Nordic Journal of Library and Information Studies

Vol. 6, No. 2, 2026
ISSN (ONLINE) 2597-0593
DOI https://doi.org/10.7146/njlis.v6i2.168918
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Information Science Education in Iceland

Graduate Perspectives on Professional Competencies and Curriculum Development

Abstract
Information Science education in Iceland faces challenges related to digitization, automation, and evolving and expanding professional roles, requiring programs to balance a shared core curriculum, topical breadth, and opportunities for specialization. This study reports on a mixed-methods survey of University of Iceland Information Science graduates (2021–2024, n=20) from the Information Behavior and Information Management programs, examining study experiences, workplace preparedness, and job satisfaction through a 35-question survey distributed via professional associations. Survey responses were analyzed using descriptive statistics and thematic analysis and situated within international debates on professional competencies. Graduates reported strong confidence in decision-making, critical evaluation, and core information-handling skills, reflecting solid theoretical foundations. However, gaps were identified, including limited elective offerings, uneven practice-based learning opportunities, and insufficient preparation for system-level responsibilities, particularly in records management. Qualitative feedback highlighted the need for greater exposure to information systems, artificial intelligence, and workplace-linked projects. While overall job satisfaction remained high, some uncertainty was expressed regarding preparedness for expanding digital roles. The findings point to both strengths and limitations in Icelandic Information Science education and indicate a need for strategic curriculum development, including a more consolidated curriculum and strengthened international collaboration through shared courses, Erasmus initiatives, and curricular partnerships aligned with European digital competence goals.

Keywords: information science education, professional competencies, curriculum development, graduate perspectives, digital competence, Nordic LIS education

Introduction

Library and Information Science (LIS) Education, or Information Science (IS) education, is under increasing pressure to respond to profound transformations in the information landscape. Digitization, automation, and the datafication of everyday life are reshaping and expanding the roles of information professionals across libraries, archives, and records management. Traditional functions such as the creation, capture, and organization of records, cataloguing, reference services, collection development, and preservation remain important, but are increasingly supplemented by demands for competencies in both digital and social domains. These demands range from information technology and data governance to community engagement and outreach to diverse groups.

On the one hand, libraries face rising expectations to act as democratic public sphere actors by combating misinformation, facilitating social inclusion, and responding to societal crises; on the other hand, archives and recordkeeping functions are increasingly tied to transparency, accountability, and good governance through digitization and the growing use of artificial intelligence (AI). In this context of expanding professional responsibility, IS education must adapt in ways that both preserve established competencies and prepare graduates for new challenges and evolving professional roles. This article situates the findings of a survey of IS students in Iceland within broader international discussions on the future of IS education. Smaller professional communities, such as Iceland, face distinctive pressures: how can relatively small programs meet expanding competency demands with limited resources?

Study aim and research questions

This article examines graduates' survey-based evaluations of master's-level Information Science programs–Information Behavior and Information Management–to inform curriculum development in Icelandic IS education and contribute to broader discussions of Nordic LIS education. While prior research has examined employer expectations, practitioner perspectives, and program-level strategies, graduates' self-assessments remain underexplored within Nordic and broader international contexts. Drawing on a formative program evaluation, this study asks:

RQ1: How do graduates evaluate the IS programs, and in which areas do they identify gaps or limitations?
RQ2: How do graduates perceive changes in their work and their ability to manage evolving and expanding professional demands?
RQ3: How do graduates assess their career expectations, professional readiness, and overall job satisfaction?

While grounded in the Icelandic context, this study contributes to Nordic LIS education research by foregrounding graduates' perspectives. The findings offer insights for LIS educators, program leaders, and policymakers concerned with curriculum development, professional readiness, and the strategic use of international collaboration under contemporary capacity and resource pressures. By presenting the Icelandic case, the article seeks to contribute to the identification of shared challenges and potential solutions.

Literature review

This literature review examines how evolving professional roles and competencies, emerging technologies, and pedagogical challenges are reshaping Information Science education and practice across libraries, archives, and records management. It focuses on how technological disruption and evolving professional expectations generate new demands on curricula, professional identity, and preparedness, providing the context for analyzing graduates' evaluations of IS education.

Evolving professional competencies

The breadth of professional trajectories associated with Information Science education is evident in recent accounts of practice. St. Jean et al. (2021) describe career pathways ranging from children's librarianship to roles such as data scientist and software design analyst, illustrating how IS degrees may lead to markedly different occupational contexts. This diversity highlights both the flexibility of IS education and the challenge of designing curricula capable of preparing graduates for highly diverse professional roles.

At the same time, the competencies required of IS professionals are rapidly evolving and expanding, driven by technological, institutional, and societal change. Johnston et al. (2022) show that while

traditional functions such as cataloguing, reference services, and collection development remain important within the library sector, librarians' roles increasingly extend to include digital competencies and socially oriented work related to access, mediation, and support for the public sphere. Söderholm and Nolin (2015) theorize that this expanded competency demand has resulted from environmental change processes they describe as the digital and social turns, through which libraries both expand their digital functions and assume broader social and community roles. These shifts place new demands on IS education to prepare graduates for professional practices that extend beyond traditional collection-centered work.

These developments are also reflected in professional identity research. Public librarians tend to define their roles through interaction with people (e.g., counselor, mediator) rather than primarily through collection management, whereas archivists emphasize document-centered roles (e.g., documentalist, researcher, case worker) and typically do not adopt socially oriented identities such as youth worker (Khosrowjerdi et al., 2024). These distinctions are embedded within practical conditions of work, particularly in records and information management, where professionals in both private and public organizations are expected to respond to rapid technological change while meeting service requirements, quality standards, and legal obligations, often layering multiple roles (e.g. organizer, trainer, manager) (Haraldsdottir & Gunnlaugsdottir, 2017). Together, these studies provide important context for understanding the expanding and sometimes competing expectations that IS graduates encounter in professional practice.

International and European frameworks for media, information, and digital literacies provide an important policy backdrop for Information Science education, highlighting the growing demand for professionals equipped to support digital participation, critical information practices, and inclusion. UNESCO's *Global Standards for Media and Information Literacy Curricula Development Guidelines* (2019) conceptualize media and information literacy as a shared responsibility across communication and information institutions—such as ministries, educators, media organizations, libraries, digital platforms, and NGOs—while the *Global Media and Information Literacy Assessment Framework* (2013, updated in 2024) situates libraries within national media and information literacy (MIL) ecosystems, underscoring the relevance of MIL for Information Science education. At the European level, the European Commission's DigComp framework provides a shared reference model for digital competence aimed at ensuring digitally literate citizens (Vuorikari, Kluzer & Punie, 2022). Importantly, EU-funded library development initiatives such as NIAGARA (NIAGARAGrant, 2025) and BALTIC Urban Knowledge Hubs (Johnston et al., 2025) demonstrate how resources are being strategically directed toward libraries and other information-providing institutions to strengthen digital competencies and promote social inclusion. Together, these investments reinforce the need for IS education to develop digital competence and system-level understanding, including preparedness for information systems, AI, and data governance—while recognizing the social dimensions of digital engagement.

Workplace requirements for IS professionals

Studies of the labor market further illustrate how workplace expectations for IS professionals have expanded. In a national, systematic analysis of Norwegian job advertisements for library positions, Gjestrum, Tallerås, and Tveit (2018) found increased emphasis on ICT and communication skills, alongside growing openness to candidates with educational backgrounds outside traditional LIS, such as pedagogy, cultural studies, or ICT. While core library competencies, including cataloguing and collection development, remained visible, they were frequently listed alongside responsibilities related to event coordination, teaching, networking, and community collaboration, indicating a broadening of the traditional generalist librarian profile toward more expanded roles.

This diversification of competencies is not limited to libraries. In the records and archives domain, Kjerúlf (2022) analyzed 42 advertisements for recordkeeping vacancies in Iceland (2017–2021)—a context shaped by professional standards and practices as known with European and Nordic traditions—and conducted interviews with ten successful applicants. The advertisements generally required a university degree in Information Science, with additional qualifications in areas such as quality management, project management, public administration, computer science, or history. Most positions also required prior experience, often three years. Only nine of the 42 advertisements specified more than general IT skills. However, interviews revealed that actual IT and digital development responsibilities extended well beyond what was advertised, with hired professionals

playing active roles in digitization processes despite managers often being unaware of their full skill sets at the point of recruitment.

Taken together, these studies highlight how expanding and often under-signaled workplace requirements position IS professionals in increasingly complex roles that extend beyond operational tasks and toward broader organizational and institutional responsibilities.

Information governance, data science, and emerging roles

Related discussions have emerged in recent examinations of data-driven change and its influence on information science and the information professions. Digital transformation further intensifies technological demands in the field, particularly in relation to governance, infrastructure, and accountability. Brooks (2019) documents how the rise of information governance (IG) is variously framed as an opportunity, replacement, or rebranding of information and records management. Across these positions, IG frequently functions as an umbrella under which records management operates, emphasizing cross-disciplinary collaboration with IT, law, compliance, and risk management for the future development of the profession. Within this context, Nesmith (2023) examines the risks of entrusting public archival infrastructure to commercial cloud providers, arguing that power imbalances between technology companies and public institutions may undermine democratic access, long-term preservation, and public control over critical information infrastructures.

Specialized and emerging roles further expand the competency landscape. Health information professionals are shifting from passive provision to embedded collaboration in evidence-based medicine (Ma, Stahl, & Knotts, 2018). Studies call for stronger integration of Digital Humanities (DH) within IS curricula, noting overlaps in digitization, text mining, and curation, while also observing that many practitioners acquire DH skills on the job (Kamińska, 2021; Sula & Berger, 2023). Other strands emphasize preparedness and resilience, with calls to prepare graduates as "disaster-ready" professionals (Tu-Keefner, Hobbs & Lyons, 2025) and to ensure continued ICT upskilling in diverse contexts (Enakrire, 2019). Governance, legal literacy, and international collaboration add further layers to this evolving picture. Copyright literacy is increasingly positioned as an integral part of digital and media literacy, requiring stronger integration into both initial and continuing professional development (Todorova, 2020). Yet, Oliver (2023) warns that in an era of data ubiquity, IS risks ceding ground to adjacent professions without stronger engagement with data governance and analytic competencies. Furthermore, while data science competencies are increasingly positioned as essential within IS education, Mojjada (2025) highlights persistent challenges related to curriculum saturation, uneven faculty expertise, and institutional capacity, pointing to the need for interdisciplinary collaboration and targeted professional development.

Pedagogical Challenges and Global Contexts

Pedagogical critiques highlight risks within LIS education related to fragmented competency development. Goulding and Li (2023) characterize "inglorious pedagogy" as a pattern in which hidden curricula, conflict avoidance, and over-teaching coexist, resulting in students being exposed to a growing number of disconnected competencies without sufficient opportunities for reflection, integration, or professional identity formation. Rather than supporting socially engaged and confident professionals, such conditions risk producing uncertainty about professional roles and expectations. Across this literature, a recurring concern is how LIS programs can balance breadth and specialization while adopting pedagogical approaches that foster coherence, confidence, and collaboration.

Taken together, this literature illustrates evolving professional competencies, structural challenges in the information landscape, emerging governance and specialized roles, and pedagogical tensions across IS domains. Yet little is known about how students and recent graduates themselves evaluate their preparedness within such changing conditions. This study addresses that gap by analyzing survey data from Icelandic IS graduates, situating their perspectives within international debates and the challenges faced by resource-constrained Information Science education programs.

The Icelandic context and information science education

Iceland positions itself as a digitally advanced society, ranking fifth in the United Nations E-Government Development Index (United Nations, 2024). National strategies for digital public services emphasize governance, security, accessibility, and the role of the Icelandic language in the digital environment, alongside goals related to competitiveness, participation, and sustainability (Digital

Iceland, n.d.; Haraldsdóttir, 2023). These ambitions place significant expectations on higher education institutions to educate information professionals capable of supporting digital infrastructures, democratic access to information, and trustworthy public services.

Within this context, the University of Iceland plays a central role in educating information professionals. The university enrolls approximately 14,500 students annually, including around 3,700 graduate students, with roughly 3,500 new enrollments each year (University of Iceland, n.d.). Information Science has been offered exclusively at the graduate level since 2014, reflecting both the professionalization of the field and the strategic concentration of resources at the master's level. Graduate education is delivered through two 120-ECTS master's programs: Information Management, with a focus on organizational information systems, recordkeeping, and archives, and Information Behavior, which emphasizes user-centered approaches to information seeking, libraries, and mediation. The programs share a common core in knowledge organization, information retrieval, web management, and research methods. A list of courses is provided in Appendix A.

The Information Science programs enroll, on average, approximately 80 students across cohorts, with annual intakes typically totaling 30–40 students across the master's and micro-credential pathways. Teaching is delivered primarily online to ensure national access. Over the period 2021–2024, 32 master's theses were deposited in the national repository, providing an indication of the number of newly qualified graduates entering—or continuing within—the professional workforce during the period studied.

The student population is characterized by a relatively high average age and substantial professional experience. Among graduates from 2021–2024, the average age at graduation was 47 years, with ages ranging from 26 to 61. Many students were already employed in libraries, archives, or information-related roles before enrollment and pursued their studies part-time alongside full-time work, often extending coursework and thesis completion beyond the nominal two-year timeframe. This profile is significant for interpreting graduates' evaluations of preparedness, as formal education frequently complements existing workplace practice rather than functioning solely as initial professional entry training.

The program offers a total of 13 courses (6–8 ECTS each), including a shared core, bound electives (e.g., qualitative or quantitative research methods), and electives linked to specialization pathways. Practical elements are incorporated through internships, applied assignments, and observational fieldwork, although opportunities for extensive practice-based learning are constrained by course availability and staffing. Earlier analyses of the program's development note that long-standing funding limitations have restricted faculty capacity and course diversity (Pálsdóttir & Gunnlaugsdóttir, 2014), a challenge that continues to shape curriculum design despite evolving professional demands. As the University of Iceland effectively supplies the majority of formally educated information professionals in the country, graduates' perspectives provide an especially informative lens on how Information Science education responds to changing professional expectations. The cohort characteristics outlined above—small intakes, experienced students, part-time study patterns, and limited curricular breadth—are therefore not incidental but central to understanding how graduates assess program strengths, identify gaps, and evaluate their readiness for evolving professional roles. Against this backdrop, the following section outlines the study design, survey instrument, and analytical approach used to capture graduates' evaluations of their education and professional preparedness.

Methods

This study employed a mixed-methods survey to capture the perspectives of Information Science graduates in Iceland. The survey was designed as a formative program evaluation to identify areas of strength and deficit in the two master's-level programs: Information Behavior (library studies specialization) and Information Management (records and archives specialization).

Survey design

The questionnaire was developed in consultation with a statistical expert and refined through several iterations. It was originally formulated in Icelandic and translated into English for analysis and dissemination. Questions combined closed, Likert-scale, and open-ended formats to balance comparability with opportunities for elaboration. Five of the main questions were semi-open, and

three were fully open, enabling respondents to describe experiences in their own words. This "mixed methods light" approach (Creswell & Plano Clark, 2018) allowed qualitative comments to contextualize and deepen the quantitative findings.

The questionnaire gathered information across four areas. First, it collected demographic and background data such as age, gender, degree specialization, job title, and workplace type. Second, respondents were asked to evaluate their studies at the University of Iceland, including the relevance of coursework, adequacy of supervision, and usefulness of skills training. Third, questions focused on professional development, probing graduates' ability to adapt to workplace changes, opportunities for continuing education, and the support they received from colleagues and managers. Finally, the survey explored professional outcomes, including job satisfaction, perceptions of being valued for their expertise, career expectations, and confidence in meeting workplace requirements.

Sampling and distribution

The survey link was distributed through listservs from national professional associations: Upplýsing – Félag bókasafns- og upplýsingafræða (Association of Library and Information Science - LIS) and Félag um upplýsingastjórnun (Association of Records/Information Management - IRMA). Association membership was used as a pragmatic proxy for program orientation; this does not map perfectly onto track for all respondents (e.g., dual memberships). Reminders were posted on closed social media channels of the associations. Participation was voluntary and anonymous.

Respondents

In total, 135 responses were collected between October and November 2024, of which 55 were from respondents who had completed a master's degree (40.7%). For this article, the analysis was restricted to responding graduates from 2021 to 2024 (n = 20) to ensure relevance to the current program structure and to capture graduates' most recent experiences of entering and working in the information profession amid ongoing digitization, automation, and system change. Respondents represented both program specializations as 11 were members of the Records and Information Management Association (IRMA), 7 were from the Library and Information Association (LIS), while two were members of both associations.

Demographically, participants spanned a wide age range. Most respondents were aged 41–50 (32.6%) or 51–60 (36.3%), while younger participants constituted a smaller proportion (16.3%). This age distribution aligns with institutional data previously given regarding graduates from 2021–2024, indicating an average age at graduation of 47 years, with ages ranging from 26 to 61.

Most respondents were employed at the time of the survey, primarily in public libraries, archives, and government agencies as records managers, with smaller numbers in the private sector. Years of professional experience varied: some respondents entered the programs directly from undergraduate studies, while others had a decade or more of prior work experience in the field. Gender distribution reflected the broader LIS workforce, with a clear majority of women respondents (88.8%).

Data analysis

Closed and Likert-scale questions were analyzed descriptively, with frequencies and percentages used to highlight patterns across the two program tracks. Open and semi-open responses were coded thematically by both authors. Coding emphasized recurring themes related to perceived preparedness, gaps in training, adaptation to workplace change, and career satisfaction. Representative quotations were translated into English and used to illustrate findings.

Findings and discussion

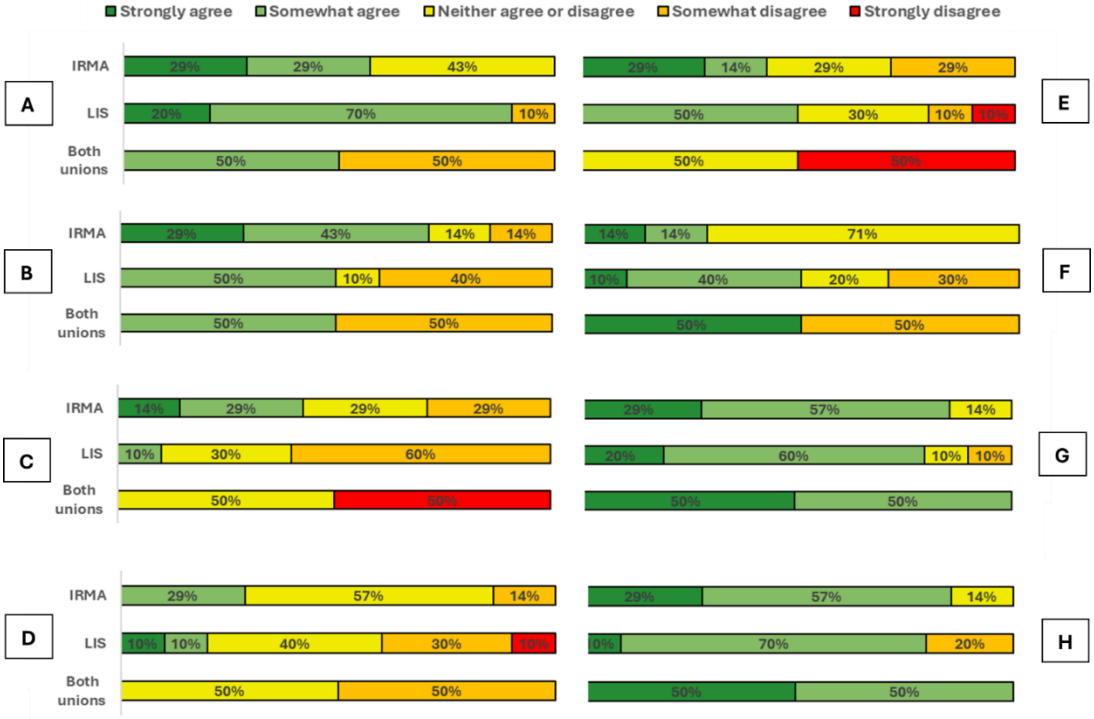
The presentation of results in this section follows Braun and Clarke's (2025) guidelines for narrating qualitative and mixed-methods findings. Their framework emphasizes integrating interpretation and links to literature and theory directly within the analysis, rather than separating these elements into a distinct discussion section. Accordingly, the survey data are organized around the research questions and presented alongside thematic insights, contextualized through relevant scholarship and policy debates. This structure allows the findings to be situated immediately within both international and Icelandic discussions of IS education and professional competencies.

RQ1: program structure and curriculum experience

The first research question focuses on how graduates assessed the IS programs and in which areas they felt the programs could be improved. Figure 1 presents selected survey variables, displaying responses to eight survey questions using a stacked format ranging from dark green (strong agreement) to red (strong disagreement). The answers are also divided into groups by associations, IRMA for those specializing in records management and archiving, and LIS for those specializing in information behavior and libraries. The questions in Figure 1 are the following:

A) My experience of the organization of the studies in information science is good
B) In my studies in information science, a wide range of elective courses were offered
C) In my studies in information science, practical training in the use of information systems was adequate
D) In my studies in information science, a wide range of practical fieldwork was offered
E) In my studies in information science, I was able to specialize in my field of interest within information science
F) The selection and number of guest teachers (external experts) involved in information science studies were reasonable
G) I believe that information science courses have provided me with adequate theoretical knowledge for work in my field of expertise
H) I believe that information science courses have provided me with adequate practical skills for work in my field of expertise

Figure 1. The assessment of graduates in 2021-2024 on their LIS program at the University of Iceland.



Graduates overall viewed the organization of their studies positively, yet several aspects of the curriculum revealed notable gaps. The range of elective courses was judged to be more limited among LIS graduates, pointing to constrained opportunities for breadth and specialization. As one respondent noted, there is a need for "*more varied electives, for example, in school librarianship*." Still, an IRMA graduate criticized the organization of the program saying that she *"would have liked to have much greater specialization in that field [records management], and courses related to library science should be elective rather than mandatory, as it was not [her] preferred area".* She explained her criticism by explaining that studying both tracks was appropriate for a bachelor's degree, but for a master's degree, more specialization in a single area was needed. Her comments add to the literature on over-teaching (Goulding & Li, 2023) and curriculum overload (Mojjada, 2025). The question remains whether future information professionals should graduate with a diverse set of skills

and expertise in the field, or alternatively, if such a broad range of options becomes less effective if it results in a lack of reflective capacity to integrate their numerous competencies.

Practical training in information systems was consistently rated poorly across both tracks—especially among LIS graduates—while practical fieldwork opportunities were somewhat better, particularly for LIS, but still received lukewarm responses. Qualitative comments reinforced these survey findings, with one graduate stressing that "*the program should place more emphasis on fieldwork. Fieldwork should be compulsory, not optional,*" and another calling for a "*stronger connection to the labor market and more opportunities to work on projects that are useful in the workplace.*" These calls for increased project-based learning may reflect a desire for experience with socially embedded professional activities—such as collaboration, facilitation, and community-oriented work—often central to contemporary library services and consistent with accounts of a "social turn" in the profession (Söderholm & Nolin, 2015). For IRMA graduates, applied learning needs also intersect with records management research showing that digital responsibilities can be understated in recruitment materials even though professionals are expected to take leading roles in digitization once employed (Kjerúlf, 2022), a pattern consistent with "digital turn" pressures (Söderholm & Nolin, 2015).

Accordingly, digital preparedness was a recurring theme. Respondents highlighted the need for "*more exposure to information systems*" and greater attention to "*the changing information technology environment, artificial intelligence, [and] programming*." These concerns resonate with research on hybrid professional roles, where information professionals are expected to combine traditional expertise with technological, communicative, and evaluative competencies (Gjestrum, Tallerås & Tveit, 2018; Johnston et al., 2022). They also align with policy frameworks that position libraries and other information-providing institutions as key actors in supporting digital and information literacies within broader national ecosystems (UNESCO, 2013, 2019).

At the same time, both programs were widely regarded as providing strong theoretical grounding and adequate core practical skills, underscoring the robustness of the shared curriculum. The primary challenges identified by graduates thus relate less to missing fundamentals than to limited elective options, uneven opportunities for specialization, and inconsistent provision of applied learning, including fieldwork, project-based activities, and engagement with external expertise. These findings echo earlier analyses of the structural constraints shaping IS education in Iceland. Pálsdóttir and Gunnlaugsdóttir (2014) noted that faculty shortages and limited resources restricted curricular breadth and specialization, and the present findings suggest that these constraints continue to influence graduate experiences.

In summary, while graduates viewed the IS programs as well-organized and grounded in strong theoretical foundations, three interrelated gaps were consistently identified: (1) limited elective offerings, constraining opportunities for specialization; (2) uneven access to practice-based and project-oriented learning linked to professional contexts; and (3) variable experiences with guest teaching and external expertise. Addressing these issues—particularly through a more coherent integration of electives and applied learning—appears central to strengthening graduate preparedness for evolving and increasingly hybrid professional roles.

RQ2: Competencies and adaptability

The second research question examines how graduates perceive changes in their work and how well their studies prepared them to manage evolving and expanding professional demands. Figure 2 presents seven survey items through which graduates assessed how well their studies equipped them with competencies relevant to managing change and development in their work environment. Responses are grouped by professional association, as in Figure 1. Together, these items allow us to examine how graduates position digital transformation—such as new information systems, increased digitization, and emerging expectations related to data governance and artificial intelligence—in relation to their perceived readiness for coordination, implementation, and organizational oversight. The questions in Figure 2 are as follows:

A) I can make professional decisions based on the knowledge I gained from information science
B) I can make professional decisions based on a critical evaluation of subjects and circumstances
C) I can use my expertise in organizing, searching for, evaluating, analyzing, and disseminating information of any form

D) I can explain the different information systems related to information science
E) I can use different information systems related to Information Science
F) I can manage the implementation of different information systems in my workplace
G) I can connect my knowledge of information science to develop new projects in an interdisciplinary context

Figure 2. 2021-2024 IS graduates' assessment on how well their studies in information science equipped them with relevant competencies to manage changes and developments in their work environment.



Graduates expressed strong confidence in their ability to make professional decisions based on both the knowledge gained during their studies and their capacity for critical evaluation. Responses across both tracks were overwhelmingly positive, though a small minority of LIS graduates reported some uncertainty, pointing to room for strengthening reflective and evaluative dimensions of the curriculum.

Core competencies in information handling were particularly robust. Graduates consistently emphasized that they were able to organize, search for, evaluate, analyze, and disseminate information across formats. This finding reinforces the conclusion from RQ1 that the programs provide a solid theoretical and methodological foundation on which professional practice can be built.

Greater variation appeared around information systems. LIS graduates more often reported confidence in explaining and using systems, but IRMA graduates expressed more mixed views, while some strongly agreed on these statements, a small part were unsure (14%). This likely reflects the greater complexity of records and archives environments, where professionals must navigate diverse systems for classification, long-term preservation, and compliance. Graduates from this track were more confident in everyday use than in system-level responsibilities, with several noting that managing implementation in the workplace was a particular challenge. As one graduate commented, "*the program should be more practical [by] showing students the main systems used by institutions and organizations and providing stronger links to the National Archives.*" Another emphasized the importance of keeping pace with technological change, calling for more focus on subjects related to *"Information Governance, Artificial Intelligence, Risk Management, Information Privacy Management, and Data Management."*

These findings closely reflect patterns identified by Kjerúlf (2022), who demonstrated that digital and system-level responsibilities in records management were often understated during recruitment, even though professionals were expected to assume leading roles in digitization and system development once employed. The gap identified by graduates between core educational preparation and advanced digital responsibilities thus appears to mirror a broader structural mismatch between education, recruitment practices, and workplace expectations.

At the same time, graduates' calls for stronger preparation in information systems and AI can be situated within broader international discussions about how IS education addresses system-level and data-intensive competencies. Related debates in Digital Humanities highlight how skills in digitization, data curation, and computational methods are increasingly relevant across libraries, archives, and cultural heritage institutions, yet are often acquired informally or on the job rather than through formal curricula (Kamińska, 2021; Sula & Berger, 2023). From this perspective, the graduates' responses point less to a demand for specific technologies than to a wider challenge of integrating system- and data-oriented methods more coherently within Information Science education.

Despite these challenges, most graduates reported confidence in connecting their information science knowledge to interdisciplinary projects. This adaptability is particularly significant given the hybrid and cross-sectoral roles increasingly demanded of both librarians and records managers, where professionals are expected to collaborate across organizational, disciplinary, and institutional boundaries (Gjestrum et al., 2018; Oliver, 2023).

Taken together, the results suggest that the programs equip graduates with strong capacities for professional judgement, critical evaluation, and core information practices, while revealing persistent challenges in preparing them for complex digital roles, including system-level work, data governance, and adapting to emerging technologies such as artificial intelligence. These challenges echo wider discussions in records management and information governance, where gaps between educational preparation and workplace demands remain well documented (Brooks, 2019; Kjerúlf, 2022; Nesmith, 2023).

In summary, graduates primarily understood changes in their work as driven by digital transformation, including new information systems, digitization processes, and emerging expectations related to data governance and artificial intelligence. While they expressed strong confidence in adapting to change at the level of professional judgement and information practice, they were less consistently confident in leading or implementing system-level changes in organizational contexts. This suggests that IS education continues to provide a strong adaptive foundation, but that further curricular attention to system-level, governance-oriented, and data-intensive competencies is needed to support graduates in increasingly complex professional environments.

RQ3: Professional readiness and career satisfaction

The third research question sheds light on how the respondents of the survey assessed their professional readiness, career expectations, and overall job satisfaction. Their answers are made available in the following two figures. Figure 3 shows how the graduates evaluated their professional readiness after graduation, where the vast majority were either already employed (green) or prepared to apply for jobs in their fields (blue). Only 10% of LIS graduates had not found a job after finishing their studies (orange).

Figure 3. Overview of professional readiness of 2021-2024 IS graduates.

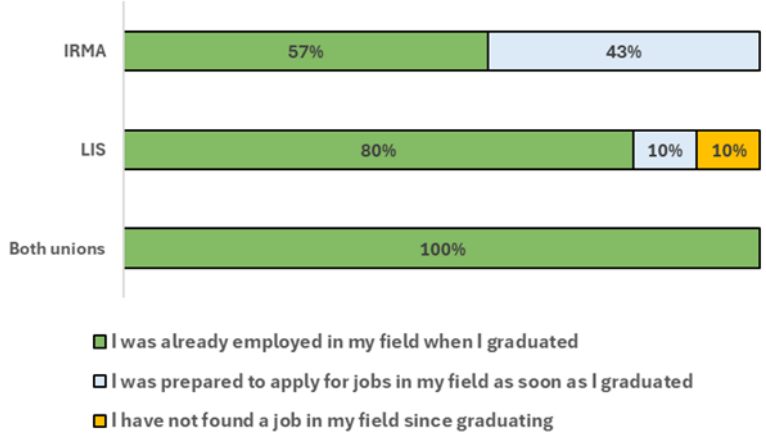
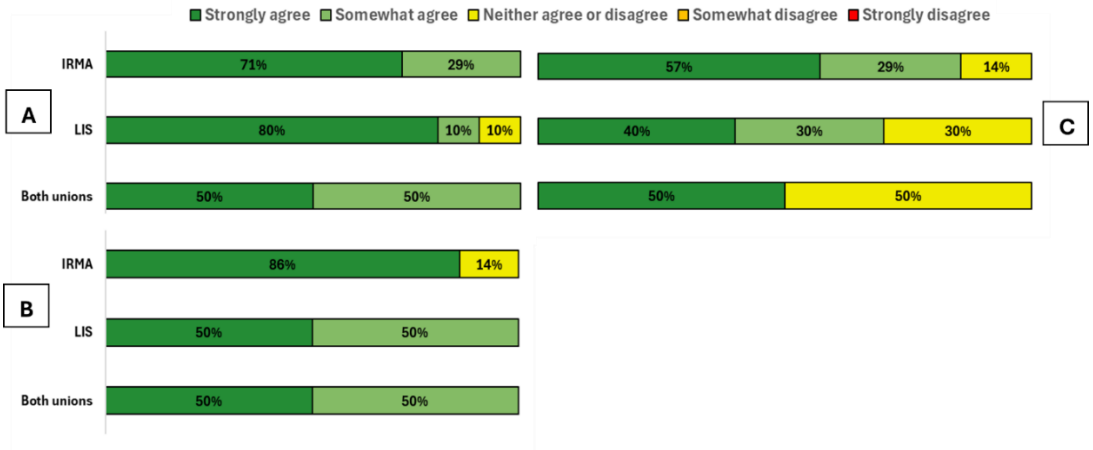


Figure 4 presents the second part of the third research question. It shows the results of three adjacent survey questions on the overall job satisfaction of respondents. The statements that the participants are answering are the following:

A. I enjoy my work
B. I feel proud of my knowledge and skills
C. I feel proud of my job

Figure 4. Overview of 2021-2024 IS graduates' overall job satisfaction.



Graduates generally reported high levels of professional readiness and job satisfaction, with most either already employed at graduation or feeling prepared to enter the labor market. Only a small minority of LIS graduates noted difficulties in securing positions. This indicates that, despite the limitations in electives and applied training highlighted under RQ1, the programs generally succeed in supporting professional transition and readiness for work.

Levels of job satisfaction were also high. Most graduates agreed that they enjoyed their work and felt proud of their knowledge and skills, underscoring the value they attach to the professional identity formed through their studies. This pattern aligns with Khosrowjerdi et al.'s (2024) distinction between internal professional identity—how professionals perceive their competence and purpose—and external recognition—how their expertise is acknowledged in organizational and societal contexts. While graduates expressed strong confidence in their own knowledge and skills, some uncertainty remained regarding digital preparedness and system-level recognition, suggesting that internal professional confidence may coexist with uneven external validation across sectors.

This also reflects Johnston et al. 's (2022) finding that librarians across Europe share a strong professional culture oriented toward inclusivity, engagement, and service, even as national contexts shape the scope of their roles. Likewise, in the discussion about rebranding or transforming records

management into information governance (IG), there is broad consensus on the complexities of the modern information landscape. What matters most is providing organizations with the support necessary to "manage, secure, access, and utilize their information in intricate digital environments across numerous locations" (Brooks, 2019, p. 14).

Overall, the findings from RQ3 suggest program graduates feel well-prepared and generally satisfied but still face challenges in digital readiness, which may impact their possibilities of achieving consistent recognition of their roles across sectors. These dynamics highlight the importance of curricular reform that not only strengthens digital and applied competencies but also articulates the value of IS expertise more clearly in national and international contexts. Although the survey did not ask graduates to articulate detailed long-term career trajectories, their high levels of professional readiness, employment, and job satisfaction indicate broadly positive career expectations, tempered by some uncertainty regarding digital preparedness and system-level recognition.

Conclusion

This study examined how recent graduates of the University of Iceland's master's-level Information Science programs assess their preparedness for professional roles amid expanding digital and social expectations. Overall, graduates reported strong confidence in professional judgement, critical evaluation, and core information-handling competencies, suggesting that the shared curriculum provides a robust theoretical foundation. At the same time, they identified persistent gaps in practice-based learning and uneven preparation for system-level responsibilities—particularly in relation to information systems, implementation work, and emerging demands associated with information governance and artificial intelligence.

These gaps are significant in light of European and international agendas that increasingly position information professionals as actors in digital transformation and trustworthy information infrastructures. In this sense, the Icelandic case illustrates a broader challenge faced by many Information Science programs: maintaining strong core preparation while more coherently integrating applied, system-oriented, and data-intensive competencies within limited curricular space and staffing capacity.

This study is limited by a small analytical sample (n = 20) and a voluntary, association-distributed survey design, which may over-represent engaged graduates. Association membership was used as a pragmatic proxy for program orientation, but it does not map perfectly onto the curricular track for all respondents (e.g., dual memberships). The findings should, therefore, be interpreted as indicative patterns rather than generalizable population estimates.

A sustainable path forward lies in strategic curriculum development and international collaboration. Strengthening practice-based learning and workplace-linked projects, increasing exposure to commonly used information systems, and clarifying preparation for system-level responsibilities would directly respond to the gaps identified by graduates. At the same time, closer collaboration with international partners—through shared courses, blended mobility formats, and curricular exchanges—can extend elective breadth, deepen specialization, and support alignment with evolving competence frameworks. While grounded in Iceland, the findings offer lessons of relevance to other small and mid-sized programs navigating similar tensions between curricular breadth, specialization, and expanding professional demands.

Call to Action

The tensions identified in the Icelandic case—strong core preparation alongside uneven applied and system-level readiness—are not unique to one program. For Information Science education providers operating with limited curricular flexibility, a realistic response is not continual curricular expansion but strategic program development and collaboration. Therefore, four practical directions are proposed. First, programs should treat practice-based learning as a designed pathway, not an optional add-on, by incorporating workplace-linked projects and fieldwork expectations consistently across the curriculum. Second, digital competence should be addressed at two levels: everyday tool use and system-level responsibility, including implementation, governance, and risk-aware decision-making. Third, elective breadth can be expanded through shared modules and co-taught courses across institutions, reducing the burden on any single program while strengthening specialization pathways. Finally, professional associations and employers should be engaged as curriculum partners to clarify

expectations around system work and to reduce the gap between recruitment signals and actual workplace responsibilities.

These actions align with broader European and international competence agendas and with emerging collaborative models in the field, including blended mobility formats and open educational resources. The wider implication is that small and mid-sized programs can remain academically coherent and professionally responsive when they shift from "coverage" to coordinated competence pathways, supported by sustained international partnerships.

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Appendix A
MIS Tracks – Comparative Course Structure

Category	Information and Records Management (RM)	Information Behavior (LIS)
Required (Core) **Number of ECTSs are visible in parentheses.**	**UPP215F** The Internet and Information Retrieval (8) **UPP113F** Library Operations: Management, Policymaking and Development (8) **UPP109F** Information Studies and Mediation in the Society of Diversity (8) **UPP112F** Organization of Knowledge (10) **UPP105F** Information and Records Management (8) **UPP110F** Web Management (8) **UPP220F** Data Protection and Information Security (6)	**UPP215F** The Internet and Information Retrieval (8) **UPP113F** Library Operations: Management, Policymaking and Development (8) **UPP109F** Information Studies and Mediation in the Society of Diversity (8) **UPP112F** Organization of Knowledge (10) **UPP105F** Information and Records Management (8) **UPP110F** Web Management (8) **UPP220F** Data Protection and Information Security (6) **UPP219F** Web Management and social media (6) **UPP223F** Knowledge Mediation (6) **UPP224F** Use of Information Technology in Professional Work (6) **UPP225F** Libraries Supporting Immigrant and Refugee Integration (6)

Methodology / Bound Electives	**FMÞ001F** Introduction to Quantitative Research (10) **FMÞ103F** Introduction to Qualitative Research (10) **UPP222F** Quality Management and Knowledge Management (6) **UPP221F** Information Technology in Practice (6)	**FMÞ001F** Introduction to Quantitative Research (10) **FMÞ103F** Introduction to Qualitative Research (10) **FÉL301F** Social Research Methods (10)
Free Electives	**UPP501F** Reading Course in Graduate Studies (10) **UPP005F** Practical Project (10) **UPP011F** Practical Project (5) **UPP010F** Practical Project (2) **IÐN101M** Quality Management (6) **HMM120F** Fundamentals in Web Communications (10) **UPP004F** Information and Cultural Institutions (6) **OSS111F** Public Administration (6) **OSS119F** Local Governance (6) **OSS202F** Public Management (6) **OSS204F** Administrative Law for Public Executives (6) **OSS201F** Strategic Planning for Public Organizations (6) **OSS102F** Public Human Resource Management (6) **TÖL502M** Human Computer Interaction (6) **FMÞ201F** Advanced Seminar in Qualitative Research (10) **UPP206F** The National and University Library: Functions, Activities and Services (2) **UPP208F** Seminar in Writing Master's Theses (2) **UPP008F** Practical Training I (2) **UPP009F** Practical Training II (2)	**UPP501F** Reading Course in Graduate Studies (10) **UPP005F** Practical Project (10) **UPP011F** Practical Project (5) **UPP010F** Practical Project (2) **IÐN101M** Quality Management (6) **HMM120F** Fundamentals in Web Communications (10) **UPP004F** Information and Cultural Institutions (6) **OSS111F** Public Administration (6) **OSS119F** Local Governance (6) **OSS202F** Public Management (6) **OSS204F** Administrative Law for Public Executives (6) **OSS201F** Strategic Planning for Public Organizations (6) **TÖL502M** Human Computer Interaction (6) **FMÞ201F** Advanced Seminar in Qualitative Research (10) **UPP206F** The National and University Library: Functions, Activities and Services (2) **UPP208F** Seminar in Writing Master's Theses (2) **UPP008F** Practical Training I (2) **UPP009F** Practical Training II (2)

Thesis	**UPP442L** MIS Thesis in Information Science (30)	**UPP442L** MIS Thesis in Information Science (30)

Note: BV = Bound Electives. Students must select from these options as part of the degree requirements.