

**'That doesn't look like I thought it would'**

**A study into the effectiveness of picture book cataloguing at the  
University of Canterbury Library**

**by**

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Submitted to the School of Information Management,  
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in partial fulfilment of the requirements for the degree of  
Master of Information Studies

**June 2017**

## Abstract

**Research problem:** This study explores the topic of whether or not library catalogues are meeting the needs of different user groups. This is narrowed down to focus on early childhood teaching students at the University of Canterbury and how they select picture books using the University's library catalogue. In doing so it identifies what metadata this group look for when selecting an item and found that these are not reflected in the current catalogue.

**Methodology:** This took a qualitative approach which combined structured interviews with the verbal protocol analyses method in a three-part approach. Participants were asked a series of questions during the first and second parts, then asked to think out loud as they selecting items during the second stage. Throughout this process no prompts were provided from the researcher in an attempt to capture their natural thoughts.

**Results and Implications:** Data collected showed that early childhood teaching students have specific needs when selecting picture books which impacts the type of metadata they are drawn to. These are a result for the need to find books which entertain and engage young children while aligning with the New Zealand Early Childhood Curriculum. It was found that these needs are not reflected in current picture book records at the University of Canterbury which creates challenges when selecting items. Understanding the behavior of this user group can help to inform cataloguers at the University of Canterbury to create or edit records to improve the selection process. On a wider level, there is the potential to explore this topic in future studies to support libraries in creating systems which reflect the needs of their users.

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## 1. Introduction

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The University of Canterbury is an academic institution located in Christchurch, New Zealand. The University is spread across two campuses and currently has four libraries, each of which caters to different areas of study. One of these campuses is the College of Education, Health and Human Development which attracts a number of teaching students from early childhood up to the high school level. This campus is also home to the Henry Field Education Library which houses a teaching specific collection including picture books, Young Adult novels, classroom textbooks and Māori resources. During November 2017, the two campuses are set to merge and the Education library will be interfiled with the collection in the larger Puaka James-Hight Library. Selecting books is already challenging as the UC catalogue currently follows the Machine-Readable Cataloguing (MARC) format and Resource Description and Access (RDA) standards which are based on older card catalogue records and do not take into account elements required by today's users (Sprochi, 2016). This means that records do not generally include details which relate to the themes or lessons they are required to teach, and locating items is heavily reliant on the help of the Education library staff. This type of help will not be possible when the collections merge, meaning that selecting books is likely to become more challenging. In this context it is essential that the library catalogue be examined to ensure it contains the information teaching students need to effectively locate items.

## 2. Topic Statement

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### 2.1 Research Objectives

The purpose of this research is to determine if the University of Canterbury Library is cataloguing picture books in a way which meets the needs of students studying early childhood education at the organisation. This is rooted in the idea that libraries today should focus on the needs of different user groups and create records using metadata which relates to these needs. This project focused on the early childhood teaching student user group at UC and how they select picture books for both educational and enjoyment purposes. It explored the hypothesis that the current catalogue does not consider what metadata this user group looks for in a bibliographic record, but catalogues picture books as they would academic texts, DVDs and classroom resources. In conducting this research I was able to identify what metadata early childhood teacher's value and if it is reflected in current bibliographic records. This was achieved by developing two research questions which the project set out to answer;

What metadata in a bibliographic record helps student teachers choose picture books that help them learn about applying the curriculum?

To what extent are the University of Canterbury records currently meeting these requirements?

Results will benefit the needs of current and future users which Tennant (2002) describes as the purpose of libraries. There is also the potential to influence the wider community as the project was designed so that it could be replicated by other libraries for their own research.

### 2.2 Rationale for Study

It was felt there was the need to conduct this research as a number of staff and students had expressed dissatisfaction with the current catalogue. Discussions with the academic staff working in the College of Education revealed the need to create records which help students connect items to the

learning outcomes of the teaching curriculum. They believe that this would allow students to select items to use as teaching tools in specific lessons, or purely entertainment purposes. This research is particularly timely as the upcoming Education Library move will result in a larger library space and lessen the availability of staff to assist in locating items.

Focusing on a library catalogue is significant as this is the access point for users when interacting with the library's resources. Without well-constructed and organised information on an item, individuals are unable to find what they need (Beak & Olsen, 2011) and the library is unable to fulfill its purpose. This information is organised through bibliographic records which display metadata details such as title and format to represent an item within a system so that it can successfully be retrieved (National Information Standards Organization, 2004, as cited in Lopatin, 2010). If the wrong metadata is represented, the quality of a search is affected as users would struggle to locate items (Kreigsman, 2002, as cited in Lopatin, 2010). It is metadata which has the greatest impact on retrieval as this is what locates the results and allows the user to determine their relevance. Current UC records are received from the National Library of New Zealand Te Puna Mātauranga o Aotearoa which follows the MARC 21 format developed in 1999 (National Library of New Zealand Te Puna Mātauranga o Aotearoa, n.d). As MARC is based on the outdated card catalogue records, these are usually uncomplicated representations which do not take into consideration the specific needs of early childhood teachers. While it is not advised that UC develop their own cataloguing process, there is the opportunity to edit, add, modify or copy information in existing records in order to make selection more effective (SirsiDynix, 2012). Collections Management have indicated that changes can be made and this research could be used to inform cataloguers on what metadata should be added to current bibliographic records. This could be achieved by library staff editing records themselves or enlisting the help of library users by installing Library Thing for Libraries. This would allow users such as early childhood teaching students to add information such as reviews, books with similar themes and tags to current records (Library Thing, n.d). As both these options will involve some input from library staff, results from this research can be presented to library management and used to gain their support in spending the time changing current and future records.

This is a type of action research as it aims to improve a perceived problem in one specific location (Williamson, 2013). In this case, the focus is on the University of Canterbury and the concern that the catalogue is not providing the bibliographic information required for an effective search. This is

different to a usability study as it examined bibliographic records after they have been found as opposed to the process an individual goes through in order to locate them.

Picture books have been selected as there are numerous studies demonstrating the correlation between reading and the development of key pre-literacy skills. This is reflected in Te Whāriki: Early Childhood Curriculum which is produced by the New Zealand Ministry of Education as guidelines for early childhood classrooms around the country to follow. The curriculum outlines the key competencies and learning areas which teachers are required to develop in students and should form the framework of their lessons. One of these learning areas is English and the development of literacy, which helps children construct meaning from the world, create language skills and develop a sense of belonging (New Zealand Ministry of Education, 2012). Picture books play a role in this development as Te Whāriki describes how reading both develops literacy and introduces children to stories from around the world in order to create a sense of identity through an awareness of New Zealand's bicultural heritage and the wider world (New Zealand Learning Media & The Ministry of Education, 2007). Their importance as a classroom resource is directly acknowledged with the statement that "books and storytelling give children the opportunity to develop the knowledge, skills and attitudes they need to use complex symbol systems that make up our society" (New Zealand Ministry of Education, 2015). As early childhood students at UC explore this curriculum in their studies (University of Canterbury, n.d), it is important that they can locate picture books to achieve the key competencies and learning areas outlined.

The impact of this research goes beyond UC as it contributes to the current information science research trend of discussing challenges within modern library cataloguing. There is general agreement that this process needs to be re-evaluated, as current cataloguing practice is limited when it comes to representing different resources so they reflect today's user needs. Bibliographic records at UC are comprised of different fields which each contain information on details such as the title or subject of an item (SirsiDynax, 2012). The details included are based on RDA guidelines which were created to answer questions such as "how should the author's name be written?" (Library of Congress, 2009) as opposed to how a specific user group may look for that item. There are benefits in this process because MARC and RDA are international cataloguing standards which allow libraries the ability to share bibliographic resources or move to a new system with the assurance that their data will remain compatible (Library of Congress, 2009). This is the case at UC as records are shared by the NLNZ and any library creating its own system would be faced with more work and cut off from information sharing (Library of Congress,



2009). Despite these benefits, there are concerns over MARC as it reflects the earlier card catalogues and neglects to account for variances between items such as DVDs and books, while often downplaying characteristics valued by different user groups (Coyle, 2016). Research has already revealed limitations in cataloguing picture books by exploring what metadata children and parents value, however this is yet to be looked at from the perspective of early childhood teachers. Prior to conducting this research it was assumed that this user group was likely to look for metadata which relates to Te Whāriki, and that these specific needs were not accounted for in current cataloguing practices. Within this context we can see the importance of this project as it benefits users at UC while providing another perspective on the discussion of RDA and MARC records in libraries today.

### 3. Literature Review

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#### 3.1 Purpose of Review

The purpose of this literature review is to present the context and need for my research. In order to provide a detailed background, the review has been divided into four sections. The first will look at international cataloguing standards and discuss the limitations in developing bibliographic records for picture books. The second describes the link between picture books and Te Whāriki, highlighting the motivating factors for early childhood teachers when selecting a picture book. The third looks at how bibliographic records can be organised to reflect different user groups, and to conclude I will look at research using the verbal protocol analysis methodology which was employed in my data collection.

Items were located using a keyword search on the Emerald database, Victoria University of Wellington Library and through the reference lists of those which were found to be particularly useful. It is important to note that a majority of the articles do not use teachers as participants or examine reading in a classroom; nor do they directly refer to a theory. They were selected because each explores an idea or question relating directly to my research, and emphasise the gap in literature which my project can fill.

### 3.2 Cataloguing Practices

The picture book records at UC are created using the MARC and RDA which a number of library science publications have determined to be problematic. Coyle and Hillmann (2007) argue that this is due to these standards still being based in the past and neglecting the needs of current and future users as they cover the history of cataloguing. Their article described how this began with the development of the Anglo-American Cataloging rules in 1908 when the card catalogue was the only entry point into a library's holdings (Coyle & Hillmann, 2007). As catalogues began to shift to electronic databases, MARC was developed as a way of moving away from the tangible card catalogue records and represent an item in an intangible online database. Since then a number of data and metadata initiatives have been developed which are discussed in a content analysis by Sprochi (2016). This identifies MARC as problematic as it limits the way information is organised and results in electronic records which mirror the traditional card catalogue. As technology improved, users became accustomed to finding information from a variety of access points and MARC became lost to these online search engines (Sprochi, 2016). This was largely due to its assumption that users would understand how to access headings. For example when looking under the author fields, Sprochi (2016) comments that the user must know they need to search for Carroll, Lewis as opposed to Lewis Carroll or even Charles Dodgson in order to successfully find items by that individual.

As cataloguing practices remained grounded in the past, information professionals recognised the need for new standards which would reflect the variety of resources and their users. Rather than re-evaluate existing standards, the RDA was developed as a set of guidelines for cataloguing in the modern world. While this is a positive development, Coyle and Hillmann (2007) argue that RDA remains in the past as a key factor of the design is the focus on adding data to current catalogue records in order to remain compatible with MARC and existing library systems (Coyle & Hillmann, 2007). Sprochi (2016) points out this was the intention for the Functional Requirements of a Bibliographic Record (FRBR) which identified user tasks and used these to create a framework for the data needed to carry these out (IFLA, 1997 as cited in Sprochi, 2016). While this showed an awareness of user needs, Coyle & Hillmann, (2007) comment that the RDA fails to consider the tasks identified in FRBR and creates bibliographic records which do not always reflect the needs of the library users.

Beak and Olson (2011) discuss how this relates to picture books in a cross-examination of different metadata schemas for children's libraries. They argue that standard library cataloguing was not created specifically for children's collections and metadata included in these records does not reflect the

unique characteristics of children's book choices (Beak & Olson, 2011). This is developed further by Coyle (2016) who reasons that catalogues should identify potential queries and manage expectations for responses. For example, early childhood teachers might ask for items focusing on rhyming words, which a cataloguer could respond to by including metadata such as 'rhyming language' or an image of a book page to show some of the text. Neglecting these needs reduces a catalogue's effectiveness and we can see why the early childhood student teacher group may struggle to select picture books.

### **3.3 Reading and Literacy Development**

Te Whāriki : Early Childhood Curriculum provides a framework for both professional teachers and students throughout New Zealand. It outlines the ways picture books can help develop these key competencies and learning areas as "words and books can amuse, delight, comfort, illuminate, inform and excite" (New Zealand Ministry of Education 1996). With reading playing such a significant role in achieving the Te Whāriki framework, it is understandable that early childhood teachers would take care in selecting what items they read to children.

The relationship between picture books and literacy development has been discussed in a number of articles. While there is little to no research into early childhood teacher's use of picture books, these studies do provide an insight into what this user group may look for in a bibliographic record. In a content analysis of case studies and articles focusing on story time sessions in public libraries MacLean (2008) argued that listening to stories is an important activity which encourages literacy development, while also raising the point that not every child is read to at home. This has been looked at in New Zealand by Bamkin, Goulding and Maynard (2013) who explored the benefits of Storytime sessions in mobile libraries. The researchers gathered recordings of 28 sessions and found that listening to stories had a positive impact on their linguistic and literacy skills as it introduced children to new words and grammar patterns (Bamkin, Goulding and Maynard 2013). The relationship between picture books and literacy was discussed in a case study from Goulding, Dickie, Shuker and Bennett (2014) which again looked at literacy in New Zealand public library Storytimes. The researchers identified six key pre-literacy skills and outlined how these can be developed through reading picture books which were described as follows;

- 1) Print motivation: having an interest in reading and books.

- 2) Vocabulary: the number of words children learn and their ability to understand and use them.
- 3) Print Awareness: an understanding that printed words have meaning.
- 4) Letter Knowledge: an awareness that letters are all different and have their own sounds.
- 5) Narrative Skills: understanding that stories have a structure and the ability to describe things and events.
- 6) Phonological Awareness: knowledge that words are made of smaller sounds and syllables. This includes the ability to understand rhymes and play with words.

In their research, Goulding, Dickie, Shuker and Bennett (2014) observed how each of these skills is achieved through various features of a picture book. Language such as rhyming words and interactive features like pop-up flaps were used to get children interested in books and encourage print motivation, while librarians were observed asking questions about a story in order to develop narratives skills. This connection between reading and literacy development is supported in Te Whāriki which uses case studies to highlight how specific details of a book relate to different literacy skills. In one example, a teacher notes how a 14 month old boy recognised the illustrations in a book during shared reading and began to say the corresponding word aloud (New Zealand Ministry of Education, 2012). This ability to connect words to an image shows an understanding that printed words have meaning, thus demonstrating development of print awareness. In another example, phonological awareness can be seen as a teacher describes how one young girl recognises two rhyming words in a story and became interested in talking about different sounds and other rhyming words (New Zealand Ministry of Education, 2012). We can use this research and examples to question whether metadata details such as size of illustrations or style of words would be valuable for early childhood teachers looking to develop literacy.

Despite the link between literacy and picture books, interviews with library staff conducted by Goulding, Dickie, Shuker and Bennett (2014) revealed that literacy development did not come into play when making book selections. When questioned about the curriculum, participants expressed little awareness or concern over how this could be incorporated into the library, often commenting that developing literacy was a teacher's responsibility (Goulding, Dickie, Shuker & Bennett, 2014). As literacy skills relate specifically to Te Whāriki, it is not essential to all user groups and we can understand why library staff interviewed would not identify it as a motivating factor

when selecting an item. This raises questions over what early childhood teachers value in picture books and if literacy development impacts their selection.

The only study looking at the role of picture books in New Zealand classrooms which could be located was from Blakeney-Williams and Daly (2013) who explored how reading can help teachers to achieve Te Whāriki. Data was collected through interviews and observations of two teachers at a particularly diverse school and found that picture books were an integral part of the classroom. Not only were these used in literacy development, but the teachers were observed using picture books in visual arts lessons, drama and general research into countries or animals featured in the stories (Blakeney-Williams & Daly, 2013). It was clear from this research that picture books can have range of uses for teachers.

It was also found that reading influenced children's social development. This reflects Te Whāriki, which states that books with characters or stories that children relate to helps to develop their identity and understanding of the world (New Zealand Ministry of Education, 2012). Phillips and McNaughton (1990) provide a detailed discussion of this in a study looking at the relationship between reading and a child's ability to construct narrative. In their research, families were asked to keep a diary of all the books read over a twenty eight day period, noting details such as who selected the book and initiated the reading. They were then provided with nine books to read over four to six weeks and asked to record any comments or questions made by their children while reading (Phillips and McNaughton 1990). The study found that children who were read to on a regular basis demonstrated the ability to construct narrative as they were able to discuss the stories without any prompting from their parents (Phillips and McNaughton 1990). An explanation of this was provided by Ryan (2010) who conducted a content analysis of the psychology of listening to a story and found children felt encouraged to make associations and develop narrative if a story evoked pleasure. Blakeney-Williams and Daly (2013) also found that children were more likely to engage in self-reflection and draw on their real-life experiences if they related to the picture book being read. This created a sense of community in the classroom as teachers were observed sharing their own stories and encouraging students to do the same and develop their own sense of self (Blakeney-Williams & Daly, 2013). Using this research we could argue that details such as the setting or gender or characters would be valued by early childhood teachers as they help to determine whether or not children would relate to the story at hand.

### **3.4 Children's Engagement**

Research also indicates that early childhood teachers are likely to select items which they feel children will enjoy. This is due to the argument that picture books are not beneficial to literacy and social development unless children are engaged with them. MacLean (2008) cites literature to argue that children cannot develop literacy skills unless they are engaged in 'fun' activities such as listening to picture books (Arnold 2003 as cited in MacLean 2008), while Goulding, Dickie, Shuker and Bennett (2014) refer to interviews in which librarians described finding books children would love as a priority.

This enjoyment can be achieved when individuals relate to and become immersed in a story. Blakeney-Williams and Daly (2013) found the teachers used picture books which children would relate to in order to capture their interest while developing a sense of identity and community. This was explored in a study from Sturm (1999) which explored how reading can evoke a trance-like state in individuals which differs to our normal state. Despite being from 1999, this research remains relevant as the process of listening to a story has not changed, and the methodology employed contains features which were adopted for my research. Sturm's (1999) approach was highly participatory as he attended public reading sessions and listened to stories before approaching other attendees and asking if they would mind being interviewed. The intention of this was to gather a natural sample and add validity to results as the experience of listening was still fresh (Ericsson & Simon, 1980 as cited in Sturm, 1999). Participants were later sent transcripts of their conversation and given the ability to make any amendments they felt necessary (Sturm, 1999), something I adopted in my research to ensure the trustworthiness of the data. Sturm (1999) concluded that participants were able to 'slip into' a story and have an emotional beneficial experience when they related to the characters or narrative. We can see how choosing picture books which children relate to could increase their enjoyment of the story and encourage development of literacy and identity.

If the engagement factor is crucial, we can argue that bibliographic records contain information needed to determine children's enjoyment level. These features are identified in a phenomenological study by Maniam (2011) which questioned what attracts children to a picture book. For this project, a group of five year olds were given an hour to choose from 200 picture books, after which time

interviews were conducted questioning their motivation behind their selection (Maniam, 2011). To provide a realistic insight into how children select books, Maniam made a point not be in the room or talk to children during the hour. Maniam (2011) recognised that children may have difficulty explaining the motivation behind their decisions and provided each participant with a list of reasons for selection. Children were asked which reasons they agreed with and the research was able to identify the book cover and title as crucial in children's original engagement and subsequent enjoyment of a text (Maniam, 2011). This is supported by Beak and Olson (2011) as their comparison of metadata schema identified colour, book length, and feelings associated with a story as important elements for children. While they did not conduct their own study, they do identify ways children may select an item. Both articles provided useful context for my own research as they gave an insight into what details early childhood teachers may look for in a bibliographic record.

### **3.5 Bibliographic Records and User Groups**

The challenges in catalogues are particularly relevant for picture books as these are generally selected by adults on behalf of children. Individuals making the selection rely on the metadata in a bibliographic record to inform them of children's enjoyment in addition to their own user needs. This was researched by Švab and Žumer (2015) who used records in a public library catalogue to identify the metadata that parents value in a picture book and argue for the importance of creating catalogues which reflect the needs of that library's users. In addition to supporting the argument that library catalogues be re-examined, the methodology employed proved to be a straightforward and reliable way to collect data and was subsequently adopted for this project. Švab and Žumer (2015) began by presenting parents with six different bibliographic records for the story 'Cinderella' and asking parents which one they would read to their child. They were then given their chosen item to look through, before being given all six picture books and asked if their choice had changed and why (Švab & Žumer, 2015). The research found that bibliographic records frequently left out details indicating whether or not children would enjoy the book such as illustrations and arrangement of the text (Švab & Žumer, 2015). Not only does this indicate that current cataloguing practices are insufficient for picture books, but it raises the question of whether other user groups would have the same experience. This argument that a catalogue should be designed to reflect the parent user-group carries over to my research with early childhood student teachers.

This was looked at in detail by Abbas (2005) who described the challenge in creating bibliographic records which are read by children. Through a content analysis of different projects and developments into how children search for information, Abbas (2005) concluded that traditional cataloguing standards do not take into account children as a user group. They may have trouble understanding cataloguing language, or value metadata not included in traditional records such as feelings or characters (Abbas, 2005). Her research concluded that metadata should take into account how children access, organise and use information (Abbas, 2005) which supports my assumptions that the metadata needs of early childhood student teachers are not reflected in MARC and RDA.

Research on what teachers value in a record is currently limited to a few publications, however these can be reviewed to draw conclusions as to how this user group selects picture books. Bradley and Jones (2007) highlight some of the details valued by teachers in a phenomenological study exploring how books can introduce children to literacy. Through data collected during observations of reading sessions in thirteen different classrooms, Bradley and Jones (2007) concluded that teachers develop literacy by introducing the sounds and shapes of letters, and showing children how these create words. Their research also found that the structure of a book impacts what teachers focus on when reading to a class. For example, books which had a high amount of alliteration could be used to encourage talk about letters and sounds (Bradley & Jones 2007), developing the phonological awareness described by Goulding, Dickie, Shuker and Bennett (2014). Although the teachers themselves were not interviewed, the project sheds light on how picture books are used in the classroom and what metadata may be considered in a bibliographic record.

Casla, Poveda, Rujas and Cuevas (2008) drew similar conclusions in their research examining the impact different types of voices and contexts have on literacy development. This was a multi-method qualitative design which collected data through observation, audio and video recordings, documentary materials and interviews at Storytime sessions in three different settings. Although this did not include the classroom, their findings are important as Casla, Poveda, Rujas and Cuevas (2008) concluded that a story is received differently depending on the context in which it is presented. They made the argument that reading in the classroom has a different impact due to the relationship a teacher has with their class and the way picture books are used to teach broader curriculum goals (Casla, Poveda, Rujas & Cuevas, 2008), supporting research from McLean (2008), Goulding, Dickie, Shuker and Bennett (2014) which indicates that children develop literacy more in a classroom setting. Blakeney-Williams and Daly (2013) provided an example of this in their research as the teachers they spoke to described how they create a



sense of community by sharing personal stories and encouraging children to reflect a story back to their own experiences (Blakeney-Williams & Daly, 2013). In considering this literature we can see there is a complexity to selecting items from a catalogue and recognise the need to explore what early childhood student teachers value in a record.

### **3.6 Related Methodology**

One of the challenges in evaluating a library catalogue is the inability to simulate real-life information seeking (Hider & Freeman, 2009). In recognising the need to keep this research as natural as possible I employed the verbal protocol analysis methodology which asks individuals to articulate what is going through their mind while performing a task. This is based on the theory that people cannot contain too many thoughts in one moment and speaking freely gives an insight into their mind (Hilden & Freeman, 2012). There are risks with this approach as unstructured talking may create an abundance of data to analyse, however the verbal protocol method has proven successful in library research.

The effectiveness of this approach was noted by Novotny and Cahoy (2006) who employed it on two separate occasions at Penn State University. They first used the methodology in a 2002 project which asked a group of first-year students to complete five tasks through the library catalogue in order to confirm its usability. As this proved to be a valid and reliable way of gathering data, the methodology was repeated in 2004 in a study looking at how librarians' teaching sessions impacted catalogue usability (Novotny and Cahoy 2006). On both occasions, students were briefed on the method before being asked to describe their thoughts as they conducted a series of tasks (Novotny and Cahoy 2006). Data gathered was noted for its reliability as researchers remained quiet and were not coercing certain answers but allowing participants to provide their natural response (Novotny & Cahoy, 2006).

Further studies have shown that the verbal protocol analysis method is best used in conjunction with interviews or surveys in order to provide detailed and reliable results (Morrison, 1999). In a usability study of the Concordia University of Alberta online catalogue, Morrison (1999) tested the hypothesis that verbal protocol analysis is a valuable means of identifying common problems in library sciences. This project asked ten undergraduate students to conduct a search while talking aloud about what keys they were pressing or how they felt about the information. To reduce the risk of the researcher altering the participant's responses, Morrison was not present herself during the searches but left a recorder to collect all the comments and conducted post-task interviews. It was found that the

data obtained in the unobserved searchers was much more technically detailed than interview questions, confirming the feasibility of verbal protocol analysis for library research. Despite this preference for the method, Morrison (1999) found there was not an overlap of information between the structured questions and natural thoughts and concluded that the verbal protocol method should be used in combination with interviews in order to provide a rounded set of data. Both Morrison (1999) and Novotny and Cahoy (2006) provided a strong argument for the effectiveness of the verbal protocol method and demonstrated how it can be used to gather natural and quality data.

### **3.7 Significance for this Research**

These articles informed my research by providing a starting framework and establishing its significance as a topic. The reason for an examination of the library catalogue is a common theme in research from Beak and Olson (2011), Sprochi (2016), and Švab and Žumer (2015) as they argue metadata included in a record should reflect the queries and items being represented. We can also see why it is important to examine a picture book catalogue as research has shown reading can be used to achieve the requirements of Te Whāriki.

The articles discussed shed light on the complexity of picture book records. While MacLean (2008), Goulding, Dickie, Shuker and Bennet (2014) argued enjoyment is needed in order for any of the benefits to be achieved, Maniam (2011), Švab and Žumer (2015), Beak and Olson (2011) developed this further by identifying factors children look for in a picture book. Casla, Poveda, Rujas and Cuevas (2008) add another dimension to this as they argue that teachers consider their prior knowledge of the class and framework of Te Whāriki when selecting items. These findings were used to inform my interviews as I questioned whether or not participants value similar details.

This review supports the need to examine the University of Canterbury catalogue and informs the way in which my project can be conducted. This discussion demonstrates the importance of examining picture book records at UC and identifying what metadata early childhood teaching students value. Not only does it contribute to current research examining cataloguing in modern libraries, but information collected can be used by UC cataloguers to edit MARC records and create a picture book catalogue from which students can effectively select items.

## 4. Research Design

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This was designed as action research which took a qualitative approach. Generally in this method the researcher follows through the data analysis with relevant actions and then an evaluation of the results (Mansourian, 2010). My intention was to establish that a problem with the catalogue exists. As no subsequent action has been taken, there is nothing at this point to evaluate, however I recognise that the opportunity to conduct this evaluation may exist in the future. This project has been designed as an introductory study that can inform future research.

## 5. Methodology

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### 5.1 Population Sample

When conducting qualitative research it is recommended that a sample of the population being researched is surveyed and used to make generalisations about the group as a whole (Leedy & Ormond, 2014). For this research eight participants in their final year of an early childhood degree were selected as this level have completed two years at UC and therefore represent the first and second year students. We can assume that as third year students have had the most experience in a center, they will be able to draw on past experiences and provide more detailed data.

When selecting participants I contacted the academic staff who coordinate the third-year program for advice on the best time and way to reach out to students. I was aware that they are away from the campus for professional practice during March which placed time constraints on the data collection. The staff were extremely supportive and posted a message for third year students on the online student message board inviting them to an informal meeting about the research project. Those who attended appeared to be a group of friends which I found concerning as there was the chance that individuals would share details with one another. This could impact the bias of the data as individuals who had some idea of the questions would naturally think about their responses before meeting with me. In an effort to avoid this I reached out again by posting another message and attending two classes to briefly talk about the project and give my details. From these efforts I was able to select nine students

from various course streams, a number which was reduced to eight after one participant neglected to show-up for the interview and observation component.

In order to create a realistic representation of the selection process six bibliographic records were chosen with the assistance the Education Librarian. All items have a maths focus which is one of the key strands of Te Whāriki. This recommends early childhood teachers encourage learning by introducing children to everyday examples of maths such as counting, comparing sizes of objects, theories and vocabulary (New Zealand Ministry of Education, 2015). This is a particularly important area for the UC early childhood students as the second year of the degree focuses on teaching numeracy and literacy in order to fulfil the curriculum (University of Canterbury, n.d). In order to support this, the Education Librarian has created a list of maths-related picture books that are given to students and can also be found on the library website, thus aligning with Hilden and Freeman's (2009) argument that we can control a design method to make it more relevant to a real-life situation. These particular records were also used as staff have already expressed problems after discovering that they are absent in results when searching the picture book catalogue with the keyword 'maths.' The titles of these items and a copy of their bibliographic record as it was presented to the participants can be seen in appendix 9.3.9.

The number of participants and bibliographic records were employed in response to the concern that qualitative research can result in an overwhelming amount of data which is difficult to analyse (Silverman, 2011). In limiting these factors I was able to ensure that the data collected could be organised and interpreted given the time constraints and logistics of this research project.

## **5.2 Ethical Considerations**

Ethical permission was obtained from the School of Information Management Human Ethics Committee at Victoria University. As the research was conducted using the library catalogue at the University of Canterbury, permission was obtained from the organisation to ensure that the research can be conducted on the University grounds and that the name of the organisation can be printed. The appropriate people in the University of Canterbury Library supported the project, and requested a copy of the Victoria University ethics application once it was approved.

Participants were asked to sign consent forms outlining the details of the study, what information they would be asked to share and how it is going to be used. Privacy will be maintained as there is no need to collect personal details such as age or gender of students, and no names are

included in the findings with those involved simply being referred to as 'participant.' Students were given the option to opt out of the research for up to two weeks after signing the form, a period chosen as it allowed for other participants to be located in an appropriate time.

### **5.3 Data Collection**

This methodology was adopted from Švab and Žumer's (2015) research as it also focused on how picture books are selected by a specific user group. Using this as a model, I divided the project into three parts: interviews, a bibliographic selection activity and post-selection interviews. Data was collected using a combination of structured questions in parts I and III, and the verbal protocol analysis method for part II. This approach allowed me to confirm that people selected books the way they described, and reflects Morrison's (1999) argument that a combination of methods provides detailed and reliable results. All parts were recorded using a voice recorder application on a cell-phone as it was felt that writing notes during the discussion may be off-putting or disrupt the thinking-aloud process. These were then transcribed into f4 software with details such as pauses or tonal inclinations added as side comments.

In order to maintain validity in data collection it is essential that the intended information is collected and measured (Leedy & Ormond, 2014). For this project, validity is achieved if the information gathered relates to the metadata valued by early childhood teachers when selecting picture books, however both interviews and the verbal protocol analysis have weaknesses which could affect this validity. Observational data is unstructured in nature which can produce erratic results, while interviews can be unreliable if participants feel an urgency to answer questions and respond in an unnatural way (Silverman, 2011). Employing two methods does raise the issue of doubling the opportunity for error, however it was felt that these can be avoided due to the smaller scale of this project and the involvement of participants in checking their transcripts. Furthermore, after considering Morrison's (1999) research it was felt that using two methods will reduce the weaknesses of each approach and provide rounded results from which valid conclusions can be drawn.

#### **5.3.1 Preliminary Interviews**

Participants were first questioned on their current perceptions and use of the library catalogue. The intention of these was to identify any immediate themes and provide context for the second part of the research, while easing participants into the activity so that they feel more comfortable in answering

naturally. This reflects Leedy and Ormond's (2014) argument that a participant is more likely to respond honestly if they feel that the researcher is friendly and genuinely interested in what they have to say.

In order to maintain reliability and standardise the method, each participant was asked the same questions, which were as follows;

- Describe how you currently use picture books both in the classroom and for your assignments or coursework.
- How do you generally select picture books and why do you use these avenues?
- Reflecting on your use of the catalogue, what information do you find helpful/unhelpful in an item's description?

### **5.3.2 Selection of Picture Books**

I then presented students with six bibliographic records of picture books and asked them to rank each one in order of preference to use in a classroom. They were briefed on the verbal protocol analysis method before this and I refrained from offering any questions or prompts during this time in order to combat criticism that the researcher's presence may influence the thought process (Schooler, Ohlsson, & Brooks 1993 as cited in Novotny & Cahoy, 2006). A time limit of fifteen minutes was imposed as I recognised that the unstructured nature of verbal protocol analysis means it runs the risk of going on for too long. Once selection was complete, participants were presented with the picture book they chose and given five minutes to look through the item. I broke away from the verbal protocol analysis method during this to ask if they were happy with their selection and capture an immediate response.

After the participant has had time to look through their selected item, they were given physical copies of each book and again given fifteen minutes to choose one for a math-based lesson. I informed them that they could stick with their original choice and again asked that they employ the verbal protocol analysis method while looking through each item. The intention was to identify participant's natural and immediate reactions to the comparisons of the bibliographic record to the physical book and determine if there is a problem with the catalogue.

### **5.3.3 Concluding Interviews**

Structured interviews concluded the activity as by this point participants had a chance to reflect on their selection and were able to articulate more detailed responses. To begin the interviews, each participant was given a list of criteria for selecting an item, much like Maniam (2011) gave to children in her study. As observations allow for flexibility and provide the chance to observe unforeseen data (Leedy & Ormond, 2014) I made sure to include details which arose during the observations. The original themes identified include information in fixed MARC fields, in addition to more unique details outlined by Beak and Olson (2011), Maniam (2011). These criteria and their reason for selection have been included in Appendix 9.2.

After presenting participants with this criteria, the following questions were asked;

- What surprised you about the book you selected when you were presented with it?
- What information were you looking for when making a selection?
- .
- What information (if any) could be included in a record to help your selection?
- What information do you find unhelpful when making a selection, both using these bibliographic records and in general?

Although the thoughts articulated during the verbal protocol method will have captured some of these answers, it is felt that interviews can provide added detail and strengthen data quality.

### **5.4 Assumptions and Limitations**

This project was being conducted under the assumption that there are problems with the UC catalogue. As mentioned in the topic statement, it is based off feedback and was the first time data has been collected on this topic. Before beginning the research one of my concerns was remaining objective as I am employed at the University and already had my own beliefs when it came to the catalogue's effectiveness. Strauss and Corbin (1990 as cited in Boyatzis 1998) discussed this as an obstacle in data analysis as it increases the likelihood that the researcher will project their own expectations onto the data collected. To reduce this, they recommend that the researcher remains open to the results and any

themes which may be present (Strauss & Corbin, 1990 as cited in Boyatzis 1998). This informed my research practices as I began the project with an unbiased view which recognised that the catalogue may be revealed as effective, in which case the research will recommend that no changes be made. While I did have my own beliefs on what the data would show, I demonstrated flexibility during the analyses process by being open to new themes.

Working with participants brings with it a set of factors which could potentially affect the quality of data captured. I was working off the assumption that participants are answering questions honestly and that data captured is a true reflection of their selection process. While participants selected were felt to provide an appropriate representation of the overall user group, it was understood that each individual has their own background and experiences which could impact their selection. For this reason I can make generalisations but cannot honestly apply results to the entirety of the student group and library catalogue. Human error was also a limitation as the sole coder increases the risk of error on my behalf. In order to reduce this, participants were sent transcriptions of their responses and given the opportunity to make any changes or express concern much like Sturm (1999) employed.

When drawing conclusions, it is important to recognise that this study has been conducted using a sample of the population at one organisation. For this reason, results cannot be directly applied to other user groups and do not speak for the entire catalogue as picture books are a specific collection. There is, however, the opportunity to use this method to examine other resources and user groups in future research projects.

#### **5.4 Data Analysis**

All interviews and observations were recorded on an iPhone recording app before being transcribed and uploaded into f4 software. This was selected as the software marks all pauses so they can be measured and allows for comments to be inserted which contributes to the overall organisation and effectiveness of data interpretation.

Content analysis was then conducted on the transcripts as a way of identifying common themes and patterns. This was conducted using open coding to identify common themes using Crewell's data spiral (2007 as cited in Leedy & Ormond, 2014) to interpret and draw conclusions from the data. In open coding, information is summarised for any commonalities or themes that help the research to identify



properties to describe a phenomenon (Leedy & Ormond, 2014). These themes are described by Boyatzis (1998) as “a pattern found in the information that at the minimum describes and organizes possible observations or at the maximum interprets aspects of the phenomenon.” These should be clearly labeled and defined in a way which is meaningful to the phenomenon being studied, clear and concise and close to the data (Boyatzis, 1998). In order to achieve this, I followed Boyatzis’ (1998) recommendation of building on codes described in previous research because this will maximise the likelihood of producing reliability and validity. Using the literature review, I identified a list of key themes which I expected to appear and are labeled and defined in the criteria given to participants. From this I developed categories which each theme would fall under as a way of better explaining the phenomenon being researched. These were as follows;

- A) Difference between the physical book and bibliographic record.
- B) Helpful metadata
- C) Unhelpful metadata.
- D) Teacher specific metadata
- E) Preference for the physical book.
- F) Insufficient data in the bibliographic record.

I then developed subcategories to help to organise data and make it easier for myself to identify any trends among the results, and then to draw conclusions. These were as follows;

1. Title
2. Cover Image
3. Author
4. Language
5. Illustrations
6. Format/Media Connection
7. Text size and style.
8. Themes
9. Te Reo
10. Level
11. Summary
12. Length

This allowed me to make observations of the transcripts such as F: 5, 10, 14 which indicated that this particular part of the transcript related to the record having insufficient data on the illustrations, themes and summary of the book.

Once these themes had been identified, I was able to conduct analysis using the data spiral. This is an effective approach for qualitative data as the spiral allows for large amounts of unstructured information to be organised and can be repeated as new ideas and details are gathered (Leedy & Ormond, 2014). In using this approach, I followed the spiral as such

- Organise: Data was organised into f4 software. This was done by saving the individual transcripts so they could be reviewed and themes identified.
- Perusal: After organising data I made notes next to the data on my preliminary interpretations. This involved marking the themes already identified and making notes on any points which I saw as important such as a particular tone of voice or any new themes which I had not considered.
- Classification: Using these notes, coding was employed as I took data from the individual transcripts and arranged them into thematic categories. This allowed me to focus on what data related to the research, and set aside any information that I did not consider important at the time. It is important to note that this data was not eliminated at this point.
- Integrate and Summarise: Conclusions were drawn using the coded data. This included offering a hypothesis on what early childhood teachers value to answer the research questions.

One of the benefits of the data spiral is that it can be repeated as the analysis is conducted. After completing my initial analysis I returned to the perusal section and went through each transcript a second time during which I recognised problems with some of the thematic categories. The term 'unhelpful metadata' was removed as I found it too closely related to 'insufficient data,' while the theme 'teacher specific data' was too vague as all data identified by this user group was specific to them and therefore appeared throughout the entire analysis. I then returned to the classification stage and conducted open coding on the results to narrow down the key themes to the following;

- A) Difference between the physical book and bibliographic record.
- B) Helpful metadata.
- C) Insufficient data in the bibliographic record.

In returning to the perusal and classification aspects of the spiral I was able to identify details I had not seen the first time the transcripts were analysed. This also afforded me the chance to step back from my original assumptions about the results so that I could remain objective and maintain the openness recommended by Strauss and Corbin (1990, as cited in Boyatzis 1998). From here information was organised into these thematic categories and I was able to draw conclusions from the data.

## 6. Results

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### 6.1 Preliminary Interviews

When asked to describe how they use picture books, all participants replied that they were utilized to enhance a lesson and develop an understanding of a particular subject. They explained that picture books can make a topic more relatable to children and are particularly effective when talking about emotional concepts such as death or fear. Others said that books had the potential to be used in a variety of ways which relate to entertainment and learning with one making the comment that “you can do so much with a picture book.” This was expanded on by other participants who described using picture books across a variety of subjects much like the teachers interviewed in Blakeney-Williams and Daly’s (2013) research. One participant remarked that books could be used to talk about feelings or teach simple words while another described using picture books to teach science or math concepts and even as the subject for an art class.

In response to the question on how they currently select picture books and why they use these avenues, a majority of the participants described a preference for using the public library or their own personal collection. This was partly due to convenience as a large part of their academic year is spent

away from the University on professional practice making it difficult to visit the Education library as it is only open weekdays between 8am and 6pm.

Students do have the option of requesting books to pick up from another campus library at a more convenient time, however many commented that they preferred to look at the physical items or ask the library staff for book recommendations. This was due to the catalogue not having the information they wanted, with comments including;

“They [picture books] aren’t categorised as I would like so it's going to take at least an hour or so looking for books that I want.”

“It’s just impossible to decide if a book is right when you’re looking online.”

“Sometimes it can be quite hard because I know what I'm looking for but can't find what I'm looking for.”

In addition to being pressed for time, participants commented that they usually do not know exactly what book it is they want. This is because a book needs to be interesting to their specific group of children while also providing a connection to a lesson. The challenge of this was summarised by one with the comment “There are so many things you've got to think about as a teacher and you've only got maybe like 3 seconds to decide on a book or whether or not it's good or bad.”

In reflecting on their use of the catalogue, all participants had experience using the UC records, which indicates that the problem is not with their searching skills but the records themselves. It was common for students to return books without ever using them as they did not meet their needs, while one individual described spending time looking through records and requesting several books for their class only to find that they “weren’t right at all.” In particular, one item had a completely different cover image than the record indicated and the student was surprised to find that the illustrations were in black and white which was quite different to the colourful image attached.

The size of the class and interests of the children in it were identified as motivating factors when making a selection. All made the comment that they did not like to select books before meeting the children and understanding their level and interests with one remarking;

“Usually you don't know the children's interests until like the day of or the week of so it's very hard to try and plan for.”

Although some participants did like to bring a few books to the Early Childhood Learning Center (ECLC) this was more of a back-up and they would often select new items after meeting the children.

It was interesting that enjoyment was considered more than the educational value of an item when making a selection. Many described looking for a book which is “interesting,” “will hold their [children’s] interest,” or is “fun.” The summary, illustrations, subject matter and cover image were identified as key details in determining children’s’ enjoyment with commented including;

“I look for whether or not it's relatable to either what I'm trying to get across or if it's interesting or is it going to hold their interest or make them laugh”.

“So if I'm looking for dinosaurs then I try to find everything that's related to dinosaurs or you know stories about friendships within the context of dinosaurs.”

“I only look at the summary and don’t bother if it is too short.”

The illustrations in particular played an important role in selecting an item as these seemed to indicate if the children would find the book engaging and therefore increase its effectiveness in a lesson;

“I look at how cartoonish or how stylised the illustrations are, whether or not they're big or small, how big the book is in general.”

“Anything with creepy or realistic pictures is a no-go. Sometimes these kids are quite young and I don’t want anything that could scare them.”

“If it doesn’t grab me visually then I will skip past it. Even if the story is really good.”

Several of the participants also commented that they were interested in the size of the illustrations in relation to the text. Rather than the numbers of pages, most seemed to value the amount of text when it came to determining how long a book would take to read and if it would be too ‘boring’ for children.

“I never want anything with too many words on a page. That is just asking for kids to fidget”

Participants described the development of a lesson once an item had been selected, reflecting research from Blakeney-Williams and Daly (2013) and Sturm (1999) arguing that individuals enjoy a story more if it is something they relate to. It shows that there is an awareness of the link between engagement and learning, but that this is not a priority.

Although a few mentioned that it was helpful to know the author, this did not appear to impact upon selection unless they were specifically looking for items. Two commented that they only looked at the author if children had enjoyed the story and they wanted to find other works by the author. This shows that there is some importance in the author's name when it comes to future searchers, however it is not identified by this user group as essential when making a selection.

## **6.2 Selection of Picture Books**

After the interviews, participants were asked to select a book to use in an early childhood centre when teaching a lesson on maths. They were not told that all of these items were recommended as books with a math theme, and therefore had to use information in the catalogue to determine which item they felt was most appropriate. Participants were asked to think out loud throughout this process and I refrained from making any comments or questions.

The title was observed as the first detail participants looked at and appeared to be particularly important in determining a picture book's subject matter. All participants paused over items which had math-related vocabulary in the title and made comments such as;

*"Pete the Cat and his four groovy buttons is obviously straight away maths, it has got a number in the title."*

*"One is a Snail, Ten is a Crab: a counting book. So it's quite obviously going to be maths related."*

For others the title was also used to indicate enjoyment with one participant looking at *Pete the Cat* and saying "Straight away the title sounds like it might be more interesting and more fun." Another quickly dismissed *Mr. Archimedes' Bath* after struggling to pronounce the title and saying "I'm not sure how to pronounce that myself so the kids might struggle with it too. That sounds like it could be quite a boring book to be honest."

Records which did not contain any math-related vocabulary were rejected as participants assumed the book would not be useful to them. All participants set aside *The Doorbell Rang* after noting that the record contained only a brief summary with the subject headings 'sharing' and 'cookies.' Several seemed unsure about its appropriateness for a math lesson with the comments that it "might be helpful but it's very loose description" and "if it was about maths it would say so." This is problematic as the item was highlighted by one academic staff member as their favourite book to use when teaching numbers and counting to young children, yet the lack of information in the record prevented participants from considering it as a useful resource.

Individual experiences also influenced the selection process, demonstrating how the personal bias raised earlier means we cannot assume results of this survey apply to all students. This was seen with *Jim and the Beanstalk*, which one individual was hesitant to use as he/she could tell it was based upon a fairy tale. This was due to previous experience in an ECLC which did not allow stories adapted from fairy tales or Disney movies. As they described;

"I worked in one [ECLC] that wouldn't allowed anything that suggest towards Disney or along those lines so this would be sitting on that border where I would be a little bit worried about bringing it into the centre."

While it is likely this was unique to this individual, this does indicate that both the needs of the centre and an individual's experience can influence the selection.

The subject headings were particularly valuable as many participants used these to determine an items use in the classroom. *Pete the Cat and his four groovy buttons* was unlike the other records in that it contained more subject headings including 'counting,' 'singing,' 'animals' and 'happiness.' Several mentioned that this item could be useful for a variety of lessons and were pleased that it identified 'counting' specifically as opposed to the more generic heading of 'math.' Despite this, only one individual selected *Pete the Cat* with the reasoning being that the item could be used for other subjects. This was explained as the participant commented that once children were familiar with a book they were more likely to respond positively to other lessons using the item.

Items where the records did include math in the subject headings were still problematic as participants did not find this was enough detail when it came to the level and type of math the story focused on. For example, *One is a Snail, Ten is a Crab* had a brief summary which described the item as a counting story but did not say what this involved. This led participants to draw information from the title

and assume the story only counted up to ten which individual felt was “too simplistic” and not a high enough number for a maths lesson.

After considering the title and summary, participants turned to the cover images to get a sense of the illustrations. This supports the earlier interviews in which participants emphasised the importance of illustrations, and Maniam’s (2011) research in which participants were first drawn to the cover and colours of a book. Comments were made such as

“This looks nice and big. Well the pictures look really big which is good for a classroom.”

This was interesting to observe as the records did contain information on whether or not the illustrations were in colour, and the measurements of the book which appear in shorthand such as ‘col. ill. ; 29 cm.’ None of the participants commented on these, which would indicate they did not see them displayed in the record, instead many seemed to use the cover image to determine what the illustrations were like. As this was not realised by myself until reviewing the transcripts, I was unable to ask participants if they had seen and understood these notes, or if they were unaware that this information could be found in the records.

The importance of this was reflected in the final choices as three participants chose *Fifty-Five Feathers* and four *One is a Snail Ten is a Crab* due to their colourful cover images and maths-related titles. The popularity of *Fifty-Five Feathers* revealed further details as participants were pleased to see that it was about New Zealand birds, one happily exclaiming “oh it’s New Zealand! I love New Zealand resources,” and another stating that “it’s always good to use New Zealand books when you can.” Similarly, while details on other editions or formats of the item were not identified as important, a number of participants appeared pleased that the record included a note on the Te Reo version of this story. One participant stated that “It’s also published in Maori which would help.” This was not expanded on during the observations, but it is likely that participants value New Zealand items for reasons explained in the curriculum that argues that picture books can help children to develop their sense of identity in New Zealand.

This decision did reveal some limitations in the catalogue as those who selected *Fifty-Five Feathers* were unsure of its length and size of the text. After selecting this item, one commented that



they hoped it was “not too long as in each page has too many words.” This was followed up with the statement “you don't want a story too long for young children, they get bored and fidget too much,” validating the metadata described as important in the interviews.

The data identified from these observations was validated and expanded upon once participants were presented with the physical books. Only two of the participants were satisfied with their selections, which were *One is a Snail, Ten is a Crab* and *Pete the Cat*, while others were quick to point out problems with their choice. This was often due to the text which was either too long, or too small which was problematic when bringing the item to an ECLC. An individual who had chosen *One is a Snail* commented that it did not have enough words on each page to make a lesson, while the participants who had selected *Fifty-Five Feathers* thought the small text which would make it difficult for children in a group to see. One made the comment that they in order to use it they would have to use the images to make a story board with reduced text which would take up a lot of time.

The satisfied participants seemed to value the same details as they noted illustrations and text as the reasons they were pleased. The participant who selected *Pete the Cat* was pleased with the large font and colourful illustrations, while the other made the similar comment that *One is a Snail, Ten is a Crab* was large and colourful which worked well for a ECLC. Interestingly, others who had chosen this item thought it did not have enough text or was not interesting, demonstrating that individual beliefs and experiences impact a selection. Again this is a reminder that while we can use this research to make generalisations, it will not apply to every student.

Picture Book	Selected based on bib record	Selected based on physical book
 <p>Jim and the Beanstalk RAYMOND BRIGGS</p>	0	0
 <p>Pete the Cat and His Four Groovy Buttons FOR FREE SOUND by James Dean Illustrated by Eric Litwin</p>	1	7
 <p>The Doorbell Rang by Pat Hutchins</p>	0	0
 <p>MR ARCHIMEDES' BATH PAMELA ALLEN</p>	0	0
 <p>Fifty-five Feathers Ben Brown &amp; Helen Taylor</p>	3	0
 <p>One Is a Snail Ten Is a Crab</p>	4	1

These results were developed further when participants were presented with physical copies of the picture books and asked again to select an item for a maths-based lesson.

The title appeared to be less important during this selection which is likely due to the participant's already knowing it and having some knowledge of the items. Instead illustrations were the first detail participants commented on, at times even disregarding a book immediately upon seeing the pages. *Jim and the Beanstalk* was set aside as many of the images were in black and white which one remarked was "too boring for children." In contrast, *One is a Snail, Ten is a Crab* and *Pete the Cat* were noted for having large, colourful images which all participant's felt would make them engaging picture books for young children. Text was another valued feature as many noted the large font size used in *Mr. Archimedes' Bath* and one participant stating;

"This is really nice and short and big letters too so that's great is you are displaying the book, which is often what we do with a group you read to, you show the book and read it at the same time, or if the child is starting to read then they will be able to follow the story a lot more easily."

It was noted that some items had left out important details on the style of text as many were drawn to *Pete the Cat* for its 'fun' font and use of numeric equations. This was a major drawback for teachers, as one commented;

"It does have maths in it, like actual maths as in its showing you  $4 - 1 = 3$  which is helpful especially when you're trying to teach."

As the research discussed in the literature review from Goulding, Dickie, Shuker and Bennett (2014) pointed out, these textual features can be particularly useful in developing literacy and we can understand why early childhood teachers may wish to know them.

It was interesting that the participant who had determined that *One is a Snail, Ten in a Crab* only counted up to ten went on to select this item after discovering that the book actually counted all the way up to 100. They made the comment that this information was not in the "wee blub" and that "this would have been helpful to know as I can see I would develop a few lessons out of this, you know basic counting and then counting in tens up to one hundred." Similarly, the record for *Mr. Archimedes' bath* was pushed aside with the comment that it didn't relate to math or seem visually appealing. However

when presented with the item a number of participants spent time looking through the pages and recognised that this could be useful to teach the concept of displacement. Although this is not necessarily a maths-related topic, it reflects the research discussed in the literature review which argued that teacher's often select items that can be used for a variety of subjects and Te Whāriki's requirement that children learn mathematical theories in the classroom (New Zealand Ministry of Education, 2015). One participant appeared to be thinking about how they could use the item for this purpose and commented "that's a tough idea for children so I would keep this book in mind." While this item was not selected by any students it highlights how much detail had been left out of the record.

*The Doorbell Rang* had been dismissed due to its brief summary and apparent lack of mathematical content, however the physical item was given much more attention with one participant going as far as to change their selection from *Fifty-Five Feathers* to this item. This was based on the content of the illustrations as they explained how each page had more characters than the previous which would allow for a lesson on counting or language development in general. As they described;

"You can count with the children you know how many children are in the picture that's displayed you know what mum is doing, how many coats she has on her arm or you know how many cookies can you see on the table. So you can broaden what you're saying, what is being said in the story."

Upon viewing the book, one participant commented that it "...is about sharing so something that I probably didn't realise from the description there." Another exclaimed "oh I see the maths theme now," before questioning why this wasn't included in the record. As they explained, "that blurb made it seem like this is a teamwork kind of book when there really is a lot of maths in this."

The impact this has on a selection is observed in the number of participants who changed their selection to *Pete the Cat*, which was the first choice for only one individual. In addition to the illustrations and text, many pointed out that the book included a free song which had not been included anywhere in the record. Comments included;

"Why wouldn't you include a free song? This really makes the book a winner if you are teaching.

"It took me by surprise to be honest. I didn't think it would be that good but it's actually a lot better than I thought it would be."

This part of the research indicated that there was a discrepancy between bibliographic records and the items they represent. Not only was this expressed by the participant's themselves, but a majority of them changed their original selection when presented with physical picture books.

### 6.3 Concluding Interviews

To end the project, participants were asked a series of questions, beginning with what information they looked for when making a selection. All reiterated the importance of subject headings summary and illustrations and commented that these areas were often lacking in detail. Many gravitated towards items they could use for subjects others than maths, again aligning with the teachers interviewed by Blakeney-Williams and Daly (2013). Comments included;

"I found the picture on the front was good because a lot of these don't really say what the book is about. The picture helped tell me things like if it was animals or people and if it was something children might like."

"The summary is so important when you are teaching. I need to know what lessons I can use this for and how. Like some of these you can tell are about maths but I want to know specific details. You know, is it addition or subtraction or counting?"

"I use the subject headings a lot. They tell me what I can use the book for besides just reading a story."

Participants were then presented with the list of metadata that could be included in a record and asked which they found helpful when making a selection. All acknowledged text, summary, subject headings and illustrations as important which supported what they had articulated when making the earlier selections. Other details identified were the need for character information as a way of determining children's enjoyment and the way an item could be used for educational purposes. This was supported by the participant's interest in the animal characters of *Mr. Archimedes' Bath* and the number who selected *Fifty Five Feathers* from the records due to its inclusion of native New Zealand birds.

When asked what details were unimportant, participants identified several of the details on the provided list. They were uninterested in information on the date, place of publication and author, saying that there was little need for this.

Using the research from Beak and Olson (2011) which found children often asked for ‘happy books’ or ‘funny books; I believed that early childhood teaching students may look for details of the feelings associated with a book as well. However all participants said that this was unhelpful information with comments such as;

“Feelings I don’t really think would matter as I am using a book to teach key subjects.”

“I think the feelings one is too difficult to include because feelings are subjective... like different things make different kids happy.”

In these observations it was clear that participants were unable to get a good sense of what the book was about before opening it themselves. This is significant for teachers because if they are using the item to teach a particular subject they would like to find items that support learning and meet the needs of Te Whāriki. We can see that bibliographic records do not always contain the details valued by early childhood teachers meaning that they may disregard items that could be effective tools in an ECLC.

## 7. Conclusion

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This research revealed the metadata valued by early childhood teaching students and confirmed the hypothesis that there is a problem with the current UC catalogue. This was information that was previously unknown and can be used to further our understanding of this particular user group.

It is worth noting that there are limitations to this as personal experiences or bias did appear to have some impact upon picture book selection. This was seen with the participant who rejected *Jim and the Beanstalk* due to their time spent in an ECLC that did not allow anything based on a fairy tale, and the individual who chose *Pete the Cat* because they believe that children can learn a variety of subjects if they are familiar with a story. Both of these decisions were based on past experiences and opinions, showing that we cannot assume results apply to every individual in this user group.

Despite the limitations, the use of two methods increased the validity of data collected as I was able to identify common themes in the interviews and support these with results from the observations.

By using the data spiral for analysis, I was able to organise the large amount of information in a clear and concise way which made it easier to draw conclusions and allowed me to answer the two research questions as follows.

### **7.1 What metadata do early childhood teaching student's value in a record?**

It was clear that participants placed a high value on data in the bibliographic record relating to the subject, summary, illustrations and text. These details indicated if children would enjoy the story, which participants felt was essential when using a picture book to teach. As explained during the interviews, it was important to grab children visually and capture their interest in order to prevent them from getting bored and disengaging with a lesson, while large text meant that children would be able to follow along with the story. Participants described looking for books with colourful pictures and simple text, a point that is supported by the observations during the second part of the search. When looking at the bibliographic records, *Fifty-Five Feathers* and *One is a Snail, Two is a Crab* were the most popular items due to their colourful covers, while *Pete the Cat* was the overall favourite due to its large font and bright illustrations.

Many of the comments made by participants relate to the strands outlined in Te Whāriki, indicating that the metadata valued by this group directly relates to their role as early childhood teachers. The subject headings and summary were often looked at to determine how a book could be used to teach a lesson with participants setting aside the records which had little detail in these fields. This was evident with the record for *The Doorbell Rang* which had a short summary and only one subject heading resulting in most participants setting it aside. Upon viewing the item, many reconsidered its use for teaching different subject, while one individual mentioned using the numbers of characters and body parts to teach counting. Similarly, many favoured *Pete the Cat* due to its inclusion of a song and the use of numbers throughout the text, which reflects Te Whāriki's encouragement to develop maths through song and identifying numbers (New Zealand Ministry of Education, 2015).

As all participants study in New Zealand, it is unsurprising that details on Te Reo versions of the story were valued. This was not mentioned during the interviews, but observed in the second part of the research as many were noted as being happy to discover *Fifty-Five Feathers* focused on native birds and that it was printed in Te Reo. Although the small text size led participants to change their minds, they maintained an interest in the item and described how it could be used for other teaching purposes.

This data showed that early childhood teaching students value metadata which relates to the enjoyment of the children they are reading to and their needs as teachers following a curriculum. Throughout the research, participants both described and were observed showing an interest in picture books which were engaging for children and covered different subjects. As many changed their selection to items which met these requirements, we can see how valuable it is for this user group to have as much detail as possible in these metadata fields.

## **7.2 To what extent are the University of Canterbury records currently meeting these requirements?**

The second question can be answered when looking at the number of participants who were unsatisfied with the items they selected from the bibliographic records. Throughout the interviews and observations, many struggled to find sufficient information on the illustrations, text and subject of an item. This led to many participants using the cover image to determine this information though was not always effective, as was seen with the record for *Fifty-Five Feathers*. Although a majority of participants chose this item, they were ultimately disappointed by how text heavy it was and indicated that the record had not accurately represented the picture book.

The catalogue also failed to provide the level of detail required by participants because subject headings and summaries were often brief and did not meet their needs. This was evident when participants looked through the bibliographic records and commented that some items seemed like they couldn't be used to teach mathematics yet identified this possibility when presented with the physical items. Although they were able to make the connection between the book and a lesson by themselves, this approach relies on the individual taking the time to go through picture books, which many had already commented they had no time to do. This was seen with *Pete the Cat* because the record did not include notes on the book's inclusion of maths equations and a song, which was what made it appealing to so many during the final selection.

The lack of relevant metadata in the records has the potential to impact the time early childhood teaching students spend finding appropriate picture books. If a record fails to represent the item adequately, students are unlikely to notice it and will potentially miss out on finding the picture book best suited to their needs. This was observed with participants setting aside records which had



little information in the subject headings and summary and focusing instead on those with more details. As all but two participants were unsatisfied with their initial choice, we can argue that these students would have missed out on finding the right picture book had this been a realistic selection. Not only does this mean they spend more time looking for items, but it indicates that the UC library is failing to meet the requirements of this user group.

## 8. Future Research and Implications

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In identifying the metadata valued by early childhood teaching students, we can make the recommendation that current picture book records are altered to improve the catalogue for this user group. This reflects the argument Švab and Žumer (2015) made that,

“Libraries should start designing new bibliographic information systems by gaining an understanding of users’ needs and tasks, verifying which bibliographic data and relationships they are interested in and what library information systems require to support users’ information seeking process.”

As early childhood teaching students and the staff teaching this program are likely to have a greater knowledge of children this age and Te Whāriki than the library staff, it is recommended that Library Thing for Libraries be installed to modify records. This would allow both students and staff to add tags which indicate teaching specific details such as the illustration and text size, any stylistic details, or even a specific strands of the curriculum which the item relates to. While this does not see libraries designing new systems as Švab and Žumer (2015) describe, it would allow for a greater understanding of users’ needs and tasks so that the current system can support their information seeking process.

If this action is taken, it is recommended that a future project is conducted which again aims to determine the effectiveness of the UC catalogue for early childhood teachers. This would use a different group of participants but employ the same picture books and methodology so that results can be compared with those of this study. If there was a higher success rate of participants remaining with their first choice, then we could begin to draw conclusions on the success of the catalogue changes.

While the University of Canterbury is beginning to understand their users' needs through this study, it is important to remember that these results are specific to this library's information systems. We cannot apply these results to other user groups, but do recommend that similar research is conducted into how other groups select picture books. It would be particularly interesting to look at how professional teachers working at both the early childhood and primary level select items to see if there are similarities with the students in this current research. While we can assume that there would be a crossover in results as they are still working within Te Whāriki, exploring this would allow cataloguers to include details which create a more effective selection process for more than one user group. If this research was conducted with a larger sample, we would be able to draw reliable and valid conclusions on how teachers in New Zealand select picture books. Such results could be used in modifying records or influencing new systems.

## 9. Summary

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This research has revealed what metadata early childhood teaching students value in a picture book record and the failure of the UC library catalogue to meet these requirements. In using a combination of data methods, I was able to answer the research questions by identifying and confirming common themes throughout both sets of data collected. Although this research was not conducted in a real-life situation, measures were taken to ensure accuracy and validity of results. As such, it is felt that this research provides an accurate reflection of what early childhood teaching students value and the effectiveness of the UC catalogue. Results can be used to support any changes made to the records by either the cataloguers or the installation of Library Thing for Libraries. Furthermore, while the topic of cataloguing is not new, this research has made a contribution to literature on this topic by focusing on a previously examined user group and their experiences with a picture book catalogue.

As libraries exist to serve their users, changes to picture book records would be required in order for the UC library to meet its role. Knowing the details that early childhood teaching students look for when selecting a picture book would inform cataloguers on what details to add to a record so that the selection process is more effective. Identifying this gap between what early childhood teaching students value and what the UC library catalogue provides can assist in creating more user-centric records and ultimately improve our service.

## 9. Appendix

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### 9.1 Interview Questions

- Describe how you currently use picture books both in the classroom and for your assignments or coursework.
- How do you generally select picture books and why do you use these avenues?
- Reflecting on your use of the catalogue, what information do you find helpful/unhelpful in an item's description?
- What surprised you about the book you selected when you were presented with it?
- What information were you looking for when making a selection?
- What information (if any) could be included in a record to help your selection?
- What information do you find unhelpful when making a selection, both using these bibliographic records and in general?

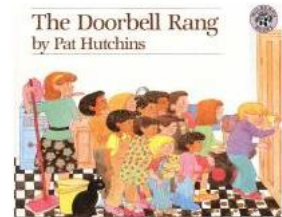
## 9.2 Criteria for Selection

<b>Metadata information</b>	<b>Reasoning</b>
Title	<i>Do early childhood teachers consider the title when making a selection?</i>
Cover Image	<i>Is it valuable to include an image of the book cover?</i>
Author	<i>Does the teacher already have a knowledge of this authors work?</i>
Language	<i>Some of the items in the UC library are printed in other languages such as Te Reo or Samoan in addition to English. Participants may select items which are bi-lingual in order to teach another language or culture.</i>
Illustrations	<i>Participants are may be looking for books which focus on illustrations as a way to encourage print awareness, or they may be looking for items which have more text than images on each page</i>
Feeling	<i>Is the book likely to make children feel happy, sad, scared or amused? Participants may require items focusing on a particular emotion in order to teach lessons on feelings.</i>
Characters	<i>Are they human, animals, imaginary, male, female and etc. This information can help participants select items which the specific children they are reading to will relate with</i>
Format/Media Connection	<i>Children are likely to enjoy stories they already know. This would include details such as other versions of the story or movie adaptations, which could also be valuable in building a lesson plan.</i>
Size of book and font	<i>Participants may require items which are going to be read to a large class and would therefore require a larger item so all the students can see, or if engaging in one-on-one sessions they are unlikely to need a large book.</i>
Themes	<i>This would provide information on the themes of a book such as teambuilding, mathematics or sharing which indicates to early childhood teachers if the item can be used in teaching on a specific subject.</i>
Te Reo	<i>As the Māori culture makes up part of New Zealand's identity, it is likely early childhood teachers would look for items which touch upon the language and culture.</i>

### 9.3 Bibliographic Records Used

#### **The doorbell rang / by Pat Hutchins.**

**Author:** Hutchins, Pat, 1942-  
**Subject:** Cookies -- Juvenile fiction.  
Sharing -- Juvenile fiction.  
**Edition:** 1st ed.  
**Published:** New York : Greenwillow Books, c1986.  
**Description:** [24] p. : col. ill. ; 22 x 26 cm.  
**ISBN:** 0688052517  
0688052525 (lib. bdg.)  
**Notes:** Each time the doorbell rings, there are more people who have come to share Ma's wonderful cookies.  
Bib#: 944316

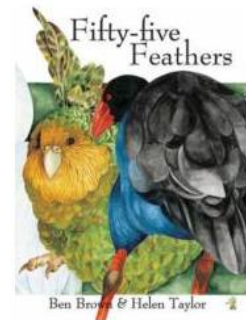


#### **Fifty-five feathers / Ben Brown & [illustrated by] Helen Taylor.**

**Author:** Brown, Benjamin, 1962-  
Taylor, Helen J. (Helen Joy), 1968-  
Brown, Benjamin, 1962- Raukura rima tekau ma rima.  
**Subject:** Pukeko -- Juvenile fiction  
Geckos -- New Zealand -- Juvenile fiction.  
Feathers -- Juvenile fiction.  
Cloaks -- Juvenile fiction.  
Birds -- New Zealand -- Juvenile fiction.  
Helping behavior -- Juvenile fiction.  
Counting -- Juvenile fiction.  
Children's stories, New Zealand.

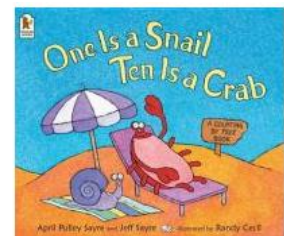
**Other title:** 55 feathers  
**Published:** Auckland [N.Z.] : Reed, 2004.  
**Description:** 1 v. (unpaged) : col. ill. ; 29 cm.  
**ISBN:** 1869486838 (pbk.) :

**Notes:** Picture story book for children.  
Also published in Maori as: Nga raukura rima tekau ma rima.  
Pukeko is worried about her friend Gecko being cold in the winter. She seeks advice from a wise old tree who tells her to make Gecko a cloak of fifty-five feathers to keep him warm, so Pukeko asks different birds for their feathers. Suggested level: junior, primary.  
Bib#: 976874



#### **One is a snail, ten is a crab : a counting by feet book / April Pulley Sayre and Jeff Sayre ; illustrated by Randy Cecil.**

**Author:** Sayre, April Pulley.  
Sayre, Jeff, 1963-  
Cecil, Randy.  
**Subject:** Counting -- Juvenile literature.  
Beaches -- Juvenile fiction.  
**Published:** London : Walker, 2004.  
**Description:** 1 v. (unpaged) : col. ill. ; 24 x 27cm.  
**ISBN:** 1844281647 (pbk.) :  
**Notes:** Originally published: 2003.  
Bib#: 978241



 **Pete the cat and his four groovy buttons / story by Eric Litwin ; created & illustrated by James Dean.**

**Author:** Litwin, Eric.  
Dean, James, 1957-

**Subject:** Animals -- Juvenile fiction.  
Happiness -- Juvenile fiction.  
Concepts -- Juvenile fiction.  
Clothing and dress -- Juvenile fiction.  
Cats -- Juvenile fiction.  
Buttons -- Juvenile fiction.  
Singing -- Juvenile fiction.  
Counting -- Juvenile fiction.

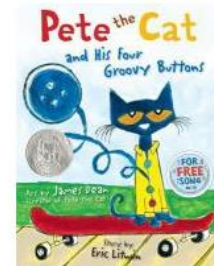
**Edition:** 1st ed.


**Published:** New York, NY : Harper, c2012.

**Description:** 1 v. (unpaged) : col. ill. ; 29 cm.

**ISBN:** 9780062110589 (trade bdg.)  
0062110586 (trade bdg.)  
9780062110596 (lib. bdg.)  
0062110594 (lib. bdg.)

**Notes:** Pete the cat loves the buttons on his shirt so much that he makes up a song about them, and even as the buttons pop off, one by one, he still finds a reason to sing.  
Bib#: 1948531



 **Mr Archimedes' bath / Pamela Allen.**

**Author:** Allen, Pamela.

**Subject:** Archimedes' principle -- Juvenile literature  
Baths -- Juvenile fiction.  
Animals -- Juvenile fiction.  
Children's stories, New Zealand.  
Children's stories, Australian.

**Edition:** Bluegum pbk. ed.

**Other title:** Mister Archimedes' bath

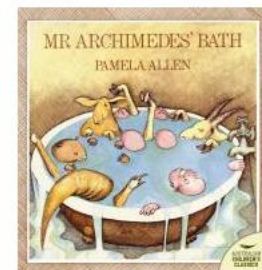
**Published:** Sydney, N.S.W. : Angus & Robertson, 1991.

**Series:** Picture bluegum

**Description:** 1 v. (unpaged) : ill. (some col.) ; 26 cm.

**ISBN:** 0207172854 (pbk.)

**Notes:** "First published ... in 1980."  
Mr Archimedes blames Kangaroo, then Goat and then Wombat for making his bath overflow until he discovers that the water rises as they each get in, finally spilling over the edge.  
Bib#: 951626



 **Jim and the beanstalk / Raymond Briggs.**

**Author:** Briggs, Raymond.

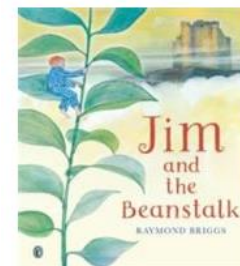
**Subject:** Giants -- Juvenile fiction.  
Helping behavior -- Juvenile fiction.  
Fairy tales.

**Published:** London : Puffin, 1973.

**Description:** 1 v. (unpaged) : ill. (some col.) ; 27 cm.

**ISBN:** 0140500774 (pbk.)

**Notes:** First published: London : Hamilton, 1970.  
A humorous adaptation of the traditional tale of Jack and the beanstalk. In this version Jim climbs the beanstalk and discovers a toothless old giant who can no longer eat little boys. Suggested level: junior, primary.  
Bib#: 942071



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