# ACADEMIC LIBRARIAN COMPETENCIES MODEL (ALCM): RECOGNISING SKILLS AND IDENTIFYING GAPS

# ABSTRACT

# Introduction

The authors present the Academic Librarian Competencies Model (ALCM) based on the findings of a single-workplace study which explores the approaches and tools Early Career Librarians (ECLs) can utilise to equip themselves with the necessary skills and capabilities to determine their own professional development.

# Purpose

The authors are ECLs, working as members of Monash University Library's (MUL) Research and Learning team. This team's mandate is to ensure students develop the required research and academic writing skills for success both while at university, and in the workforce. The library as a professional environment is on the cusp of pivotal change with baby boomer employees approaching retirement age.

With this change comes the threat of a loss of knowledge, with outgoing staff potentially taking skills with them before ECLs have had a chance to recognise and work towards developing these skills for themselves. To address this issue, this paper discusses the

adaption of the Work Skill Development (WSD) Framework (Bandaranaike & Willison, 2016), and the Chartered Institution of Library and Information Professionals' (CILIP) Professional Knowledge and Skills Base (PKSB) self-assessment tool (CILIP, 2014). Through the adaptation of these two generic frameworks, the authors have created ALCM which is specific to those working in the academic library sector, and allows ECLs in particular to map their existing capabilities against the skills necessary for professional development.

## Methods

To determine librarians' expected competencies across Higher Education Worker (HEW) levels at MUL, a thematic data analysis of MUL position description documentation was undertaken, along with the authors' documented work experiences. This analysis served as an exercise in benchmarking the expected capabilities and skills of MUL Librarians. In addition, it provided a means to identify any knowledge and/or skills gaps mapped against the WSD and PKSD, contributing to the final design of the model.

## Results

Based on this methodology, the research culminates in an interpretation and adaption of the WSD and the PKSB. The result is ALCM, a comprehensive self-assessment model for ECLs to map their existing skills against those required for career development. Through an ECL's individual use of ALCM, they will be empowered to undertake

reflective practice, assess their skills, and recognise their competencies and gaps. Through these benchmarking and gap-identification activities, an ECL's implicit knowledge will be made explicit, empowering the ECL with a self-awareness of their necessary areas for skills improvement. Subsequently a professional development narrative which seeks to address these gaps can be developed.

## Conclusions

ECLs are faced with a fast-paced, dynamic workplace, situated within a sector which is undergoing constant change. Flexibility and nimbleness is required in order to stay abreast of technological and pedagogical developments, and an awareness of skills gaps is essential. Through individually identifying and acknowledging skills gaps, ECLs will be able to form communities of practice with employees of various skill levels in order to not only enhance their own professional development, but also to create lasting connections with colleagues and perform more effectively as members of a larger library team.

#### Relevance

This paper is relevant to the conference theme 'Lead'. It offers an evidence-based and innovative way for ECLs to continue their career development and to recognise their leadership potential. It will give them the tools to demonstrate and confidently communicate their professional value.

# ACADEMIC LIBRARIAN COMPETENCIES MODEL (ALCM): RECOGNISING SKILLS AND IDENTIFYING GAPS

## **INTRODUCTION**

Librarianship as a profession is undergoing pivotal change, impacted by a number of variables including rapid technological advancement and an ageing workforce. The need to protect libraries from the threat of knowledge loss is as imperative as the need for individuals to develop the capabilities required to deal with a changing environment. This is true of libraries and librarians across all sectors: public, special, school and academic.

For Early-Career Librarians (ECL) employed in the academic sector, identifying and understanding which skills they need to develop in order to successfully address such changes is particularly challenging. This paper defines ECLs as new graduates in their first five years of work, employed at librarian level. In academic libraries, 'librarian level' usually corresponds to Higher Education Worker (HEW) level 5 and above. Existing models and frameworks for skills assessment often seek to serve the library community as a whole, omitting key skills areas particular to academic librarianship and ECLs. They identify broad skills areas with little opportunity for professionals engaging with these frameworks to map their level of confidence (i.e. autonomy) with each skills set. In addition, ECLs can no longer rely on 'traditional' hierarchical models of mentorship in order to successfully develop relevant skills (Murphy, 2008). This paper addresses this issue by introducing the Academic Librarian Competencies Model (ALCM), which proposes to guide users to identify not only the skills they need to operate as capable academic librarians, but also to assess the level of autonomy at which they engage with each of those skills, in order to articulate their strengths and areas for further development. The model is based on a thematic analysis of Monash University Library Position Descriptions (PD), and existing professional frameworks, through which six Competencies associated with the expected activities of academic librarians were identified: Communication & Teamwork; Professional Skills Development; Research Support; Teaching; Technology & Resource Use; and Time Management & Organisation.

In order to determine the relevance of these six Competencies to the role of academic librarians, a qualitative survey of librarians at Monash University was undertaken. Responses to this survey not only provide first-hand insight into librarians' self-assessment of their own level of autonomy for each Competency, but also personal examples of their engagement with each. In addition, the authors each kept detailed work diaries, covering the first nine months of their employment in new librarian roles, through which the capability of ALCM to map skills development over time could be ascertained.

The results from both the survey and the work diaries serve to test ALCM as a viable self-assessment framework for academic librarians, and demonstrate its potential as an individual tool for reflective practice, benchmarking at a personal level, and as a method

by which to identify and close any skill gaps. While this first iteration of ALCM is aimed at a particular subset of ECLs, the results indicate the potential for wider application of the Model for academic librarians at any stage of their career and across a variety of departments and teams.

#### LITERATURE REVIEW

## **Changing Trends in Academic Libraries**

Technological advancements are the primary catalyst for the changes surrounding librarianship as a whole, and also affect academic librarianship. As reported in the 2015 Library Edition of the NMC Horizon Report, six trends are predicted to accelerate technology adoption in both the long- and short-term, including developments relating to the accessibility of research content, the evolving nature of the scholarly record, an increasing focus on Research Data Management (RDM), and the rising importance of mobile-friendly content and delivery (Johnson, Adams Becker, Estrada & Freeman, 2015). The report highlights the need for academic libraries and their staff to continually refine workflows and the digital infrastructures that support various procedures related to these trends, in order to stay abreast of changes and remain relevant in our dynamic professional environment (Johnson et al., 2015).

These trends and changes are recognised by professionals in the library sector, with librarians sustaining "consistent professional interest and participation" in conferences such as ALIA Information Online (Hallam, 2007, p. 1) and are aware of the need to maintain their knowledge and understanding of technological changes that are currently affecting, or have the potential to affect, their professional environments and practices (Hallam, 2007).

However, while Librarians appear to recognise these trends and seek to take steps to address them via professional forums, there is some doubt as to whether the institutions that employ them are planning strategically to address these trends. As recently as 2015, it was reported that few institutions were articulating the need to develop skills in acknowledged trend areas such as "data management, digital humanities, and mobile or device neutral environments" (Saunders, p. 290). An acknowledged difficulty in articulating such action in professional documentation (such as annual strategic plans) is the fact that academic libraries are at least partially beholden to the strategic directions of their parent institutions, which may prevent the clear declaration of the need to develop skills that address all emerging trends (Saunders, 2015).

#### Existing Methods and Frameworks to Address Skills Development

There are a number of existing approaches and frameworks which are used by academic libraries, with the aim to ensure their staff possess the required skills to address changing trends. These include: formalised training and informal development of competencies (Shupe & Pung, 2011), a value scorecard approach which measures a library's overall human capital (Town, 2014), and balanced scorecards and strategy maps designed to capture and communicate the contributions of staff (Corrall, 2015). Certainly, there is no singular cohesive approach. In the case of the balanced scorecard approach, Corrall argues the method enables professionals to "articulate existing and required competencies … as well as identifying skills gaps" (2015, p. 229). However, Hallam (2007) acknowledges that the balanced scorecard method may not be the best

approach, as a tension exists between workplace planning and personal skill awareness. Additionally, the method focuses on staff as a whole, rather than individuals (Hallam, 2007). Indeed, the mapping and addressing of librarians' skill development is "not the sole responsibility of the individual ... [but] a sector-wide process" (Hallam, 2007, p. 21). The lack of a workplace-based methodology that also allows staff to assess and address their skills gaps at an individual level highlights an important gap in libraries' preparedness to work with identified future trends.

Librarians can use individual skills-assessment frameworks, however, such frameworks are typically developed and championed by governing bodies such as the Australian Library and Information Association's (ALIA) Research/Academic Librarian PD Scheme (ALIA, 2016), and the Chartered Institute of Librarians and Information Professionals' (CILIP) Professional Knowledge & Skills Base (PKSB) (CILIP, 2014). These bodies represent a wide variety of individuals in the library (and the broader information management) sector, necessitating the development of frameworks which can be used by a broad range of professionals. While both models enable individuals to identify skills gaps, neither afford professionals the chance to assess their level of accomplishment for each skill, making it difficult to track changes in their skills development over time. Other frameworks and methodologies seek to address this deficiency, such as the Skills Audit in ALIA's PD Scheme (Edwards, 2016), and the Librarianship Portfolio (Mills, 2015). Ultimately, however, there is currently no single methodology or framework that enables librarians to individually assess the development of a skills-set specific to their work environment over a sustained period of time.

The Work Skills Development Framework (WSD), developed by John Willison and currently implemented at Monash University, seeks to describe the continuum of knowledge production (Willison & O'Reagan, 2007). Users of the WSD are able to "review, reflect on and so adjust their workplace engagement" in accordance with identified skills areas, as well as enabling them to "articulate their strengths and weaknesses" (Bendaranaike & Willison, 2010, p.1 & 15). While not specifically designed for use in the library sector, the framework's creator acknowledges its portability to a wide variety of disciplines (Bendaranaike & Willison, 2010).

### Workplace-Based Skills Development

The common denominator of all aforementioned methods and frameworks is the encouragement of Continuing Professional Development (CPD). Generally speaking, librarians seek Professional Development Opportunities (PDO) from a number of sources, but it is noted that in-house professional development is "more likely to be concerned with the needs of the organisation than the needs of the professional" (Niema, 1996, as cited in Cossham & Fields, 2006, p. 236). Common in-house PDO can include informal and/or organic Communities of Practice (CoP) such as "mentoring, mailing lists, and web logs (blogs)" (Cossham & Fields 2006, p. 236). As such, Cossham & Fields identified a clear "need for better quality, focused CPD directed at specific library sectors" (2006, p. 245). This notion has been investigated in an exploratory study by Hampe & Lewis, who endeavoured to identify a model of best practice for employees in a health services library, and found that specialised models

provide a level of understanding for professionals that a broader framework cannot (2010).

While commonly used for CPD in professional institutions, there is debate surrounding the true value of CoP. In particular, when a CoP takes the form of traditional, hierarchybased peer mentoring, the relevance of longer-serving staff members' experience is questioned due to the dramatic change of the professional environment – resulting in markedly different early-career expectations and experiences (Henrich & Attebury, 2010). Similarly, in relation to developing specific skill sets relating to advances in technology, Murphy asks, "would it be more effective for individuals of varying skill and experience levels to learn together?" (2008, p. 434). However, if librarians re-frame the CoP to "recognize and adapt to changes in technology, society, and the nature of work", it can be used as a way to start conversations with peers at a variety of experience levels, as well as to network and exchange new ideas (Murphy, 2008, p. 436 & Goosney, Smith & Gordon 2014).

In light of the limitations to current practice identified in this literature review, and as discussed further in the results of our survey, ALCM proves to be a viable model. The Model aims to acknowledge future trends in academic librarianship; to enable professionals in the sector to identify their skill strengths and areas for improvement; to map their development over time; and to facilitate CPD through the formation of meaningful CoP.

#### METHODOLOGY

## **Thematic Analysis**

Due to the broad nature of the aforementioned existing professional skills frameworks, ALCM is designed to identify librarians' strengths and weaknesses across a range of competencies specific to academic librarianship. In order to determine these competencies, a thematic analysis of Monash University Library PDs, and existing professional frameworks was undertaken.

Librarians are employed across a range of different department and teams at Monash University, including Lending Services, Information Resources, and others. In order to provide scope for this first iteration of ALCM, it was decided that for the purposes of this paper the focus would be on librarians employed at a HEW5 level in the Research & Learning Team (a division of Client Services). These HEW5s are involved in activities such as liaising with students and academics, developing eLearning objects, and facilitating workshops. Therefore, a thematic analysis of the HEW5 Research & Learning Librarian PD and HEW7 Research & Learning Subject Librarian PD was conducted. As the position of HEW7 Subject Librarian is seen by most HEW5 Librarians as the next step in their career, the thematic analysis of this PD was deemed relevant to determine the skills HEW5 Librarians need for their current position, as well as the skills needed to meet the demands of their position as they develop and move forward in their career.

Through this thematic analysis, six Competencies for the HEW5 Research & Learning Librarian were identified:

- Communication & Teamwork;
- Professional Skills Development;
- Research Support;
- Teaching;
- Technology & Resource Use; and
- Time Management & Organisation.

These six Competencies are by no means exhaustive. Rather, they cover a range of soft skills (i.e. communication), and specialised skills (i.e. research support), that seek to distil the responsibilities of a HEW5 Research & Learning Librarian into clear areas that allow for identification and engagement.

# Levels of Autonomy

In order for users of ALCM to obtain an indication of not only whether they engaged with each of the six Competencies, but also at what level they were engaged - and therefore an awareness of where their skills strengths and weaknesses lie - users were asked to self-evaluate each of the six Competencies against a level of autonomy, as utilised in John Willison's WSD (Willison, 2016). A sister framework to Willison's Research Skills Development Framework (RSD), the WSD is used at Monash University Library as a means by which to measure and assess an individual's autonomy across a range of skills:

guidance from supervisor. provided guidelines. with limited guidance. guidelines appropriate to discipline / context	Prescribed Direction	Bounded Direction	Scaffolded Direction	Self-Actuated Direction	Open Direction
	Level 1	Level 2	Level 3	Level 4	Level 5
	Highly structured directions &	Boundaries set by & limited direction	Works independently and within	Develops own abilities & works innovatively	Works within self-determined
	guidance from supervisor.	from supervisor.	provided guidelines.	with limited guidance.	guidelines appropriate to discipline / context

Figure 1. Levels of Autonomy in the Work Skills Development (WSD) Framework (Willison, 2016).

For the purpose of the survey these levels were expressed as the following:

- Level 1 Not skilled;
- Level 2 Not particularly skilled;
- Level 3 Fairly skilled;
- Level 4 Moderately skilled; and
- Level 5 Highly skilled.

These five levels of autonomy will be used as the method by which individual users of ALCM evaluate at what level they are engaged with each of the six Competencies.

# Validating the Competencies

In order to determine the relevance of the six Competencies for skills-mapping purposes, two approaches were taken. A short ALCM self-assessment survey was developed using Google Forms, and sent out via targeted email to a complete list of HEW5 Research & Learning librarians at Monash University. In the survey, respondents were asked to reflect on the reason/s why they assessed themselves at their nominated level of autonomy for each Competence, and were encouraged to provide examples in order to support their assessment. As well as this, detailed work diaries were kept by the authors, which covered their first nine months of employment in new librarian roles. Through thematically analysing the content of these diaries, the Competencies were used to map skills development over time, using levels of autonomy.

# SURVEY FINDINGS

The survey was sent to 24 HEW5 Librarians at Monash University. In total, 18 responses were received, representing a 75% sample of Research & Learning Librarians (Rubinowski, Adams, & Pilz, 2016). Just under two-thirds of respondents (61%) have been employed in a Research & Learning role for twelve months or less, with the remaining 39% having been employed in this role for more than five years.



*Figure 2.* Results from the ALCM survey showing the length of employment in a Research & Learning role at Monash University.

Quantitative and qualitative data was collected from respondents. The survey first asked respondents to rate their skill levels across the six Competencies identified in the thematic analysis. Following this, respondents were asked to provide examples of their

skill levels via open-ended questions. The answers to these questions were then analysed to identify reoccurring themes.

Overall, the highest rated Competencies were:

- Time Management & Organisation: 89% of respondents rated themselves Moderately skilled or higher.
- Communication & Teamwork: 78% of respondents rated themselves Moderately skilled or higher

The Competencies with the lowest self-assessment rating were:

- Teaching: 22% of respondents rated themselves Not Particularly skilled or less.
- Professional Skills Development: 22% of respondents rated themselves Fairly skilled or less.
- Time Management & Organisation: 22% of respondents rated themselves Fairly skilled or less.

Respondents most commonly rated themselves at a Moderately skilled level, with 50 responses across each of the six Competencies. 13 respondents possessed a Moderately skilled level of Technology & Resource Use – a significant spike compared to the five remaining Competencies, as Fig. 3 demonstrates.



Figure 3. Overview of all responses for each Competency showing the level of autonomy for each area.

For those employed for one year or less, skills levels were self-assessed across each of the five levels, with a concentration at the Fairly skilled (23 responses) and Moderately skilled (30 responses) levels (see Fig. 4), and a mean of 3.61. A similar trend was exhibited for those employed for five years or more, with Moderately skilled (20) recording the highest number of responses (see Fig. 5), and a mean of 4.14. This distribution of results, and growth in skill level over time, suggests employees become more confident in their role the longer they are employed.



*Figure 4.* Overview of all responses of respondents employed in a Research & Learning role for less than 12 months for each Competency showing level of autonomy for each area.



*Figure 5.* Overview of all responses of respondents employed in a Research & Learning role for more than 5 years for each Competency showing level of autonomy for each area.

Responses to the survey showed the following trends:

- Those employed for one year or less recognised and used their previous work experience in their current role at Monash University, with 36% noting this previous experience positively influenced their skill level across a variety of competencies. As stated by one respondent, "it was my experience and skills in [previous positions] that was integral to my being hired at Monash."
- 71% of those employed for five years or more nominated their experiences while employed at Monash University as those which are most beneficial to their skills development. This suggests exposure to a role over a longer period of time results in increased skills levels across all Competencies – supported by a respondent who remarked they "consider[ed themselves] skilled because of the number of years that [they] have done this [role]."
- A lack of available time was identified by 29% of respondents employed for one year or less as having a negative impact on their opportunities for Professional Skills Development. As one respondent noted, "opportunities for skill development were not taken that possibly could have been. This may have been due to timing and availability issues."
- 14% of those employed for five years or more indicated they were content to increase their level of autonomy in Professional Skills Development in order to

improve their practice in their current role, rather than in preparation for future, higher-level positions (i.e. HEW7 Subject Librarian).

- Across all respondents, there was a desire to increase skills in Research Support, with 28% nominating this as a targeted area for growth.
- 17% of respondents indicated instances where "a lot of [their] knowledge is selftaught" regarding the use of various software and online applications (i.e. Adobe Captivate, TechSmith Camtasia, and Articulate Storyline 2), demonstrating a proactive approach to improving skills in Technology & Resource Use.
- Of those employed for five years or more, 29% recognised that having a second role external to Monash (i.e. part-time employment across two or more organisations) had a positive impact on their Time Management & Organisation skills.

# APPLICATIONS OF THE ACADEMIC LIBRARIAN COMPETENCIES MODEL (ALCM)

The results of both the survey and the qualitative analysis of the authors' documented work experiences pave the way for the delivery of ALCM, a model grounded in the use of reflective practice as a basis for one's self-assessment of skills across the six nominated Competencies of the academic librarian role.

Following one's reflective practice and self-assessment, a visual graphic, or 'snapshot' of the levels of autonomy a professional associates with each Competency can be generated. The visualisation style chosen reflects the interrelated nature of the Competencies and allows professionals to see, at a glance, their current strengths and areas for potential development (see Fig. 6). For this paper, the snapshot was created manually due to technological constraints. However, in future iterations of ALCM, it would be desirable for users to receive an automatically-generated snapshot, based upon coding of responses to a brief self-assessment survey.



*Figure 6.* Two snapshot of levels of autonomy for the six Competencies in ALCM based on reflective practice and documented work experience of two HEW5 Librarians.

While this is a powerful visualisation in itself, ongoing engagement with ALCM and reflective practice will enable professionals to map the development of their skills over time - as can be seen in examples from one author's work diary for the Competency of Research Support, mapped over the first nine months of their position (see Fig. 7). While different instances have been self-assessed as demonstrating a rating of Fairly skilled or Moderately skilled, an overall growth in experience and autonomy can be seen – with Month 9 indicating a re-evaluation of skill level due to being awarded larger projects. By prompting continuous and personalised engagement with the Model, ongoing skills development is encouraged - thereby addressing the limitations of the CILIP PKSB and ALIA PD frameworks.



*Figure 7.* Development of the Research Support Competency based on one of the authors' documented work experience and reflective practice over a period of 9 months. NOTE: Month 7 falls across the 2015/16 Holiday period.

A similar development of skills over time is shown in Fig. 8, with an increase of autonomy relating to Professional Skills Development demonstrated over the same

nine-month time period for another of the authors. Again, a re-assessment of their skill level occurred due to the addition of higher duties to the author's existing HEW5 role.



*Figure 8.* Development of the Professional Skills Development Competency based on one of the author's documented work experience and reflective practice over a period of 9 months. NOTE: Month 7 falls across the 2015/16 Holiday period.

Through undertaking a survey of HEW5 Librarians at Monash University, the authors were able to establish an average benchmark for each Competency, subsequently allowing our own documented work experiences to be directly compared with the results of our peers' self-assessment. However, it must be stressed that ALCM is not designed for peer-to-peer comparison and benchmarking. While the Model uses levels of autonomy to enable professionals to express their familiarity with each Competency, due to the highly individualised experience of engaging with ALCM, no normalised or 'expected' level of autonomy each professional 'should' attain at any given stage of their career is available for comparison. Rather, ALCM seeks to encourage professionals to

*benchmark against themselves over time*, iteratively documenting and assessing one's own skills development.

Professionals' use of ALCM can extend to identifying skills gaps which can then be addressed via internal or external methods and PDO. However, the environments in which librarians operate are rarely isolated, and therefore the authors also recommend the use of ALCM to identify and form relevant CoP that bring together professionals from a range of work departments, service lengths, and HEW levels. The potential diversity of these CoP would allow for an equal exchange of knowledge and experience, negating concerns identified in the Literature Review regarding traditional hierarchical models of peer-mentorship.

Through engaging with ALCM, identifying one's strengths and areas for development, and seeking PDO and establishing CoP, followed by continuous monitoring of skills development over time, academic librarians will be empowered with the knowledge and ability to build skills relevant to their work area. Due to ALCM's inclusive nature, this process will allow professionals to address and counteract the challenges surrounding knowledge loss currently faced by the sector, building a stronger, more competent, and more aware workforce for the future.

## SCOPE FOR FURTHER RESEARCH

The Competencies used in the scope of this paper are by no means exhaustive, and indeed, for ALCM to be relevant to and usable by academic librarians working at various HEW levels and/or in teams outside of this paper's scope, more competencies would need to be identified. With a more comprehensive bank of competencies available, users could select those skills areas which are best suited to their role, resulting in a truly personalised experience of engagement with the Model. For example, a HEW7 Subject Librarian could choose to focus on additional relevant competencies, such as Collection Management, Liaison & Outreach, and Subject Knowledge (see Fig. 9 and 10).



*Figure 9.* Snapshot of levels of autonomy for the six Competencies and additional competencies identified for a subject librarian position in the ALCM based on reflective practice and documented work experience of an early-career HEW7 Librarian.



*Figure 10.* Development of the Collection Management Competency based on one of the author's documented work experience and reflective practice over a period of 9 months.

#### CONCLUSION

The literature review, conducted to provide a background to and identify a need for the development of ALCM, highlights a clear gap in the availability of a specialised framework for academic librarians to assess their skills and competencies at an individual level. While frameworks such as the PKSB (CILIP, 2014) and the ALIA Research/Academic PD Scheme (2016) are available, they ultimately rely too heavily on a 'benchmarking' approach. While these existing frameworks are beneficial in assisting professionals identify what skills they need to develop, there is limited scope for professionals to gain a sense of how well they engage with the skills sets. While many academic libraries seek to address this gap by facilitating hierarchical mentorship programs and CoP, questions are being raised of the validity of such programs, given the dramatic change of the professional landscape since longer-serving employees were initially employed (Henrich & Attebury, 2010, and Murphy, 2008).

A thematic analysis of relevant professional documentation was undertaken, resulting in the determination of six Competencies for academic librarians: Communication & Teamwork; Professional Skills Development; Research Support; Teaching; Technology & Resource Use; and Time Management & Organisation.

For the purposes of this paper, this first iteration of ALCM was tested using two methods. Firstly, through a self-assessment survey by HEW5 Librarians at Monash University who are employed as members of the Research & Learning Team, the majority of which are ECLs. And secondly, via the analysis of the authors' work diaries in order to determine the Model's ability to map skills development over time.

The results of the survey indicate there is significant scope for the further development of ALCM. ALCM is a model which has the potential to be used by both early-career and mid-career librarians - indeed, by professionals at any stage of their career. However, given the small sample of this particular cohort, further research would be required to validate this assumption. Similarly, the validity of the Model would need to be tested by those professionals who are employed outside of the Research & Learning environments - such as those Librarians working as part of Information Resources, Lending Services, and Research Data teams. Again, this would solidify ALCM's viability as a model which can be used by professionals employed in academic libraries from a range of departments and areas, and inform the development of a truly inclusive Model.

ALCM's strength as a tool to map skills development over time was demonstrated clearly via the analysis of the authors' work diaries. Through the continued development of ALCM, professionals employed at academic institutions will be well-placed to conduct reflective practice and benchmarking at a personal level, as a method to identify and close any skill gaps. Additionally, academic librarians will be able to map their engagement with these skills over time - thereby empowering themselves with the ability to target their own professional development accordingly through both internal and external means.

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