

# Participatory Design, Co-production, and Curriculum Renewal

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This article presents an illustrative and instrumental case study of participatory design and co-production as used in curriculum renewal for a bachelor's degree in library and information studies (LIS). It outlines the process of constant review and reflection to improve the next round of development. The authors use the lenses of participatory design and co-production to shed light on the development of a completely new curriculum (syllabus) for a degree and three undergraduate qualifications. Drawing on their experience, organizational documentation, and the literature, they analyze the success of the development as collaborative engagement and co-production for improving practitioner–academic engagement, and for improving the quality and relevance of LIS qualifications to the professions. The advantages and disadvantages of using participatory design and co-production are discussed from the perspective of curriculum and course development, industry/profession involvement, and faculty needs, in the light of the higher education context in New Zealand. Despite the challenges of using these approaches, the process has been very positive for all the participants. Strong relationships have been developed with industry, and the program has benefitted from diverse perspectives.

**Keywords:** case study, co-production, curriculum, industry collaboration, online learning, New Zealand, participatory design, undergraduate degree

We live in an environment of transformational social and technological change, leading to an increasingly complex information environment and a need for digitally literate communities. Information professionals from the library, archives, records, and information management sectors need the flexibility to move between sectors and into newly emerging roles arising as a result of these changes. Qualifications need to be broadly focused across the wider information sector (while still allowing some specialization) and to include transferable skills, notably, communication, digital technologies, cultural competencies, community engagement, programming, designing and delivery of services, and management and strategic leadership skills. This trend has been highlighted by [Allard \(2017, 2018, 2019\)](#) in *Library Journal's* placements and salaries survey, [Norlander et al. \(2020\)](#), and [Saunders \(2019\)](#), among others. This article presents an illustrative case of innovative curriculum renewal through participatory design and co-production leading to a new bachelor's degree and embedded qualifications. The purpose of this research is to consider how effective participatory design and co-production are for the development of a library and information studies (LIS) curriculum, for improving practitioner–academic engagement, and for improving the quality and relevance of LIS qualifications to the professions.

Co-production is broadly about equal partnership and transformation in the delivery of services. Participatory design involves sharing the power in decision making, opening up the design process to input from those who are affected by the design ([Devisch, Huybrechts, De Ridder, & Martens, 2018](#)). While there are a number of studies on co-production in business and public service, there are few in an educational context. This article aims to

**KEY POINTS:**

- Participatory design and co-production are productive ways of engaging diverse stakeholders in the design and development of LIS qualifications, leading to strong partnerships and greater collaboration between industry/professions and academia.
- Effective use of participatory design and co-production improved the quality and relevance of the curriculum. It now addresses industry needs better and is enriched by a diversity of perspectives, both of which are important in a rapidly changing and complex information environment.
- Balancing industry expectations and wishes against the practicalities of tertiary education and educational design remains challenging, but the process is rewarding for all stakeholders (including faculty and students) and leads to positive educational outcomes.

increase understanding of co-production in this context.

Following a literature review, we provide a brief background of the LIS education landscape in New Zealand and then examine the development of the new Bachelor of Library and Information Studies degree as a participatory design process involving engagement with constituencies. We evaluate the advantages and disadvantages of participatory design and co-production for this development. We conclude with lessons learned regarding this approach to engaging with constituencies in terms of the end product (the courses in the degree) as well as for the process of curriculum renewal itself.

Throughout the article, *program* refers to a range of courses in a discipline area that may lead to one or more qualifications. *Curriculum* refers to the subjects that make up a course of study that leads to a qualification; it is often used interchangeably with *syllabus*. *Course* refers to a unit of study taught during a 15-week trimester. Since educational terminology varies

around the world, terminology used in this paper is further explained in [Appendix A](#).

## Literature review

The literature around library and information studies (LIS) education is extensive. We provide here a selection of key resources, focusing on the redevelopment over time to address changing societal needs and educational requirements. We then consider participatory design and co-production and the use of these approaches in curriculum development. This provides a basis for our analysis of what was done in the case study we are presenting. The question of which competencies should be included in a curriculum per se is beyond the scope for this case study, although it is an important topic in its own right and closely related to the requirements of professional registration and recognition.

## LIS education

LIS education has been through several kinds of reinvention over the past 20 or so years, but this has not led to a widespread rethinking of such education, which is now in need of “transformative change” (Abels, Howarth, & Smith, 2016, p. 85). The literature is extensive, and only a brief selection of resources that helped guide our thinking is identified here.

Some countries have conducted reviews of their LIS curriculum at national and institution levels, for example, Australia (Hider, Kennan, Hay, McCausland, & Qayyum, 2011;

Partridge et al., 2011; Yu & Davis, 2007) and the United States (Abels et al., 2016; Marchionini & Moran, 2012; Seadle & Greifeneder, 2007); and there are also some comparative reviews (e.g., Bawden et al., 2007; Miwa, Miyahara, Kasi, & Takeuchi, 2013). Such reviews seem to have been conducted in the light of changing external situations: technology, society, science, higher education, and the information age generally. Information professionals' skill sets are consequently changing, and these are frequently determined by professional associations such as IFLA (see Smith, Hallam, & Gosh, 2012), CILIP, the American Library Association (ALA), LIANZA (Library and Information Association of New Zealand Aotearoa; see LIANZA, n.d.a, n.d.b), the Australian Library Association (ALIA), and Records and Information Professionals Australasia (RIMPA), rather than being driven by the teaching institutions. Challenges of all kinds, including the need to broaden a curriculum, have been identified (e.g., Chawner, 2015; Xue, Wu, Zhu, & Chu, 2019; Yu & Davis, 2007).

Students, faculty, curriculum, and delivery are four distinct aspects for consideration in a review of curriculum, as identified by Marchionini and Moran (2012). Abels et al. (2016, p. 86) suggest a broader approach to developing education programs for the LIS professions:

There is an immediate requirement to: (1) educate information professionals to successfully lead and shape our information future; (2) pave a path for students to understand the challenges ahead; (3) prepare students to excel in their abilities to keep pace with the rate of change; and (4) ensure that LIS educators stay ahead of trends that are shaping our information world.

In New Zealand, LIS curriculum has been researched by Chawner (2013, 2015), Chawner and Oliver (2012), and Cossham, Wellstead, and Welland (2014). Professional development has been closely tied to professional qualifications in this country because students tend to study part-time while working, making their qualifications de facto continuing professional development as well (Cossham & Fields, 2007; Irvine & Cossham, 2011; Maathius-Smith et al., 2011). This situates LIS education as part of life-long learning rather than as an entry-level qualification into the profession.

### Participatory design and co-production

Participatory design is an approach that arose in the 1970s from the design of computer-based systems, although it is now used more widely. It was introduced as a way of allowing users and designers to collaborate to achieve better product, system, and space design (Devisch, et al., 2018), and it differs from other human-centered design in that it focuses on users as co-designers at all stages of the design process. Users bring expert knowledge to the process, and the approach allows end users to influence the design (Bratteteig & Wagner, 2014). Thus, participatory design “searches for ways to enhance and share power in decision making in the design process with those who are affected by the design, thus opening the design process for their input” (Ehn, as cited in Devisch et al., 2018, p. 5). Jordan and Carr-Chellman (2014, p. 55) say that participatory design occurs when “users become designers with real power and control over the shape of what they design rather than providers of subject matter expertise and recipients of solutions presented to them by experts who control the process, the information, and ultimately the design.” While user

power is ideal from the perspective of the user, [Bratteteig and Wagner \(2014, p. 2\)](#) note the problems around sharing power with users:

In the early days of PD [participatory design], it was clear that following the “core principle” of involving users in decisions in all phases of a design process unavoidably led to explicitly addressing issues of politics and power . . . . This insight has been somewhat lost in the assumption that “working with users” almost inevitably would lead designers to do the right thing.

In their case study of a user-designed curriculum at the US Bureau of Labor Statistics, [Jordan and Carr-Chellman \(2014\)](#) note that “the real magic of the solution came more from the process than the product. . . . The high level of interest in this curriculum indicates that user design has had a positive impact on adoption” (p. 58). This is one of the strengths of participatory design: the buy-in or adoption of the end product (in our case, courses making up the degree curriculum) by the end users (broadly, the information professions).

There are limited examples of participatory design in library and information studies curriculum redevelopment, although there are some instances of it as part of curriculum itself (e.g., [Hughes, 2017](#)). Participatory design may be integrated in a “combination of conventional forms of academic literacy with critical perspectives rooted in everyday experience” ([Mendoza, Kirshner, & Gutiérrez, 2018, p. xii](#)).

Co-production refers to the delivery of the services as much as to the development of them, but the key factor, as with participatory design, is the involvement of the end users, stakeholders or constituencies in their production:

Co-production means delivering public services in an equal and reciprocal relationship between professionals, people using services, their families and their neighbors. Where activities are co-produced in this way, both services and neighborhoods become far more effective agents of change. ([Boyle, Coote, Sherwood, & Slay, 2010, p. 3](#))

One of the clearest discussions of co-production is an article on the concepts and implications of theory in co-production by [Abeysekera \(2015; drawing on Humphreys\)](#). In collaborative co-production, an organization works with the end user in various stages of the value chain (i.e., conceptualization, design, production, post purchase service) to produce a product or service. Three end-user-related factors are “imperative to effective co-production: perceived clarity of the task/role, ability or competence and, motivation” ([Abeysekera, 2015, p. 26](#)). These aspects are similar to those identified in participatory design, since both are collaborations of some kind.

The first consideration for effective co-production is the clarity of the roles in collaborative projects: “Task clarity refers to the extent which customers understand what is required of them in obtaining service. The clearer a customer’s role expectations, the greater is the likelihood that their contributions will lead to improved service outcomes” ([Abeysekera, 2015, p. 26](#)). The second factor for effective co-production is the end user’s ability or competence, that is, “the quality of input a customer provides to the service production process. A customer’s useful and timely customer contributions enhance the co-production output” ([Schneider & Bowen, as cited in Abeysekera, 2015, p. 26](#)). Motivation is the third factor for successful co-production. It is claimed that there are three types of benefits that motivate end users’ participation in service, namely “efficiency in service process, efficiency of the service outcome and psychological benefits (e.g., novelty, enjoyment and increased perceived control)” ([Rodie & Kleine, as cited](#)

in [Abeysekera, 2015](#), p. 26). The success of co-production within this case study is evaluated in part in terms of these considerations. We note that [Abeysekera \(2015\)](#) talks in terms of customers, which is a less appropriate term for an evaluation of curriculum. The “customers” in our case were the end users (students), stakeholders, and constituencies.

## Method

This research takes the form of an illustrative and instrumental, single-subject case study ([Crowe et al., 2011](#)). The epistemological approach was interpretive. A single subject was chosen (the design and development of the curriculum for an undergraduate degree) because of its uniqueness and interest to the researchers. Descriptive analysis is based on observations from the authors’ perspectives: “A case study is both the process of learning about the case and the product of our learning” ([Stake, 1995](#), p. 237). The advantage of a case study is that it allows for an in-depth and multifaceted understanding of a complex issue in real life ([Crowe et al., 2011](#)).

The disadvantage of a case study is that it may lack rigor. To help overcome this, and as is common with case studies ([Eisenhardt, 1989](#)), we used multiple sources of data. We were closely involved in all the developments described in the paper and have drawn on our experiences and observations as a key source of data. Discussions with our immediate colleagues also informed the case study. Organization documentation was analyzed, including documents created at the time of the curriculum development, stakeholder workshops and planning, and annual program reporting. The data gathered from the workshops and curriculum planning were checked by the stakeholders (respondent validation). We have also drawn on the constant review and reflection conducted in the workplace throughout the process (including that documented in [Irvine, Openshaw, Bidwell, & Kelly, 2018](#))).

The literature around participatory development and co-design was reviewed to clarify what each involved, before the curriculum development was analyzed. Triangulation of these multiple sources of data strengthens the findings and our conclusions. In reporting the findings, we were cognizant of ethical standards, including the anonymity of the participants, and the integrity of data analysis and reporting.

## Library and information studies education in New Zealand

New Zealand is a small country with a population of 5 million ([Statistics New Zealand, 2020c](#)). A significant bicultural commitment to the indigenous Māori population is mandated by Te Tiriti O Waitangi—the Treaty of Waitangi of 1840; Māori are acknowledged as *tangata whenua* (the people of the land). There is a significant multicultural population as well ([Statistics New Zealand 2020a](#)). The largest city, Auckland, has 220 recorded ethnic groups, and 39 percent of its population of 1.4 million were born overseas. New Zealand has strong social, cultural, economic, and political ties to its Pacific Island neighbors, and Auckland is the largest Polynesian city in the world.

New Zealand government policy over the past decade has emphasized the development of digitally literate communities (most recently, see [Citizens Advice Bureau, 2020](#); [Digital Govt.NZ, 2020](#)), with young people, Māori, Pasifika, and diverse communities identified as specific target groups ([Open Polytechnic of New Zealand, 2016](#), p. 5). Another significant external factor affecting curriculum renewal in New Zealand is the increasing acknowledgment

of Indigenous knowledge and information paradigms (Lilley, 2017; Oxborrow, Goulding, & Lilley, 2017) and a commensurate rise in the amount of published research.

Given these changes, the Open Polytechnic decided in 2016 to create a Bachelor of Library and Information Studies (BLIS), with embedded certificates and diplomas, to supersede Information and Library Studies majors in the existing bachelor's degrees of Arts and Applied Science. The BLIS curriculum covers libraries (including school libraries), archives, and records management, but not museums.

### Qualification providers

There are around 9,000 individuals working in the information industry in New Zealand (Statistics New Zealand, 2020b). LIS education is covered by two large programs: Victoria University of Wellington offers a postgraduate program in information studies (including library, archives, and records management) and information management. The Open Polytechnic offers an undergraduate program in LIS (including records and archives management) which has been taught by distance and online (and has been for the last 23 and 19 years, respectively). A third, smaller, program is offered by Te Wānanga o Raukawa (a Māori polytechnic). This requires some fluency in *te reo Māori* (Māori language) and “evidence of support from a hapū or iwi [tribal groups]” (New Zealand Qualifications Authority, n.d.). It is not an option for most New Zealanders because most are not fluent in Māori language or part of a tribal group (Cossham et al., 2014, p. 229).

The Open Polytechnic is the largest provider of LIS qualifications. Four qualifications are delivered through the LIS program using online teaching and learner-centered course materials. There are around five full-time-equivalent LIS faculty supported by more than a dozen adjunct staff who predominantly mark assignments and occasionally teach courses. The level of staffing is determined by the number of students, as well as by the delivery mode and its implications. Delivery is facilitated but also constrained by the approach and requirements of the Open Polytechnic to online delivery of courses. Consequently, the curriculum itself is the area that is most amenable to renewal.

### Links with the information industry

Chawner (2013, p. 2) notes that “one of the defining characteristics of LIS education is that it prepares students to enter a profession, rather than providing them with knowledge relating to a traditional academic discipline.” As a consequence, and in common with many other professions, there have always been close links between the education providers and industry. There is regular consultation and engagement with the stakeholder constituencies of the Open Polytechnic's library and information program:

- A stakeholder advisory group provides regular (if infrequent) feedback on major changes to the curriculum. Members represent professional associations and interest groups across the archives, libraries and records sectors.
- Students provide feedback on each course instance through regular student surveys.
- An external advisor meets annually with faculty to review each degree.
- Qualifications are reported on annually to the New Zealand Tertiary Education Commission, and there are broader self-assessment and external evaluation reviews

focusing on courses, delivery, library services, and student support within each program.

- The qualifications are accredited by Library and information Association of New Zealand Aotearoa (LIANZA) and recognized by Records and Information Professionals Australasia (RIMPA).

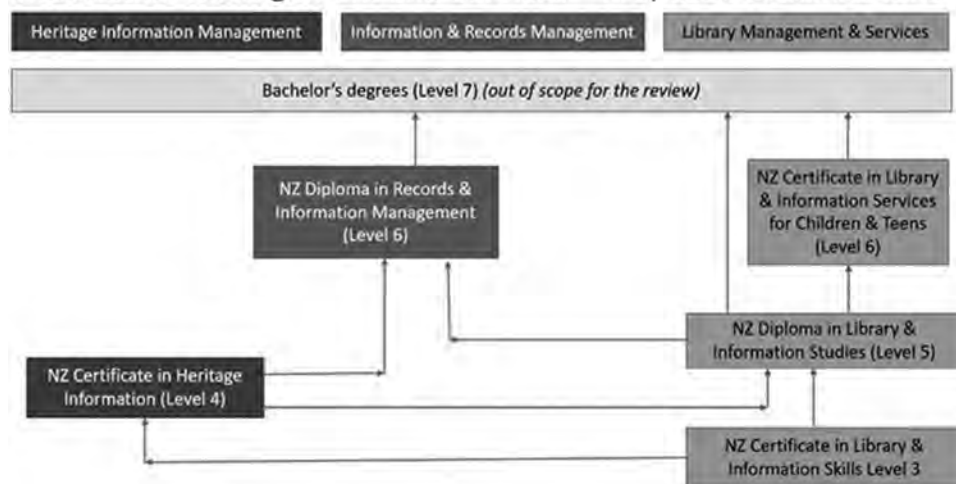
### Initial developments

One major stakeholder engagement predated, and partly drove, the curriculum renewal being evaluated in this paper. The 2014–2015 New Zealand Qualifications Authority (NZQA) mandated review of all New Zealand qualifications at sub-degree level, including those for libraries, archives and records. The aim of the review was to reduce duplication of qualifications, ensure the system was easy to understand, and ensure the qualifications met the needs of relevant industry sectors. The terms of the mandatory review were largely dictated by the NZQA and required extensive stakeholder engagement.

Library, records, and archives qualifications were reviewed in 2014 and redeveloped in 2015. A governance group was established of representatives from professional associations, major employers, and industry sectors (libraries of all types, archives, and records). The review involved a needs analysis (Cossham & Information Management and Services Governance Group, 2014), extensive stakeholder consultation across all the industry sectors, and the scoping of five new sub-degree-level qualifications (Information Management and Services, 2014, Phase 1), followed by formal endorsement of the proposed qualifications by industry stakeholders.

The outcome of the review was a new national qualification landscape of sub-degree-level LIS certificates and diplomas (Figure 1).

## Information Management and Services – Proposed Qualifications



**Figure 1:** The post-review qualifications landscape (redrawn from <https://imsqualreview.files.wordpress.com/2014/07/qual-framework-information-management-and-services-v4.jpg>).

## Curriculum renewal, 2015–2017

Following the NZQA review, the Open Polytechnic engaged in a program renewal exercise to embed the new sub-degree qualifications into a new bachelor's degree in Library and Information Studies. The intention was to produce graduates who would have professional skills in their chosen information sector while also gaining transferable skills that would enable them to move between sub-sectors (e.g., from academic to public libraries), into newly created roles in other sectors (e.g., from public libraries to community archives), and into other industries. This focus necessitated a greater emphasis on an information industry-wide perspective: moving from a library-focused program with archives and records as smaller and often separate components to a degree where all the core courses encompass the industry-wide perspective while electives focus on different specialties. The new Bachelor of Library and Information Studies (BLIS) is therefore a relevant qualification for professionals across the information industry and enables graduates to have mobility and flexibility.

The program renewal began with extensive research and constituency engagement. [Abels et al. \(2016\)](#) refer to “engagement with constituencies” rather than stakeholder consultation, and the notion of engagement, which implies an ongoing and two-way process, represents better the Open Polytechnic's approach. Two high-level reports were commissioned that identified strategic opportunities for the Open Polytechnic's LIS portfolio. A thorough needs analysis was undertaken, building on the work done in the earlier mandatory review process.

### Engagement with constituencies

An important part of the program renewal process was engagement with stakeholders and constituencies, which enabled a participatory design approach to the curriculum. These included faculty teaching on the program, professional associations covering all sectors and sub-sectors, major employers (including National Library of New Zealand, Archives New Zealand, Auckland Libraries, and Christchurch Libraries), and information consultants. Consultation covered a variety of communication methods, styles, and preferences: face-to-face, visual, written, group and one-on-one meetings, formal and informal. A major aim was to ensure a good balance between the needs of the various sectors, since the records management and archives sectors are very small in New Zealand and frequently swamped by the needs of the much-larger library sector.

In 2016 there was a push from LIANZA for education and training to be more closely connected to workforce needs ([Libraries Aotearoa Workforce Development Working Group, 2016](#)). Hence the importance and value placed on including industry representatives in participatory design and co-production of the new program, qualifications, and courses.

Stakeholders were involved in all aspects of the Open Polytechnic LIS program and curriculum design and development through

- a representative stakeholder advisory group;
- workshops with stakeholders to design the curriculum, formulate outlines of course descriptors, and identify course content;



- working with stakeholders to identify writers, content reviewers, cultural advisors, assessment moderators, and ideas for assessment case studies; and
- on-going constituent engagement.

## Participatory design and co-production, 2016–2020

Once we had been through the process of engaging with stakeholders representing a range of constituencies, the participatory design process began with scoping the new bachelor's degree and developing the curriculum as expressed through the philosophy, graduate learning outcomes (see [Appendix B](#)), and course descriptors (outlines specifying learning outcomes and assignments). Quite apart from the desire to work with industry to meet their needs, it was never going to be possible for the curriculum development to take place fully in-house. There were 24 new courses, including both core and elective courses, few faculty, tight timeframes, and the need for specialist expertise in some areas. Additionally, distance education requires fully prepared learning materials, activities, multi-media, and assessments to be created in full before the start of a course and delivered through an online learning management system. The constraints on this process and the specialized nature of curriculum development meant that full co-production was unfeasible.

The course descriptors that encapsulate the curriculum went through extensive development in-house with LIS faculty and an experienced project manager over a six-week period in late 2016. This stage incorporated constituents' feedback and existing research on the information industry and its needs, including the needs analysis written for the mandatory review ([Cossham & Information Management Governance Group, 2014](#)), a careers survey report for LIANZA ([Stone, 2013](#)), strategic documents such as those of the [Association of Public Library Managers \(Local Government New Zealand & Association of Public Library Managers, 2012\)](#) and the [National Library of New Zealand \(2007\)](#), and formally published research on LIS qualifications in New Zealand and Australia ([Chawner, 2012](#); [Chawner & Oliver, 2012](#); [Cossham et al., 2014](#); [Partridge et al., 2011](#)). Resources and research from LIANZA, IFLA ([Smith et al., 2012](#)), ALA, and CILIP were also used.

The course outlines that emerged were sent out for further stakeholder consultation and discussed in the stakeholder advisory group and at a one-day workshop for representatives of all constituencies. Subsequent feedback was incorporated into strategic planning documents for the program: an academic case and an *Application to NZQA for Approval of a Qualification and Programme and Accreditation to Deliver* ([Open Polytechnic of New Zealand, 2016](#)). Feedback summaries were circulated to stakeholders to confirm understanding. Diverse, robust feedback was provided in response and incorporated into the curriculum as far as possible. Final approval was obtained from the New Zealand Qualification Authority in June 2017.

## Reflection on the curriculum renewal

The purpose of this case study is to consider whether participatory design and co-production have been effective approaches to the development of a degree and curriculum in LIS. We firstly consider the roles of the collaborators the writers and reviewers and then evaluate the planning and development stages of the process. The benefits of participatory design

are revealed, as well as some of the lessons learned. Consequently, conclusions are drawn about the effectiveness of adopting a participatory design approach both for the development of courses and qualifications and for improving the quality and relevance of LIS qualifications.

### **Diverse constituencies and conflicting agendas**

It was complex ensuring that all stakeholders' points of view and constituencies' needs were incorporated. Draft course outlines from a planning workshop identified many ideal aspects that industry wanted to see included. While many of these were able to be incorporated, others were unfeasible, minor specializations or lacked the necessary appeal to all prospective students; there were also significant overlaps because stakeholders focused on individual courses rather than the degree as a whole.

Although sharing power with users is inherent in participatory designing (Bratteteig & Wagner, 2014), we found it challenging because of the diversity of constituencies, each of which had different understandings, different values, and different focuses, which at times were in conflict with other users as well as with the parameters of higher education and the practicalities of what could be developed. This challenge was associated with constraints around course content and development mandated within the Open Polytechnic. Externally, the New Zealand Qualifications Authority determines how we respond to the users' wishes and what could be included in the courses of a degree. That is, some things were simply not possible no matter how good or desirable they were. This was a key issue underlying the development of individual courses and was an ever-present factor throughout the development. Ideal content for each course had to be balanced with the practicalities of developing materials that enabled teaching by distance in a tertiary institution and the need to meet organizational and NZQA requirements and standards.

Ideally, the design process should be open-ended (Bratteteig & Wagner, 2014), but organizational requirements, contracts, and timeframes for delivery of completed courses meant that this was not possible.

Despite having a content and assessment plan for each course that outlined in reasonable detail the content and the scaffolding leading to the assessment activities, there was still considerable difference between what was anticipated from a course writer and what was actually delivered in some instances. As discussed in the next section, this was positive in that it showed the variety of understanding and coverage possible for each topic, but negative in that it had to be actively managed to ensure that each course was fit for purpose and still occupied the right place in the curriculum.

We engaged appraisers for each course but there was no formal process for providing feedback to them on what of their input we had been able to incorporate into the course or why some had not been incorporated. Appraisers also felt accountable to the stakeholder groups they represented, especially if their feedback was not reflected in the final product. While ad hoc feedback was provided, this did not suit the style of engagement of some constituencies and may have made it seem that we were undervaluing their significant and voluntary engagement with the curriculum. While users' voices should have "space and weight" (Bratteteig & Wagner, 2014, p. 2) this was challenging to achieve in practice.

It was important to have processes in place to deal with conflicting viewpoints as issues arose. For example, some educational designers either did not understand or did not condone the co-production philosophy, which was viewed as a lot more work for them because they had to deal with feedback from the multiple roles involved in the course development. Any differences of opinion were taken to the steering group overseeing the program development. This group, composed of senior managers in the project, met on a regular basis to discuss matters related to the project. Good facilitation skills were a key attribute for project managers and senior educational designers when using a participatory design approach in this project. Recruitment of staff with excellent facilitation skills is another fundamental factor impacting on the successful co-design and co-development (or co-production) (Jordan & Carr-Chellman, 2014).

### Course writers and reviewers

The Open Polytechnic utilized various methods to ensure that all collaborators were on the same page and to manage expectations for role clarity in course development. While it was time consuming to set up processes for managing this (including Expressions of Interest for project roles, team planning days, and content and assessment plans), it was worth it once course developments commenced.

Course writers and reviewers were recruited from a pool of industry practitioners to provide specialist expertise of the industry. As noted, motivation is an important factor for successful co-production (Rodie & Kleine, as cited in Abeysekera, 2015). However, we can only speculate on the actual motivation of constituents coming forward to be involved in this curriculum renewal; this is an area for further research.

In line with participatory design principles (Bratteteig & Wagner, 2014), each writer and reviewer contributed their unique subject matter expertise to the process of design and development of the courses. This meant that variable experiences informed each course development. As ability or competence is one of the three key factors for effective collaborative co-production (Schneider & Bowen, as cited in Abeysekera, 2015), some writers were recruited from overseas with substantial experience in similar education contexts, while other writers were more familiar with New Zealand LIS education and the information industry landscape. Any gaps in the writers' knowledge or expertise were balanced by the varied experience of other members of the team: content reviewers, cultural reviewers, and faculty representatives.

Recruiting writers and reviewers from industry was advantageous because it enabled the sharing of industry knowledge while information professionals remained in the profession. It also provided opportunities for continuing professional development for them and opened up the possibility of new career pathways into LIS education and teaching.

However, there were some disadvantages in recruiting and using industry writers, most notably the difficulty in finding them. We were surprised at how few put themselves forward for this role, given the levels of enthusiasm and interest in the process during earlier stages. Possible reasons for this include the limited pool of expertise to draw on in New Zealand and contextual factors such as the constraints of information professionals in full-time roles and the relatively limited timeframes for course writing, along with our

need to recruit information professionals with appropriate experience across the wider LIS sector (i.e., libraries, archives, and records/information management). It may also have been due to lack of confidence on the part of would-be writers, since perceived self-efficacy is a determinant of successful co-production, according to [Abeysekera \(2015\)](#). [Bandura \(2013\)](#) emphasizes that self-efficacy is an individual's belief in their capabilities to perform a task and can "influence the goal challenges people set for themselves, how much effort they invest in the endeavor, and their perseverance in the face of difficulties and setbacks" (p. 147). Of course, it could also be that we had unrealistic expectations about how enthusiasm might translate into concrete writing:

Affective commitment also plays a part in the motivation for getting involved in participatory design of courses and programs. Affective commitment can be defined as "... customer attachment to, identification with, and involvement in the organization (Meyer and Allen, as cited in [Abeysekera, 2015](#), p. 26).

For example, graduates of the outgoing program saw this as an opportunity to contribute to its ongoing improvement. Personal connections were beneficial in recruiting key stakeholders. We drew upon established professional relationships for shoulder tapping known experts, working with employers to release staff for a block of time, splitting up the course writing into smaller sections, and seeking writers from overseas.

### The course writing stage

The course writing stage involved co-production by a range of collaborators. With the recognition that sustainability of co-production is maintained by small group interactions ([Abeysekera, 2015](#), p. 29), course writing was enhanced by small-group planning meetings, where team members met face-to-face and worked to produce a content and assessment plan for a course. Planning days were held for each course to ensure that every member of the team understood their roles and there were shared expectations and processes.

Working from the course descriptors to develop each course was a complex process involving educational designers, multi-media creators, educational platform specialists, and bicultural and cultural appraisers for each course development. Most teams involved in the co-production of courses were highly motivated, working together with the common goal of producing a really good course fit for the needs of the New Zealand information industry.

Creating educational materials is reasonably specialized, although the process was developed so that LIS professionals with no experience in this area (i.e., non-educators) would be supported and guided through it. It can be difficult to find someone who has both subject expertise and experience in instructional design, tertiary education, training, or teaching. A writer without a tertiary education teaching background may not understand how a course is put together and may not realize the pedagogical implications of decisions regarding course content, activities, and assessments. For example, they may be unfamiliar with the significance of the verbs in the learning outcomes for each course and the graduate outcomes for the degree and may not be aware of how the verbs translate to activities and tasks scaffolding into the assessments. This was countered by drawing on the knowledge and expertise of the educational designers, LIS faculty, and content reviewers.

We observed a tendency among industry collaborators to want to put everything into one course rather than to see the place of the course in the whole program (degree plus associated certificates and diplomas). While it was important to keep a strong focus on the learning outcomes for a course, it was also important to keep in mind the bigger picture: the graduate learning outcomes for the qualification that the course sits within and the strands woven throughout the whole program, notably cultural competencies, information literacy, and digital skills. These potential gaps in awareness of the bigger picture were addressed during course planning days through presentations on the program and the place of the relevant course in the program. Another check was the final review of each course's content and assessment plan from a whole-program point of view by the program leader (faculty).

### Course appraisal and review

In all instances, the courses underwent review of their content by a content appraiser and/or a faculty appraiser, along with bicultural and cultural appraisers. The first two learning outcomes for graduates of the new degree prioritize New Zealand's commitment to Māori and Pacific Island peoples (see Appendix B), so appraisal from these experts was important in shaping the courses.

To monitor progress, "pulse checks" were conducted to test the health of each course at critical stages in the course development (Irvine, et al., 2018). The course development teams and the pulse-check teams regularly reviewed course content throughout the lifecycle of course development. Pulse points included the content and assessment plans, each module, and every assignment.

### The impact of contextual factors

As Abeysekera (2015) has noted, contextual factors can have a significant impact on co-production, including the macro environment, proximate environment, and co-production management (e.g., instructional design), as discussed below.

#### *Macro environment*

In the context of this curriculum development, the macro environment includes the New Zealand educational context and the information industry as a whole. The New Zealand Qualifications Authority has exacting requirements for any qualification and approves any new qualifications and courses, right down to the course descriptors that cover purpose, scope, content, learning outcomes, and assessment.

The information industry had particular requirements, both for the content of individual courses as well as for the curriculum as a whole and for the smaller qualifications embedded in the degree, since each LIS sub-sector has different needs. For example, children's librarians need a much greater understanding of children's development than archivists, university librarians need greater expertise with published electronic resources than records managers, and they also need better knowledge of customizable in-house software and diverse classification processes.

The participatory design process was limited by its exclusion of some stakeholders. For example, it focused on the needs of employers in key sectors of the information industry as

opposed to their staff. Moreover, students lacked opportunities to formally share their views in the whole process as a particular constituency. The absence of an alumni association made contacting past students difficult. Nevertheless, many of our past students are now working at all levels of industry and were active participants in the design and development of the curriculum as writers and through the professional groups they belong to.

### *Proximate environment*

For this program, the proximate environment means the Open Polytechnic processes and staff, including faculty, educational designers, content specialists, reviewers, senior managers, and project managers.

Budget constraints and business planning dictated what could be done (and this changed over time). For example, the Open Polytechnic had particular approaches centered on educational design best practices, as well as features and constraints of the then-evolving learning delivery platform iQualify (an in-house platform similar to Moodle and Blackboard). In contrast, faculty teaching in the program had a consistent perspective on the curriculum based on their professional expertise and their ongoing engagement with industry through professional associations, collaborative research, and consultancy, as well as extensive teaching experience. However, they also needed to be flexible and compromise. For example, they believed that it would be better to run the themes of information literacy and bicultural practices through all courses to ensure that these significant aspects were constantly reinforced across the curriculum rather than to have stand-alone courses. The outcome, however, was stand-alone courses covering each theme, with some weaving of these themes into other courses.

The sheer scope of the subject matter covered in the program meant that we needed to make sure the curriculum covered the relevant bodies of knowledge for all sectors of the industry, including libraries (LIANZA) and records and archives (RIMPA). This was time consuming for the two faculty members representing archives and records, because they had to contribute to nearly all of the courses developed.

### *Co-production management*

Adopting a participatory design approach necessitates long timeframes for every stage of the process (Greenbaum & Loi, 2019; Jordan & Carr-Chellman, 2014) because it involves collaboration with a wide variety of constituents. It also results in multiple opportunities for feedback, which again requires time to gather and to incorporate into the course content. In particular, this had an impact on the educational designers, whose role was to coordinate the feedback and liaise with the content specialists.

Longer timeframes and wide consultation also affected the resourcing of the program, not least the need to budget to allow for multiple roles: writers, content reviewers, bicultural reviewers, cultural reviewers, independent consultants, project manager, digital architects, educational designers, head of school, program leader, faculty, and program delivery managers.

Similar to Jordan and Carr-Chellman (2014, p. 56), we found that “user design may not provide the best path for undertaking design because it requires a power shift away from

the expert to the users.” As we have shown, there were competing requirements, which at times outweighed our efforts to fully engage with users in the design process.

### Co-delivery and moving forward

The final phase of co-production is co-delivery. The learning environment is being extended into industry through professional practice placements. Library, records, and archives expertise will be available through co-teaching and/or facilitation, and guest lecturers. Adjunct tutors are drawn from industry and provide a mentoring element as part of marking assignments. From time to time, opportunities arise for content writers and content reviewers for course developments and as course leaders. Relationships with local *iwi* (tribal groups) will be fostered with the face-to-face components of learning delivery such as the Māori practitioners and the *noho marae* (participation in a Māori cultural experience). The plan also included using LIS educators in the workplace. However, these last two intentions for co-delivery have been affected by institutional and financial constraints and are currently on hold.

### Effectiveness of participatory design and co-production in curriculum renewal

One purpose of this case study has been to evaluate how effective participatory design and co-production are for the development of courses and qualifications, for improving practitioner–academic engagement, and for improving the quality and relevance of LIS qualifications to the information professions.

The key benefits of participatory design and co-production include a closer relationship with the different industry sectors, a curriculum that is more applicable to all the sectors and sub-sectors in the information industry, and a breadth of expertise well beyond what the small number of faculty could bring to the creation of new courses, including expertise in related disciplines such as teaching and information technology.

Although not out of date, the curriculum was ripe for renewal, similar to curriculum at Rutgers University, where “many of the goals and priorities already existed in our program and curriculum and simply needed to be brought to the foreground” (Pavlovsky & Stoerger, 2017, p. 3). While the curriculum already included industry priorities, these needed to be made more visible and reflect better the changing societal and technological environment. The advantage of the approach we chose is that we were much clearer about what needed to be done and the specific needs of sub-sectors in the information industry than we might have been if we had designed and created the content ourselves with a more limited stakeholder consultation.

The key disadvantages of the participatory design and co-production approaches included lengthy timeframes as well as tight timeframes for individual course development; serious constraints on staff and budget resourcing that prevented the process from being as dynamic and reflective as we would have liked; the need to constantly balance industry expectations and wishes against the practicalities of tertiary education and educational design in a distance education environment; and the difficulty of creating processes to address and resolve any conflicts, meaning that there was a lot of ad hoc decision making rather than measured facilitation.

The participatory design and co-production approaches that we used have been successful in achieving the following outcomes, as demonstrated through direct student feedback, formal surveys of students, ongoing consultation with stakeholders, and feedback from employers and professional associations:

- Students find our qualifications enriching and appropriate for their chosen career trajectories.
- Employers see our qualifications as desirable and future-focused.
- There are closer relationships between industry and academia as groups and as individuals.
- The courses themselves have benefitted from the inclusion of a diversity of perspectives.

## Conclusion

This has been a unique opportunity to radically redevelop a bachelor's degree and three embedded qualifications, and to ensure that the information professions in New Zealand have a strong sense of ownership and ongoing involvement in LIS education development and delivery. We could not have done this without the support and involvement of professionals in the industry. Together we have worked to harness the transformative potential of education to build a new generation of confident practitioners.

The partnership with stakeholders for program design and development, drawing on industry expertise, has enriched the qualifications to more directly meet the needs of industry sectors. As a result of the extensive participatory design and co-production process, the renewed curriculum is in a stronger position to support all sectors of the information industry to thrive in whatever ways are required to support New Zealand in the information age. The final courses were completed in 2020 after four years of sustained development, and a review of the program as a whole was completed in early 2021.

The generous time and support given by our stakeholders at each stage of the consultation process and co-production of the qualifications and courses were invaluable. Engagement with our constituencies from the very beginning was highly beneficial to ensure buy-in from all stakeholders and was a positive and enjoyable part of the process for us as faculty responsible for the program and for stakeholders and contributors. In short,

In doing Participatory Design we are not designing (by committee or workshop) a new elephant or camel, but rather stretching ourselves to do what is practical in certain situations and necessary in others. Yes, participatory design can be larger and messier than traditional forms of design and research, but it engages people in practicalities and it can ultimately get us to where we need to go. (Greenbaum & Loi, 2019, p. 84)

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## Acknowledgments

We would like to thank our colleagues in faculty and learning design, including adjunct staff and the former Head of School who was a key champion for this development, and external stakeholders who have all participated throughout the curriculum design and development process for their contributions and support. We thank the reviewers for their feedback on the paper.

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## Appendix A: Definitions

- *Curriculum*: the subjects making up a program of study.
- *Syllabus*: an outline of the subjects in a program of study.
  - In education, these terms are often used interchangeably. We have used *curriculum* since that is what the development talked about.
- In education, these terms are often used interchangeably. We have used *curriculum* since that is what the development talked about.

- *Course*: a unit of study taught over a fifteen-week trimester.
- *Information industry*: all types of libraries, archives, and records and information management organizations and functions.
- *Information sector*: one part of the information industry, e.g., school libraries, community archives.
- *Program*: a range of courses in a discipline area that can lead to one or more qualifications.
- *Qualification*: a certificate, diploma or degree awarded by a tertiary institution.

## Appendix B: Learning outcomes for the BLIS

Graduates of this qualification will be able to

1. provide culturally responsive library and information services and collections, recognizing and applying the principles of Te Tiriti o Waitangi, understanding Te Ao Māori, biculturalism, and Indigenous knowledge paradigms;
2. provide culturally relevant library and information services and collections to enhance the lives of Pasifika and other cultural groups in New Zealand;
3. collaborate and communicate to analyze individual, organizational, and community needs, and to design, deliver, and evaluate appropriate library and information services, programs, collections, and systems to facilitate access to and use of information, life-long learning, and multiple literacies;
4. facilitate the creation, organization, and dissemination of new knowledge;
5. search for, critically evaluate, contextualize, and use information in diverse formats and locations; and
6. develop leadership and management strategies to advocate for and promote ethical and effective evidence-based information solutions within communities and organizations, for open, equitable access to information.