What effect has technology integration in Irish libraries had on the public librarian's skillset?

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Declaration

I declare that this dissertation that I have submitted to Dublin Business School for the award of MSc in Information and Library Management is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.

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Abstract

Public libraries across Ireland have been integrating technology into their service in recent years. This research aims to examine how the public librarian's skillset has shifted in response to this integration. A mixed methods approach was used consisting of a survey and interviews with librarians in the Irish library service. Data indicated that some degree of technological skill is needed to fulfil the duties of a modern public librarian. Research revealed that delivering a public library service is a collaborative effort, and thus technology skills will vary among staff. Data indicated that technology has resulted in a higher degree of specialisation among librarians' skillsets when compared to the "traditional" library services of the past. These findings concur with existing literature which suggests that the ongoing integration of technology in libraries is adding a new dimension to the field, and librarians will need to adapt accordingly as this trend continues.

Chapter 1 – Introduction

1.1 - Research Context

As technology becomes more integrated into the operations of many different workplaces, the way that professionals in these fields deliver their services and complete their day-to-day tasks is shifting accordingly. Public libraries are no exception. As new technologies are integrated into libraries, library staff have needed to develop new skills and competencies to keep abreast of these changes.

Nageswara Rao and Babu write "Traditionally librarians have been information providers for centuries. They now have the opportunity to use modern tools to provide quicker, more complete, and more sophisticated service to the users." (Nageswara Rao and Babu, 2001)

This view of librarians as information providers is deeply engrained in the field, with the terms "librarian" and "information professional" being largely interchangeable. Stachokas agrees with this perception and highlights how this is unlikely to change as technology is further integrated in libraries: "Libraries exist to provide services based on information…Given improvements in computing and increasing reliance on big data, this trend is likely to continue." (Stachokas 2014, p.36)

This is something that has been taken into consideration in the "Our Public Libraries 2022" strategy, which states "technological advancements and growing expectations of members and users means that libraries need to continuously evolve to remain relevant and meet the expectations of an ever-changing society." (Department of Rural and Community Development, 2018)

While this strategy deals with Irish libraries, technology appears to be a focus of libraries internationally. Along with more traditional library competencies such as administrative and interpersonal skills, the American Library Association has identified a skill of the modern public

librarian as “Knowledge of computers, the internet, and commercially available library software.” (ALA, no date)

Technology is undoubtedly changing the expectations of the library’s userbase and as such, librarians may need to develop new skills or change the way in which they exercise their existing skills in order to meet these expectations. This study aims to answer the research question “What effect has technology integration in Irish libraries had on the public librarian’s skillset?”

1.2 – Literature Review

Starting with the broad area of technology in public libraries, eventually this research was narrowed in scope to deal specifically with the impact of technology on the public librarian's skillset. From here, sub-topics needed to be selected for analysis. The literature related to these topics is discussed below.

1.2.1 – Meeting the needs of changing user profiles

This topic was chosen to identify what is expected of the modern public librarian from their userbase.

Any public library's primary motivation is to serve the needs of its userbase. To do this effectively, libraries must identify user profiles and the expectations of these users.

The European Telecommunications Standards Institute offers the following definition: "The concept of a user profile usually refers to a set of information, preferences and rules that are used by a device or service to deliver a customized version of capabilities to the user." (ETSI, 2009)

Development of a user profile is often used by for-profit companies in identifying the common traits across their customer base so that they may cater their products or services to them. Multiple user profiles may be developed to identify different target markets. Similarly, public libraries can make use of user profiles to tailor their service to their members and potential members.

Anyira writes "The 21st century has virtually turned everything virtual. The library and its users have also gone virtual." Anyira goes on to broadly group 21st century library user profiles into 3 groups:

1. Unskilled user / computer illiterate users
2. Semi-skilled user / semi-computer literate user
3. Skilled user / computer literate user

(Anyira, 2011)

This is an interesting use of alternate definitions for these user profile groupings. It seems to suggest that library skills and computer literacy are now inextricably linked in the modern era. This is obviously dependent on the intent of the library user. Some users may wish to visit the library for the sole purpose of skimming through the newspaper or attending an art exhibition. In this case, computer literacy is a non-factor. In the case of a user wishing to access the library's e-collection or make use of hardware found within the library, a further degree of computer literacy may be required. For this reason, it may be fair to assume that Anyira's groupings of a 21st century library user are overly broad when we consider the disparity among those who use public libraries.

Traditionally, skills for library users have been largely focused around an understanding of the principles of information literacy (Behrens, 1994). Anyira seems to suggest that this skill now also encompasses the ability to navigate information in the digital world, although Bawden and Robinson argue that the core of the library user's skillset in this regard remains largely the same: "It is best to understand information literacy as something much broader than an enhanced form of computer skills … To deal with the complexities of the current information environment … a complex and broad form of literacy is required" (Bawden and Robinson, 2002). This suggests that the ability to navigate information is not entirely dependent on a person's ability to operate a computer, but rather may require an understanding of the broader nature of information itself.

Technology is also allowing libraries to serve a broader range of user profiles than ever before. One such example is the integration of "Tovertafel". This is a projector system with sensors and a speaker which contains interactive games. Often used in an educational setting, it is designed for people with dementia, people with an intellectual disability and children who have developmental disorders. These have been introduced to various libraries across the country, firstly in the Dún Laoighaire Lexicon, with county librarian Mairead Owens commenting: "The library service supports lifelong learning, and the Tovertafel helps us meet our commitment to provide a rich and engaging collection

and technology programme for all our users, regardless of background, age or circumstances." (Dún Laoighaire County Council, 2018)

Similar resources exist in online library services, such as "Touch-type Read and Spell" or "TTRS". This is a multi-sensory online course for students of all ages which helps with reading, writing, spelling and computer skills. It is tailored towards those with dyslexia, ADHD and other learning difficulties. (Fingal County Council, no date)

Recent technologies such as Tovertafel and TTRS are allowing many libraries to create a more inclusive environment where they can serve a broader range of user profiles than ever before. As new technologies emerge, it is an exciting prospect to think that this trend will continue.

A 2014 Indian study recognised the opportunities such assistive technologies can present in allowing people with disabilities to engage with library services on a deeper level. This study polled 15 libraries. 10 of the 15 libraries surveyed agreed that it was "very important" to keep up to date with the latest technologies of this kind. 4 felt it was "important" and 1 felt it was "moderately important". (Sanaman and Kumar, 2014) This demonstrates that integrating these technologies and empowering users with disabilities to fully engage with their libraries is an area which is being prioritised in the region where this study was carried out. This observation is encouraging, as it shows that libraries are actively working towards using technology to create a more inclusive environment.

Librarians are sometimes said to "play an instructional role…teaching users how to access information, synthesize it, and use it" as well as teaching users how to "effectively use library tools, technology and resources." (MacKellar 2008, p.20) This research will aim to examine how librarians adapt to new technologies while fulfilling this role.

1.2.2 – The digital divide

The “digital divide” is a concept that has become relevant in the internet age and is closely interlinked with user profiles and the librarian’s role as an instructor. This concept refers to the disparity in access to computers and the internet across various groups. (Kinney, 2010) Some common factors in the digital divide are socio-economic status, gender, life stage and geography. (Vaagan and Koehler, 2005)

Librarians are often thought to play a role in “bridging the digital divide”. “Libraries can provide the access and skills needed to navigate the digital world, bridging the gap between information and access.” (Morgridge College of Education, no date) While this broadly asserts that libraries “can” address this issue, it does not specify “how”. This topic was chosen for analysis to determine to what extent librarians prioritise digital divide initiatives and how they approach the challenge of bridging the divide.

The “Wired For Youth” (or “WFY”) program based in the Austin Public Library aimed to bridge the digital divide among disadvantaged youths. This program consisted of providing computer access to these youths as well as basic technological instruction from WFY librarians to impart skills such as “configuring email accounts” and “enrolling in virtual pen pal programs”. Outcomes to this program were positive, with the youths reporting increased technology skills and a heightened sense of appreciation for the library as a “safe, welcoming place where they could do homework, work and play on the computers, and work with others.” (Durrance and Fisher, 2003) This demonstrates that bridging the digital divide is a multi-faceted undertaking. Access to the technologies themselves must be provided, as well as some level of instruction in how to make use of them.

This program was analysed alongside a similar initiative in Flint, Michigan which yielded very similar results, with participants reporting heightened technology skills and self-confidence in applying these technologies to assist them with their work. (Durrance and Fisher, 2003) The side-by-side comparison of these two case studies along with the similarity of outcomes strengthens the

argument that such public library initiatives to bridge the digital divide among disadvantaged youths can yield highly effective results.

Korupp separates the digital divide into two levels:

1. Access to computers and the internet
2. User profiles of new technologies

(Korupp, 2005)

Aqili and Moghaddam argue that public libraries are "one of the major social tools" equipped to address the digital divide, writing "Librarians can help people interact intimately as well as efficiently with new information technologies to locate, use, process, organize, create, communicate and manipulate information and information resources and somehow find an appropriate identity and status in the electronic virtual world." (Aqili and Moghaddam, 2007) This would suggest that public libraries are equipped to address both of the levels identified by Korupp.

Mun-Cho and Jong-Kil offer an alternative separation of aspects of the digital divide:

1. Information accessibility or "digital opportunity" (economic or geographical factors)
2. Information utilization (creating added value in using information)
3. Information receptiveness (using information to improve quality of life)

(Mun-Cho and Jong-Kil, 2001)

While the first of these is identical to Korupp's, information utilization and information receptiveness are interesting factors to consider. Utilization seems to refer to an individual's ability to not only locate a general information source, but interpret it appropriately and extract the information they were seeking. Receptiveness refers to applying this information in a practical way for the purpose for which it was initially sought. These are factors which both correlate to the librarian's role as an

instructor. While many library users may be familiar with the process of locating information from an online source, differentiating “good” and “bad” information is another challenge entirely, and one which librarians can play a role in assisting with.

Regarding the issue of access to technology, Milheim writes “Programs which reside within institutions which serve the public, in particular, such as public libraries, are implementing resources to allow citizens to gain access to technology resources.” (Milheim, 2006) This is undeniably true, and plain to see for anyone who visits a public library and observes the range of electronic resources that are now typically found there.

Milheim contends that the implementation of these resources is only half the battle. Staff development is another factor that must be considered: “educators are being faced with new technologies, yet it is difficult to maintain, as well as incorporate these technologies into a curriculum without additional staff development and human capital.” This is largely reliant on the emphasis that an organisation chooses to place on prioritising a digital divide initiative.

Staffing is not just a matter of having an adequate number of people in the workplace. The ability for staff to effectively offer instruction on the use of these technologies is equally as important: “it is important for educators to improve their technology skills and gain an ability to integrate technology into effective instruction.” (Milheim, 2006)

Although Milheim here uses the term “educators”, for the purposes of this research, it is equally applicable to librarians in an instructional role. This research will examine what level of continuous professional development librarians must undertake to fulfil this instructional role, and how much of this can be learned on the job on a day-to-day basis.

1.2.3 – Technological literacy as a core skill for librarians

This topic was chosen to explore how computer/IT skills compare to other librarian skills in the modern library working environment.

As technology is increasingly being integrated into public libraries, one might assume that all public library staff must be highly familiar with how these technologies operate. While a familiarity with technologies may be necessary, this may vary among individuals, as some librarians' roles will require them to interact with these technologies more regularly than other staff, either in terms of completing their own work, or instructing library users on how to use them.

The International Technology Education Association has developed a series of standards on how to achieve technological literacy, and broadly define the term as the ability to "use, manage, assess and understand technology." (ITEA, 2000/2002/2007) This definition encompasses a range of factors in relation to technology in libraries. The terms "use" and "manage" here could refer not only to the librarians themselves using these technologies but could also reference the librarian's role in instructing their users.

Wilson writes "The perfect library would provide a suite of special technological resources, from the simple to the cutting edge, as well as help with using these technologies from library staff" (Wilson, 2016). Here Wilson is highlighting that a library that is technologically well-equipped is of little value if the library users do not receive adequate instruction on how to make use of the technologies.

The ITEA's use of the word "assess" in their definition of technological literacy is interesting, as it seems to give the library staff a place within the decision-making process when it comes to technological planning and strategy. Obadare noted that for a library to maximise their technological services, the librarians who are dealing with these technologies on a day-to-day basis must be able to make critical assessments and observations, and subsequently make recommendations about their hardware/software needs: "If they are left out, it would be difficult because any equipment

supplied without their approval may pose a serious problem for them" (Obadare, no date). This implies that library staff should be involved in the decision-making process of how technologies are implemented in their branches and should have a sense of awareness of the general user sentiment towards these technologies.

While technological literacy as a librarian skill implies that one must be intimately familiar with library technology on a variety of levels, there are others who feel that the technical knowledge of these systems plays a secondary role to other factors. Radniecki argues that the most important element in producing a strong library technology service lies elsewhere, in the "interpersonal skills necessary for adapting technological innovation in specific library settings, rather than the technical expertise needed for implementation." (Radniecki, 2013)

Emanuel emphasises the importance of developing technology skills and suggests that younger librarians tend to have an inherent advantage over their older colleagues due to developing these skills on some level due to the era they were born in. She writes "Younger academic librarians believe that their technology knowledge makes them more flexible and assertive in libraries compared to their older colleagues, and they have different ways of completing their work" (Emanuel, 2013). While this research study is focused on public librarianship, given the crossover in the skillsets of public librarians and academic librarians, it is interesting to consider if this perspective exists in the public library field. Nonetheless, Emanuel's focus on academic libraries is a factor that must be considered, as prevalent technologies in an academic library will no doubt differ to that of a public library, given the differences in userbases.

There is a clear contrast here between the perspectives of Radniecki and Emanuel. Emanuel's focus on an academic library environment may account for this. Another factor to consider in this contrast is branch size and nature. A large urban branch well equipped with technology may find that a larger percentage of their user interactions involve their technology services. In this case it can be assumed that library staff may have a higher degree of technological literacy, either through a conscious

effort to develop it, or through picking up these skills through regular interaction. Similarly, in a branch where the majority of the userbase does not make use of the technology, staff may find that interpersonal skills constitute a larger portion of their day-to-day obligations.

The primary research for this study largely concurred with Radniecki's assessment, with interview participants agreeing that the traditional librarian skills such as being personable and helpful to users take precedence over technical knowledge. Interestingly, survey respondents broadly agreed with Emanuel's notion that younger librarians have an inherent advantage due to their technology skills. This will be explored more in the Results and Discussion chapters.

1.2.4 – Continuous professional development

Changing technology has pronounced effects on the profession of librarianship and continuous professional development is necessary to keep up with these changes in the field. Upskilling and reskilling is vital (Broady-Preston and Cossham, 2010). Analysis of this topic was identified as being relevant to the broader research goals of this topic. Has the need for or nature of CPD changed with the integration of more technology into the library service?

While interviews for this research revealed that much of the technology skills required for modern public librarianship can be learned largely on the job, participants agreed that some level of extracurricular continuous professional development (CPD) among staff is generally beneficial to a branch's service.

Moonasar and Underwood argue that CPD should be an ongoing process throughout a librarian's career: "The aim is to remain abreast within one's profession, with the understanding that CPD is a continuous undertaking; a commitment to lifelong learning. Once formal education is completed, it does not mean that learning will end" (Moonasar and Underwood, 2018).

The Library Association of Ireland conducted a study in 2019 to determine which aspects of CPD participants would like to see being focused on in the future. This study showed a clear interest

among participants in a strong focus on the technological aspect of modern librarianship. A factor that must be considered when assessing these findings is the disparity of respondents. Almost half of survey responses received were from academic librarians, with only 17.95% of respondents coming from public librarians. This is not necessarily representative of differing attitudes among the two fields as survey responses between different library types were amalgamated in the final tallying, yet it is important to note that responses are not entirely from a public librarian perspective.

Under the heading of “Teaching & Learning”, 47.54% of participants identified “Content design using virtual learning environments” as an area they would like to see prioritised in terms of CPD. This was the only technology focused option under the heading and received the highest percentage of the vote.

Under the “Research Support” heading, “Open Access and digital repositories” scored 65.45% of the vote. Again, this was the only option related to technology and received the highest percentage of the vote.

The “Information Technology” heading was perhaps the most interesting, as the results gave an insight into which specific areas of IT librarians are interested in upskilling in. The three highest results under this heading were “Assessing the success of your website” (63.93%), “Website publishing and design for libraries” (58.20%) and “Photoshop (and other design-related programs)” (58.20%). (LAI, 2019)

These results show a clear focus on technology among librarians’ CPD aspirations, with a particular focus on how libraries should navigate the web in terms of designing their websites and presenting their brand to the public. This leads on to the use of technology as a promotional tool.

1.2.5 – Social media as a promotional tool for libraries

This topic was chosen for analysis based on the growing prevalence of social media as a promotional avenue. The researcher aimed to discover if social media has outstripped other promotional methods for public libraries, and if there is a specific skillset associated with social media library promotion.

Online promotion has become a focus of all organisations in recent decades. Public libraries are no exception. The term "Web 1.0" refers to the communication of static information, such as opening hours or a library's catalogue. An example of this would be a standard public library website information page. "Web 2.0" is a term used to describe interactivity on the web, or a two-way system where users can communicate back and forth (Helge and McKinnon 2013, p.3). An example of this is social media such as Facebook or Twitter.

Interview and survey data collected for this study revealed that modern librarians typically view social media as the most effective way to promote their branch. While this is probably true of most organisations, there appears to be a lack of centralised guidelines in terms of using social media (or Web 2.0) to market a library.

Gupta and Savard found that libraries typically do not make their social media policies freely available on the open web, and as such "there is little for libraries at large to use as a basis for the creation of such documents at the present time." (Gupta and Savard 2011, p.44) From this we can surmise that libraries' social media usage is largely branch-specific (or library network-specific) and there is not a standardised set of "best practices" for librarians to follow. Given the rapid proliferation of social media promotion among all organisations in recent years, it must be noted that progress may have been made in this area in the 9 years since Gupta and Savard's findings through individuals becoming more familiar with these platforms through interacting with them over that time.

Certain core social media skills may be obvious, such as having a professional demeanour or aligning your library's social media presence with broader organisational goals, however creating such a list of "best practices" may be a worthwhile future research project as it relates the modern librarian's skillset.

As with all organisations, online visibility for public libraries is increasingly important. While social media is allowing libraries to reach a broad range of users instantaneously and effortlessly, this does not necessarily mean that more traditional promotional methods such as local print media or radio have become completely obsolete. An Irish 2016 study regarding library visibility found that there still exists a contingent of library users to whom online promotion does not apply: "There is a balancing act in terms of making the library visible and accessible in an online environment to those in the community who are e-literate and those who struggle with technology" (Lawton 2016, p.111).

Undoubtedly it is important in the modern age for public libraries to be able to make use of social media to communicate their message with their users. While this avenue of promotion may have overtaken others in recent years, librarians must also give consideration to the segments of their userbase that will not be reached through these means and plan accordingly for alternative methods of communication.

1.3– Research Aims

The intention of this study is to identify what effect the integration of technology in libraries has had on the modern public librarian's skillset in Ireland. This research aims to examine what new skills have developed and to gauge attitudes among those in the field regarding these changes. Primary qualitative research themes in this study include changes of public libraries' userbase/user expectations, the public librarian's role as a technology instructor/bridging the digital divide and technological literacy as a core skill for librarians. Related sub-themes include continuous professional development and social media as a promotional tool for libraries.

1.4– Rationale for Research

Almost all public libraries in Ireland have integrated technology to some degree in recent decades. In some smaller branches, this may only extend to adding a small number of computers and printing/photocopying facilities. In larger urban branches, the focus may be on the exciting possibilities of emerging library technologies such as 3D printing and virtual/augmented reality. (Joiner 2018, p.111, p.129)

This research involves a review of secondary literature related to the topics of librarian skills and technology in libraries, as well as a mixed methods approach of primary data collection. Upon completion, this research aims to provide an overview of points of agreement/disagreement between those in the field, as well as their attitudes towards the effect technology is having on their careers.

1.5– Contribution of Research

While much literature exists on the topic of technology in libraries, very little seems to focus specifically on the impact of technology on the librarian's skillset. Library users' technology skills (Anyira, 2011), causes for the digital divide (Vaagan and Keohler, 2005) and a vision of the idealised modern library (Wilson, 2016) are areas where there seems to have been a significant amount of research conducted. While these are tangentially related to the public librarian's skillset, there appears to be room within the existing literature for more research in this area.

The closest area where a considerable amount of research has been carried out is the librarian's role in bridging the digital divide. While this relates to technology, much of this research is concerned with the role of the library itself as a venue to facilitate computer/internet access rather than the role of librarians themselves. As this research is focused specifically on how technology relates to the

librarian's skills and competencies, the planned qualitative research may provide the opportunity for novel insight into this area.

Another factor to consider is that much of the existing literature on librarian reskilling in the digital age is heavily focused on academic libraries (Emanuel, 2013). While there is certainly a large degree of crossover in the skillsets of academic and public librarians, this research may identify some areas in which they differ in terms of integrating technology into their service.

1.6– Conclusion

In assessing the literature related to this topic, there appears to be a level of disagreement on how large of an impact the integration of technology in libraries is having on the core skillset of the modern public librarian.

Emanuel's view that younger librarians are at an advantage purely due to their technology skills is an interesting one. She also predicts that "this generation is poised to revolutionise library services with their technology skills." Clearly this assumes that technological literacy is becoming a central competency of the role and this will only increase as technology becomes further integrated into the service.

This contrasts with Radniecki's view that interpersonal and communicative skills remain the most important factor in delivering a strong public library service. Primary research for this study supported this assessment. Librarians interviewed agreed that technology is certainly playing a larger role in the service than ever before, but the ability to deal with the public in a helpful and personable manner is still the most important part of the job as opposed to an advanced technical knowledge of the integrated technologies.

The role of the librarian in bridging the digital divide and making technology available to various demographics appears to be an area on which most agree. MacKeller views this as a core service of

the library, with Aqili and Moghaddam arguing that libraries are among the most well-equipped institutions to provide this bridge. The ability for librarians to provide effective technological instruction to their users requires them to be intimately familiar with the technology themselves, a prerequisite which is recognised by Milheim.

This is clearly something that librarians in Ireland generally agree with, as the literature revealed that librarians were most eager to focus on technology in their continuous professional development (LAI, 2019).

The importance of social media in library branch promotion is an area of almost unanimous agreement. The literature suggests that social media (and online visibility in general) has overtaken more traditional promotional avenues such as print media. Gupta and Savard recognise the opportunity to develop a more coherent set of guidelines on how libraries should conduct themselves in this regard.

The broad conclusion drawn from this literature review is that technology is undoubtedly impacting how public libraries deliver their services to their users. This in turn is impacting how librarians perform their duties and certain aspects of the job now have a different level of emphasis than in decades past. While there is unanimous agreement that this is the case, there appears to be a reluctance to concede that certain aspects of public librarianship are becoming obsolete, with most agreeing that the core skillset remains largely the same as the past. The primary research in this study aims to gauge the general sentiment in the field regarding the scope and impact of technology on the duties and skillset of librarians who are adapting to these changes.

Chapter 2 – Methodology

This chapter aims to outline the methodology used during the course of this research project.

2.1 – Participants

2.1.1 – Participant profile

This research study utilised a mixed methods approach in the form of an anonymous survey and a series of interviews. It was decided early in the research process that the most valuable data could be collected from public librarians who have first-hand experience with the changes technology has brought to the field in terms of their skillset and duties.

2.1.2 – Participant sample size

In the case of the survey, an initial challenge that was identified was the typically low response rates to online surveys (Pederson and Nielsen, 2016). It was anticipated that a low response rate would diminish the credibility of the data collected, as larger response rates are typically thought to give a more accurate representation of sought data (Hill, 1998).

To account for the possibility of a low response rate, the research survey was sent to a large sample size. A list of over 100 libraries across the country was compiled. The short online survey was emailed to each of these libraries along with an information sheet and a request to participate.

In selecting a sample size for the interviews, it was important to select a manageable number of participants to be interviewed within the data collection window. Ultimately, considering the time constraints of this research project, 5 librarians from a variety of roles were interviewed.

2.1.3 – Participant recruitment

While compiling the email list for the survey, it was decided that consideration should be given to the urban/rural divide among library branches across the country. As such, the email list aimed to strike a balance between branches located in cities (namely Dublin, Limerick, Galway and Cork) and branches located in small to mid-sized towns. It was felt that this would provide more representative data of technology's impact on the country's library service as a whole rather than recruiting participants exclusively from either urban or rural branches. In this regard, non-probability sampling was used.

It was decided that interviews would be conducted face-to-face if possible, as the interview format was semi-structured and it was felt that a face-to-face environment would facilitate a more informal conversational flow and possibly lead to interesting data arising which the researcher had not previously considered to enquire about. One of the participants was unable to meet face-to-face but agreed to a phone interview.

The decision to conduct interviews face-to-face presented geographical limitations given the fact that long-distance travel is discouraged under COVID_19 guidelines. As such, these interviews were limited to the North Tipperary area. Five participants were selected from various branches, ranging from a small branch to one of the most well-equipped IT branches in the county. Four of the interview participants were contacted by telephone, with one being contacted by email. Like the survey sample, non-probability sampling was used. There was some variance among the roles that each participant fulfilled within the county's library service. The rationale behind this choice was the assumption that technological integration in libraries would have a different level of impact on library staff based on what their day-to-day duties looked like.

Upon agreeing to take part, participants were sent an information sheet giving an overview of the research and the interview process (Appendix 1.1). They were also sent a consent sheet informing

them of their rights, the fact that interview audio would be recorded, and an assurance that the research project had been approved by the Dublin Business School Ethics Committee (Appendix 2).

Participants graciously agreed to take part in the research for no compensation.

All interviews took place over the course of three days in the library branches of the participants, and via phone in the case of one of the participants.

2.1.4 – Interviewees

The first interview was conducted with the head librarian of a small branch with relatively modest in-house technology facilities.

The second interview was conducted over the phone with an experienced branch librarian who later went on to focus on digitisation for a number of years and currently occupies an administrative role in the Tipperary County Council Library Service Headquarters.

The third interview encompassed interviewing three librarians in one session in a large town branch. Of these three, one is a desk librarian who deals heavily with the public and facilitating access to the branch's IT services, while the other two work in the "Tipperary Studies" service, an archive project focused on preserving local history and culture.

2.2 – Design

This research project was mixed methods in design. Interview and survey data were primarily qualitative in nature, although some interview data was supported with quantitative figures regarding estimated rates of ebook transactions and the growth rate of eservices in a branch. This research is exploratory in nature, as it seeks to provide further insight into a research topic which may provide the catalyst for future research into a more specific segment of the findings.

2.2.1 – Survey design

When designing the survey for this research, a number of factors were taken into consideration. As previously mentioned, typically low response rates for surveys of this nature were accounted for. This was done by ensuring that the mailing list who would be receiving the survey included enough email addresses to obtain a satisfactory participation number in the event of a low response rate.

The length of the survey was kept to 10 statements. This information was included in the email attached to the survey along with an assurance that it should take no more than a few minutes to complete. Michaelidou and Dibb observed that lengthy questionnaires are less likely to receive a response (Michaelidou and Dibb, 2006). Placing a constraint of 10 statements on the survey allowed for deeper consideration of which topics needed to be covered, and how these statements should be phrased.

The phrasing of the 10 statements was also a consideration in relation to bias. De Vries writes "When people who analyse data are biased, this means they want the outcomes of their analysis to go in a certain direction in advance" (De Vries, 2017). This resulted in numerous drafts of the survey statements until the researcher was satisfied that all statements consisted of neutral language and none appeared to be leading the participants towards providing a particular answer.

The survey was hosted on Google Forms and consisted of 10 statements which the participants needed to select one of five responses to, ranging from "Strongly Disagree" to "Strongly Agree".

Before completing the survey, participants needed to go through a screen where they agreed that they were over the age of 18 and agreed to participate in the survey with knowledge of its purpose.

Survey results were finalised on Thursday 23/07/2020 with a total of 37 responses, representing a pleasantly surprising response rate of over a third. Responses were then finalised and tallied.

Topics covered in the survey included social media, age as a factor in librarians' technological skills, continuous professional development, digital literacy, digitisation and adaptations in the library service during the COVID_19 pandemic.

2.2.2 – Interview design

Semi-structured face-to-face and telephone interviews were conducted for this research. This method was selected to allow for a conversational, non-rigid environment where interviewees could feel free to delve into areas not directly related to the questions posed to them. It was felt that this may lead to interesting insights which would not arise from a more formal and regimented interview structure.

The purpose of these interviews was to explore a variety of themes which arose during the literature review and learn the perspectives of those within the field on these themes. This was also the rationale behind the participant selection, as it was felt that interviewing librarians from differing roles would provide a more nuanced picture of the attitudes in the overall service towards the effect of technology on their skills and duties.

The proposed timeframe of the interviews was listed as "roughly 30 minutes" on the information sheet. This decision was made as the researcher did not wish to take up an unreasonable amount of the participants' time. Initially a shorter provisional interview time was considered but it was felt that a minimum of 30 minutes would be needed to satisfactorily explore the interview topics. This time limit was decided upon based on DiCicco-Bloom and Crabtree's recommendation on semi-structured interviews: "Most commonly they are only conducted once for an individual or a group and take between 30 minutes and several hours to complete" (DiCicco-Bloom and Crabtree, 2006).

As with the survey design, researcher bias was also given consideration in compiling a list of research questions. Valenzuela and Shrivastava note that interviewer bias may slant the results and "might

jeopardize the results or purpose of the study" (Valenzuela and Shrivastava, no date). Numerous drafts of questions were compiled until the researcher was satisfied that the phrasing was neutral and unbiased. The final draft consisted of 10 questions (Appendix 3). Given the semi-structured nature of the interviews, it was anticipated that an equal amount of time would not be allocated to each question. Depending on each participant's area of knowledge or interest, it was expected that some participants may spend more time discussing particular topics than others.

There was a large degree of crossover between the survey and interview design in terms of the subject matter being explored. The rationale behind this was that the survey would provide some statistical representation of general sentiment within the field while interview responses would allow the researcher to delve deeper into the subjective opinions of a smaller number of participants, who could provide nuanced insight which the survey would be unable to offer.

2.3 – Materials/Apparatus

The following section describes the materials and apparatus used during the data collection process. These are listed in full in the appendices where applicable.

2.3.1 – Survey information sheet (Appendix 1.2)

An email was sent to over 100 libraries across Ireland containing a link to the survey for this research. A survey information sheet was attached to this email where relevant details could be found before participation. This information sheet introduced the nature of the research being conducted. An assurance was given that the research had been approved by the DBS Ethics Committee. Participants were informed of their rights, given confidentiality assurances and contact details were provided for further information regarding the study. An estimated time commitment of the survey was also given, along with details on how the survey should be completed and how the collected data would be used.

2.3.2 – Survey hosting platform

This survey was hosted using the online platform Google Forms. An alternative hosting platform was originally planned although this was changed to Google Forms due to possible privacy concerns. This platform allowed for the quick and easy creation of the survey and offered the option to include a consent page before the survey could be accessed. This eliminated the need for a survey consent form. This platform had the added advantage of representing collected data for each survey statement visually in the form of a pie chart. These charts would update as each new response was collected. This was an interesting point of reference to keep an eye on while conducting the literature review. The survey consisted of a total of 10 statements.

2.3.3 – Interview information sheet (Appendix 1.1)

Information sheets were printed out and given to the participants to review before the interviews took place. These were similar to the survey information sheets, containing much of the same information, along with an overview of topics that were expected to be covered and a disclaimer regarding the collection of audio and the timeframe that it would be kept for before being deleted.

2.3.4 – Interview consent form (Appendix 2)

Individual consent forms were printed out for each interview participant. These forms outlined a project summary reiterating the nature of the research. The participant's and researcher's names were printed, and written signatures were obtained from both parties once the participant was satisfied that they were willing to proceed with the research.

2.3.5 – Interview prompt sheet (Appendix 3)

Although these interviews were semi-structured and flexible in nature, the researcher brought a printed list of the questions that would be covered. This served as a "prompt sheet" to ensure that no topics or questions were forgotten during the course of the interview. In total, the prompt sheet consisted of 10 questions which thematically mirrored topics covered in the survey.

2.3.6 – Audio recording device

Audio for these interviews was recorded on the “Voice Recorder” app for Android. This was tested thoroughly before the interviews to ensure that there was no risk of audio being lost.

2.3.7 – Audio storage device

Upon completion, all interview audio was backed up as soon as possible. All audio was exported to a password-protected laptop computer. A second backup was created on a USB device.

2.4 – Procedures

The following is a chronological account of the procedures followed during the data collection stage of this research project.

2.4.1 – Time management

Given the scope of this research project, time management was a consideration from the beginning. A proposed timeline was drawn up in early June to be used as a reference point for the duration of the project to ensure that the research was moving at an appropriate pace.

The development of data collection tools took place over a two-week period in mid-June. The literature review was still being conducted and revised over these two weeks, and thus informed the development. Numerous drafts were created for both the survey statements and interview questions and subsequently reworked until the researcher was satisfied that both showed as little bias as possible and thematically mirrored each other, fitting with the general research framework. Developing the data collection tools while simultaneously finalising the literature review allowed the researcher to create questions and survey statements which were heavily informed by existing research. The generous two-week timeframe had the added benefit of giving ample time for reconsideration of the tools before implementing them in the data collection itself.

A three-week period from June 29th – July 20th was allocated for the data collection itself. This overlapped with "data analysis" on the proposed timeline in the event that the full three weeks would not be required. This proved to be the case as all of the interviews were conducted over a three-day period from 6th July – 8th July.

2.4.2 – Survey procedure

Once the survey was finalised on Google Forms, a mailing list was drawn up. This involved selecting various library networks from around Ireland and writing down their email addresses. A list of over 100 libraries was compiled to account for the possibility of a low response rate.

The geographical spread of libraries selected was given consideration, as the researcher wished to get responses from both city libraries and smaller branches located in the country. This decision was made based on a survey guideline advised by Bell, who writes "Great care has to be taken to ensure that the sample population is truly representative… you will need to consider what characteristics of the total population need to be represented in your sample to enable you to say with fair confidence that your sample is reasonably representative." (Bell, 2005 p.14) Considering that this research project is not specifically focused on urban or rural libraries, it was decided that a mix of both in the survey sample was appropriate.

After the list had been compiled, an email was drafted introducing the researcher and the nature of the research. This email contained an attached information sheet, a link to the survey and an invitation to contact either the researcher or the dissertation supervisor if any further information was needed. The email was then sent to all addresses on the email list.

The survey was closed on July 20th with a total of 37 responses so that analysis of the final data could commence. It is unknown if this truly represents a 37% response rate, as the researcher received some emails from librarians who had completed the survey saying that they had forwarded it to their colleagues. The researcher also suspected that some of the email addresses the survey was

sent to are outdated/defunct. Both of these factors will undoubtedly have had some effect on the number of people who received the survey link.

2.4.3 – Location of interviews

The first interview was conducted face-to-face in a relatively small library branch. The interview took place in a staff-only section of the library to ensure quietness and privacy.

The second interview was done over the phone.

The third interview was a group interview with three librarians from a large busy branch. This interview was conducted in a quiet area of the library which was closed to the public at the time of the interview.

2.4.4 – First interview procedure

The first interview for this research project was conducted at 3pm on Monday 6th July 2020, having been arranged the previous Thursday. The participant was contacted by phone on the morning of the interview to confirm.

Before beginning, the participant was handed an information sheet and consent form. The researcher gave a brief overview of the research topic and offered to answer any further questions they may have about the process and assured them that the interview would not go longer than half an hour. The participant graciously offered to go as long as necessary to provide in-depth answers.

The researcher began recording and conducted a semi-structured interview where interesting data was gathered on the research topic from the perspective of a small-town library. The flow of the interview was quite informal and friendly, with all pre-planned topics being given roughly the same amount of time.

At the half hour mark, the researcher offered to stop the interview to remain within the time limit stated on the consent form, although all topics had not been covered at this point. The participant

offered to continue and the interview was ended at roughly the 45 minute mark. The researcher thanked the participant and left.

Audio backup and transcription of the interview began as soon as possible. Bell notes “you can count on at least four hours work for every hour of interview” (Bell, 2005 p. 164). The researcher felt that it was wise to get this out of the way immediately rather than wasting data analysis time transcribing it later.

2.4.5 – Second interview procedure

The second interview participant was contacted on Friday 3rd July. They agreed to a phone interview which was scheduled for the following Tuesday at 2pm. The information and consent forms were sent to the participant later that day.

Consideration had to be given to how the audio for this interview would be recorded. The researcher experimented with various apps which would allow for the recording of the call. This idea was later rejected due to the researcher’s lack of familiarity with such apps as well as privacy concerns.

Ultimately, the same voice recorder app which was used in the first interview was used, and the call was made with a second mobile phone which was placed on loudspeaker. This method was tested beforehand to ensure that the collected audio would be decipherable.

At the start of the call the researcher gave an overview of the research and outlined the format and timeframe of the interview. As in the first interview, the participant insisted that time was not an issue and the interview could take as long as necessary.

There was a concern that conducting the interview would prove a less effective data collection method than a face-to-face interview. Farooq writes “telephone interviews, with its lack of visual contact between interviewer and interviewee, is shunned by traditionalists and is regarded as inferior” (Farooq, 2015). This did not prove to be the case. The interview flowed smoothly, partly

due to the fact that the researcher and participant were previously acquainted. The use of a phone did not appear to have any effect on the quality of the interview or the data collected.

As with the first interview, the researcher offered to end the call after 30 minutes. The participant strongly insisted that they were happy to continue. The interview ended after roughly 50 minutes.

2.4.6 – Third interview procedure

The third and final interview was conducted on Wednesday 8th July at 11am. This was a group interview with three librarians from the same branch. Upon scheduling the interview there was a level of uncertainty regarding how well it would go, as the researcher had not previously conducted an interview of this type, but it was also seen as an opportunity to gather data which may not be obtainable in an individual interview setting.

Saunders, Lewis and Thornhill write "Group interactions may lead to a highly productive discussion as interviewees respond to your questions and evaluate points made by the group" (Saunders et al, 2012, p.402). As such, it was felt that a variety of perspectives could be gathered, particularly considering that the librarians interviewed fulfilled different roles in the service.

Upon arrival at the branch, the participants were given their information sheets and consent forms which they were happy to sign. They were given an overview of the research and given the opportunity to ask questions about the research or the interview process. All were satisfied to proceed with the interview. The interview took place in an upstairs part of the library which houses an archiving project. The archives were closed to the public at the time due to COVID restrictions so this ensured privacy. The voice recorder was started and the interview began.

As the interview progressed, it proved to be very productive. As hoped, the variety of perspectives played off each other well and provided some insights which did not arise in the previous interviews. Some of the collected data concurred with data collected in previous interviews, while there were

also some very interesting differences in perspective regarding the emphasis that should be placed on technological literacy as a core library skill.

The interview was ended at the half hour mark. The participants were thanked for their time. The collected audio was backed up immediately and transcribed later that week.

2.5 – Research Ethics

Any research project must be beholden to certain ethical standards. This study did not deal with overly controversial subject matter (ie. political/social matters) or research methods (ie. using minors as participants). This is not to say that ethics did not need to be considered.

2.5.1 - Maintenance of privacy

Maintenance of privacy was a major consideration. Survey respondents were assured that the survey was entirely anonymous and even the researcher would not be able to see who responded to it. Similarly, interview participants were assured of total anonymity when being recruited, with one small caveat: their role within the service may be listed to contextualise their responses, but their name/branch would not be listed in the paper. In the interest of shorthand during data analysis, a master sheet was created listing their roles and assigning each of them a title. For example: “A head librarian in a mid-sized town branch in North Tipperary – Participant A”

This follows the advice of Salkind, who writes “Anonymity is most often maintained through the use of a single master sheet that contains both the names of the participants and their participant number” (Salkind, 2018 p.78). Participants were also made aware of the fact that the audio of the interviews would be recorded and destroyed at a certain date.

2.5.2 – Informed consent

Salkind refers to informed consent as arguably the most important ethical consideration of any research project, writing “The informed consent form or letter might be the one tool that ensures ethical behaviour” (Salkind, 2018 p.79).

Of course, this is entirely dependent on the researcher ensuring that the information presented to the participant is accurate. The researcher must not deviate from the agreed upon terms at the time of receiving consent. Saunders, Lewis and Thornhill refer to “the right of those taking part to expect the researcher to abide by the extent of the consent given” (Saunders et al 2012, p.258). For this reason, great care was taken to ensure that the information included in both the information and consent sheets was accurate and the nature of the research project was disclosed fully and truthfully. These sheets informed the participants of who the researcher is, the purpose and nature of the research, the expected time commitment of their participation and the timeframe collected data would be retained for. They were also informed of their right to withdraw from the research at any point, given assurances of anonymity and research approval, and provided with contact details should they want to request further information related to the study.

These information and consent sheets are available in the appendices (Appendix 1) (Appendix 2).

2.6 – Data Analysis

2.6.1 – Survey responses

Using the Google Forms platform to host the survey for this research came with many benefits. One such benefit was the automatic tallying and visual representation of collected data. The responses to each survey statement were represented by a pie chart, thus eliminating the need to tally the final

results in a program such as Microsoft Excel. These pie charts proved more than adequate for later consultation in the data analysis.

2.6.2 – Interview data

As stated earlier, all interview audio was transcribed using Microsoft Word. A thematic analysis was utilised when interpreting the responses received. Braun and Clarke note the "flexibility" and "theoretical freedom" of using a thematic analysis when assessing qualitative data (Braun and Clarke, 2006, p.78).

This process involved identifying aspects of the data collected which relate heavily to the research topic in question. Initially, the "corpus" (or entirety of research data collected) is analysed before "data items" are isolated which are relevant to a particular theme (Braun and Clarke, 2006, p.79). These data items may support or contradict other pieces of research related to the theme in question. In this way, it divides and organises the corpus into sub-sections for a deeper analysis of the individual themes.

Thematic analysis can be divided into two types of analysis: inductive and theoretical. Inductive analysis is heavily data-driven, where themes identified may not fit into the researcher's existing epistemological framework, or reason for exploring the research area. Braun and Clarke define inductive analysis as "a process of coding the data without trying to fit it into a pre-existing coding frame" (Braun and Clarke, 2006, p.83).

A theoretical thematic analysis is "driven by the researcher's theoretical or analytic interest in the area" (Braun and Clarke, 2006, p.84). In this sense, the researcher may isolate specific data items from the corpus which strongly relate to the framework of their research.

Given the mixed methods approach to this research project, both inductive and theoretical thematic analysis were utilised to some extent. Survey responses lack the nuance of an in-depth interview,

and thus the data collected must be taken at face value. In this sense, survey analysis was inductive as the data had to speak for itself.

Theoretical thematic analysis was applied to data collected in interviews, as the onus is on the researcher to identify areas of agreement/disagreement between participants, gauge the general sentiment towards a particular topic and fit it into the thematic framework of the broader research. This thematic analysis will be discussed further in the following chapter.

Chapter 3 – Results

This chapter will examine the primary data collected during the course of this research project. A mixed methods approach was employed during the data collection process. The nature of the data gathered was largely consistent with the expected outcomes during the design of the data collection tools. This chapter will outline the quantitative data collected through the survey responses collected, as well as an examination of the qualitative data collected during the numerous interviews which were carried out.

3.1 – Thematic Interview Analysis

Upon collection and transcription of interview data, a thematic analysis of the collected data could begin. This was done according to the "six phase" approach recommended by Braun and Clarke (Braun and Clarke, 2006, p.86).

3.1.1 – Familiarising yourself with your data

Since the interview data was collected through "interactive means", the researcher began analysis with some prior knowledge and general thoughts about the data's meaning (Braun and Clarke, 2006, p.87). All interview audio data was transcribed as soon as possible following the interviews, a necessary prerequisite to beginning an in-depth thematic analysis.

3.1.2 – Generating initial codes

Coding is a stage of the analytical process where pieces of data are organised in such a way that meaning may be ascribed to them. This can consist of a word, sentence or paragraph. Coding enables the researcher to easily retrieve relevant data items later in their analysis (Quirkos, 2019).

Upon coding the corpus of the data, a contextual analysis was carried out and the list of codes was narrowed based on relevance. For example, “interpersonal skills” was identified as a code. Through examining the entirety of the dataset, words or phrases with the same meaning were grouped together with this phrase, such as “dealing with the public”, “personable” and “engage with the public”.

No software was used in the coding process. Rather, interview transcripts were printed and codes were identified in the margins of the pages. Different coloured highlighters were then used to group the codes accordingly based on relevance (Braun and Clarke, 2006, p.89). These codes were then compiled on a separate page to make the data more easily retrievable in the next phase. The complete list of codes is available in the appendices (Appendix 5).

3.1.3 – Searching for themes

After the list of codes was drawn up, patterns and themes were searched for. This involved a more focused analysis of the codes with the aim of identifying connections between them so that a broader set of themes could be derived. Maguire and Delahunt write “a theme is a pattern that captures something significant or interesting about the data and/or research question” (Maguire and Delahunt, 2017).

Through reviewing the list of codes, a set of “candidate themes” was compiled (Braun and Clarke, 2006, p.90). Many codes ended up being applicable to more than one theme. This was largely due to the semi-structured nature of the interview process, where certain topics of discussion overlapped in the participants’ answers. Participants sometimes referred back to previously discussed topics to provide context or clarification. Thus, some codes ended up being relevant to multiple themes when the broader research question was considered.

3.1.4 – Reviewing themes

The list of candidate themes was examined and refined until three themes were settled on. This involved considering how each candidate theme related to the research topic and data.

Some themes were amalgamated while others needed to be broken down further. This was done by ascribing relevant codes to each candidate theme. Areas of significant overlap between multiple themes suggested that they were not sufficiently distinct to warrant pursuing as a main theme. Similarly, themes where only a small number of codes could be applied suggested that the collected data was insufficient to explore them in detail.

Braun and Clarke write "Data within themes should cohere together meaningfully, while there should be clear and identifiable distinctions between themes" (Braun and Clarke, 2006, p.91). Originally four themes were identified. Due to a significant overlap in the codes for themes 1 and 2, it was ultimately decided to explore the second theme as a sub-theme to the first.

3.1.5 – Defining and naming themes

This stage involved identifying the "essence" of each theme and "determining what aspect of the data each theme captures" (Braun and Clarke, 2006, p.92). In a way, this stage was a continuation of the previous one, as the naming of each theme required reviewing them further to examine how they fit into the broader research topic and how they relate to the data collected.

It is important that theme names are not overly vague or long-winded, and should be "concise, punchy and immediately give the reader a sense of what the theme is about" (Braun and Clarke, 2006, p.93). After numerous redrafts the final three themes settled on were:

1. Technology skills as a prerequisite for modern public librarianship.

Sub-theme: How differing librarian skillsets complement each other in working towards broader institutional goals.

2. How public librarians play a role in bridging the digital divide.
3. Upskilling to adapt to technological changes.

The division of codes by relevance to their themes can be seen in the appendices (Appendix 5).

3.1.6 – Producing the report

Producing the thematic analysis involved presenting pieces of collected data which were relevant to the theme in question and "provide sufficient evidence of the themes within the data" (Braun and Clarke, 2006, p.93). In this phase, some interview data was deemed extraneous or only tangentially linked to the themes and broader research topic. As such, only the most relevant data was selected which fit into the analytical framework of each theme.

3.2 – Presentation of Findings

The interviews carried out for this research project aimed to collect qualitative data to answer the question "What effect has technology integration in Irish libraries had on the public librarian's skillset?" While there was a significant amount of agreement between participants on certain topics, there were also areas where they had differing perspectives.

Some of the interview answers collected appeared to contradict survey data. This is perhaps due to the fact that interviews allow for more nuanced and in-depth responses than the more general data collected through a survey, where respondents are more limited in the answers they can provide.

An effort was made in disseminating the survey to reach out to libraries in both urban and rural areas, as this research project is concerned with the entire Irish library service. As the survey was entirely anonymous, it is not possible to know which libraries responded. The geographical breakdown of the mailing list is outlined below:

County	Number of libraries contacted
Dublin	20
Limerick	15
Clare	12
Cork	10
Galway	9
Tipperary	8
Kilkenny	8
Wexford	5
Offaly	5
Roscommon	5
Louth	3

Figure 1

A total of 37 survey responses were received. The survey was sent out during library working hours and thus, many of the responses were received quickly, with over a third of the final figure being collected on that same day. In hindsight, the data collection window did not need to be as long as it was, as no responses were collected in the final week. The information and consent screens which participants needed to go through before beginning the survey are shown below:

Figure 2

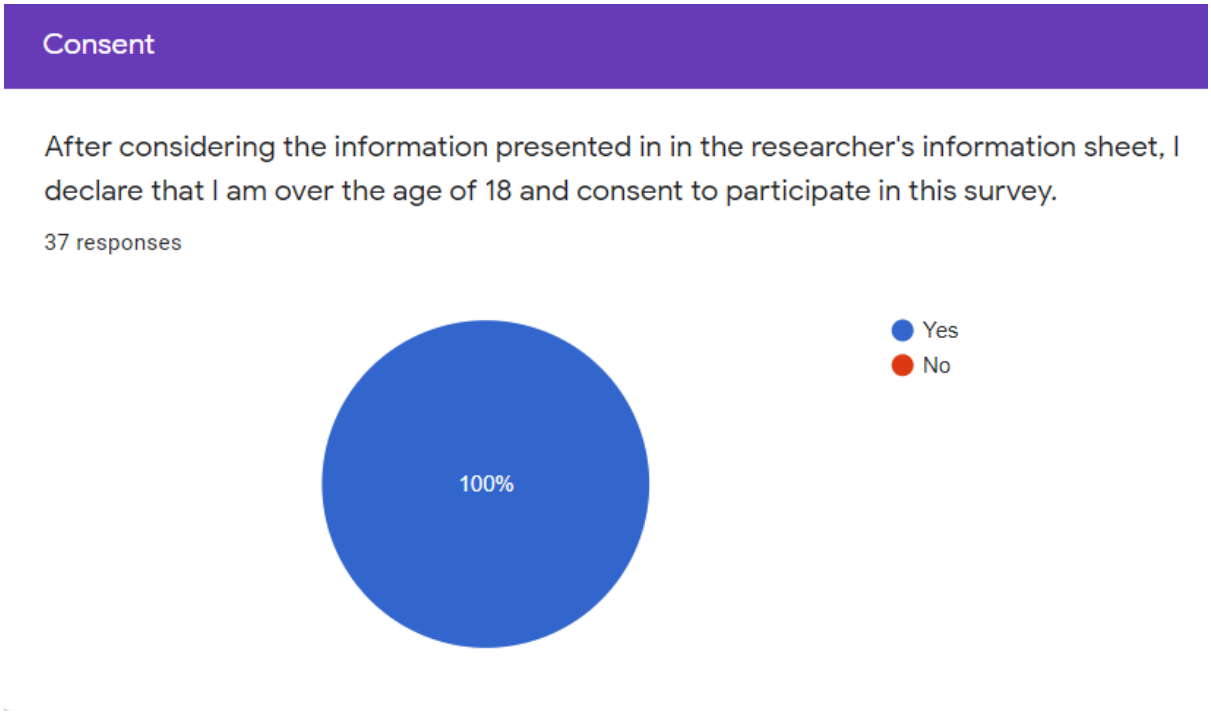

Figure 3

3.2.1 – Participant master sheet

As previously mentioned, anonymity was assured for all interview participants. As such, they will hereafter be referred to as follows:

- P(A) – a head librarian in a small branch in a mid-sized town
- P(B) – a former branch librarian currently working in the county library headquarters
- P(C) – a branch librarian in a large town library
- P(D) – a librarian working on a local history and culture archiving/digitisation project in the same branch as P(C)
- P(E) – also working on the same project as P(D) in the same branch

P(C), P(D) and P(E) were interviewed simultaneously in a group interview environment.

3.2.2 – Technology skills as a prerequisite for modern public librarianship

This first theme covers a topic where there was some level of disagreement. 94.6% of survey respondents agreed that digital literacy is equally as important as information literacy in the modern public librarian's skillset, shown below.

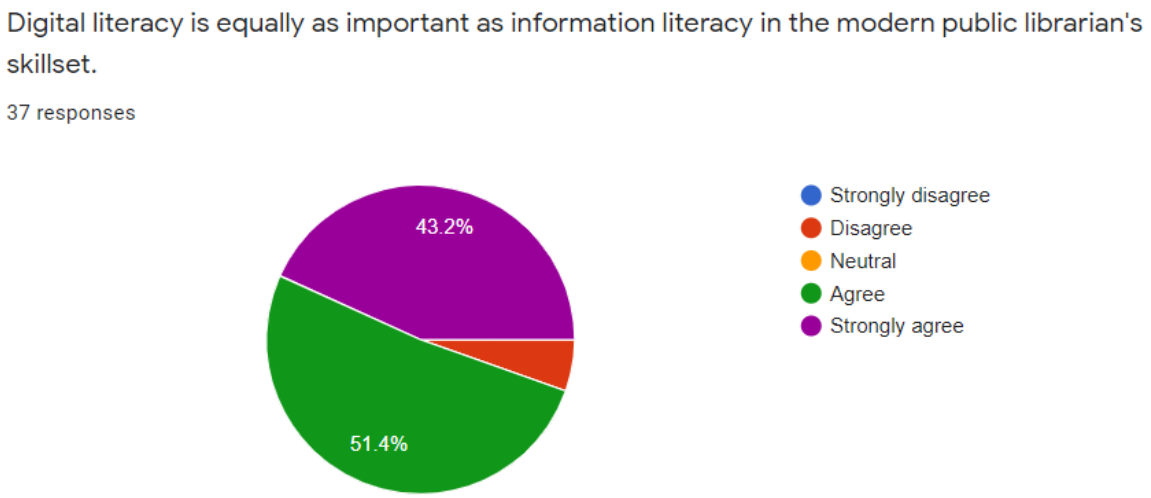

Figure 4

As information literacy has historically been inextricably linked with the field of librarianship (Behrens, 1994), this figure is striking and demonstrates the profound effect technology has had on the duties of the modern public librarian. It may be assumed from such a figure that it is necessary to have technology skills in order to be qualified to do the job.

Interview participants were asked if technological literacy should be a major consideration when taking on staff for a public library job. P(C) felt strongly that some level of technology skill is necessary:

'If you're sitting behind a computer for the first time in a librarian's job, you're going to be at a massive disadvantage. It's going to be a very long time until you're up to speed, up to the speed that you need to be to get the job done.'

P(D) concurred, outlining some of the expectations modern library users have which a librarian will require technology skills to satisfy:

'Branches now are expected to blog, they're expected to be active on social media, they're expected to reply to queries coming in, so you've got to be fairly technologically literate, definitely yeah.'

These perspectives undoubtedly concur with the data collected in the survey, with P(C) and P(D) both agreeing that the ability to use a computer is a vital part of the job in the modern era. The same question was posed to P(B), who somewhat agreed but was adamant in their belief that technology skills are not a major priority when assessing potential new staff:

'I wouldn't think it's a massive factor. It's definitely a bit of an advantage when you're coming in but you don't necessarily need to be a computer whiz to fulfil the role … Some of the newer staff coming in would have a bit of a background in using computers and operating technology. It's definitely better to have it than to not have it but it wouldn't be top of the checklist in an interview when you're doing an interview with them.'

P(A) echoed the sentiments of the other participants, appearing to agree more with P(B) than P(C) and P(D):

'It's certainly an important factor. I wouldn't necessarily put it as being more important … some knowledge of IT is definitely a factor in the job. If you came in with no knowledge of IT, you'd be playing catch-up for a while. I wouldn't want to give anyone the impression that you need a huge knowledge of it to be a librarian, or discourage anyone from entering the field because they're not strong in that area, but yes, I'd definitely put basic IT knowledge down as one of the two or three most important aspects of the job, along with interpersonal skills and the ability to plan ahead in an administrative sense.'

All participants agree that some level of technological literacy is necessary to fulfil the role although there appears to be a split in how heavily each participant emphasises this point. P(A) and P(B)

acknowledge that while using technology is a necessary part of the job, a lack of skill in this area should not deter one from entering the field. P(C) and P(D) emphasise the centrality of technology to the role and suggest that the ability to understand and use technology is an indispensable skill.

All participants agreed that the level of technology skills required is not necessarily very high. All were quick to point out that staff in a branch working collaboratively towards a broader institutional goal allows for different skillsets to complement each other. This subject arose when participants were asked if they agreed with Emanuel's theory that younger librarians may have a perceived advantage over their older colleagues due to some inherent familiarity with technology (Emanuel, 2013).

P(A) said:

'A large part of the job is collaborative. Some staff are definitely stronger than others in the area of IT. In this branch, and even in bigger branches as well, everyone has a role.'

P(A) expanded on this by referencing a previous role they occupied in a different branch:

'I wasn't doing an awful lot of IT because my role was elsewhere. Some others who weren't dealing with the members quite as much would be in the back doing IT work but we'd keep in close contact and we were all working towards the same broader goal, so we were working as a team.'

P(A) heavily emphasised the importance of this diversity among staff skillsets, arguing that identical skillsets would be detrimental to the service:

'I think though if everyone in the library had the exact same skillset and same level of focus on all aspects of the job, it would negatively affect the service of the library. In our branch, each staff

member fulfils different roles to different degrees, so I'd say teamwork is more important, and each of those roles complements each other in delivering the overall service. A good librarian will be able to straddle the different aspects of the job, not necessarily equally strongly.'

P(B) was asked whether all public library staff should be intimately familiar with the digitisation process. Their response was thematically similar to P(A)'s view on differing skillsets complementing each other, also highlighting how individual librarians' areas of interest can play a factor:

'I've always found that the library service as a whole runs a lot smoother when the roles are properly allocated. Since I have such an interest in digitisation, it makes sense to put me in that role as opposed to someone who has no interest in it. Not only from the point of view of staff morale, but someone is going to complete their work to a higher standard if they're passionate about what they're doing. There are other aspects of the job that I wouldn't be as interested in but someone else might love, so it makes sense in that case to delegate most of those responsibilities to that person.'

P(C), P(D) and P(E) were also asked about Emanuel's 2013 paper where she posits that digital natives have an inherent advantage over their older colleagues in terms of technology, where again this theme arose. P(E) replied:

'As one of the older colleagues, I'd say I'm in a good position to answer that … I'd be the first to admit that my IT skills would not be as good as either of the lads', and never will be, because even though I might learn, I'm going to be slower to learn. But I'd also say that my interpersonal skills and my experience certainly have a valuable place within the library service.'

P(D) agreed that a lack of technology skills does not necessarily diminish one's contribution to the service, stating:

'You can have all the IT skills in the world but you still can't replace certain knowledge and experience … And nothing in librarianship replaces good communication skills with the public in my opinion.'

Survey respondents largely agreed with Emanuel's assessment:

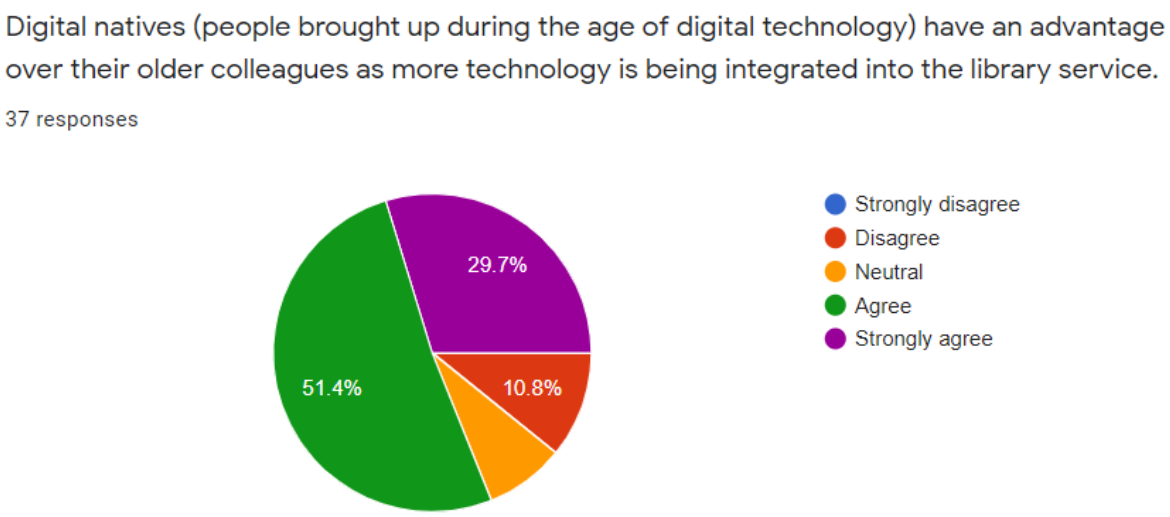

Figure 5

As the survey did not provide the option to submit additional comments, this data may not fully encompass librarians' views when we consider the fact that P(E) broadly agreed with the statement but added the caveat that technology skills are not the only deciding factor in assessing a librarian's level of contribution to the service. Nonetheless, this data represents the perception that younger librarians are at an advantage, if only in terms of an aptitude for operating technology.

P(C) also highlighted the importance of being aware of the broader branch goals:

'I think what makes a librarian assertive is the experience of doing the job and the knowledge of the different programs that you're trying to implement as a branch. It doesn't matter how good you are with IT. If you haven't delivered those programs before, and you haven't got the results, and you don't know what does and doesn't work, you can have all the IT skills in the world and it's still not going to be enough.'

Clearly there exists some degree of unanimity that a library branch cannot properly deliver a service without a diversity of skillsets. While all participants agreed that staff need to have the ability to use

technology to some degree, this does not outweigh other skills to the point that one must be highly familiar with it on a technical level.

3.2.3 - How public librarians play a role in bridging the digital divide

As mentioned in the introduction chapter, public libraries are thought to be well-equipped to address the digital divide (Aqili and Moghaddam, 2007). This research aimed to find out how librarians fulfil this role in practice.

P(C) pointed to the wide array of quality hardware available in their branch which their members would not otherwise have access to:

'We're one of the best equipped IT branches in the county. We have 17 public PCs downstairs. When you look at the userbase of these services, the vast majority of them are coming in because they don't have good internet access at home. They definitely don't have the type of hardware that we have. Our hardware is quite high spec … Even for people of good economic means, the stuff that we have downstairs is beyond the reach of most people.'

P(C) went on to point out how central these IT facilities are to a segment of their branch's userbase:

'If you look at a lot of our membership, a lot of people who come in don't use anything aside from our IT facilities. Overall, I would say that we're doing a very good job in providing an opportunity for certain socio-economic groups to access these services.'

The survey responses collected also indicated the importance of a library being technologically well-equipped. In-house technological services were identified by a majority of survey respondents as the single most important factor in the expansion of public libraries' userbases. 59.5% of respondents agreed with this, while a further 2.7% strongly agreed, shown below:

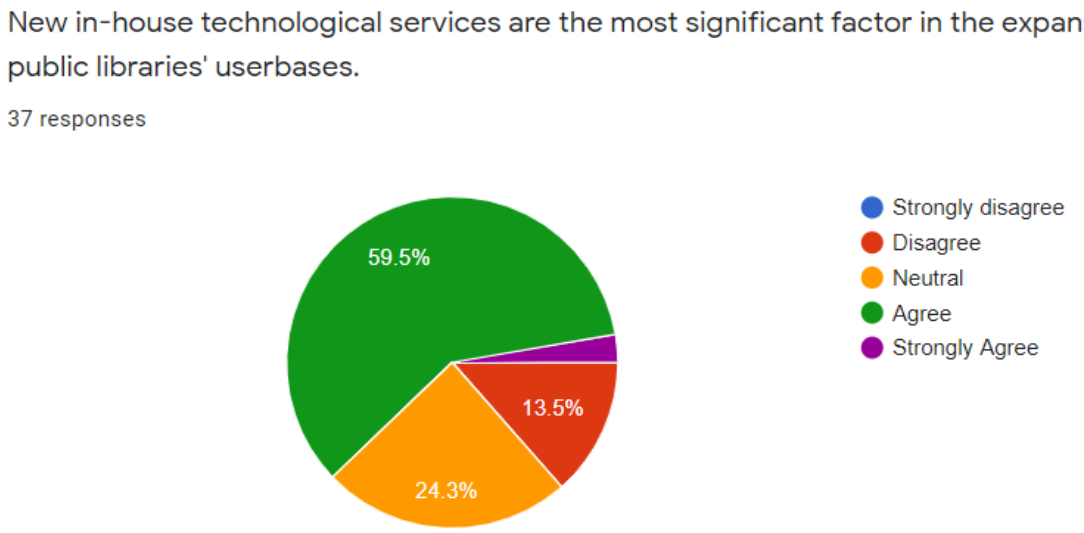

Figure 6

P(A) was asked about the librarian's role as an instructor to their members in terms of using technology. They felt that the librarian's role is not to engage in direct instruction, but rather to facilitate instruction from third parties:

'A while ago we had a series of computer classes. We brought in experts from the Educational Training Board. They provided the PCs to conduct the classes, and we provided the facilities for them to host them … I've actually taught some of these classes myself. Just some very basic computer classes to get people going. I don't think it's the role of the librarians to teach in that sense. It is their role to facilitate and allow for access more so than instruction.'

P(A) acknowledged that librarians in larger branches may engage in more direct instruction:

'I'm sure in some of the bigger urban libraries they're conducting these classes regularly and staff may play more of a teaching role, although in my experience I wouldn't see it as a librarian's role to teach, but to facilitate.'

P(A) spoke of the advantages of a library's "neutral" environment for instruction:

'I think a lot of older people have come to be less nervous about technology because they come in here and we can show them how to use the self-service machines, or how to use the PCs to fill out their motor taxation forms. The first time they come in to use it we might have to show them, but after that they gain confidence. They start overcoming their fear of technology as the library is a neutral place for them, and technology is allowing us to serve them in ways that we couldn't before.'

P(B) also alluded to this when discussing a series of instructional classes carried out in collaboration with Age Action Ireland:

'We gave them access to the library to host the classes for showing older people how to use computers and such. It was done in a way that was very informal and relaxed. It wasn't really a classroom type environment at all … the library is a place for all and acts kind of like a community hub. It's the perfect venue to host these things.'

P(A) identified information literacy as an area where librarians play more of an instructional role as it relates to technology:

'Young people are well aware of what's out there, but they're not often aware of how to navigate information on the web in terms of an order of priorities. It's not that they're ignorant, but they mightn't be trained in how to distinguish good information from bad. They can be overwhelmed with information on the broader web … That's where we come in and we might say "this is the site that we found to be best" or "you should look here". So that's our role, and it's great that there's so much information out there but sometimes people need a little bit of guidance in navigating it.'

This is a role for modern librarians that was also identified by P(B):

'We can educate people on how to use keywords and how to conduct a proper search, and even to try alternate keywords to get a more accurate result that relates to what they're looking for … you'd be shocked at how many people don't know how to find reliable information online. That's a role that's developed in recent years for librarians. We need to be able to educate people with regards to search engines and navigating Google.'

The broad consensus from interview participants appears to suggest that librarians can be most effective in bridging the digital divide by taking on the role of facilitators rather than direct

instructors, and providing access to hardware and IT facilities that members may not have elsewhere.

3.2.4 – Upskilling to adapt to technological changes

Survey respondents were asked if they agreed with the statement "Technology skills for librarians cannot be adequately learned in the workplace. These competencies can only be fully acquired through extracurricular continuous professional development." The responses to this statement varied greatly, shown below:

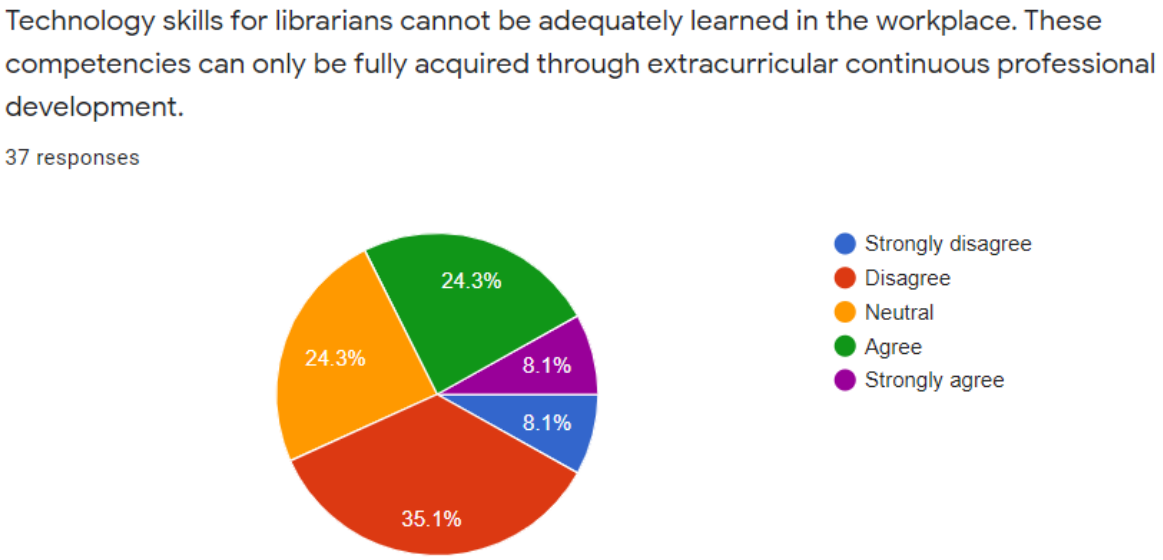

Figure 7

Interview participants were similarly divided. P(D) felt that extracurricular CPD is necessary to keep up with changes in the field:

'Yes, you definitely need to upskill regularly because the field changes so fast. Some of it you can pick up on the job, but you might need to go beyond that sometimes.'

P(C) disagreed, arguing that on-the-job learning has proven to be the most effective in their experience:

'Any knowledge I've picked up has been on the job. It's come from making mistakes, learning from those mistakes and doing better the next time. Would I benefit from it? I suppose I would, but nothing beats actually doing it, seeing the results and seeing what works best.'

P(C) argued that seminars tend be inefficient considering the time commitment involved, although was careful to clarify that their own experience with this may not be universal:

'Personally, if I go to a course and if I walk away with 10% of what's been delivered to me, I think it would have been worthwhile. Maybe that's just my own lack of concentration.'

P(E) agreed that the time commitment for seminars is often not worth it:

'At a seminar, they're talking to a whole group of people. Not everything that they give you will apply to everybody there. Dealing with so many people, you can't be too specific. Hopefully you'll pick up something that will apply to you, although sometimes the time investment isn't worth the return.'

Having mentioned the possibility of their branch getting a 3D printer in the future earlier in the interview, the group was asked how they will approach the task of familiarising themselves with this new technology. P(C) felt confident that learning from colleagues will prove far more valuable than any formal training they might receive:

'We'll probably get 2 or 3 hours of an introduction to it, we'll forget 95% of what we've been told and we'll then work away ourselves and figure it out, between chatting with the people who know in other branches, and finding it out for ourselves.'

P(D) agreed that experimenting with new technologies and learning through informal methods is the most effective way to approach the task:

'I love seeing new technologies being brought in and usually they'll come with a set of tutorials. There'll usually be some YouTube videos too, so I'll go there first, and then start messing around with it. I wouldn't be a huge fan of seminars either. I find that you forget more than you retain.'

P(C) finished by again advocating for an informal sit-down instructional session with a colleague:

'I think the best education you can have is one-on-one for a short period with somebody who is an expert on something and knows exactly what they're doing and knows exactly what you want to get from this new technology. You can ask them specific questions and you can get a whole day's seminar boiled into an hour with that one person.'

P(B) agreed that pooling the knowledge of colleagues can be an effective way to learn a new competency:

'There's definitely a lot of informal opportunities for on-the-job training too. If one person was particularly good with social media, we might arrange for them to sit down with 4 or 5 other members of staff and just run through a few things.'

P(B) found that the knowledge that can be gleaned from a staff member will be largely reliant on their own areas of interest:

'For want of a better phrase, you might have a "digital champion" in the county. Myself for example, I've given hours at home digitising and learning about it, just because I enjoy it so much. Similarly with other staff members who are into something like social media. It's something they like and it's something they're interested in, so any queries the rest of us might have with regards to that would be deferred to them.'

This seems to suggest that technology has brought about a degree of specialisation in the field as different staff members will have different strengths in the area. Survey respondents largely agreed

that technological integration has brought about a higher degree of specialisation compared to the broader librarian skillset of the past, shown below:

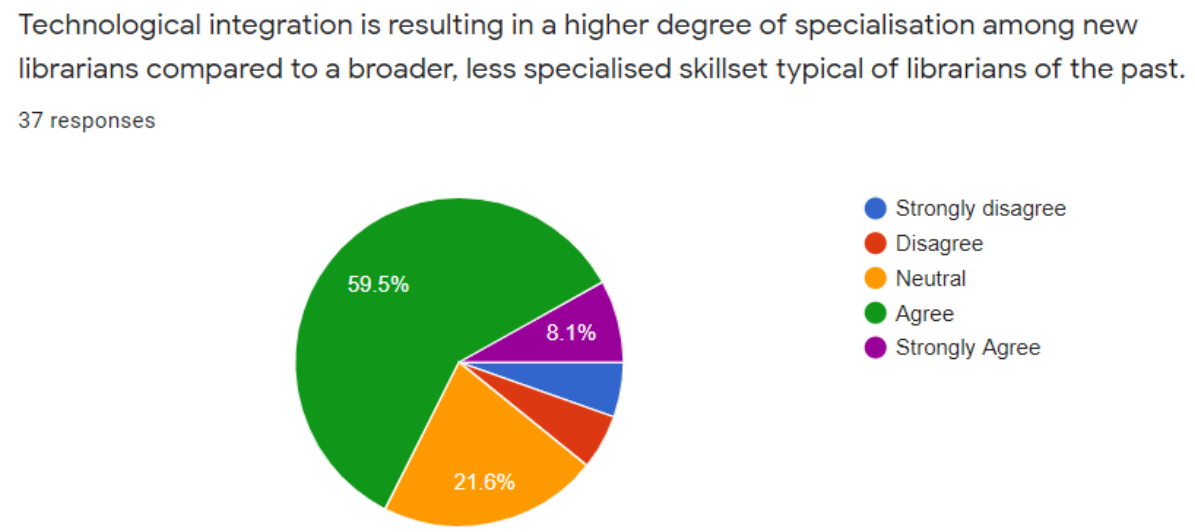

Figure 8

Among all participants, P(A) was the most vocal advocate for the importance of upskilling through attending courses:

'We've all done courses in various things. It might be something simple, like a little half-day course showing you how to use the self-service machine. Sometimes you'll have to go and do a two or three day course learning about something else. That's hugely important, because if you're going to be providing a technology service to the public, you need to have a knowledge of it yourself.'

P(A) agreed that upskilling can take place on the job but every branch should have staff members who are anticipating future technological integration:

'You can definitely learn on the job to some degree, and the longer you're using these technologies, the better you'll get at using them. You'll need to have at least some staff who are looking ahead and planning for new technology coming down the line in the area of CPD.'

P(A) also agreed with the other participants that informal learning from colleagues can prove to be a valuable method of upskilling:

'A lot of the learning will be on the job but sometimes you'll need to sit down with somebody and get them to show you how something works best. We've all had to that. It might be very informal and again goes back to teamwork and working towards our broader goals as a service.'

All participants agreed that ongoing technological integration in libraries requires some degree of upskilling and continuous professional development to remain afloat of these changes.

Chapter 4 – Discussion

4.1 – Research Aims

1. To examine changes in the userbase of public libraries and the expectations of that userbase
2. To examine the public librarian's role as a technology instructor/bridging the digital divide
3. To determine if digital literacy is a core skill for the modern public librarian
4. To assess the need for librarians to engage in continuous professional development as it relates to technology
5. To assess the effect of social media on the promotional practices of public libraries

This research project found that public librarians in Ireland have assumed a variety of new duties as technology has been integrated into libraries. Librarians have needed to develop their technology skills to keep up with these duties. Interview data suggested that the level of importance placed on these skills may differ depending on one's place within the service. P(C) and P(D) work in a relatively large branch which is highly equipped with technology, and as such, both identified technology skills as a necessary prerequisite for completing their duties.

Conversely, P(A) and P(B), while acknowledging the importance of possessing these skills on some level, felt that a lack of technology skills should not be a deterrent for anyone wishing to enter the field. This suggests that the scope of a branch's technology service is a variable which may influence a librarian's perception of the importance of technology skills. The majority of survey respondents appeared to consider technology skills central to the role.

The findings of this research suggest that as technology is being integrated into public libraries in Ireland, librarians within the service are needing to upskill accordingly, although it may not be

necessary for every librarian in the service to develop technology skills to a high level due to the collaborative nature of delivering a complete and rounded service to the public.

4.2 – Findings in Relation to Research Aims

4.2.1 – To examine changes in the userbase of public libraries and the expectations of that userbase

Interview participants and survey respondents overwhelmingly agreed that public library userbases are changing. Interview participants revealed that their branches' userbases are encompassing a broader demographic than ever before. Technology was identified as a major factor in this.

The proliferation of eservices is seen as a factor in this userbase expansion, as libraries are now able to cater to their members remotely and members can access materials outside of branch opening hours.

The majority of survey respondents agreed that in-house technological services are the most significant factor in the expansion of library userbases. Interview participants echoed this sentiment, citing access to in-house high spec hardware as a motivating factor for people to join their branches, with a growing segment of the typical library's userbase rarely borrowing reading materials.

4.2.2 – To examine the public librarian's role as a technology instructor/bridging the digital divide

Interview participants agreed that librarians have a role to play in bridging the digital divide yet were hesitant to accept the idea that librarians should play a direct instructional role in relation to technology.

Participants felt that librarians could best fulfil for their obligations to bridge the digital divide by facilitating access to technologies, while collaborating with external bodies who may wish to use the library as a venue to host instructional sessions.

One area where participants felt librarians could play the role of instructor in relation to technology is in navigating digital information on the web. Two participants noted from their experience that much of the general public are unable to discern credible from unreliable information online and this is an area they felt librarians can share their knowledge and provide the information literacy skills to effectively research using technology.

4.2.3 – To determine if digital literacy is a core skill for the modern public librarian

A massive majority of survey respondents agreed that digital literacy is equally as important as information literacy in the modern public librarian's skillset. This seems to strongly suggest that digital literacy is a core skill in the field, given how inextricably linked information literacy has been to librarianship historically.

Interview participants were asked how significant a factor technology skills are when entering the field. There was some variance in the responses received. All acknowledged that some level of technology skills are needed to fulfil the role, yet the level of emphasis placed on this point differed somewhat. One participant felt that entering the field without these skills would place one at "a massive disadvantage", while others felt these skills could be picked up on the job, and were outweighed by other factors such as interpersonal skills when considered as a prerequisite for the field.

All participants agreed that the level of digital literacy required is not necessarily very high for all staff, as there exists a degree of specialisation among individual staff who collaboratively work

towards a broader institutional goal, and more complex technology tasks will typically be referred to someone specialising in that area.

The broad consensus appears to be that digital literacy is a core skill for the modern public librarian, even if not necessarily at a very technical level universally.

4.2.4 – To assess the need for librarians to engage in continuous professional development as it relates to technology

Regular upskilling through CPD was recognised by all interview participants as necessary to remain afloat of technological integration in libraries. Opinions differed on the necessity of extracurricular CPD.

Roughly a third of survey respondents agreed that technology skills could not be learned to a satisfactory level on the job and librarians must engage in extracurricular CPD to keep up with technological integration. A quarter of respondents were undecided while the remaining respondents disagreed that extracurricular CPD is a necessity.

Interview participants all felt that technology skills could be best learned through regular use and experimentation with new technologies, as well as informal one-on-one instructional sessions with experienced colleagues. Some were highly critical of the seminar format, feeling that the time investment is not worth the knowledge return, arguing that given the generalised group format of seminars, a large portion of the information delivered will not be relevant to individual attendees.

One participant advocated for librarians to choose an aspect of the job that they have a passion for and develop their skills in that area at home as part of their professional development, arguing that this is beneficial to both the library service itself, and the individual's morale if the person has a genuine interest in the skill they are developing.

This research indicates that it is undoubtedly necessary to engage in CPD to remain afloat of technological changes, yet the necessity of this CPD being extracurricular is still up for debate and may depend on the individual in question as well as the role they fulfil within the service.

4.2.5 – To assess the effect of social media on the promotional practices of public libraries

This research indicated that social media has become the most important promotional tool for modern public libraries. A majority of survey respondents agreed that this was the case.

Interview participants unanimously agreed that social media has overtaken more traditional promotional avenues for libraries to communicate their message to the public. Participants highlighted the free, instantaneous and interactive nature of social media as significant advantages over print media.

Participants pointed out that traditional promotional avenues such as local newspapers, local radio and church newsletters are not entirely obsolete and can prove very effective at reaching certain segments of their userbase. Participants highlighted the ability to “know your audience” as the main skill when promoting library events and services, as opposed to any skills in terms of using the social media networks themselves.

The adoption of social media use as a promotional tool for libraries does not appear to have necessitated a skillset of its own distinct from other non-profits. Audience awareness and selective promotional methods are clearly important in reaching target demographics but given the free and easy to use nature of social media promotion, there exists little reason not to utilise this for all promotion, coupled with alternative methods where appropriate.

4.3 – Findings in Relation to Literature

The data collected during this research project from interview participants concurred heavily with Radniecki's notion that successfully integrating new technologies into a library's service is not solely reliant on the technical expertise of library staff. Radniecki cites "the interpersonal skills necessary for adapting technological innovation in specific library settings" (Radniecki, 2013) as being the truly important factor in effectively delivering these technologies to users. The findings of this research project strongly supported this assessment, with all interview participants alluding to the idea that interpersonal and communication skills are at least equally as important as technical knowledge, with some outright stating that these skills are more important for a librarian to have in their skillset.

Emanuel's theory that younger librarians feel more assertive and flexible in the workplace due to their technology skills (Emanuel, 2013) was largely dismissed by interview participants. This may be accounted for by the fact that Emanuel was referring specifically to an academic library setting while a public library may deliver different technological services. When asked if they agreed with this theory, P(E) acknowledged that there is probably some truth to the idea as it related specifically to technology, but pointed out that a lack of technical expertise does not necessarily diminish a librarian's contribution to the overall service. Other participants largely shared this view, with all of them citing the collaborative nature of operating a public library branch, with different skillsets working in tandem to deliver a strong overall service.

Interestingly, survey responses contradicted the interview data on this point. When asked if they agreed that digital natives have an inherent advantage over their older colleagues as more technology is being integrated into the library service, over 80% of respondents selected either "Agree" or "Strongly Agree", with only 10.8% disagreeing. One possible reason for this is the much larger geographical spread of survey respondents when compared to interview participants which

may correlate to a different level of focus on technological services within their branches and thus, obligations on staff to be highly familiar with technology.

Moonasar and Underwood state that CPD is an ongoing process throughout a librarian's career (Moonasar and Underwood, 2018). Interview participants agreed that given the rate of technological integration in libraries, library staff need to regularly upskill to be adequately familiar with new technologies. All participants agreed that a large amount of this upskilling can be done on the job, with some criticising the seminar/conference format as being overly broad and non-specific. It could be argued that this perception is reflected in the 2019 LAI study on CPD mentioned in section **1.5.4**, which indicated that respondents were most interested in seeing future CPD programs cover topics such as "Photoshop (and other design-related programs)" and "Content design using virtual learning environments". (LAI, 2019) These represent practical and specific technology-related skills, and the apparent demand for CPD programs to cover topics such as these may indicate that the interview participants' view on seminars being overly broad and non-specific is held more widely across the field.

Korrup lists "access to computers and the internet" as one of the main factors of the digital divide. (Korupp, 2005) The data collected for this research project suggests that public libraries are actively bridging the divide in this sense, thus supporting Aqili and Moghaddam's view that libraries are "one of the major social tools" equipped to address the digital divide (Aqili and Moghaddam, 2007).

Interview participants spoke of providing access to high spec hardware and fast broadband speeds to members who would not otherwise be able to access them due to geographical or socio-economic factors. P(C) felt that their branch is making a concerted effort to bridge the divide in this sense by investing in high quality computers and looking at emerging technologies which may be implemented, such as 3D printers.

P(C) also spoke of observing which services members are responding well to which informs staff on how to strategise for the future. This supports Obadare's view that library staff must be involved in

the decision-making process of how technologies are implemented in their branch and critically assess these technologies in terms of user satisfaction (Obadare, no date).

P(A) and P(B) made reference to the suitability of a public library environment for collaborative educational programs, specifically computer classes. This is supported by Durrance and Fisher's report on the Wired For Youth program hosted in Austin Public Library which aimed to bridge the digital divide for disadvantaged youths. Very positive outcomes were reported for this program. Participants in the WFY program reported improved technology skills and "a heightened sense of appreciation for the library as a safe, welcoming place" which suggests that public libraries are well suited to host instructional and educational technology programs (Durrance and Fisher, 2003). This lends credence to P(A) and P(B)'s view that librarians can be of most benefit in bridging the digital divide by acting as facilitators and collaborating with external bodies to deliver such programs.

Through the data collected for this research project, it is evident that social media promotion has overtaken more traditional promotional avenues such as print media. No interview participants offered much information on how library social media promotion differs from other organisations. This is in line with Gupta and Savard's research in 2011 which found that the lack of freely available library social media policies online has made it impossible to determine a set of standards or best practices for the field in this area (Gupta and Savard 2011, p.44).

Interview participants all highlighted the fact that while social media may have outstripped these other promotional avenues, that does not render them obsolete in reaching a certain demographic, and it may be wise to still selectively make use of these when targeting these demographics. Participants referred to elderly people, who may not be as technologically literate or active online as the majority of the userbase. This idea of targeted promotion concurs with Lawton's findings from 2016 who found "There is a balancing act in terms of making the library visible and accessible in an online environment to those in the community who are e-literate and those who struggle with technology" (Lawton 2016, p.111).

4.4 – Strengths of this Research

One of the key strengths of this research was the utilisation of a mixed methods approach to data collection. The survey responses collected gave a general overview of the views of those in the field on a variety of topics related to the research question. The interviews allowed for the collection of in-depth qualitative data which further explored these topics and provided further nuance and context. The interview questions and survey statements were designed simultaneously to ensure the same topics were covered.

Another strength of this research was the decision to take a semi-structured approach to the interviews. It was felt that this would allow participants to raise points that the researcher had not previously considered yet may relate to the broader research question in some way. This proved to be the case, as all interview participants brought up collaboration with colleagues of differing skillsets in the service as imperative to the integration of a successful technology program. The fact that this point was raised by all participants entirely unprompted forced the researcher to give this point serious consideration. As a result of this, data analysis took on a different context from certain preconceived ideas the researcher had beforehand. This significantly affected data interpretation and as such, justified the decision to utilise a semi-structured interview approach.

The diversity of the roles of interview participants was another key strength of this research. It was decided beforehand that the researcher would aim to interview participants fulfilling different roles in the library service, as it was felt this would provide a more holistic overview of how the integration of technology is affecting the skillsets of those in the service. Participants from different-sized branches with different professional obligations were interviewed, and this allowed for the collection of a variety of different perspectives.

4.5 – Weaknesses of this Research

While survey responses were collected from across the country with a reasonably high response rate, one key weakness of this research was the travel limitations imposed by the COVID_19 pandemic. This limited the researcher to a relatively small geographical range when conducting interviews. It was decided beforehand that interviews should be conducted face-to-face to allow for a more relaxed and open conversational flow. In hindsight, the success of the phone interview indicated that this could have also been achieved by conducting further interviews via phone or video link. Given the fact that all interview data was collected well within the data collection window, conducting interviews via these methods would have allowed for further interviews to be carried out, thus enriching the data further.

One of the topics covered in the survey and interview yielded very little valuable data, specifically social media promotion.

It could be argued that the lack of interesting data collected in relation to this is valuable in itself, as it reinforces Gupta and Savard's observation that the field of librarianship is lacking a set of guidelines on how social media should be used (Gupta and Savard 2011, p.44), which is something to consider for future research. Despite this, in hindsight the researcher felt that the time spent exploring this topic could have better been spent elsewhere.

4.6 – Recommendations and Conclusion

This research study generated several interesting insights from those working in the public librarianship field as it relates to technological integration in libraries. Skillsets within the library service are undoubtedly shifting in response to this. This research has resulted in data which may provide the catalyst for future research projects.

One issue that was raised consistently in the collected data concerned the collaboration between staff while working towards broader institutional goals. All participants recognised that public librarians do not all have an equal level of technological competency. Complex IT tasks will typically be referred to a member of staff who is recognised by others in the branch as having the highest level of IT skills. Most survey respondents agreed that the integration of technology in libraries is resulting in a higher degree of specialisation among those in the field compared to the broader, more general skillset of librarians of the past. It may be a worthwhile research project to investigate this specialisation in relation to librarianship courses. Should more specialised courses be established in Ireland which deal exclusively with specific aspects of the job rather than the catchall model which provides a more general library skillset? The apparent collaborative nature and complementing skillsets of librarians in a branch suggests that this may be worth considering.

The data collected regarding library social media use appeared to suggest that there is very little difference in how libraries operate on these platforms compared to other organisations. The apparent lack of significant progress in terms of developing a set of social media best practices for libraries since Gupta and Savard's 2007 study shows that there is room to explore this in future research. Research of this nature would undoubtedly prove beneficial to the field, as all indications from this research project suggested that social media has outstripped other promotional means. Library branches having access to a centralised set of guidelines under a library body such as the LAI

would allow them to promote themselves more effectively, thus resulting in a stronger overall library service which could potentially translate to higher memberships.

In relation to CPD, some participants in this research were highly critical of the seminar format, feeling that other forms of CPD were far more effective and time efficient. Interview participants mentioned the effectiveness of learning about new technologies by sitting down with someone one-on-one and receiving individual instruction. It may be an interesting research topic to investigate if this perception is broadly held among librarians, and if so, which forms of CPD are preferred over others.

While much research already exists on how librarians approach the challenge of bridging the digital divide, the "facilitator vs instructor" dichotomy was so prevalent in this research that it may warrant further exploration. Numerous participants spoke of collaboration with external bodies to deliver programs to their members. The library environment was said to be highly suitable for hosting events and classes due to its "neutral" atmosphere which is not perceived by the public as being overly academic or daunting. It would be interesting to conduct a more in-depth study gauging the attitudes of librarians towards taking on a direct instructional role as it relates to technology. Do they feel an obligation to take on such a role or can they better serve their users by acting as facilitators and allowing collaborating bodies to instruct?

This research project has revealed a definite shift in the skills and obligations of public librarians across Ireland as technology has increasingly been integrated in branches. Research participants unanimously agreed that there exists a minimum standard of technology skills which are necessary to adequately fulfil the role of a modern public librarian, yet there remains some ambiguity regarding where this bar lies. Librarians will need to continue to adapt to technological integration with the emergence of new technologies such as virtual learning environments, 3D printers and assistive learning technologies. Becoming familiar with these technologies will require continuous

upskilling among those in the field, a challenge which will undoubtedly be embraced by librarians as an opportunity to deliver a more inclusive and multifaceted service to their userbase.

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Appendices

Appendix 1 – Information Sheets

Appendix 1.1 – Interview information sheet:

Technology and Public Librarianship

My name is Niall Kenny. I am a student at Dublin Business School entering the dissertation phase of the MSc Information and Library Management program. You are being asked to participate in a research study on technological integration in public librarianship. Specifically, how the integration of new technologies in public libraries has impacted the skillset of the typical modern public librarian. This research project has been approved by the Dublin Business School Ethics Committee and dissertation supervisor Marta Bustillo Esteban.

Details

In this study, you will be asked to answer a series of questions under an interview format where you will offer your professional insight on the topic based on your own experiences. The interview will take a semi-structured format, allowing you to deviate from the questions to discuss other related topics that you feel may be relevant. Themes covered will include:

- Library adaptations in the face of COVID_19
- Userbase changes
- Librarian's role as an instructor
- Continuous professional development

This interview will be recorded on an audio device for later consultation. Some quotes you provide will appear as text in the final dissertation. The interview may be carried out face-to-face, online or by phone, depending on your convenience. All collected audio will be destroyed within two months of final grade appeal.

Time Commitment

This interview is expected to last roughly 30 minutes.

Participant's Rights

You may decide to stop being a part of the research study at any time without explanation required from you. You have the right to ask that any data you have supplied to that point be withdrawn / destroyed.

You have the right to omit or refuse to answer or respond to any question that is asked of you.

You have the right to have your questions about the procedures answered. If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

Confidentiality/Anonymity

The collected data will be represented as text in the final document. Quotes used in the final document will be anonymised. Your name will not be used, although your job title and general geographical location of your library branch may be used to provide context where appropriate (ie. "An assistant librarian in a Tipperary branch…"). You may request total anonymity, in which case no details will be shown aside from your answers.

For Further Information

I or / and Marta Bustillo Estaban will be glad to answer your questions about this study at any time. You may contact my supervisor at martha.bustillo@dbs.ie.

Appendix 1.2 – Survey information sheet:

Technology and Public Librarianship

My name is Niall Kenny. I am a student at Dublin Business School entering the dissertation phase of the MSc Information and Library Management program. You are being asked to participate in a research survey on technological innovation in public librarianship. Specifically, how the integration of new technologies in public libraries has impacted the skillset of the typical modern public librarian. This research project has been approved by the Dublin Business School Ethics Committee and dissertation supervisor Marta Bustillo Esteban.

Details

You are asked to fill out an online survey regarding the relationship between ongoing technological innovation and the modern public librarian's skillset. This survey consists of 10 statements. You are asked to select how strongly you agree or disagree with each statement ("Strongly Disagree", "Disagree", "Neutral", "Agree" or "Strongly Agree"). This survey is hosted on Google Forms and your responses will be entirely anonymous. Final survey results will be represented textually and visually in a final MSc dissertation.

Time Commitment

This survey should take 2 to 5 minutes to complete.

Participant's Rights

You have the right to have your questions about the procedures answered. If you have any questions as a result of reading this information sheet, you should ask the researcher before the study begins.

Confidentiality/Anonymity

The collected data for this survey will be entirely anonymous. Your responses will be aggregated with responses from other participants and represented visually in the form of a graph or chart in the final dissertation document.

For Further Information

I or / and Marta Bustillo Estaban will be glad to answer your questions about this study at any time. You may contact my supervisor at martha.bustillo@dbs.ie.

Appendix 2 – Interview Consent Form

INFORMED CONSENT FORM

PROJECT TITLE:
Technology and Public Librarianship

PROJECT SUMMARY:

This research project aims to examine the effect of technological innovation on the modern public librarian's skillset. As public libraries integrate more technological/electronic services, this project aims to examine to what degree a modern librarian's skillset has shifted to effectively provide these services to their users. This project will collect data from librarians in the form of interviews and surveys to gain insight into the pattern of technological integration, how this technology has impacted their day-to-day duties, skills relating to this technology that may not have been required in the past, and predictions about the future skillset requirements of a public librarian based on current patterns and relevant policy aims.

By signing below, you are agreeing that: (1) you have read and understood the Participant Information Sheet, (2) questions about your participation in this study have been answered satisfactorily, (3) you are aware of the potential risks (if any), and (4) you are taking part in this research study voluntarily (without coercion).

_____ _____

Participant's signature Participant's Name (Printed)

Niall Kenny _____

Student Name (Printed) Student Name signature

_____

Date

Appendix 3 – Interview Questions/Prompt Sheet

1. The COVID-19 pandemic has presented unprecedented challenges for all organisations. To what extent was your branch still able to serve your userbase during the lockdown, and is it fair to say that this would have been impossible without your range of eservices?

2. Do you anticipate any lasting changes to how you deliver your services as a result of the adaptations you were forced to make in the face of COVID?

3. Has your branch's userbase changed or broadened over time, and if so, to what extent do you attribute this to the integration of new technologies?

4. In your experience, has technological integration resulted in a degree of speicialisation among new librarians or is their skillset broadly the same as long-term librarians, adapting and reskilling as necessary in response to this integration?

5. Is technological literacy a considered factor when taking on staff in a modern public library? How is this balanced with other factors such as interpersonal skills or cataloguing proficiency?

6. Has social media overtaken more traditional marketing avenues (ie newspapers/flyers) in promoting your branch? Do you believe there is a skillset associated with effective social media promotion?

7. In 2013, Emanuel wrote "Younger academic librarians believe that their technology knowledge makes them more flexible and assertive in libraries compared to their older colleagues, and they have different ways of completing their work." In your experience, does this perception exist among public librarians, and if so, is it changing over time?

8. Does the modern public librarian need to engage in regular continued professional development in order to keep up with the integration of eservices and new technologies?

9. Librarians are often said to play the role of instructors in terms of teaching information literacy and good information seeking behaviour. Do you agree with this, and has the

proliferation of search engines (both online and library catalogue) significantly changed how librarians fulfil this role?

10. Digitisation of existing physical materials has become a priority for many public libraries. Is this a skill that librarians should seek to add to their skillset or is it a more specialised role?

11. Trends suggest that ebooks are increasingly making up a larger portion of library transactions when compared to physical items. In your opinion, does this suggest that certain traditional librarian skills or competencies will become less prominent, or even obsolete in the future?

Appendix 4 – Survey

Appendix 4.1

Effective use of social media is the most important promotional tool for the modern public library.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Appendix 4.2

Digital natives (people brought up during the age of digital technology) have an advantage over their older colleagues as more technology is being integrated into the library service.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Appendix 4.3

Technology skills for librarians cannot be adequately learned in the workplace. These competencies can only be fully acquired through extracurricular continuous professional development.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Appendix 4.4

Technological integration is resulting in a higher degree of specialisation among new librarians compared to a broader, less specialised skillset typical of librarians of the past.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Appendix 4.5

Search engines have changed the principles of information literacy and information seeking behaviour on a fundamental level.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Appendix 4.6

The process of digitising existing physical materials is a competency which all public library staff must be highly familiar with.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Appendix 4.7

New in-house technological services are the most significant factor in the expansion of public libraries' userbases.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Appendix 4.8

Digital literacy is equally as important as information literacy in the modern public librarian's skillset.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Appendix 4.9

Some traditional librarian skills will become obsolete as ebooks make up an increasing percentage of library transactions.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Appendix 4.10

Adaptations in delivering our services to our userbase during the COVID-19 pandemic will result in an increased focus on electronic service delivery moving forward.

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly Agree

Appendix 5 – Codes

Initial Generated Codes

- Interactivity with users
- Variety of services
- Expansion of services
- Surge in eservices
- Necessity of computer skills
- Level of computer skills
- Reach of social media
- Cost of social media
- Ease of use of social media
- Specialised skills
- Staff allocation
- Experimentation
- Learning from colleagues
- Connect with online audience
- Surge in online services
- Advantages of technological literacy
- Personable
- Interpersonal skills
- Informed users
- Mix of skills sought
- Technological expert in branch
- Differing levels of technicality
- Appropriate allocation of roles
- Reduced focus on cataloguing
- Interactions with users
- Digital champion
- Promote individual interests
- Technology's impact on userbase
- Librarians sharing knowledge
- Basic technology skills
- Outsourcing teaching
- Dealing with the public
- Engaging with the public
- Level of IT skills required
- Importance of IT skills
- Varying staff technology strength
- Differing staff roles
- Diversity of skillsets
- Roles complementing each other
- Straddle different aspects of the job
- IT learning curve
- Young people's technology skills
- Dedicated digitisation staff

- Exclusivity of roles
- Learning on the job
- Looking to the future
- COVID-forced adaptations
- Focus on online archiving
- Expansion of services
- Relationship between services
- Necessity of physical items
- Advantages of physical items
- Necessity of computer skills
- Level of computer skills
- Teamwork
- Collaboration
- Different skills
- Knowledge of broader goals
- Reach of social media
- Cost of social media
- Ease of use of social media
- Specialised skills
- Staff allocation
- Core teams
- Communication
- Experimentation
- Learning from colleagues
- Focus on digitisation
- Connect with online audience
- Promotion of online services
- Shared catalogue
- Opportunities for growth
- Connections in the field
- Nodes in a network
- Community hub
- Alternative library uses
- Mix of skills sought
- Technological expert in branch
- Allocate roles appropriately
- Awareness of broader goals
- Autonomous library users
- Promote individual interests
- Learn from other staff
- Team effort
- Adaptability
- Changing nature of library usage
- Basic technology skills
- Outsourcing teaching
- Dealing with the public

- Engaging with the public
- Knowing your audience
- Varying staff technology strength
- Differing staff roles
- Working as a team
- Broader goal
- Integration
- Diversity of skillsets
- Roles complementing each other
- Refer tasks to other staff
- Order of priorities
- Dedicated digitisation staff
- Specialist areas
- Awareness of project purpose
- Future project planning
- Exclusivity of roles
- Interactivity with users
- Acquiring new technologies
- Expansion of services
- Elderly technology skills
- High spec hardware
- Quality wifi
- Continued technological investment
- Access across socioeconomic spectrum
- Exclusive IT use
- Know your audience
- Promote appropriately
- Advantages of traditional promotional avenues
- Access to eservices
- Remote access
- Young users' expectations
- Elderly attitudes towards technology
- Library as a neutral venue
- Community hub
- Elderly access to technology
- Disadvantaged youths access to technology
- Bias in information
- Awareness of bad information
- Keyword searches
- Search phrasing
- Information discernment
- Changing information
- Dated information
- Librarians educating users
- Technology's impact on userbase
- Changing nature of library usage

- Leaving Cert students
- Wifi access
- Information services
- Librarians sharing knowledge
- Older library users and technology
- Fear of technology
- Computer classes
- Basic technology skills
- Library as a venue
- Librarians as facilitators
- Online courses
- Outsourcing teaching
- Targeting age demographics
- Young people's technology skills
- Navigate information
- Overwhelmed with information
- Credible information
- Google results
- Guidance in web searches
- Learning on the job
- Work from home
- Acquiring new technologies
- Making collection available online
- Expansion of services
- Surge in eservices
- High spec hardware
- Continued technological investment
- Level of computer skills
- Teamwork
- Collaboration
- Different skills
- Specialised skills
- Necessity of upskilling
- On-the-job upskilling
- Seminar inefficiency
- Assessing time commitments
- Learning from colleagues
- Lasting effect of COVID adaptations
- Surge in online services
- 24/7 nature of libraries
- Opportunities for growth
- Alternative library uses
- Mix of skills sought
- Data protection
- Awareness of relevant laws
- Changing information

- Allocate roles appropriately
- Awareness of intellectual property
- Reduced focus on cataloguing
- Digital champion
- Promote individual interests
- Learn from other staff
- Encourage seminars
- Diversity of skillsets
- IT learning curve
- Dedicated digitisation staff
- Future project planning
- Universality of CPD
- Learning on the job
- Looking to the future

Discarded Codes

- COVID-forced adaptations
- Work from home
- Necessity of physical items
- Advantages of physical items
- Lasting effect of COVID adaptations
- Informal
- Instant communication with users
- Repeated advertising
- Automated text list
- Local radio
- Church newsletter
- Council administration
- Reduced IT service
- Library website
- Parents of young children
- Early adoption of technology
- Commuting driving ebook transactions
- Prioritisation of physical books
- Books as a cultural icon
- Reduced focus on cataloguing
- Relationship between services
- Variety of services
- Leaving Cert students
- Integration
- Order of priorities

Codes for Theme 1 (Technology skills as a prerequisite for modern public librarianship)

- Interactivity with users
- Expansion of services
- Surge in eservices
- Necessity of computer skills
- Level of computer skills
- Reach of social media
- Cost of social media
- Ease of use of social media
- Specialised skills
- Staff allocation
- Experimentation
- Learning from colleagues
- Connect with online audience
- Surge in online services
- Advantages of technological literacy
- Personable
- Interpersonal skills
- Informed users
- Mix of skills sought
- Technological expert in branch
- Differing levels of technicality
- Appropriate allocation of roles
- Interactions with users
- Digital champion
- Promote individual interests
- Technology's impact on userbase
- Librarians sharing knowledge
- Basic technology skills
- Outsourcing teaching
- Dealing with the public
- Engaging with the public
- Level of IT skills required
- Importance of IT skills
- Varying staff technology strength
- Differing staff roles
- Diversity of skillsets
- Roles complementing each other
- Straddle different aspects of the job
- IT learning curve
- Young people's technology skills
- Dedicated digitisation staff
- Exclusivity of roles

- Learning on the job
- Looking to the future

Codes for Theme 1 Sub-Theme (How differing librarian skillsets complement each other in working towards broader institutional goals)

- Focus on online archiving
- Expansion of services
- Necessity of computer skills
- Level of computer skills
- Teamwork
- Collaboration
- Different skills
- Knowledge of broader goals
- Reach of social media
- Cost of social media
- Ease of use of social media
- Specialised skills
- Staff allocation
- Core teams
- Communication
- Experimentation
- Learning from colleagues
- Focus on digitisation
- Connect with online audience
- Promotion of online services
- Shared catalogue
- Opportunities for growth
- Connections in the field
- Nodes in a network
- Community hub
- Alternative library uses
- Mix of skills sought
- Technological expert in branch
- Allocate roles appropriately
- Awareness of broader goals
- Autonomous library users
- Promote individual interests
- Learn from other staff
- Team effort
- Adaptability
- Changing nature of library usage
- Basic technology skills
- Outsourcing teaching
- Dealing with the public

- Engaging with the public
- Knowing your audience
- Varying staff technology strength
- Differing staff roles
- Working as a team
- Broader goal
- Diversity of skillsets
- Roles complementing each other
- Refer tasks to other staff
- Dedicated digitisation staff
- Specialist areas
- Awareness of project purpose
- Future project planning
- Exclusivity of roles

Codes for Theme 2 (How public librarians play a role in bridging the digital divide)

- Interactivity with users
- Acquiring new technologies
- Expansion of services
- Elderly technology skills
- High spec hardware
- Quality wifi
- Continued technological investment
- Access across socioeconomic spectrum
- Exclusive IT use
- Know your audience
- Promote appropriately
- Advantages of traditional promotional avenues
- Access to eservices
- Remote access
- Young users' expectations
- Elderly attitudes towards technology
- Library as a neutral venue
- Community hub
- Elderly access to technology
- Disadvantaged youths access to technology
- Bias in information
- Awareness of bad information
- Keyword searches
- Search phrasing
- Information discernment
- Changing information
- Dated information
- Librarians educating users
- Technology's impact on userbase

- Changing nature of library usage
- Wifi access
- Information services
- Librarians sharing knowledge
- Older library users and technology
- Fear of technology
- Computer classes
- Basic technology skills
- Library as a venue
- Librarians as facilitators
- Online courses
- Outsourcing teaching
- Targeting age demographics
- Young people's technology skills
- Navigate information
- Overwhelmed with information
- Credible information
- Google results
- Guidance in web searches
- Learning on the job

Codes for Theme 3 (Upskilling to adapt to technological changes)

- Acquiring new technologies
- Making collection available online
- Expansion of services
- Surge in eservices
- High spec hardware
- Continued technological investment
- Level of computer skills
- Teamwork
- Collaboration
- Different skills
- Specialised skills
- Necessity of upskilling
- On-the-job upskilling
- Seminar inefficiency
- Assessing time commitments
- Learning from colleagues
- Surge in online services
- 24/7 nature of libraries
- Opportunities for growth
- Alternative library uses
- Mix of skills sought
- Data protection

- Awareness of relevant laws
- Changing information
- Allocate roles appropriately
- Awareness of intellectual property
- Digital champion
- Promote individual interests
- Learn from other staff
- Encourage seminars
- Diversity of skillsets
- IT learning curve
- Dedicated digitisation staff
- Future project planning
- Universality of CPD
- Learning on the job
- Looking to the future

Codes which were amalgamated

Digitisation

- Focus on online archiving
- Making collection available online
- Focus on digitisation
- Promotion of online services
- Dedicated digitisation staff

Use of social media

- Interactivity with users
- Reach of social media
- Cost of social media
- Ease of use of social media
- Know your audience
- Promote appropriately
- Advantages of traditional promotional avenues
- Connect with online audience
- Targeting age demographics
- Knowing your audience

Expansion of tech services

- Acquiring new technologies
- Expansion of services
- Surge in eservices
- Continued technological investment
- Young users' expectations
- Opportunities for growth

- Looking to the future

Technology and the elderly

- Elderly technology skills
- Elderly access to technology
- Elderly attitudes towards technology
- Older library users and technology
- Fear of technology
- Computer classes
- Basic technology skills

Quality in-house tech

- High spec hardware
- Quality wifi
- Wifi access

Facilitating access to hardware

- Access across socioeconomic spectrum
- Disadvantaged youths access to technology

Necessity of computer skills

- Level of computer skills
- Specialised skills
- Advantages of technological literacy
- Mix of skills sought
- Differing levels of technicality
- Digital champion
- Level of IT skills required
- Importance of IT skills
- Varying staff technology strength
- Differing staff roles
- IT learning curve
- Refer tasks to other staff

Working towards branch goals collaboratively

- Teamwork
- Collaboration
- Different skills
- Knowledge of broader goals
- Staff allocation
- Core teams
- Communication
- Nodes in a network
- Allocate roles appropriately

- Awareness of broader goals
- Team effort
- Working as a team
- Broader goal
- Diversity of skillsets
- Roles complementing each other
- Specialist areas
- Awareness of project purpose
- Straddle different aspects of the job
- Exclusivity of roles
- At least one tech expert per branch

Seminar effectiveness

- Seminar inefficiency
- Assessing time commitments
- Encourage seminars

Informal instruction from colleagues

- Learning from colleagues
- Connections in the field
- Promote individual interests
- Learn from other staff
- Librarians sharing knowledge
- Universality of CPD

Librarians as facilitators

- Library as a neutral venue
- Community hub
- Alternative library uses
- Changing nature of library usage
- Tech impact on userbase
- Library as a venue
- Online courses

Librarians as instructors

- Bias in information
- Awareness of bad information
- Keyword searches
- Search phrasing
- Information discernment
- Changing information
- Dated information
- Librarians educating users

- Autonomous library users
- Outsourcing teaching
- Navigate information
- Overwhelmed with information
- Credible information
- Google results
- Guidance in web searches

Interpersonal skills

- Personable
- Interactions with users
- Dealing with the public
- Engaging with the public

Data protection

- Awareness of relevant laws
- Awareness of intellectual property