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Designing a Model Curriculum for a Japanese Institutional Research Human Resource Development Program

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ABSTRACT

This study proposes a model curriculum for institutional research (IR) human resource development programs in Japan. To achieve this, the study first integrated three information sources: (1) a meta-review of prior survey data identifying the knowledge and skills most in demand among Japanese IR professionals, (2) a classification of courses in U.S. IR certificate programs to identify common curricular structures, and (3) an analysis of qualitative data collected at a workshop for Japanese IR practitioners. This integration extracted commonalities and Japanese-specific characteristics. Next, drawing on Terenzini's (1993) "Three Tiers of Organizational Intelligence," Howard-McLaughlin's (1998) "Information Support Circle," and considering Andragogy theory and Japanese employment practices, we developed a proposed Japanese IR model curriculum. The model curriculum established three essential courses for all learners: "Introduction to IR/IE," "Data Ethics & Research Ethics," and "Research Methods & Survey Methods." Courses such as "Fundamentals of Higher Education" and "Data Utilization Skills" were designated as electives, considering the characteristics of Japanese IR personnel resources and the Andragogy concept of "Self-concept." Furthermore, recognizing that program participants are adults, it was determined that the "General Skills" necessary for IR should be developed through real-world problem-solving and interactive learning methods. Additionally, this model curriculum is intended to guide learners through a structured sequence of skills, paralleling those included in Tier 1: Technical/Analytical Intelligence of the "Three Tiers of Organizational Intelligence." Furthermore, within the "Information Support Circle" IR activity model, it signifies that learning elements related to communication and data utilization skills are crucial in the processes connecting the roles of Broker and Custodian. The next challenge is to further review this model curriculum and connect it to actual program development.

Keywords: Institutional Research, Human Resource Development, Model Core Curriculum

1. Introduction

In recent years, institutional research (IR) offices have been established in Japanese universities. According to a survey by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT), “the number of universities with offices dedicated to university-wide IR” increased from 7% (56 universities) in FY 2011 to 53% (412 universities) in FY 2022 (MEXT, n.d.). Simultaneously, the number of faculty and staff members responsible for IR has increased over the past 10 years.

In response to the growing need for skill enhancement and career development among IR personnel, there has been an increase in the number of short-term training programs and program development for IR personnel in Japan (Iseri et al., 2023). The latter was developed by two universities (Institute of Science Tokyo and Yamagata University) starting in 2019 as a one-semester IR personnel training program (Iseri et al., 2025).

However, IR in Japan is still in its infancy and training opportunities are not yet well developed. The two aforementioned programs are still undergoing the replacement of instructors and periodic program reviews to examine their educational content. In this program review, an attempt is required to examine the appropriateness of the program based on the current status of IR in Japan and overseas; however, such evidence has not yet been found.

The purpose of this study is to examine a model curriculum for an IR human resource development program (hereinafter referred to as “IR program”) in Japan. The results of this study are expected not only to evaluate the validity of Japan's current IR programs but also to serve as reference material for the development of future IR programs in various countries.

Furthermore, this study establishes the following research framework for this purpose. First, commonalities will be extracted based on three quantitative and qualitative information sources: (1) A meta-review of the knowledge/skills in Japanese previous surveys of IR practitioners, (2) Classification of courses in the U.S. IR certificate program, and (3) Analysis of qualitative data on IR programs collected at a workshop for IR practitioners. Next, we examine Japanese IR programs by comparing these findings with Japanese Human Resource systems for IR personnel, Terenzini's (1993) “Three Tiers of Organizational Intelligence” (hereinafter referred to as “three intelligences”), and Howard-McLaughlin's (1998) “Information Support Circle” (hereinafter referred to as “ISC”). The characteristics of Japanese IR personnel management are twofold. First, rather than hiring new IR specialists, it is common to appoint existing faculty or staff members within the institution as IR officers. In such cases, due to differences in prior work experience, the strengths of IR officers in the aforementioned three intelligences vary significantly. This necessitates careful consideration of the differing prerequisites for what they need to learn. Second, learners are almost exclusively working adults. Learning must be designed to reflect characteristics of adult learning theory (Malcolm et al., 2012), such as “Self-concept,” “Adult learner experience,” and “Orientation to learning.” It should leverage individual experiences, be self-directed, and lead to problem-solving oriented learning. The framework for this study, based on the above, is shown in Figure 1.

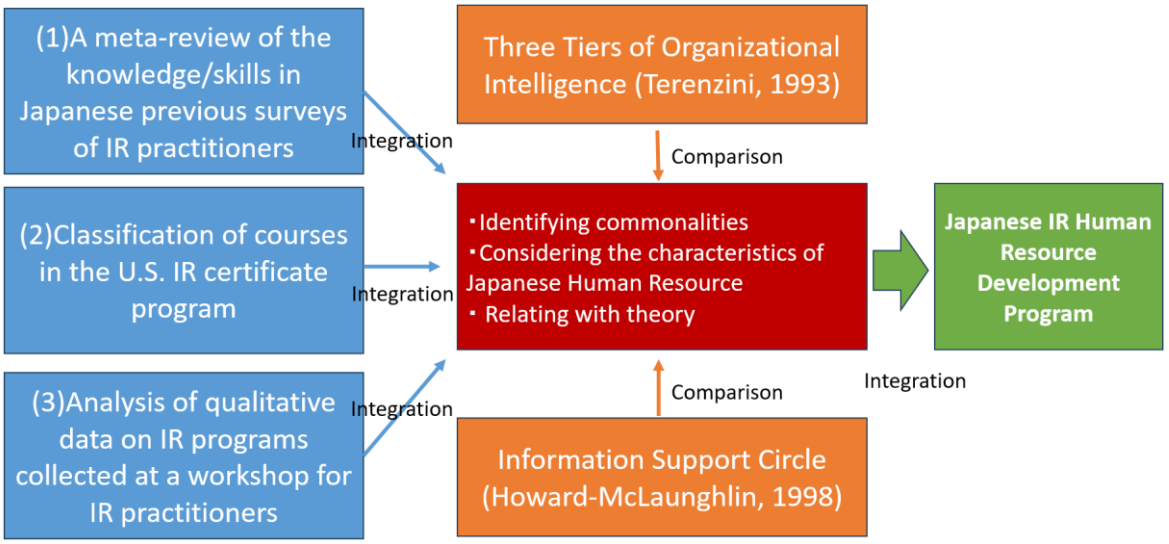

Figure 1: A framework for developing a model curriculum (Source: Author).

2. Methods of Three Sources

A meta-review of the knowledge/skills in Japanese previous surveys of IR practitioners

We conducted a meta-review of knowledge and skill items from past questionnaire surveys targeting IR professionals in Japan. First, we identified 21 IR-related surveys (2005–2024) by searching for the keyword “Institutional Research” in Japan's academic paper search database “CiNii Research.” We then excluded 15 surveys targeting IR offices and focused on 6 targeting individual practitioners: of these, 4 included knowledge/skill items. Because two were conducted by the same researcher at multiple time points using a rubric-based measure, we referenced only the most recent in each series to avoid duplication. Additionally, 3 selected studies were multi-investigator projects funded by Japan's Grant-in-Aid for Scientific Research (KAKENHI), involving numerous IR researchers beyond the respective authors. Ultimately, three surveys became the subject of the meta-review. Subsequently, the knowledge and skill items asked for in each survey were listed. The first author grouped those considered to fit into common categories, and the other authors reviewed their validity to finalize the content.

Classification of courses in the U.S. IR certificate program

Ten post-bachelor’s level certificate programs were selected from “Graduate Certificate Programs” introduced on the website of the Association for Institutional Research (AIR). The final reference date on each program's website was June 15, 2025. Programs regarded as not IR-focused, those at the doctoral or master’s level, those that were no longer accepting applications, and those for which the links were broken and information was only available several years ago were excluded. Consequently, we obtained the 10 programs mentioned above.

Information on these 10 programs is summarized in Table 1 by using an updated version of Fujiwara’s (2015) classification framework, which had been applied to compare U.S. IR certificate programs. While Fujiwara (2015) classified them into four areas, based on the first author's classification and validity checks by other authors, this study classified them into six.

Analysis of qualitative data on IR programs collected at a workshop for IR practitioners

First, on November 9, 2024, we held a workshop titled, “Let’s think about the model core curriculum of the Japanese IR program.” A total of 38 IR personnel completed a worksheet asking them to (a) state what knowledge and skills they think should be cultivated in IR programs, (b) briefly describe the goals of the knowledge and skills mentioned above, and (c) briefly describe the learning content and ideas for learning methods that they think are necessary for the program to develop the knowledge and skills mentioned above. In asking students to consider (b) and (c), we made the prerequisite that “the primary target audience for the program should be novice IR professionals with less than one year of IR work experience.”

A qualitative analysis of the textual data was then conducted. First, the knowledge and skill items in (a) were classified by the authors, and 17 knowledge and skill categories were extracted. We then organized the descriptions in (b) and (c) by category and extracted representative descriptions for each category. Note that for these tasks, one of the first to third authors initially drafted the outline, after which the other authors reviewed its validity.

However, we would like to note a limitation of this sample. This workshop was held exclusively in person as one session within the Meeting on Japanese Institutional Research, a conference gathering Japanese IR researchers and practitioners. The 38 participants were those who had the opportunity to present or attend at this conference. Approximately 60% of participants were faculty, while 40% were staff members. About 40% had over five years of IR practice experience, and roughly 70% had over three years.

3. Results

A meta-review of the knowledge/skills

Table 1 shows the results of the meta-review of knowledge and skills items from previous surveys of IR professionals in Japan. The items were categorized as the Main Category.

Consequently, the items in the Main Category, “Generic Skills,” “Knowledge of University Management & Organization,” “Knowledge of Higher Education & Policy,” “Research Theory & Methods,” and “Knowledge of Higher Education & Policy,” were categorized under the Main Category. The eight main categories were “Generic Skills,” “Knowledge of University Management & Organization,” “Knowledge of Higher Education & Policy,” “Research Theory & Methods,” “Data Collection & Management,” “Basic Data Aggregation & Visualization,” “Basic & Applied Statistics,” “Basic & Applied ICT Knowledge,” “Use of Statistical Software,” and “Specialized IR Topics”, which were surveyed as necessary.

The responses to these questions were also noteworthy. Because the trends are almost the same in each survey, we report only the results of Iseri and Matsumoto’s (2023) survey, which is the most recent and has the largest sample size of IR personnel. Figure 2 shows only the items for which the percentage of “Necessary” responses was 50% or more in the knowledge and skill questions. From here, for example, “Teaching and research aspects of own institution” and “Organizational and managerial aspects of their institution,” which correspond to the “Knowledge of University Management & Organization” in Table 1, were ranked in the top 10. The survey results show that “Teaching and research aspects of own institution” and “Organizational and managerial aspects of their institution,” which correspond to the

"Knowledge of University Management & Organization" in Table 1, are the top-ranking categories and are recognized as highly necessary.

Table 1: Knowledge and skill items in a questionnaire survey of Japanese IR professionals (Source: Author).

Main Category	Iseri & Matsumoto (2023)	Oishi (2021) (Created based on the "Seminar Topic" you would like to attend) *	Shimada and Ohno (2022) (Rubric for each element for IR personnel)
Generic Skills	● Presentation skills ● Documentation skills ● Capability to recommend improvements ● Interpersonal negotiation skills	● Data reporting ● Reporting techniques ● Process improvement ● Communication skills ● Project management	● Presentation skills ● Reporting ● Information dissemination
Knowledge of University Management & Organization	● Knowledge of teaching & research at one's institution ● Knowledge of organization & management at one's institution	● University management ● IR organization ● Decision-making	● Hypothesis translation & issue structuring ● Identifying university-management issues ● Client/stakeholder decision-making mechanisms ● University administration at one's institution
Knowledge of Higher Education & Policy	● Knowledge of higher education ● Knowledge of higher-education policy ● Knowledge of other higher-education institutions	● Higher education	● Terminology & definitions in higher education ● Policies & trends in higher education
Research Theory & Methods	● Knowledge & skills in survey design ● Knowledge & skills in qualitative research/qualitative surveys ● Data ethics	● Student surveys ● Research question(s)	● Survey design ● Analytical & methodological skills
Data Collection & Management	● Knowledge & skills in data-analytics infrastructure ● Knowledge & skills in databases ● Knowledge & skills in Extract/Transform/Load tools	● Data collection ● Data restructuring/wrangling ● Data warehouse ● ETL tools ● Database	● Source/data identification & collection ● ICT skills (for data collection) ● Storage & reuse

Basic Data Aggregation & Visualization	● Knowledge & skills in data aggregation & descriptive statistics ● Knowledge & skills in data visualization ● Knowledge & skills in spreadsheets (Excel, Google Sheets, etc.) ● Knowledge & skills in BI tools (Tableau, Power BI, etc.)	● Visualization ● Excel ● Tableau	● Aggregation/tabulation ● Visualization
Basic & Applied Statistics	● Knowledge & skills in inferential statistics (statistical testing, etc.) ● Knowledge & skills in advanced statistical methods (machine learning, causal inference, time-series analysis, etc.)	● Statistics	● Analysis ● Statistical skills
Basic & Applied ICT Knowledge	● ICT literacy	● Information technology ● Software development ● Digital transformation (DX) ● Data security ● Network security	● ICT skills
Use of Statistical Software	● Knowledge & skills in statistical software (SPSS, Stata, etc.) ● Knowledge & skills in programming (R, Python, etc.)	● R ● Python	
Specialized IR Topics	● Bibliometrics ● Academic advising ● Instructional design	● Educational data analysis ● Research data analysis ● Financial data analysis ● University evaluation ● Dropout prevention	

* Some items have been omitted because their levels of detail differ substantially.
Note: The table groups similar items from different sources in each main category.

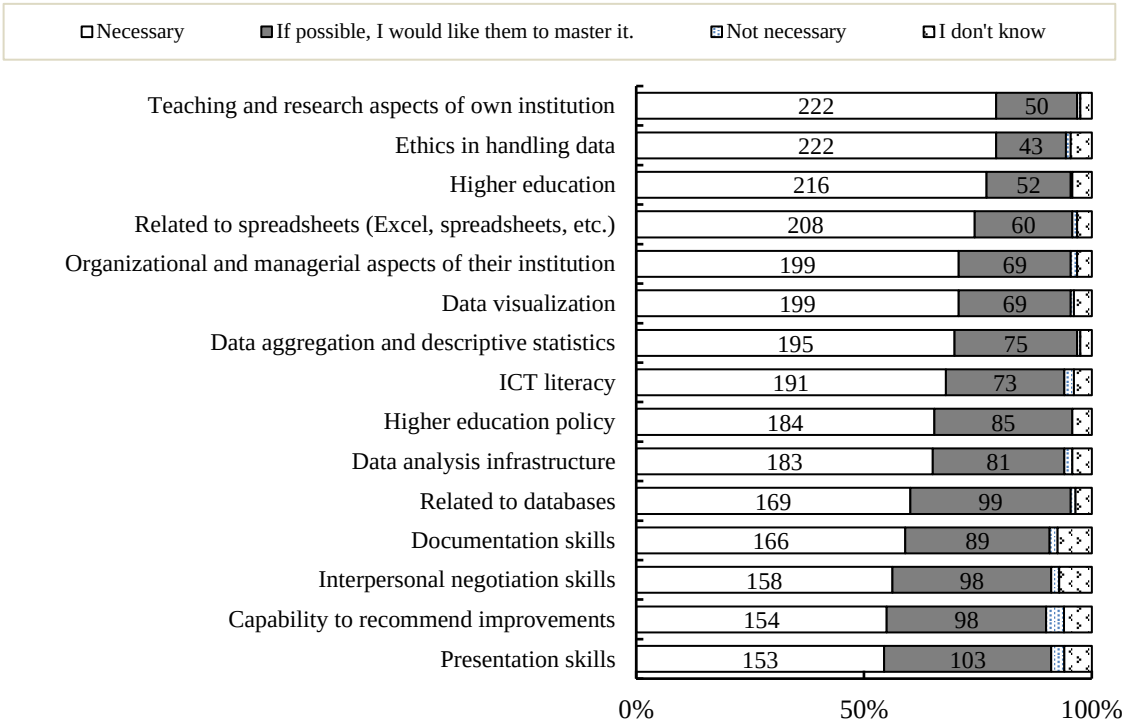

Figure 2: Knowledge and skill items considered highly necessary in the survey by Iseri & Matsumoto (2023) (Source: Author).

Classification of courses in the U.S. IR certificate program

Table 2 lists the IR course completion programs selected for analysis in this study. In addition to the names of the universities, program names, delivery modes, and credits required, Table 2 summarizes the list of courses in six categories created by the authors. Currently, the range is 12 to 18 credits, and many courses can be completed online.

Next, we examined the course content and, without naming institutions, grouped courses into six areas: (1) Higher education & university management—history, policy, external environment, governance, and organization; (2) General research methods—question design, study planning, and quantitative/qualitative methods; (3) Introduction to IR—origins, roles, and core theories; (4) Advanced IR—links to learning assessment, student surveys, institutional evaluation, and student support; (5) Data management & analysis—data management, statistics, analysis, and reporting for beginner-to-intermediate learners; and (6) IR practice—capstone activities such as internships applying acquired knowledge.

This clarifies four points. First, many universities require courses related to the "Introduction to IR." Second, many universities offer basic and advanced courses in "Data management & analysis." Third, "General research methods" include research and survey methods in the social sciences related to the specialized fields of the program's departments. Fourth, "Institutional research practice" includes a variety of subjects such as internships, submission of analytical reports using real-world data, and credit for work experience.

Table 2: List of IR certificate programs selected for this study (Source: Author).

University		Florida State University（*1）	Indiana University（*2）	Kent State University	Pennsylvania State University	University of Iowa	University of Kentucky（*4）	Ball State University	Boston College	University of North Carolina Charlotte	UC San Diego Extension
Program / Course		Institutional Research	Certificate in Institutional Research	Institutional Research and Assessment - Graduate Certificate	Institutional Research Certificate	Certificate in Institutional Research and Effectiveness	Research Methods in Education Graduate Certificate	IR Graduate Certificate Program	Certificate in Institutional Research:Officer Analyst	Institutional Effectiveness Certificate	Institutional Effectiveness Program
Delivery mode		Online-centered (can be completed entirely online)	in person	Online-centered (can be completed entirely online)	Online-centered (can be completed entirely online)	in person or Hybrid	Unknown	Online-centered	Unknown	Online	Online
Credits required		12	18	18	15	15	15	15	12	18	18
Curricu-lum area	Higher education & university management		***EDUC-C 565 Introduction to College and University Administration*** （*3） ***EDUC-C 664 Higher Education Org and Admin*** （*3）	HIED 66656 Higher education curriculum HIED 66651 Student affairs functions in higher education HIED 66662 Politics and power in organizations	Administration in Higher Education（HIED 842） Higher Education Students and Clientele (HIED 846）						
	General research methods	EDF 5449: Survey Research Methods (Spring) EDF 6417 Computer Assisted Qualitative Data Analysis (Summer) EDF 6476 Advanced Qualitative Research Seminar (Fall)				EPLS:6209 Survey Research and Design	***EPE 619: Survey Research***	EDPS 646 - Tests and Measurements SOPS 610 - Social Psychology SOPS 640 - Social Psychology of Attitudes SOC 683 - Qualitative Research Methods EDST 650 - Introduction to Qualitative Research EDST 660 - Ethnographic Research in Education SOC 681 - Quantitative and Survey Research Methods EDPS 640 - Methodology of Educational and Psychological Research EDPS 643 - Research Design PSYS 680 - Research Methods in Psychology CPSY 653 - Research Methods in Counseling and Social Psychology SOC 682 - Social Statistics	***MESA6820 Foundations in Research Methodology(*5) MESA6210 Instrument Design and Development(*5) MESA6830 Interpretation and Evaluation of Research***		
	Introduction to institutional research	***EDH 5055: Introduction to Institutional Research***	***EDUC-C 661 Foundations of Institutional Research***		***Foundations and Fundamentals of Institutional Research(HIED 801）***	***EPLS 5260: Introduction of Institutional Research & Effectiveness***		***EDP S602 Institutional Research***		***Institutional Research Introduction to Careers in Assessment***	***Introduction to Institutional Effectiveness EDUC-42340***
	Advanced institutional research	EDF 5461: Introduction to Program Evaluation (Summer and Fall) EDH 5078 Outcomes Assessment in Higher Education I (Spring) EDH 5079 Outcomes Assessment in Higher Education II (Fall)		***HIED 66749 Assessment and accreditation in higher education***	Planning and Resource Management Studies(HIED 810) Assessing Student Outcomes and Evaluating Academic Programs(HIED 840) Analyzing Faculty Workload, Performance, and Compensation(HIED 850) Conducting Enrollment Management Studies (HIED 860)	EPLS:6266 Program Evaluation	***EPE/EDP 620: Introduction to Evaluation***	EDST 671 - Evaluation of Educational Programs		***Student Learning Outcomes Accreditation Strategic Planning Building Relationships***	***Institutional Effectiveness Management and Operations EDUC-42341 Institutional Effectiveness Leadership EDUC-42342***
	Data management & analysis	***EDF 6455: Data Use in Education*** EDF 5414 Introduction to Large Data sets (Spring) EDF 5401 General Linear Modeling (Fall) EDF 6471 Quasi-Experimental Data Analysis (Spring)	EDUC-Y 502 Intermediate Statistics Applied to Education	***HIED 66665 Technology, systems and data in higher education administration RMS 65510 Statistics i for educational services RMS 68710 Introduction to measurement RMS 68806 Higher education data and institutional research***	***Designing Institutional Research Studies(HIED 830）***	***EPLS:6370 Quantitative Methods for Policy Analysis PSQF:6243 Intermediate Statistical Methods***	***EPE/EDP 557: Gathering, Using and Analyzing Educational Data I***	EDPS 641 - Introduction to Statistical Methods EDPS 642 - Analysis of Variance EDPS 742 - Multivariate Statistics and Data Mining EDPS 741 - Applied Regression Analysis EDPS 730 - Introduction to Nonparametric Statistics	***MESA6410 Introductory Statistics (*6) MESA6420 Intermediate Statistics (*6)***		
	Institutional research practice		***EDUC-C 678 Capstone in Institutional Research***	HIED 66492 Internship in higher education administration		EPLS: 6352 Action Research in Educational Settings	***EPE 663: Field Studies in Educational Settings***	EDPS692 Internship in Institutional Research SOC 588 Internship 3: Field Experience SOPS 695 Internship in Applied Social Psychology PSYS 686 Applied Practicum EDHI 699 Practicum in Higher Education EDAC 699 Internship in Adult and Community Education	***MESA6310 Evaluation Practice and Methods***		

*1 Courses intended exclusively for Ed.D. students are excluded.

*2 With the program adviser's approval, you may substitute either two additional graduate-level higher-education courses or other related graduate-level courses not shown in the table.

*3 Choose and complete one of the two options.

*4 You must take one additional course selected from the 30 + Educational Policy Studies and Evaluation electives that are not listed in the table.

*5 Choose and complete one of the two options.

*6 Choose and complete one of the two options.

Note: Bold and italics indicate required courses.

Analysis of qualitative data on IR programs collected at a workshop

The participants' responses to (a) "What knowledge and skills do you think should be developed in an IR personnel training program?" were categorized into 17 groups, and the number of occurrences in each group is summarized in Figure 3. Figure 3 shows the number of times each of the 17 categories was mentioned by participants. The items circled by "University Management/Institutional Management," "Data Management," and "Statistics/Data Science" were found in the responses of more than 70% of the total number of participants (38). In addition to the three items above, the following items were also found: "Reporting Techniques," "Data Visualization/Analysis," "Communication," "Higher Education Studies/Education Policy," "Introductory IR Knowledge," and "Data Management/Data Science." "Introductory IR Knowledge" also appears relatively frequently. Even if the frequency was not relatively high, items such as "IR Ethics" and "Research Methods/Survey Methods" were described by several participants.

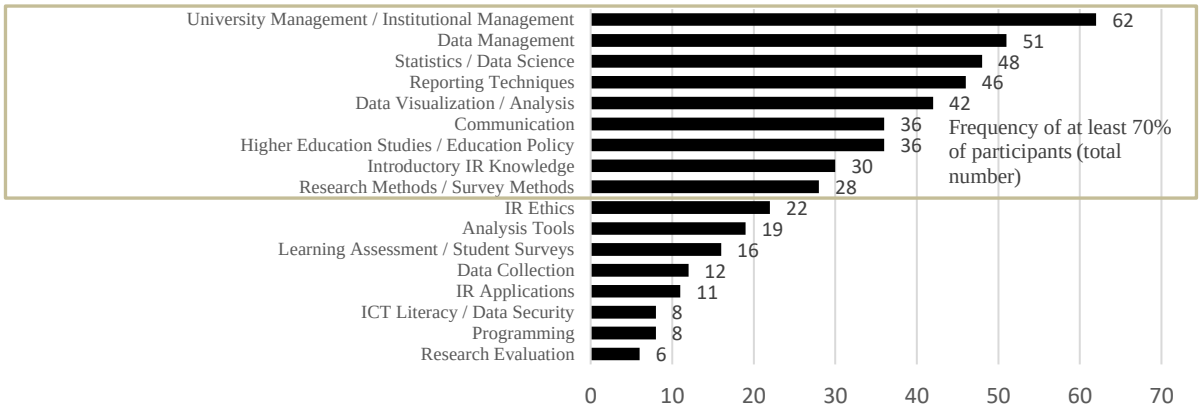

Figure 3: Classification and frequency of knowledge and skills (Source: Author).

Due to space constraints, we present only the text here. IR practitioner's feedback on how beginners should learn converged on two points. First, pair lecture-style classes for foundational knowledge with practice-based classes that build applied skills; for example, "Introductory IR Knowledge," "IR Ethics," and "Higher Education/Education Policy" are typically delivered as basic lectures. Second, for practice, use projects and case studies with institutional or dummy data, peer presentations, and exercises such as discussing past incidents and countermeasures or drafting a questionnaire for a fictional student survey.

4. Discussion

Model Curriculum Structure - Learning Areas Map - Design

Drawing on the three evidence sources, relevant theory, and Japanese IR practice, we propose a model curriculum (Figure 4). First, we describe three elements under the Essential for IR learning areas at the top. "Introduction to IR/IE" was determined to be essential for all IR practitioners to learn first, based on findings from U.S. IR programs (hereafter M2) and Japanese qualitative research (hereafter M3). Next, "Data Ethics & Research Ethics" was deemed essential because many respondents in the questionnaire survey (hereafter M1) considered it necessary, and 22 mentions were also found in M3. This recognition of the importance of "Ethics" was not evident in the M2 results, and similar terminology is not explicitly mentioned in Terenzini (1993)'s three intelligences. This suggests it may be a feature

specific to the Japanese IR context. This trend likely stems from the growing number of IR-related research groups and faculty members seeking to present their findings within them. Indeed, in the survey conducted by Iseri & Matsumoto (2023) introduced in M1, approximately 90% of respondents agreed that "publishing research findings also benefits IR work," while around 80% agreed that "standard guidelines for handling data in IR research should be established." Third, "Research Methods & Survey Methods" was made mandatory because it was common to multiple subjects in M1 and M2, and demand remained high in M3. The skill to design research or analysis, including methodology, according to purpose is crucial for IR.

Next, the middle tier "Optional" allows learners to flexibly choose what to study. It comprises three areas: "Fundamentals of Higher Education," "Data Utilization Skills" (including "Data Management," "Data Analysis," and "Data Handling"), and "IR Applications," consolidating their elements. The inclusion of "Fundamentals of Higher Education" and "Data Analysis"—areas showing high demand through multiple methods—within "Optional" reflects consideration for Japanese IR personnel practices. Many universities appoint IR staff through existing faculty or staff reassignments rather than new hires. Consequently, even among new IR personnel, the strengths in knowledge and skills they possess vary significantly. Therefore, it was deemed necessary to allow learners to select and study what they personally perceive as lacking. This approach also incorporates the concept of "Self-concept" from Andragogy.

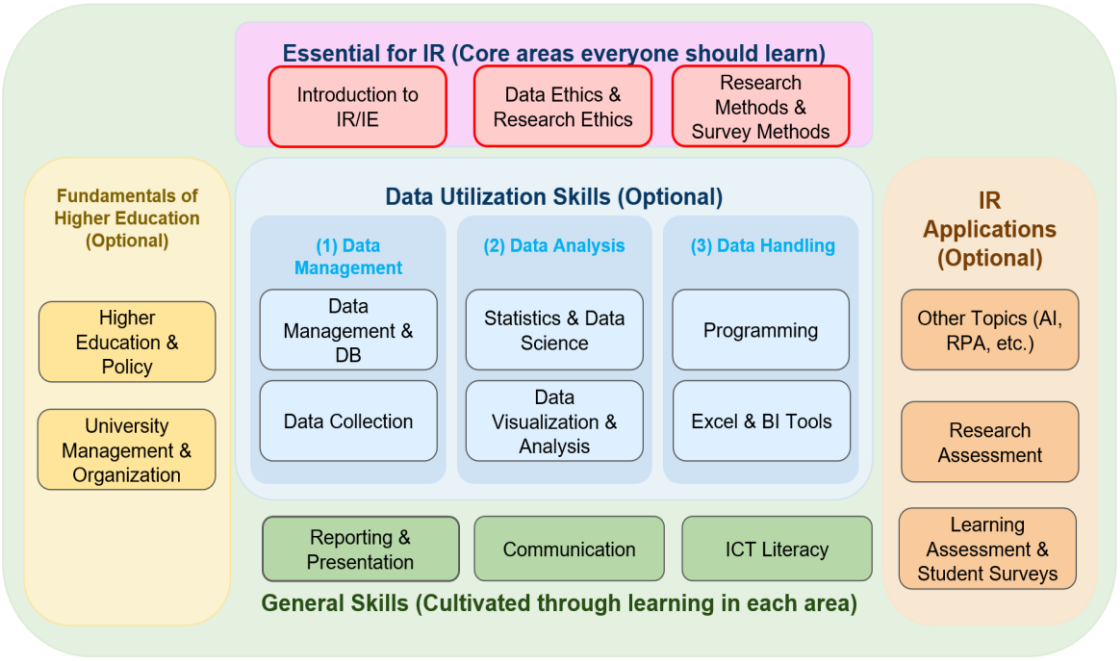

Figure 4: Model Curriculum Structure - Learning Areas Map (Source: Author).

Finally, the "General Skills" section at the bottom is positioned as skills to be developed across all learning areas, not specific to any one area. These skills showed high demand in M1 and M3, and we considered intentionally developing them through practical subjects like M2's "Institutional research practice." However, it was ultimately determined that these should be developed through the learning process in each area, utilizing the learning method innovations introduced in M3. Naturally, this requires educators to design learning experiences that emphasize dialogue and real-world problem-solving, grounded in the characteristics of the "Adult learner experience" and "Orientation to learning" from adult learning theory.

The Relationship Between IR Skill Sets, Activity Theory, and Model Curriculum

Figure 5 examines the elements of the aforementioned model curriculum in relation to Terenzini's (1993) three intelligences and Howard-McLaughlin's (1998) "ISC." First, regarding the former, we considered how each element of the model curriculum fits within each of the three tiers. The result was that nearly all elements were positioned within Tier 1. This is influenced by the broad scope of the basic knowledge and skills listed in Tier 1, but it also suggests that this model curriculum can cover, to a significant extent, the learning elements necessary for becoming an independent IR officer. Furthermore, while Tier 1 presented numerous elements in parallel, this model curriculum represents a new approach by offering flexibility based on learning pathways and learner experience.

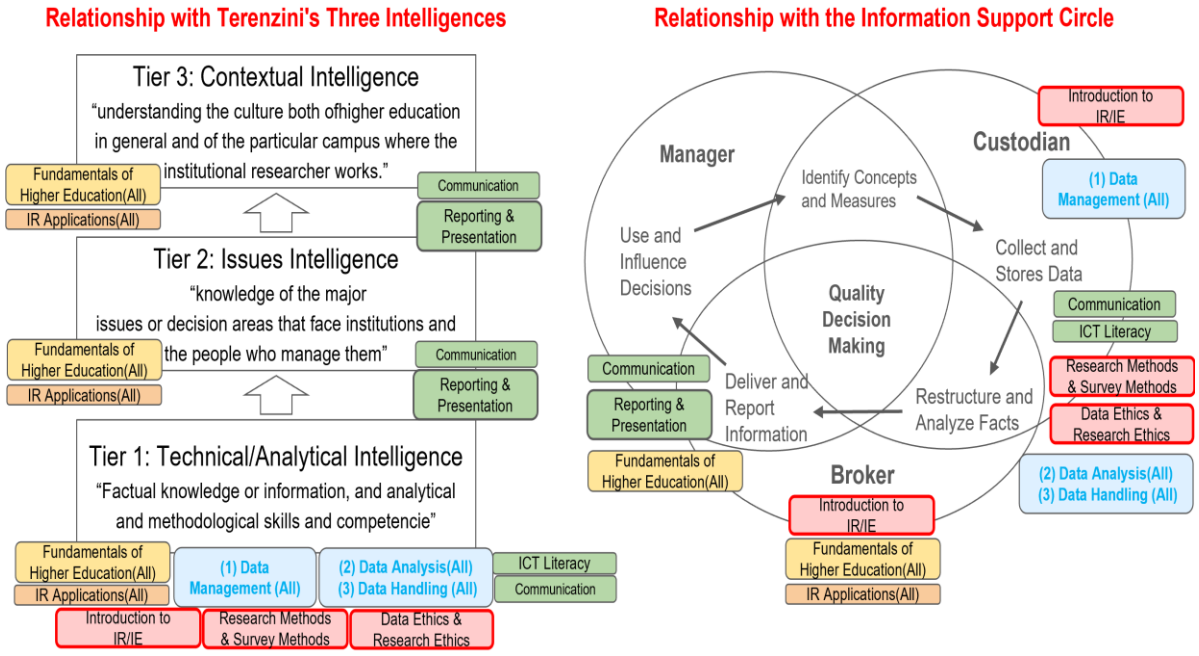

Figure 5: Relationship with IR Personnel and Activity Theory (Source: Author).

Next, we also map curriculum elements to Howard–McLaughlin's "ISC", focusing on the "Broker" and "Custodian" roles. This suggests that many elements matter most through collaboration. For example, the activities between "Collect and Stores Data" and "Restructure and Analyze Facts" for both "Custodian" and "Broker" involve learning related to the five elements: 'Communication' to "(3) Data Handling". Overall, it can be said that the importance of the learning areas and elements in the model curriculum becomes apparent when interacting with other roles within the institution during IR activities.

Summary and Issues

This study develops a model curriculum for Japanese IR by synthesizing (a) meta-review of national surveys, (b) analysis of U.S. IR programs, and (c) practitioner workshops.

However, future research must address the following two points of evaluation. First, an assessment by other IR researchers and practitioners of the validity and comprehensiveness of this model curriculum's areas and elements, as well as its suitability for real-world operations. Second, evaluating how easily actual educational programs can be developed based on this

model curriculum. For both points, we plan to hold new workshops targeting IR researchers and practitioners. These workshops will involve thought experiments on program development under varying conditions—such as single-course units (2–3 credits) or full-program units (10+ credits)—to facilitate their evaluation.

Acknowledgment

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