The app will message you....*	Able to understand and articulate learning using digital terms i.e email, blogs, publish	Digitally literate
A1	*Gaming and robotics*	Discerns and differentiates categories or uses for digital applications	Awareness of the branches/fields of digital realm
A1	*I was making one of my blogs...* *I showed my family how to do it.*	Demonstrates digital knowledge with others	Digital confidence
A1	*You can create a bog on their and make your own website.* *We're designing an android app.*	Understands and communicates learning outcomes	Digital competency

Source	Quote	Concept	Code
B1	*Chromebook, cellphone and tablet*	Familiarity with digital devices (home & school)	Uses digital technology
B1	*We do like a plan inquiry.. And we have to search what we need....*	Able to understand and articulate learning using digital terms i.e search	Digitally literate
B1	*YouTube, Facetime, Instagram*	Discerns and differentiates categories or uses for digital applications	Awareness of the branches/fields of digital realm
B1	*I showed a friend.... the star in the new tab...that when you click it, it stays on your tab (tool bar)*	Demonstrates digital knowledge with others	Digital confidence
B1	*We use Google slides... Send them your email*	Communicates learning outcomes	Digital competency

Source	Quote	Concept	Code
C1	*My cell phone A smart phone A laptop A tablet*	Familiarity with digital devices (home & school)	Uses digital technology
C1	*I go on to Google I've used my gmail account and I've messaged a lot of experts for my project. We use digital technology for the whole day*	Awareness and familiarity with using web-based platforms for learning	Digital learning is a way of life
C1	*I used to copy them and post them on my website (google images) For maths we go online and do our maths activities*	Able to understand and articulate learning using digital terms i.e copy, post, online	Digitally literate

C1	*I used to copy them off the internet, and then from Google images..*	Discerns and differentiates categories or uses for digital applications	Awareness of the branches/fields of digital realm
C1	*I've shown her (mum) how to change the title of an article*	Demonstrates digital knowledge with others	Digital confidence
C1	*I've created a website We have to research about a project and do evaluating, summarising, synthesising on websites*	Understands and communicates learning outcomes	Digital competency

Source	Quote	Concept	Code
D1	*Tablet, i-pad, smart phone. we got new chromebooks*	Familiarity with digital devices (home & school)	Uses digital technology
D1	*Google classroom, Google docs, Harpara My parents don't like me going on social media, but I go a lot on YouTube*	Awareness and familiarity with using web-based platforms for learning	Digital learning is a way of life
D1	*You could go to "settings" and put your account on "private," so only the people that you follow, or the people that you allow, can see it.*	Able to understand and articulate learning using digital terms i.e settings & private	Digitally literate
D1	*I have a few games on there like Subway serve, Musically...*	Discerns and differentiates categories or uses for digital applications	Awareness of the branches/fields of digital realm
D1	*I've shown my mum and my brothers how to use "musically."*	Demonstrates digital knowledge with others	Digital confidence

D1	*You can record yourself, like, it will play a song and then you can, like, lipsync to it…..*	Awareness of the features of the app.	Digital confidence
D1	*I've made powerpoint presentations*	Understands and communicates learning outcomes	Digital competency

Source	Quote	Concept	Code
E1	*An HP* *My dad has an i-phone* *My mum has a laptop* *We have chromebooks and laptop (school)*	Familiarity with digital devices (home & school)	Uses digital technology
E1	*There's this ..Google app which we go onto Google docs* *We have our own email which we sign into..*	Awareness and familiarity with using web-based platforms for learning	Digital learning is a way of life
E1	*Snapchat and Facebook, YouTube*	Able to list digital applications	Digitally aware
E1	*There's this app when we play maths games, and I showed them how to use it..*	Demonstrates digital competency. Shares this knowledge with others	Digital confidence
E1	*You just log in (Maths Wizz), and you start to set up, so as you go, you answer these maths questions. If you get some wrong, first it will give you an example, and then you get a test.*	Understands and communicates learning outcomes	Digital competency

Source	Quote	Concept	Code
F1	*I-pad. Laptop*	Familiarity with digital devices (home & school)	Uses digital technology
F1	*YouTube* *Google docs* *Movie-maker and* *Publisher* *Mindcraft*	Awareness and familiarity with using web-based platforms for learning	Digital learning is a way of life
F1	*If you want to communicate with others, like, so some-one's not where you want them to be, and you don't know how to communicate, digital skills are a good way - learning how to communicate with others....*		Uses digital technology

Table 3   Second cycle coding – Narrative Analysis

| Learning Outcome	Personal Reflection Affirmative feelings	Feedback from others Cognitive thoughts	Collaboration Physical actions	Competency	Confidence
Make a movie using captions and music	I recommend it to my friends (Geek Camp)	They were amazed	We put it together....	I was able to demonstrate how..	I could challenge people!
Learn new things	It's really fun	They will be surprised	You can share ideas		Very confident
You have those skills remembered	A lot of people should go to Geek Camp	Other people thought this was a really good game	.Everyone brain-stormed	I showed them how to create a loop	If they ask me how to make a movie, I'll tell them!
Learn new skills	It was really good		We added the spoken words	How to do the animations	Know what you want to do....
You can make a game	[The Geek Camp] it is really teachable	My mum – she tried playing it and she kept laughing	Build it and them programme it	Explain how we did it	I have been trying to "self-manage" lately
Getting to make music	You make lots of friends		Explain what we did	I had to show them	My contribution was to show....
Make the robot	More inspirational		Meet new people	You can activate music	
Make a short film	I really learned a lot		We took photos		
Learn different skills	...the game was fun				

Figure 4 - Second cycle analysis of follow-up interview transcripts

SECOND INTERVIEW

Table 4 : General inductive qualitative analysis – Summative knowledge

Theme: Affective feelings, Cognitive thought and physical actions

Source	Quote	Concept	Code
A1	*You have to learn different skills in how to make it (the game)*	Able to explain the learning objectives	COGNITIVE THOUGHTS Understands the learning objectives and outcome
A1	*I added lots of spikes and enemies to make it challenging for the player*	Evaluating progress and modifying game settings for improved results	COGNITIVE THOUGHTS & PHYSICAL ACTIONS Reflection on learning progress Refining for improved outcomes
A1	*I liked the way I could challenge people on my own game*	Reflecting on personal achievement and the satisfaction that others receive when playing the game	AFFIRMATIVE FEELINGS A positive learning experience Digital competence and confidence
A1	*I got to learn new things that I didn't know before*	Associates Geek Camp with a place where digital learning takes place	COGNITIVE THOUGHTS Reflection on learning progress
A1	*You have those skills remembered when you were at Geek Camp*	Recalling information learned at Geek Camp "game-making" workshop	PHYSICAL ACTIONS Future indication of the application of learned digital skills
A1	*..that it's really fun and I hope to to get to do it again (Geek Camp)*	Enjoyed the Geek Camp experience	AFFIRMATIVE FEELINGS A positive learning experience Digital learning is a way of life

Source	Quote	Concept	Code
B1	*Had to make a movie and use captions and music*	Understands the learning objectives of the digital workshop	COGNITIVE THOUGHTS Learning objectives
B1	*We took photos of people working and we put it in our slide and then we put it together and it becomes a short film*	Understands and explains the learning steps required to achieve learning outcome	PHYSICAL ACTIONS Communicating the learning process
B1	*…We go on "Add music" and then we go on YouTube or other things to pick a song to [play] on your slide [show]*	Communicates steps to achieve learning outcome	COGNITIVE THOUGHTS Understanding and communicating learning Recalls learning steps Digital competency
B1	*If they ask me how to make a movie, I'll tell them, like, straight away*	Expresses confidence in being able to demonstrate the digital skill(s) learned at the Geek Camp workshop	COGNITIVE THOUGHTS Digital confidence
B1	*Becoming a director*	Awareness and understanding of where digital skills will have future application. Making connections - "Bigger picture" Understanding of the "why?"	COGNITIVE THOUGHTS Future digital aspiration
/B1	*They were amazed*	Reactions from immediate relatives about the Geek Camp outcomes - Inner circle	AFFIRMATIVE FEELINGS Successful learning outcome Social value

B1	Very confident	Perception of confidence in digital skills learned at Geek Camp	AFFIRMATIVE FEELINGS Digital confidence
B1	*When they come to the Geek Camp, they will be surprised!*	Reflected that Geek Camp will be a positive experience for participants friends	AFFIRMATIVE FEELINGS A positive learning experience

Source	Quote	Concept	Code
C1	For the SMINKS lab robotics we were using "Scratch."	Identifies the digital application and the field of digital technology digital learning belong to	COGNITIVE THOUGHTS Recalling the digital application
C1	You have to build it and them programme it	Provides essential steps required to be undertaken in the workshop	COGNITIVE THOUGHTS Explaining Learning objectives
C1	I think the m-bot was, like, more inspirational.	Positive reflection about the Geek Camp task compared with a previous LEGO robotics learning experience	AFFIRMATIVE FEELINGS Meaningful, engaging content
C1	You can make it, like, go around and drive and stuff.	Describing the outcomes or effects that the different coding tasks could produce when programmed onto the computer	COGNITIVE THOUGHTS Describing the learning outcomes
C1	You can add some sentences [LED moving sentences], and animation [emoji's]	Demonstrates an awareness of the range of digital tasks that can be achieved at the robotics workshop	COGNITIVE THOUGHTS Recalling learning process
C1	It was really good. I was able to demonstrate how the m-bot was programmed	Reflecting on the digital learning experience and what was achieved, which indicates that digital competency was achieved	AFFIRMATIVE FEELINGS Meaningful, engaging content Positive learning experience
C1	My contribution was to, like, show all the programming, and show my animation and the sentences	Communicates the tasks that participant was responsibility for at the Celebration of Learning event	PHYSICAL ACTIONS Communicating and demonstrating the digital learning outcomes with the public

C1	PHYSICAL ACTIONS Instructing another participant to demonstrate the learning outcomes Taking personal responsibility/accountability	Demonstrating leadership and confidence of personal learning in front of others [at Celebration of learning event]	*I asked ."X". to move the m-bot for the audience*
C1	COGNITIVE THOUGHTS Digital learning is a way of life Future digital aspiration	Communicating the desire of a future goal, building upon the skills that have been learned	*I would like to make a robot in college*
C1	AFFIRMATIVE FEELINGS Educational value A positive learning experience	Able to communicate the value of the Geek Camp experience. Acknowledges the benefit of the learning that other students might achieve if they had the opportunity to attend	*I think a lot of people should go to Geek Camp, 'cause it is really teachable, and a lot of students might, like, go to higher levels with their real learning at schools*

Source	Quote	Concept	Code
D1	I enjoyed learning new things....listening to different sounds, and getting to make music	Familiarity with digital devices (home & school)	AFFIRMATIVE FEELINGS Meaningful, engaging content Positive learning experience
D1	I would like like to be a singer - or music artist.	Awareness and familiarity with using web-based platforms for learning	COGNITIVE THOUGHTS Future digital aspiration
D1	I could use those skills to put something together and..... boom!	Connects with the relevance of the Geek Camp digital learning experience and able to visualise the application of these digital competencies	COGNITIVE THOUGHTS Meaningful, engaging content Digital confidence
D1	Really confident. Yeah! I have already showed a few of my other friends	Confident to share newly acquired digital literacy skills with friends	AFFIRMATIVE FEELINGS Digital confident Positive learning experience
D1	I showed them how to create a loop and how to insert a song from YouTube	Incorporates digital terms in explanations; Recalls the associated web applications and breaks down learning outcomes into steps Actions confirms digital literacy achievement	COGNITIVE THOUGHTS & PHYSICAL ACTIONS Recalls learning Digital competence and confidence
D1	You would need to go onto Google and then search up the website, "Soundtrap."	Understands and communicates learning steps Awareness of the online search engine to locate and access digital platforms	COGNITIVE THOUGHTS Digital competency

D1		
D1	*I made the lyrics, so ...everyone brain-stormed and then I put the lyrics together*	Recalls personal actions which contributed to the achievement of learning outcomes Collaboration with others - teamwork	PHYSICAL ACTIONS Personal achievement Digital competency
D1	*Say you wanted a song from somewhere else, you could go onto YouTube (type that up), then upload it to "Soundtrap" and then you can add your own – different beats and so on....*	Understands and communicates learning steps clearly and confidently	COGNITIVE THOUGHTS Digitally confident and competent
D1	*I got the drum beat.to carry on so we could keep in time with the music.*	Expresses personal actions which contributed to the achievement of learning outcomes Collaboration with others - teamwork	PHYSICAL ACTIONS Demonstrates personal ownership of task
D1	*I sang them, and then I... put the different beats in, and we added the spoken words in...*	Expresses personal actions which contributed to the achievement of learning outcomes Collaboration with others - teamwork Understand digital platform, "adding words in" another recorded track being inserted.	PHYSICAL ACTIONS Personal achievement Digital competency
D1	*Once you save it, you can import those files and put them together..*	Recalling learning process and the necessary steps to achieve learning outcome	COGNITIVE THOUGHTS Digital competency

Source	Quote	Concept	Code
D1	*I would tell them that it's really cool [Geek Camp]*	Excited about the whole digital learning experience and judgement made "cool!"	AFFIRMATIVE FEELINGS A positive learning experience

Source	Quote	Concept	Code
E1	*I took them through the steps, and the process of how to do it.*	Understands the methodology to create a game and is able to communicate learning process	COGNITIVE THOUGHTS & PHYSICAL ACTIONS Digital competence and confidence
E1	*…play other games so you can get, like, a fair idea of how your game's going to be set up.*	Researching to understand aspects of game construction Recognising the value of comparison to develop or achieve a better learning outcome	COGNITIVE THOUGHTS & PHYSICAL ACTIONS Meaningful, engaging content Engaging in physical activity as part of learning assessment
E1	*Know what you want to do and how you want your place to be set up*	Understands what factors need to be incorporated into a game to make it a successful game	COGNITIVE THOUGHTS Evaluating learning outcomes
E1	*..how you can make a game – umm, like not making it too hard or easy. But just right for them to have fun.*	Knowledge of the construction rudiments that enables players to engage and enjoy the game Awareness about levels of difficulty and impact on players engagement and enjoyment Critical thinking indicates higher level cognitive thought process	COGNITIVE THOUGHTS Understands and communicates learning steps Demonstrates personal ownership of task

E1	*Other people thought this was a really good game.*	Receiving positive feedback about game Reflecting on achievements Taking on board comments shared by others, confirming value of personal achievement	COGNITIVE THOUGHTS & AFFIRMATIVE FEELINGS Personal confidence Digital competence A positive learning experience
E1	*My mum - she tried playing it and she kept laughing!*	Recalling experience Confident to share learning with others Proud that mother enjoyed playing the game Recalling experience	COGNITIVE THOUGHTS & AFFIRMATIVE FEELINGS A positive learning experience Personal confidence
E1	*I feel good because, like, the game was fun.*	Describes the personal value of the learning experience and wants to express those feeling with others in a positive way	AFFIRMATIVE FEELINGS Personal achievement A positive learning experience
E1	*I make it, like, sound interesting to them!*	Advocates that Geek Camp was a great learning experience. (Participant has attended a previous Geek Camp also)	AFFIRMATIVE FEELINGS A positive learning experience Social value

Source	Quote	Concept	Code
F1	*Getting to learn new skills*	Learning	COGNITIVE THOUGHTS
F1	*First, we had to make the robot. Then we had to connect it to a computer.*	Initial overview of the learning process Remembering steps	COGNITIVE THOUGHTS
F1	*How to move the robot. How to control it. How to do the animations.*	Describing learning objectives Recalling information	COGNITIVE THOUGHTS
F1	*Click and drag the instructions and connect it to the robot (the computer) so the robot knows what to do*	Explaining incremental steps in the process of achieving a successful learning outcome	PHYSICAL ACTIONS Learning method
F1	*You can activate music on the robot and the*	Communicating additional higher-level learning outcomes	COGNITIVE THOUGHTS Digital competence

ID	Quote	Description	Theme
	animations on the screen (of the m-bot)		
F1	I don't remember the app, but it had something to do with coding.	Understands the alignment of the digital learning workshop to the appropriate branch of computer science	COGNITIVE THOUGHTS Recollection of learning discipline
F1	I had to explain what we did.... The rules that we had and .. I had to show them the movements of the robot and explain how we did it. (Celebration of Learning event)	Communicated the learning objectives and the learning outcomes of the Robotics workshop to the people at the Celebration of Learning event. Able to demonstrate learning objective. Achieved learning outcomes.	PHYSICAL ACTIONS Able to demonstrating the learning outcomes Digital competence and confidence
F1	I recommend it to my friends.	Personal endorsement the Geek Camp was a positive experience	AFFIRMATIVE FEELINGS Meaningful, engaging content A positive learning experience
F1	Geek Camp is a place where you learn new skills. It's place where you make lots of friends and meet new people.	Personal acknowledgement that the digital learning programme was helpful and worthwhile for young people	COGNITIVE THOUGHTS A positive learning experience Social value
F1	...and a place where you can share ideas, and it's a	Geek Camp allows young people to have fun in the process of learning and they can ask questions freely and openly	AFFIRMATIVE FEELINGS A positive learning experience

		COGNITIVE THOUGHTS Independent learner
F1	*place where you can just have fun. Yeah!* *One thing I took away from robotics is what our instructor told us, He said… He asked me, "What do you do if you are stuck? He said to manage yourself and if there is no-one around, it's a good time to "self-manage." I really learned a lot about that. I have been trying to "self-manage" lately.*	Participate was challenged by tutor to take personal responsibility for their learning - self directed learning Evaluating other aspects of learning experience. Making conrnctions Higher level thinking

Table 5   Summary of research participants cognitive learning using Starkey's Digital Learning Matrix

| Cognitive processes	Digital skills being learned	Thinking about connections	Thinking about concepts	Critiquing and evaluating	Creating knowledge	Sharing knowledge
Explanation of level of learning	Focus on completing a measurable task	Simple connections made within the learning context. Compare and share	Develop conceptual understanding of "big ideas."	Evaluating and critiquing to explore the limitations and potential of information, sources or a process	Creativity - Applying ideas, processes and/or experiences to develop a new reality	Sharing the new knowledge through authentic contexts and gaining feedback to measure value of learning
A1	GAMING Make your own computer game using Createria	✓	✓	✓	✓	✓ Co-presenter at Celebration of learning
B1	MOVIE-MAKING Use movie-maker to create digital content for Geek Camp News	✓	✓	X	✓	✓ Multi-media presentation Celebration of learning
C1	ROBOTICS Use coding language to programme an m-bot (SMINKS Lab)	✓	✓	X	X	✓ Demonstrated learning at Celebration of learning
D1	MUSIC LAB Create a music recording using Soundtrap	✓	✓	✓	✓	✓ Audio broadcast at Celebration of learning
E1	GAMING Make your own computer game using Createria	✓	✓	✓	✓	✓ Shared about learning Celebration of learning
F1	ROBOTICS Use coding language to programme an m-bot (SMINKS Lab)	✓	✓	X	X	✓ Demonstrated learning to another participant at a Geek Camp session

Figure – Second cycle analysis (Participant A1)

Figure — Second cycle analysis (Participant B1)

Figure 1 – Second cycle analysis (Participant C1)

**Figure   — Second cycle analysis (Participant D1)**

Figure – Second cycle analysis (Participant E1)

Figure – Second cycle analysis (Participant F1)

RESEARCH PROJECT TIME-LINE 2016

DATE	ACTION
5 February - 5 March	Consult with Supervisor regarding aspects of the project i.e discuss and decide the preferred research method for research Literature search
6 March - 31 March	Review literature in terms of articles regarding "maker spaces" and "digital literacy" to assess which ones would be suitable for discussion in terms of relevancy and accuracy.
1 April - 6 April	Continue literature search in preparation for writing research proposal. Develop research questions in preparation for testing on students.
27 April - 13 May	Confirm methodology, and seek ongoing feedback from Supervisor regarding research project queries Finalise research question, methodology, Timeline and literature review
27 April - 13 May	Complete and submit Research proposal.
14 May - 17 May	Liaise with Rongomai Intermediate STEM teacher, to "trial" pilot survey questions on two students regarding their knowledge and experience using digital devices and e-learning platforms.
18 - 19 May	Attend Otara Geek Camp sessions (3 - 6 pm each day)
20 May - 26 May	Attend Otara Geek Camp debrief. Discuss which organisations would be interested in being involved with the August Geek Camp research project.
27 May - 27 June	Prepare consent forms for participants, parents & learning institutions. Confirm what workshops will be offered at the August Geek Camp.
27 June - 31 July	Prepare HEC application.

Date	Tasks
	Obtain permission from Auckland Library Manager for research project to be undertaken at Mangere Town Centre Library. Submit HEC application. Prepare introductory letter about the Geek Camp research project and prepare sample consent forms school visits in early August. Confirm budget for August Geek Camp.
1 August – 9 August	Make appointments to meet with school leaders to discuss research project and associated learning outcomes. Obtain school permission to promote the Geek Camp to their parent community. Arrange for letters to go out to year 7 - 8 students for the Geek Camp. Await HEC approval.
10 August – 17 August	Organise Library staff to deliver 3 of the 4 workshops. Organise the required digital devices & equipment required for the workshops. Obtain approval from respective library managers to release their staff to assist with the Geek Camp research project. Visit schools to meet with senior leaders to identify prospective participants for research project involvement. Prepare "run sheet" for the Geek Camp programme and H & S Risk Assessment. Receive HEC approval. Collect required signed consent forms.
18 August	Geek Camp (4 pm - 6.15 pm) Conduct first participant interviews. Conduct visual observations of participants
19 August - 24 August	Send out invitations to Library & Civic leaders, parents & family members, teachers, community members, volunteers and Geek Camp supporters to the "Celebration of Learning" event. Transcribe 1st participant interviews Write up observations from Geek Camp.
25 August	Geek Camp (4 pm - 6.15 pm)

	Conduct visual observations of participants
26 August - 31 August	Write up observations of participants as they participate in workshops. Organise equipment, staff, security and catering for Celebration of learning event.
1 September	Celebration of Learning event Conduct visual observations of participants
2 September - 30 September	Conduct second participant interviews Visit schools to present small gift to participants for taking part in Geek Camp and to the Senior leaders of the school involved in the Geek Camp research project Complete transcription of 2nd interviews and observations write-ups following Celebration of Learning event. Begin analysis of transcripts.
1 October - 20 October	Complete analysis of interviews and write research report. Submit research project for peer-review.
30 October	Submit research report

First Interview - Content analysis – Key Words & Phrases

create a bog on their and make your own website design android app.

making one of my blogs showed my family how to do it.

website We use email The app will message you

use YouTube and podcasts. do project-based learning

Windows PC Tablet

Chromebook cellphone tablet

plan inquiry search what we need

YouTube Facetime Instagram

use Google slides email

smart phone laptop tablet

Google gmail messaged experts project use digital technology

copy them post them website google images online

copy them internet Google images

show her how change title of article

create website research project evaluating summarising synthesising on websites

Tablet i-pad smart phone chromebooks

Google classroom Google docs Harpara social media YouTube

settings account private follow you allow

games Subway serve Musically

show how to use musically

record yourself play

powerpoint presentations

HP i-phone mum laptop chromebooks laptop

Google docs email sign in

Snapchat Facebook YouTube

play maths games show how to use

log in Maths Wizz set up

I-pad Laptop

YouTube Google docs Movie-maker Publisher Mindcraft

communicate with others communicate digital skills are a good way   learn how to communicate with others

Geek Camp Observation - A1

Reflections
Thursday 18 August
4.45 pm Participant was sitting at a table in the Teen collection of the library attending the "Game-Making" workshop. Participant was looking at colleague's tablet on their right-hand side. Participant focussed on task. and touching the tablet screen.
Participant is engaged and focussed on the workshop activity. Self-talk indicates that participant is confident and feeling well able to undertake the task of creating a computer game.
Participant re-loads the power, guided by the tutor. Participant looks across at colleagues tablet on the left of them, and asks, "How did you get that?" "Ah…yes! I got it!"
Participant clearly focussed and engaged in the game that is being played.
Participant re-focusses onto the tablet in front of them and says, "Oh… look at that!"
Participant smiles at what colleague has achieved. This is a visual indicator that participant is in a relaxed, happy state and is feeling comfortable interacting with other colleague's attending the workshop
Participant then swaps tablet and plays another game on their colleague's tablet. Participant asks, "How do you re-set it?"
I don't get this" "It keeps running and I don't want it to run?" "It just says 'tap to start'?" Tutor respond to this request for assistance, saying, "Really - Why did he die?"
Engaging in discussion with tutor indicates that participant is "on task" i.e seeking verbal assurance from the tutor that the work that is being accomplished is a helpful contribution to the desired end product.
Tutor assists A1 to get back on task, by challenging participant – "Sometimes you have to break a rule!" Tutor continues addressing the group of students – "If it (the game) is too easy, you may need to create some enemies. You need a good story!" "There a many
This action by the tutor helps drive the participant to re-focus and think or reflect on the comments that the tutor has said. Perhaps a

different elements that go into game making." Participant concentrates on the tablet and purses their lips. Participants eyes are moving from left to right, viewing what is on the computer screen. Participant briefly looks up to see what the other students are doing. Participant re-adjusted their position on the seat.	rule does need to be broken" Perhaps there is another way of achieving the desired outcome? Intense concentration over a 10 minute period demonstrates that participant is highly engaged with the process of creating a computer game.
4.55 pm Participants facial features are relaxed – not showing any signs of concern.	[Students take a break.]
5.30 pm Participant realises that game is too difficult and is working on modifying parts of the challenge so that players can win. Participant employs the use of hand gestures when explaining to colleague the challenges of another colleague's game.	Participant has considered some of the other games that colleagues have created, and then evaluated their game, to make it easier to play.
Thursday 25 August	
5.24 pm Participant is working on the game that is being created. Participant explains the philosophy/strategy of game to a library staff member. Participant says that they are using "Createria" and that the goal for the game player is that they "go to the top of the loop hole." Participant has created a character and that character has to collect gems.	Participant stated that they are the "Master of their game!" The choice of these words are indicative that they are feeling confidence in the game that they have created. These words also indicate a sense that they are proud of what they have achieved. Evidence of enjoyment demonstrated through spontaneous

Participant has also given some thought to the landscape (background scenery). Library staff member asks participant how that is achieved. Participant shows them the "edit" function in the programme. Participant continues talking about the features of the game i.e suitable for people over 10 years of age. Players have "5 lives" and for every diamond that is collected you get points.	interactions with fellow student and with tutor when a group discussion about what makes a good computer games was started. Participant explains the strategy of their computer games that creates the stimulation, motivation and challenge for the player to desire to "master the game."
Thursday 1 September	
6.50 pm	
M.C asked participant to tell the audience about what they have learned at the "Game-making" workshop. Participant corrected library staff member when they incorrectly pronounced the name of the Createria app. as "Creativity" app! Participant states that the favourite aspect of the Geek Camp was using the Createria app to create a "loop hole." Participant elaborated when asked to explain what a "loop hole was" that "a loop hole was like a roller-coaster – up, around and down!" Participant went on to say that player's goal was to get purple diamonds – points. Participant had selected blue as a "background landscape" and that "spikes" were created as part of the game design. Participant is invited forward to receive Geek Camp participation Certificate from Auckland Councillor, Arthur Anae.	Participant clearly proud of what they have achieved in the Geek Camp over the past couple of sessions. This is supported in the way the participant can clearly speak about the features of the computer game they have created. There is no evidence of hesitation or nervousness despite the fact that there are a lot of people in the audience that participant would know. Participant has been given the responsibility to act as M.C. She confidently states, "The next group up is the video group."

In the Geek Camp video, which follows, participant comments that at the Geek Camp, "I have been learning about games."

Geek Camp Observation - B1	
	Reflections
Thursday 18 August Participant was assigned to be part of the "Stop Animation" workshop located in the Library meeting room. The room was a little stuffy, and there were students in the session that were not part of the "Geek Camp" project. The tutors lacked some experience in being able to effectively engage with the young people assigned to this workshop. It meant that a bit of time was lost with students "off-task," socialising and chatting and playing with the props. I wasn't able to observe participant as she was not engaged in learning at the times I popped in.	The Geek Camp workshop experience was offered to students from three local schools. However, there were students who attended this workshop, who proved to be a distraction to some of the students. It was a challenge for the tutors to motivate the group collectively to complete this task. For some of these students, Stop Animation, was their preferred "choice" of workshop to participate in. A the end of the evening session, it was apparent that the workshop content was not inspiring the students to engage with the task, so the students were re-assigned to work with the Geek Camp Movie-making" session to learn video-editing skills.
Thursday 25 August 5 pm Participant sitting at a table with a row of four computers, located in the Mangere Town Centre Library serials lounge. There are four participants involved in the "Movie -making" workshop. Participant was in the process of learning how to create visual effects and	

entering in content to a movie.	
Tutor gave instructions to the students that they had 15 minutes to select a "backing track" for their movie. Participant was accessing YouTube to listen to some songs, to assist in making the song selection for the movie.	
Participant leaning over to the left-hand side to observe what the adjacent participant was typing on the computer screen.	Evidence of enjoyment demonstrated through spontaneous interactions with fellow student.
Participant selected some emoji's and laughed.	
Tutor commented, "You're being distracted!"	
Participant then re-directed focus and started typing in "End Credits."	Engaging in discussion with tutor indicates that participant is "on task" i.e seeking verbal assurance from the tutor that the work that is being accomplished is a helpful contribution to the desired end product.
Participant changed background colour on computer screen to blue.	
She asked tutor, "Her's or mine?"	
Participant was referring to the font size for the credits that was being typed up.	
5.20 pm Observed the work that had been produced after 20 mins. Tutor encouraged participant to add details about the library, like you would see mention of location of filming at the end of a movie.	Participant appeared to be motivated by this recommendation and proceeded to focus on this new instruction.
Thursday 1 September	
7.19 pm When asked by the M.C what learning was accomplished at the Geek	

Camp workshop, participant commented, "We make movies out of the videos that have been recorded. You can make heaps of photo's in one slide and you can create your own movie."	
Participant is invited forward to receive Geek Camp participation Certificate from Auckland Councillor, Arthur Anae.	
Participant looks over the certificate and compares the certificate with that of the colleague standing next to them.	Participant clearly proud of what has been achieved in the Geek Camp over the past couple of sessions.
The Geek Camp movie is played on a screen and participant can be viewed with a smile on their face and they are wearing sunglasses and holding up a "pretend" paper picture frame. When asked what they liked about Geek Camp, by the interviewer, the participant added, "Chips and biscuits."	Smiling and laughing as they see themselves in the movie.

Geek Camp Observation - C1

	Reflections
Thursday 18 August	
4.30 pm	
Participant was working with another colleague (in pairs) sitting at a table in the Children's collection of the library attending the "SMINKS" workshop.	
Participant was leaning over towards colleague's robot. Participant was in the process of making a robot, and at this point in time participant was screwing in a bolt. Participant was engaged in the process and communicating to colleague about what needed to be done.	Participant focused on the construction of an m-bot. Not aware of what is going on around him, which indicates that participant is engaged "on-task."
Participant's head was bowed over as participant was trying to see what was happening to the screw. Colleague tasks over the task. Participant looks over to another group to see how they are progressing.	
Tutor steps in to check how things are progressing. Colleague holds up robot for participant to look at.	Monitoring progress by examining the progress of another in completing the construction of colleague's m-bot.
4.40 pm	
No talking taking place. Participant holding screw driver. Participant leans over and asks colleague about one of the screws. Begins to manually turn screw with right hand. Participant then looks at colleague who picks up the M-bot.	Sense of competition i.e wanting to keep up with the other colleagues Evaluating personal progress in the accomplishment of digital task.

Participant looks across to another group to see what they were up to. Participant interested in their progress. Participant holds onto some wire while colleague is attaching or connecting wires to the M-bot.	Taking care to assist colleague. Wanting to be included and showing affirmative feeling by these actions
Thursday 25 August	
4.30 pm	
Participant is on task – looking at computer screen.	Evidence of enjoyment demonstrated through spontaneous interactions with fellow student and with tutor when a group discussion about what makes a good computer games was started.
4.52 pm	
Participant focussed on computer screen, following coding instructions laid out in sequential order on laminated card. Participant used coding language to programme the LED word, "Hi" onto M-bot screen. Participant seemed a little frustrated and commented, "the coding is supposed to be like that! (The word "Hi" should scroll horizontal across the screen).	Participant demonstrates critical thinking/evaluation when comparing learning of other colleague. Comment reflects that detail is important i.e wanting to get things right!
Tutor questions participant by saying, "What did you do to it?" He challenges participant by saying, "You need to change something in the code to make it scroll."	Participant reveals that they have understood the steps and an understanding of the correct process to achieve the expected results.
Participant returns to the computer screen to check the steps shown on the laminated card.	Demonstrating "quality-control," monitoring that correction instructions are being followed.
[Some other students arrive and take over the laptop and work on the coding]	Because the participant is engaging in discussion with tutor it can be concluded that participant is "on task" i.e seeking verbal assurance from the tutor that the coding being programmed is going to result in the

	desired result/outcome
Participant is struggling with the fact that some other students have arrived at the SMINKS workshop and have been encouraged to "have a go" at coding. They have taken over the computer that the participant was using. Participant was not happy to relinquish the computer to these students who are not part of the Geek Camp programme.	Participant learning the challenges of working collaboratively, in that tools and equipment have to be shared.
Participant leaves the SMINKS workshop and goes and sits on a stool behind one of the bayend shelves in the non-fiction area.	
Participant returns to workshop area and picks up a M-bot that is no longer being used by a another pair of students. Researcher asks what participant had achieved so far. Participant replies, saying, "I created a sentence and the sentence I made was, "We love libraries…!"	Researcher notices participant C1 in the non fiction area. Researcher wanders over to have a chat with the participant and encourages participant to return to workshop and demonstrate what has been learned.
Participant acknowledges that M-bots were completely new for them. In the words of participant E1, "The SMINKS workshop is slightly more difficult than coding at school."	When questioned whether patron had prior experience with programming, participant explained that the workshop was new learning. Participant had previous experience programming LEGO robots at school, but the programme was much simpler.
6.09 pm	
Participant E1 joins another research participant and they are both working together following the coding instructions on the laminated card. Other research participant used the computer and started inputting the code, following the instructions that are laid out on laminated coding worksheet. Participant E1 watches on as other research participant types the sentence, "A long time ago."	Participant recognises that they had allowed their emotions over-ride their thinking and learning progress. Acknowledges those feelings and frustrations, by verbalising them to tutor, and when listened to, is able to settle and returns to the group and continues with another task.
	Research participant acknowledges that the coding associated with the SMINKS workshop is more sophisticated than what they were used to at school with the LEGO robots.

	Tutor explains that there are several levels of coding (degree of difficulty) that workshop participants can aspire to achieve: 1. Coding to enable M-bot to undertake small movements i.e forward and stop 2. Insert a variable in the coding programme to enable the M-bot can go forward and backwards. 3. Insert the press/release function so M-bot can go forwards and turn.
Thursday 1 September	
7.19 pm M.C asked participant to inform the audience about the Geek Camp workshop that they were working in. Participant reached for the microphone and said, "First of all, I'd like to show you guys what animation I did with this robot." There was a horizontally moving sentence running across the M-bot screen that read: "We love libraries." The second activity that could be undertaken was to create emoji's that could be flashed across the M-bot screen.. Participant continued the explanation in a clear voice, "I'm going to show you the message, "Libraries are fun!" Tutor holds up the M-bot showing the scrolling sentence to the audience.	Participant was confident and articulate in describing the learning steps that were involved with the SMINKS Lab workshop with the audience at the "Celebration of Learning" event. Participant used the microphone to outline what the outcome of learning entailed, and didn't appear nervous in front of people.

Participant closed the report back session by saying, "I'd like to say "Thank you" to all those who let me go to this Camp."	Participant is clearly proud of their achievements and was confident in sharing the learning process with a group of people.
Participant is invited forward to receive Geek Camp participation Certificate from Auckland Councillor, Arthur Anae. Participant shook hands with Councillor. Participant stood proudly alongside the other students attending the SMINKS workshop, holding up the Geek Camp Certificate.	Participant demonstrates digital competency and personal confidence in the learning achieved, as evidence by body language and facial expressions, and sharing learning with family and friends.
A big smile is clearly seen by everyone in the audience.	

Geek Camp Observation - D1	
	Reflections
Thursday 18 August 4.15 pm Participant has headphones on. Eyes focussed on computer in front. Using "Soundtrap" programme to create some rhythms for the background that vocal track to be laid. Participant manipulating the pitch. Leans over towards colleague on left hand side. Discusses with colleague the features of the Soundtrap programme. Tutor walks over to offer participant and colleague some tips about downloading songs from YouTube and imported into Soundtrap. Participant and colleague working together to "re-mix" recording to suit the project requirements.	Participant demonstrating "on-task" behaviour. Physical actions confirm that participant is engaged with digital task and making progress on the achievements of the learning outcomes. Communicating confidently with other colleagues, indicating that learning is pitched at a correct level and not over-whelming. Given that this is a completely new digital platform, behaviour demonstrates a familiarity and confidence with digital technology. Participant working collaboratively with other colleagues, able to negotiate differences in musical taste and not "tripped up" emotionally or feeling self-conscious. Appears completely happy and content in their person which infers that participant is "intrinsically motivated" and this will inevitably lead to a positive learning outcome.
Thursday 25 August 5.42 pm Participant started singing a song about bullying. Singing into a microphone. Song was being recorded i.e laying down a vocal track. Participant then listened to what had been recorded. Put headphones back on.	Working collaboratively with colleagues to complete voice recording and Discussing with colleagues, where the verse and the chorus will sit, and participating in conversations about the lyrics and what they mean. Participant is engaging in cognitive thought and higher level thinking, evidenced by evaluation and reflection of work, aiming to achieve a

5.46 pm Participant re-records the lyrics. Then selects the vocal track and re-focusses on the recording. 6.17 pm Participant focussing on computer VDU. Participant encourages fellow student by looking directly at her and says, "You can sing it your own way." Participant is re-directed back to task as hand, following the tutor's direction. Participant offers an explanation to a fellow student about microphone technique. Makes a comment to fellow student about "recording over each other." Grabs headphones off the other student and laughs. Participant sharing headphones so they can both listen to the recording.at the samer time – placing their heads near each other. Participant asks tutor, "Can I do something? Adjusts positioning on chair. Tutor comments that it is an original song so they can do whatever they wish to do.	positive result for their efforts. Participant demonstrates digital competency as they are able to confidently use the platform to select rhythmns, add beats, and adjust the tempo or playback " of the musical piece being created. Participant happy to receive feedback about progress and consider advice from tutors about features that could improve piece of music. Participant coming up with ideas or variations about what could be modified on the vocal tracks i.e "What would happen if I did that?" Evidence of enjoyment demonstrated through spontaneous interactions with fellow student.
Thursday 1 September	
7.15 pm Participant turns up half way through "Celebration of Learning" event. Arrives in time for group presentation. Participant is invited forward to receive Geek Camp participation Certificate. Has a beaming smile. Standing beside Auckland Councillor, Arthur Anae. Participant joined in school performance where group sang their School	Participant proud of what has been achieved in the Geek Camp over the past couple of sessions. Participant had looped the recording so it played through 3 times. Student was clearly enjoying the special occasion and the opportunity to hear the original song about bullying being played to the community

song in te reo Maori.	representatives and civic dignitaries present at the "Celebration of Learning" event.

Geek Camp Observation - E1

	Reflections
Thursday 18 August	
4.40 pm Participant volunteered answers to the tutor when the tutor posed questions to the group of participants for their reflection. Tutor gave participants a time limit to complete the coding task they were doing – "Improve the one you have already."	It was evident that the student was thinking about what was being asked. Participant leaned over towards the direction of the person that they were working alongside (in pairs), looking at what that person had programmed in code on the computer.
4.45 pm Participant is looking at the computer text on LCD screen and comments to partner, "Drag the whole thing out." Participant continues, "Create a variable - exposition. Participant observes partner editing coding text.	Participant demonstrating competency in the use of the computer terminology to explain what neighbouring colleague could do to "enhance" their game layout. Partner evaluating progress colleague is making with learning instructions.
Thursday 25 August	
7.08 pm Participant volunteers an answer to a question that tutor posed to the group of students. "When you get older, you can't rely on others. You have to figure it out for yourself."	The demeanour of the participant indicated that participant was proud of their efforts. Participant demonstrating a mature outlook, taking personal responsibility for their learning (self-directed).
7.12 pm Participant states, "I want to show you how we connected the robot to the	Participant had a look of contentment and satisfaction that the tack which had been set, had been successfully accomplished.

laptop." Participant continues by saying, "We followed instructions." (instructions for computer code printed on laminated card)." Participant commented again, "He moved the robot via the computer."	Demonstrating competency and confidence in being willing to share the understanding they have achieved and how the learning objective was completed.
Thursday 1 September **7.15 pm** Participant shared with the audience about the process/steps that were taken during the workshop to programme a robot at the "Celebration of Learning" event.	Participant had a look of contentment and satisfaction that the tack which had been set, had been successfully accomplished. This was evidenced in the fact that participant did a "moon-walk" action (dance manoeuvre) and then went back to join the group of students.
Participant is invited forward to receive Geek Camp participation Certificate. Participant has a smile on their face and claps their hands as sign to congratulate the whole group of students who were involved in the SMINKS workshop. Participant stands with the students by Auckland Councillor, Arthur Anae.	Participant had a big smile on their face as they stood beside Councillor and tutor. This was evidenced in the fact that participant did a "moon walk" action (dance manoeuvre) and then went back to join the group. Demonstrating an understanding of the way the coding language can be transmitted to the physical object on the floor.
When asked by the M.C about the workshop that participant was involved in, participant commented, "I did robotics. It's fun to do it." "I recommend this Geek Camp to family and friends."	Demonstrating cognitive and affirmative thinking in the comments being shared with others.
The finale act of the "Celebration of Learning" was a group performance Participant picked up the guitar and lead the school students from Rise Up Academy in a rendition of their school song in te reo Maori.	Showed leadership and confidence to inspire the group of fellow students to sing their school song. Came with a guitar and, on a whim, pulled it out, and the group performed as a finale item to close out the Celebration of Learning. These actions demonstrate the value of the learning experience. Participant was intrinsically motivated and achieved positive learning outcomes, and the social-emotional, technical and cognitive processed contributed to the achievement of digital competency.

Geek Camp Observation -F1

	Reflections
Thursday 18 August	
5.45 pm Participant was sitting at a table in the Teen collection of the library attending the "Game-Making" workshop. Participant leaned over to listen to the tutor's comments. Participant picks up colleagues tablet and plays a game on the tablet.	
Participants comments, "Oh! That's mean, eh?!" Colleagues keeps repeating, "It's impossible!" "Try getting me!"	Participant is engaged in playing a computer game and determined to "win!"
Participant moves over and looks at friends tablet. "I'll take you on, eh!" Participant adds, "Yeah!, you idiot!"	
Participant re-focusses on their own computer game. Participant expresses frustration. "Clash with the Queen's dragon race." Participant is focussed on the tablet screen.	Participant completely engaged in workshop task.
Participant get up from chair when colleagues has something exciting happening on their tablet, but participant is still intently working on own computer game. Returns to original position at table.	
Tutor comes over to have a look at the game that has been created.	
Participant exclaims, "Bad guy! Bad guy!" Participant continues, "No - wait! When you get here, jump."Wait, I'll take it out first."	Volunteering advice to another workshop colleague. Reveals that patron has sufficient confidence to be able to make

Participant observes tutor playing the game. Participant asks tutor, "Where are you going?" "You gotta go back!" When tutor gets past a difficult points participant states, "Yeah!" Participant sits back in a reclined position. Has a contented look on their face. 5.55 pm Participant re-sets the game for the tutor. Participant briefly looks away, and then re-focusses on the tablet screen. Participant smiles when the tutor loses. Follows tutor's progress intently.	recommendations to another. Actions confirm that patron is engaged in the learning process . Participant is emotionally engaged and enthusiastic about the workshop task. The workshop is at the right level of difficulty in that there is sufficient challenge to stimulate learning and participant is highly motivated to overcome the "obstacles" that have been created in the game - evidenced by the comments that are being spoken. Intense concentration over a 20 minute period demonstrates that participant is highly engaged with the process. Participant understands the rudiments associated with winning or losing a computer game..50
Thursday 25 August	
5.50 pm Participant looking at colleague's computer game. Tutor asks for feedback to question, "What makes a good game?" Participant volunteers the answer, "Difficult." Participant qualifies answer by adding, "makes it good because it is difficult." Responded back to tutor again, "I played Josh's game. Too easy." "Sometimes it is too difficult because of the spikes"	Evidence of enjoyment demonstrated through spontaneous interactions with fellow student and with tutor when a group discussion about what makes a good computer games was started.

When tutor threw out the question to the group about what makes a good game, participant commented that their computer game was based on pre-existing games that had been played that were addictive i.e time management game – that was where the inspiration had come from.	
"Looked at other games." Played around with a few."	
When asked what is motivating about a computer game, participant responded by saying, "Trying to win/finish a game."	
Tutor asked about the specific attributes of the computer game that participant had created.	Engaging in discussion with tutor indicates that participant is "on task" i.e seeking verbal assurance from the tutor that the work that is being accomplished is a helpful contribution to the desired end product.
"Diagonal lines – maximum effect." "You need to get enough diamonds."	
"Yea – you have completed the game."	
When asked what age would this game be suitable for, participant said,	
"Over 10 years of age - they would know what to do."	
After feedback gathered from colleagues in the workshop, the participant commented that "more jumps were added" and the level of difficulty was refined, "so it wasn't too difficult - they didn't die too often."	Participant demonstrating the criteria that he has inbuilt into his games that creates the stimulation, motivation and challenge for the player to desire to "master the game."
When asked about the criteria of the game, participant said, "You have to be able to finish the game." The challenge for players is that they collect purple diamonds.	
A query was raised as to whether there a name for the game? Participant replied, "Die for the diamonds!"	When asked how participant set up the parameters for the game, participant volunteered that other people were asked to try it out and give feedback. These actions reflect the fact that the participant is

	"testing the model" to check whether it is too hard or too easy for players. In this way the participant can establish whether people enjoy playing it. "When you play other games, it gives you an idea of what you want to create in your game." The statement by the participant indicates that participant is reflecting on prior knowledge and experience in playing computer games, and he is beginning to analyse what criteria aspects are important for a successful game.
Thursday 1 September	
7.19 pm M.C asked participant to tell the audience about the computer game that was created in the "Game-making" workshop. Participant held the tablet on his forearm and he spoke into the microphone detailing features about the game. Participant explained the learning experience, making comments such as "You get to play other games" and following on from this thought, "gives you an idea of what you want to create in your own game." Participant is invited forward to receive Geek Camp participation Certificate from Auckland Councillor, Arthur Anae. In the Geek Camp video, participant is seen wearing sunglasses and he comments about the Geek Camp saying, "Come and learn some of these new things! Cool!" Participant adds, about Geek Camp – "It is quite a	Participant clearly proud of what has been achieved in the Geek Camp over the past couple of sessions. Evidenced by the way participant speaks about the computer game displayed on the tablet for the audience to see. Participant uses their hands to express themselves. Participant appears very confident and able to articulate their ideas clearly, with a sense of

rush!" followed by the after thought, "And there's some nice food too!"	humour.
7.35 pm Participant joins in with students from Rise Up Academy at the end of the "Celebration for learning" event when they sing their school song in te reo Maori.	Participant smiles when viewing their workshops "cameo" contribution to the Geek Camp movie.