International Journal of Institutional Research and Management
International Institute of Applied Informatics
2025, Vol. 9, No. 1, IJIRM882

A Survey on Self-Perception of Institutional Research Skills and Knowledge: Results from Training Courses in 2023-2024

Tetsuya Oishi *, Takashi Nishide †

Abstract

We conducted a series of studies from 2021 to 2024 to investigate the needs and effectiveness of institutional research (IR) training courses in Japanese higher education. Initial investigations through web questionnaires (n=189) in 2021 and individual surveys in 2022 revealed a need for step-by-step training sessions based on participants' abilities. Based on these findings, we implemented training courses in 2023 (n=20) and 2024 (n=29) to examine essential IR training requirements and participants' self-perceptions of their skills. The 2024 course incorporated improvements including broader participant eligibility and more detailed attribute data collection. This paper presents comprehensive results from these training courses, analyzing how participants' self-perception of IR skills changed through the sessions, with particular attention to differences between faculty and staff members, as well as variations based on years of IR experience. Our findings suggest that role-specific training approaches may be more effective, as faculty and staff showed different patterns in skill self-assessment and learning preferences.

Keywords: Institutional research personnel training, Training course development, Self-perception analysis, Higher education administration

1 Introduction

In recent years, Japanese higher education institutions have faced increasing pressure to make effective use of their limited assets due to economic challenges and declining 18-year-old population. This situation has led to a growing trend of utilizing internal data to objectively assess organizational status through institutional research (IR). However, despite the establishment of IR functions and organizations, many practitioners struggle to understand how to effectively carry out their tasks.

Previous efforts to address this challenge included the "IR Human Resource Development Curriculum" at Kyushu University (2013-2016)[1][2][3], which offered five courses with 10 credits based on the information support cycle[4]. Additionally, Tokyo Institute of Technology has been offering "Institutional Research Theory" since 2019 [5][6]. Not only

* Kyushu Institute of Technology, Fukuoka, Japan
† Otaru University of Commerce, Hokkaido, Japan

these initiatives but also other training opportunities have been continuously implemented since 2015 [7][8].

Based on the hypothesis that IR training needs would diversify as the number of practitioners increases, we conducted a comprehensive research project from 2021 to 2024. This paper presents the results of this project, including:

- Web questionnaire survey (2021)
- Individual interviews (2022)
- Initial training course implementation (2023)
- Enhanced training course with expanded participation (2024)

2 Initial Investigations (2021-2022)

We have held two kinds of investigations about IR needs: a web questionnaire survey and individual surveys. In this section, we explain these investigations.

2.1 Web Questionnaire Survey (2021)

A web questionnaire survey was conducted from July 1, 2021 to August 20, 2021, targeting IR practitioners at Japanese higher education institutions[9][10]. The survey was distributed to approximately 900 people, including IR practitioners at 793 universities throughout Japan and members of the Japan Association for Institutional Research. We received 189 responses (response rate: 21.0%).

Key findings from the web survey revealed several important trends in training needs:

- When the need for the time of the event was identified by the combination of the number of classes and the number of days of the event, with the number of classes per day being one, two, or four and the number of days of the event being one, two, four, eight, or 16, the most common response was two classes per day and one day of the event. The number of responses was 162, equivalent to 86.7% of the 189 responses.
- Based on the information support cycle [4], we identified the needs for "Identification of issues and needs," "Data collection and accumulation," "Data reconstruction and analysis," "Data reporting," and "Decision making," and found that many respondents particularly would like to participate in the course, "Data reconstruction and analysis." There were 184 responses, equivalent to 97.4% of the 189 responses. Practical studies on "data reconstruction and analysis" have been reported [11][12], and have attracted significant attention from IR practitioners.
- We also found that there were many responses regarding the desire to participate in courses related to "visualization" with regard to technical items. The number of responses was 171, equivalent to 90.5% of the 189 responses.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

2.2 Individual Surveys (2022)

Following the web questionnaire, we conducted individual surveys with selected respondents who indicated willingness to participate in further research[13][14]. From 47 potential participants (24.9% of total respondents), we selected ten individuals:

- Six faculty members (including two with no prior IR training experience)
- Four staff members (including one with no prior IR training experience)

The individual surveys revealed several key requirements for IR training:

- In particular, university staff members indicated that a longer duration would make it difficult for them to participate due to their work commitments and that one night at most would be the maximum length of the course.
- Regarding technical training courses, there was a desire for training sessions tailored to their skill levels, and there were comments that it would be beneficial to have training sessions by class, such as advanced, intermediate, and beginner levels.
- Regarding the information support cycle, there is a need for training courses in analytical methods and visualization, as well as training to understand how to read data.
- Other needs included the need to interact and share feelings with others who participated in the training courses.

3 Training Course Design and Implementation

3.1 Course Design Principles

Based on the findings from our initial investigations, we developed training courses with the following key characteristics:

- Tool-independent format: Rather than focusing on specific software tools, the courses emphasized understanding data presentation principles
- Interactive learning: Group discussions using concrete examples
- Balanced content: Progressive difficulty levels in data visualization and analysis
- Limited duration: Approximately three hours of structured training plus networking time

3.2 2023 Implementation

The initial training course was conducted in August 2023 at the Tokyo International Forum [15][16]. The course structure included:

- Registration (13:15-13:30)
- Purpose explanation and ice-breaking (13:30-14:00)
- IR data visualization training (14:00-15:45)

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

- Closing and questionnaire (15:45-16:00)
- Opinion exchange (16:00-16:20)

Participants (n=20) were required to complete pre- and post-course surveys evaluating their self-perceived skills in various IR-related competencies.

3.2.1 Participant Demographics

Table 1 shows the breakdown of participants in the 2023 course:

Table 1: 2023 course participant demographics by the type of job

Category	Registered	Attended
Staff	13	13
Faculty	7	7

3.2.2 Course Structure

The 2023 course was divided into eight main sessions[17][18]:

- Session 1: Bar graph
- Session 2: Standard deviation
- Session 3: Standard deviation and t-test
- Session 4: Box plots
- Session 5: Box plots with average
- Session 6: Histograms
- Session 7: Histograms with density plots
- Session 8: Histograms with density plots and box plots

3.3 2024 Enhanced Implementation

The 2024 course incorporated several improvements based on previous experience[17]:

- Simplified consent process (web form instead of written signature)
- Expanded eligibility beyond current IR practitioners
- More detailed attribute data collection

The enhanced training course was conducted in August 2024 at the Tokyo International Forum. The course structure included:

- Registration (13:15-13:30)

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

- Purpose explanation and ice-breaking (13:30-14:00)
- Training on data representation and use in IR (14:00-15:45): This is the most different aspect compared to 2023.
- Closing and questionnaire (15:45-16:00)
- Opinion exchange (16:00-16:20)

The title of the training was changed to emphasize that the training was not biased toward visualization tools such as R.

3.3.1 Participant Demographics

Table 2 and 3 shows the breakdown of participants in the 2024 course:

Table 2: 2024 course participant demographics by the type of job

Category	Registered	Attended
Staff	21	18
Faculty	11	7
Others	4	4

Table 3: 2024 course participant demographics by the years of IR practice

Category	Registered	Attended
$\geqq$ 2 years	18	15
$\leqq$ 3 years	18	14

3.3.2 Course Structure

The 2024 course was divided into four main sessions:

- Session 1: Admission Data Examples
  - Session 1-1: Descriptive statistics tables
  - Session 1-2: Box plots
  - Session 1-3: Box plots and violin plots
  - Session 1-4: Histograms
  - Session 1-5: Histograms and additional line
  - Session 1-6: TOEIC score classification
- Session 2: New Admission System Performance Tracking
  - Session 2-1: Multiple visualization examples which were used in 2023

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

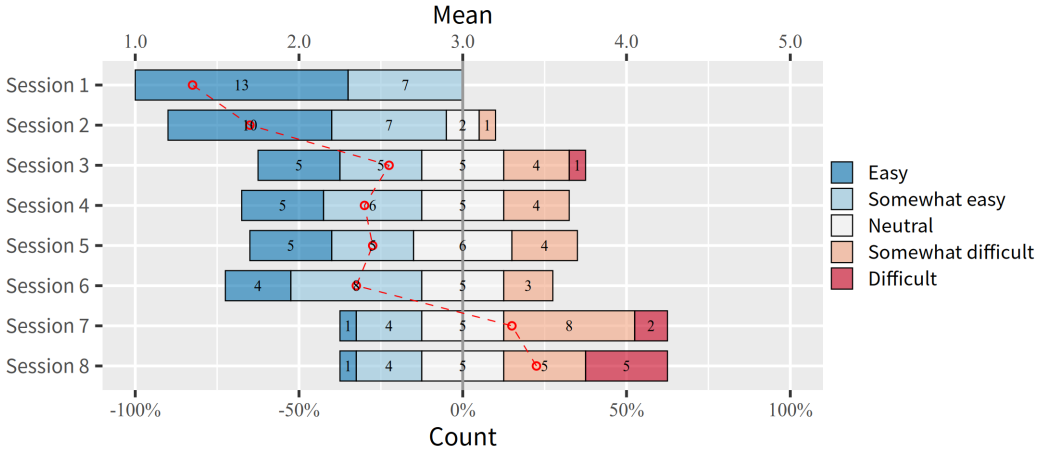

Figure 1: Percentage band graph of report case difficulty (2023 overall):
The red circles in these figures represent the average for all participants when the difficulty level "easy" to "difficult" was replaced by a score of 1 to 5. Furthermore, the "Neutral" responses were placed in the center, with the "Easy" and "Somewhat easy" responses on the left and the "Somewhat difficult" and "Difficult" responses on the right.

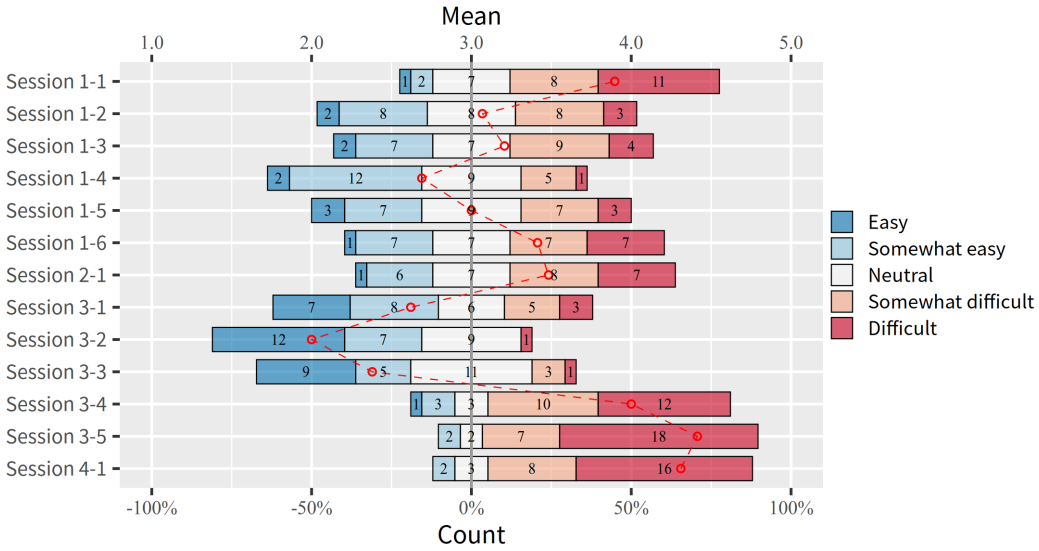

Figure 2: Percentage band graph of report case difficulty (2024 overall): This figure uses the same representation method as Figure 1.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

- Session 3: Data Handling
  - Session 3-1: Multiple TOEIC test data analysis
  - Session 3-2: Wide data
  - Session 3-3: Long data
  - Session 3-4: Data handling by Excel
  - Session 3-5: Data handling by R
- Session 4: TOEIC Enhancement Program Effects
  - Session 4-1: Multiple visualization examples and analysis

4 Results and Analysis

This section describes the results and analysis of the course held in 2023 and 2024 [19] [20] [21].

4.1 Difficulty Perception Analysis

We analyzed participants' perceived difficulty levels for each session component using a five-point scale: "Easy," "Somewhat easy," "Neutral," "Somewhat difficult," and "Difficult." Figure 1, 2 present the distribution of difficulty ratings across all sessions in 2023 for all participants and in 2024 for all participants.

As shown in Figure 1, in 2023, the difficulty level for participants increased progressively with higher session numbers, which aligns with our intended design of increasing information volume and complexity in later materials. Figure 2 indicates that Session 1-1's high difficulty level was due to discussions being based solely on tables of descriptive statistics in 2024. The difficulty decreased during Sessions 1-2 through 1-5, where discussions were facilitated using specific box plots and histograms, making them more accessible than Session 1-1. The increased difficulty in Sessions 1-6 and 2-1 can be attributed to the simultaneous presentation of multiple graphs. While Sessions 3-1 to 3-3 were generally perceived as less challenging due to discussions being guided by concrete data, Sessions 3-4 and 3-5 showed a marked increase in difficulty due to their focus on practical data formatting exercises. Session 4-1, like Session 2-1, was perceived as challenging due to the presentation of multiple graphs within a limited timeframe.

4.2 Role-Based Analysis

As illustrated in Figure 3, faculty members appeared to experience greater difficulty across all sessions in 2023, likely stemming from their uncertainty about how to apply the presented graphs. Figure 4 reveals an interesting contrast in 2024: Session 1-3, which showed moderate difficulty in overall ratings, was actually perceived differently between groups - staff members found it challenging while faculty members considered it easy. This session's content, which combined explanations of box plots and violin plots, suggests that the divergence in perception might be attributed to different levels of familiarity with violin plots between faculty and staff. Furthermore, Session 3-1, rated as relatively easy in overall assessments, showed an inverse pattern: staff members rated it as easy, while faculty members found it challenging. This session, despite its seemingly straightforward nature, involved analyzing the difference between initial and final TOEIC scores across ten attempts,

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

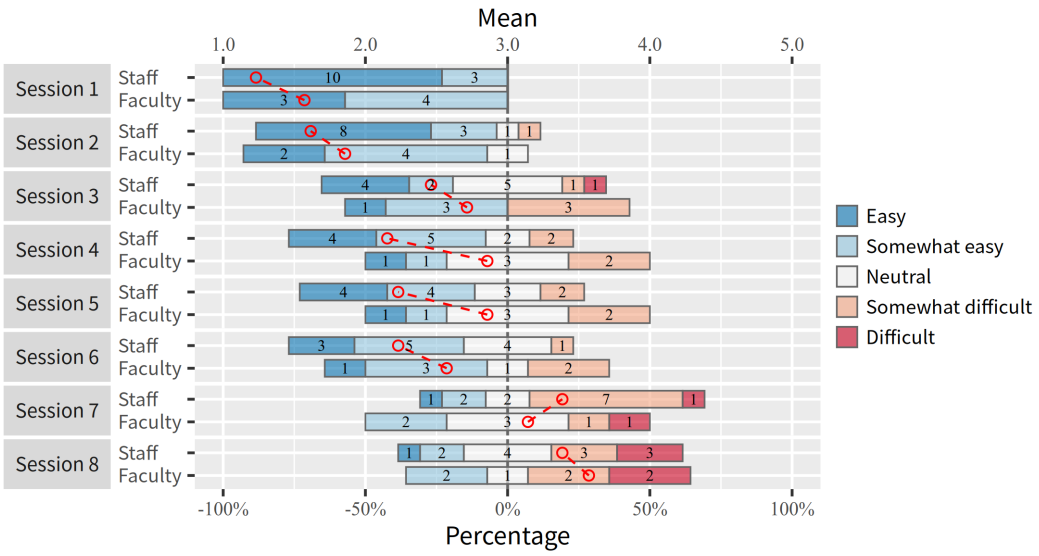

Figure 3: Percentage band graph of report case difficulty (2023 separated by the type of job): This figure uses the same representation method as Figure 1.

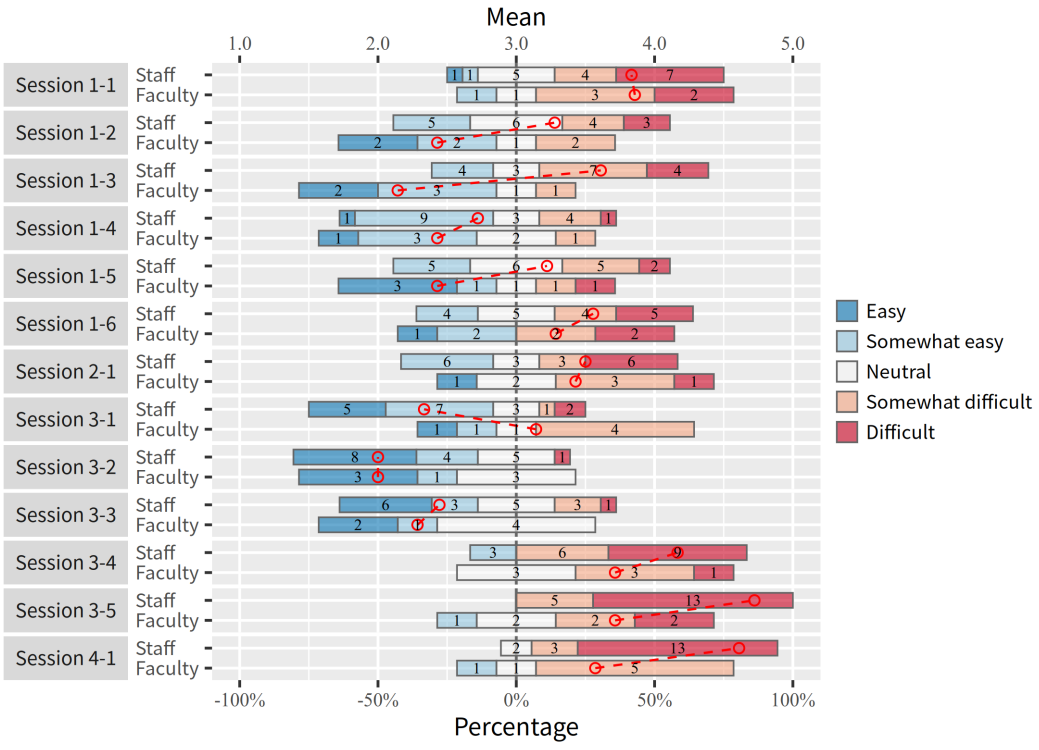

Figure 4: Percentage band graph of report case difficulty (2024 separated by the type of job): This figure uses the same representation method as Figure 1.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

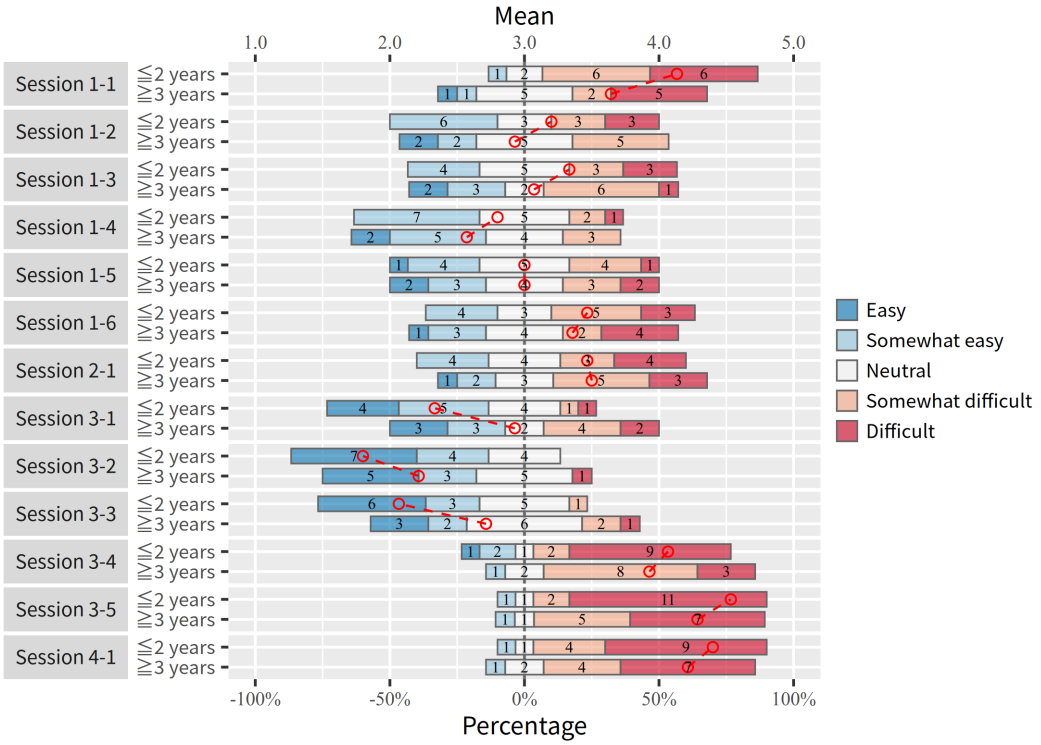

Figure 5: Percentage band graph of report case difficulty (2024 separated by the years of IR practice): This figure uses the same representation method as Figure 1.

a calculation aspect that apparently posed more difficulty for faculty members. Figure 5, which presents the difficulty levels based on years of IR experience in 2024, reveals that Session 3-1 - a session that had already demonstrated differences between faculty and staff - also showed significant variation between participants with two years or less experience and those with three or more years. This disparity may be explained by the varying levels of familiarity with expression methods among participants, corresponding to their years of experience.

4.3 Expression Method Analysis

As shown in Figure 6, the 2023 data suggests proportional and inversely proportional relationships with the difficulty levels discussed previously. However, Sessions 7 and 8 demonstrated a marked decrease in affirmative responses for both “already familiar with” and “can implement,” likely indicating a critical point where participants encountered IR practice barriers that would be challenging to overcome with existing knowledge alone.

In Figure 7, the 2024 data reveals that particularly challenging sessions (1-3, 2-1, 3-5, and 4-1) showed low implementation capability among participants, partly attributable to unfamiliarity with the expression methods. However, these sessions generated signifi-cant new insights and implementation interest among participants. Sessions 1-4 and 1-5, covering familiar content such as histograms with auxiliary lines, were known and imple-

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

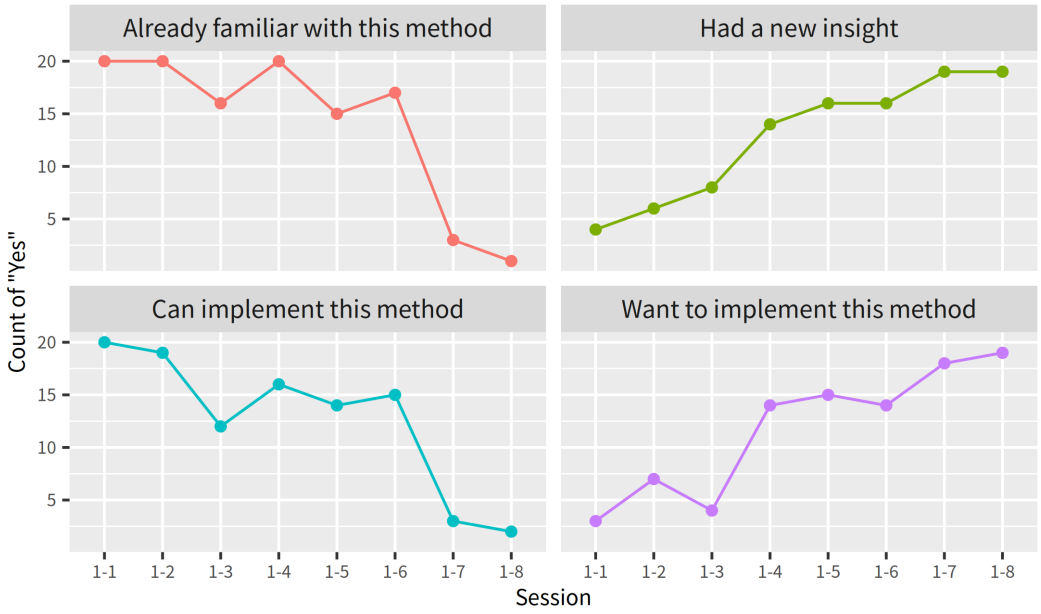

Figure 6: Line chart of representation of report case (2023):
For each material used in this training course, participants were asked whether they “were already familiar with”, “had a new insight of”, “can implement”, and “want to implement” the expression methods, responding with either “yes” or “no”. This figure shows the number of participants who answered ’yes’ to each question.

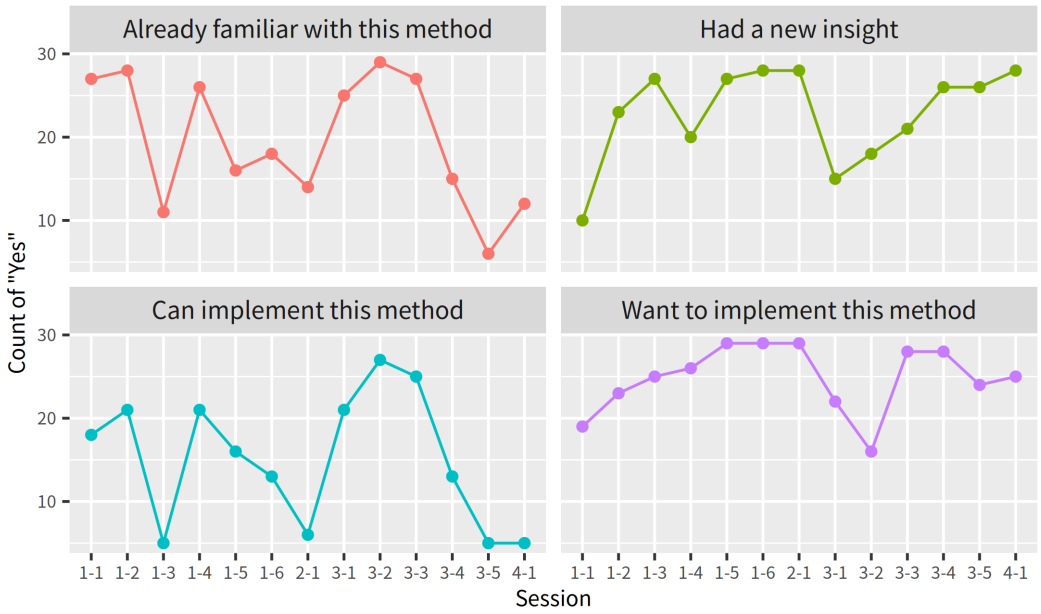

Figure 7: Line chart of representation of report case (2024): This figure uses the same representation method as Figure 6.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

mentable by approximately half of the participants, yet still generated new insights and implementation interest, suggesting their significance to the participants.

4.4 Self-Perception Changes

A critical aspect of our study was analyzing changes in participants' self-perception of their IR skills before and after the training courses. Figure 8 and 9 present these changes across different skill categories.

Participants' self-perception was evaluated in three main areas:

- Data collection and accumulation
  - Data collection such as planning and implementation of questionnaire surveys
  - Data organization such as inter-departmental coordination of data collection
  - Data accumulation such as database or cleansing
- Data reconstruction and analysis
  - Data processing and preprocessing,such as the extraction transform load(ETL) tool or data extraction
  - Data analysis such as statistical estimation, testing, or multivariate analysis
  - Data visualization such as graph creation
- Data reporting
  - Data reporting such as report writing or data description

Figure 8 reveals that in 2023, faculty participants maintained relatively stable self-assessments across all items. In Figure 9, the 2024 data shows that while most participants reported no change across various items, there was a notable trend of improvement in "Data Organization," "Data Accumulation," "Data Processing and Preprocessing," and "Data Reporting." This suggests that participants who initially underestimated their competencies in these areas before the training course later came to recognize higher levels of capability after course completion.

Figure 10 illustrates that in 2023, staff participants demonstrated variation between decreased and improved self-perceptions, with significant differences emerging in areas aligned with the training content: "Data Analysis," "Data Visualization," and "Data Reporting." The 2024 analysis by job type in Figure 11 shows that faculty members consistently reported either "No Change" or "Improvement" in "Data Visualization" and "Data Reporting," with no instances of "Decrease," indicating an initial underestimation of their capabilities. Additionally, Figure 12's 2024 analysis by the years of IR practice reveals a notable trend of "Improvement" in "Data Organization" among participants with three or more years of experience, suggesting that many IR practitioners who had been developing their skills through practical experience recognized their higher competency levels after participating in the training course.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

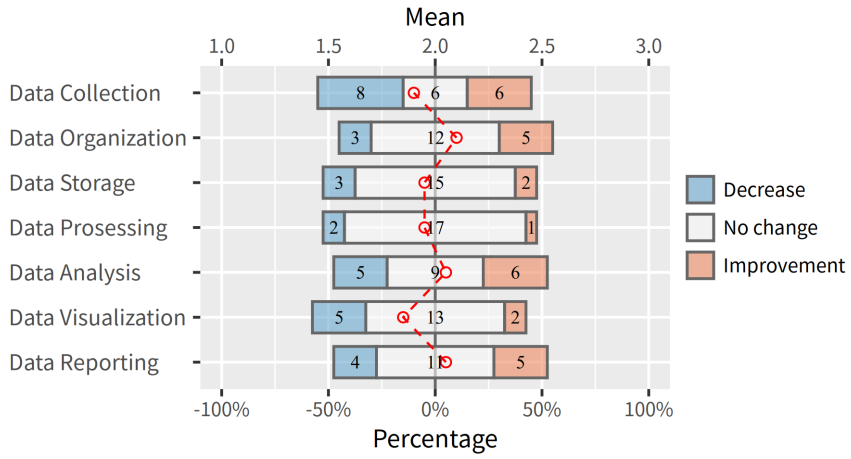

Figure 8: Percentage band graph of change in perception of own skills before and after attending the training course (2023 Overall):
The scores for "not in charge," "beginner," "middle between beginner and intermediate," "intermediate," "middle between intermediate and advanced," and "advanced" were assigned on a scale of 1 to 6, with a negative difference indicating a "Decrease", a zero difference indicating "no change", and a positive difference indicating an "Improvement." The red circles in these figures represent the average for all participants when the difficulty level "Decrease" to "Improvement" was replaced by a score of 1 to 3. Furthermore, the "No change" responses were placed in the center, with the "Decrease" responses on the left and the "Improvement" responses on the right.

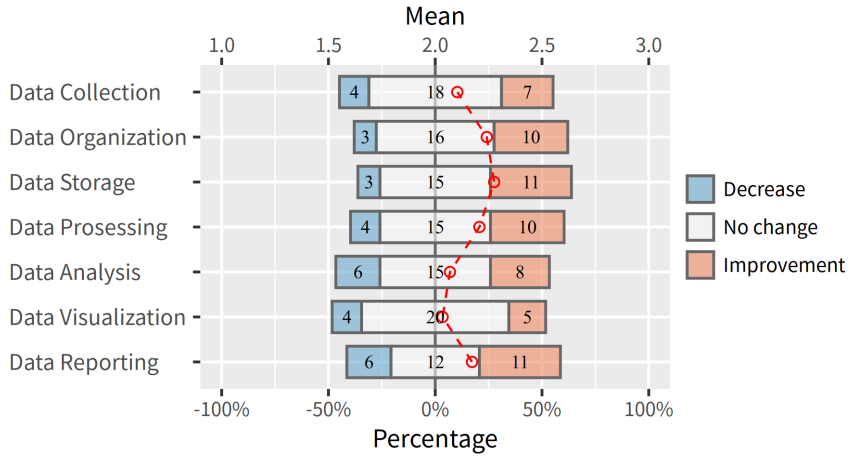

Figure 9: Percentage band graph of change in perception of own skills before and after attending the training course (2024 Overall):
This figure uses the same representation method as Figure 8.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

Figure 10: Percentage band graph of change in perception of own skills before and after attending the training course (2023 separated by the type of job): This figure uses the same representation method as Figure 8.

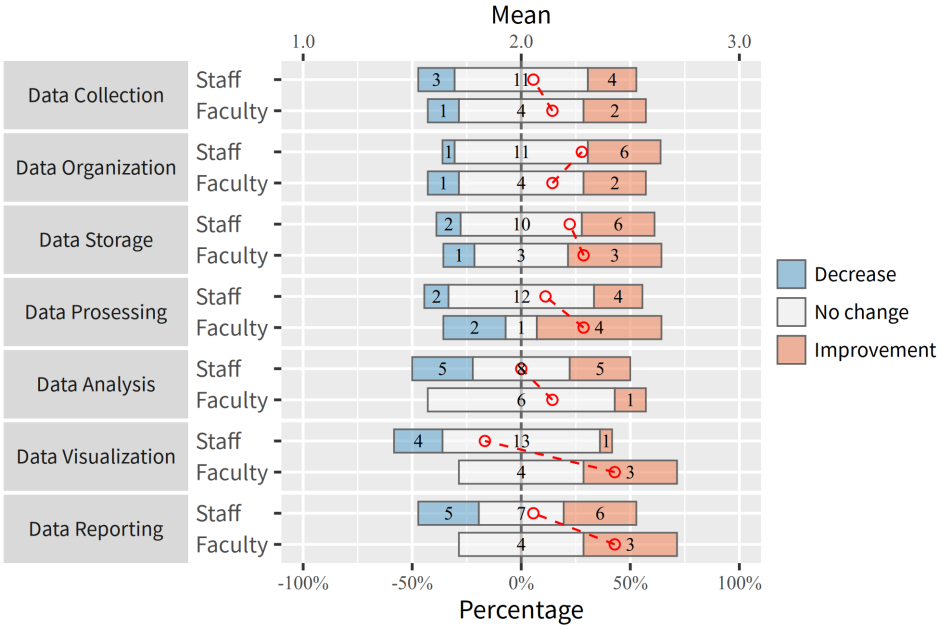

Figure 11: Percentage band graph of change in perception of own skills before and after attending the training course (2024 separated by the type of job): This figure uses the same representation method as Figure 8.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

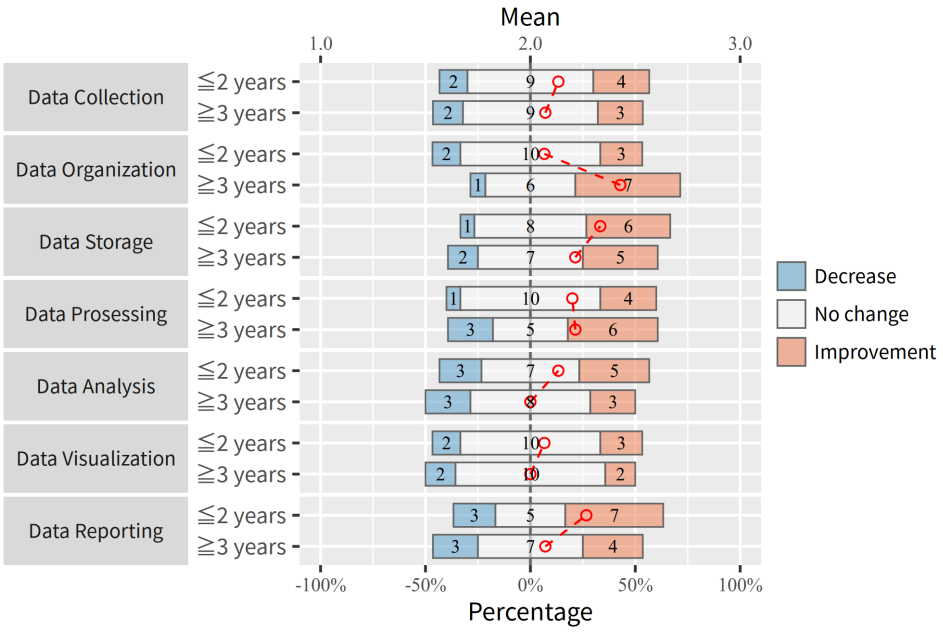

Figure 12: Percentage band graph of change in perception of own skills before and after attending the training course (2024 separated by the years of IR practice): This figure uses the same representation method as Figure 8.

4.5 Course Satisfaction Analysis

Figure 13 reveals that while we had anticipated varied responses due to the 2023 course's design as a discussion-based rather than technical workshop aimed at gradually building participant understanding, the results showed general satisfaction among participants not only with the overall content but also with practical aspects such as timing and venue. Similarly, Figure 14 demonstrates that participants in 2023 expressed overall satisfaction with both the course content and logistical elements including timing and location.

5 Discussion

The comprehensive analysis of our training courses from 2023 to 2024 reveals several significant implications for IR training development in higher education institutions. We organize our discussion around key themes that emerged from the research.

5.1 Role-Specific Training Needs

Our findings demonstrate clear differences in learning patterns and needs between faculty and staff members:

- **Faculty Characteristics**
  - Stronger grasp of statistical concepts and advanced visualization techniques
  - More stable self-assessment patterns

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

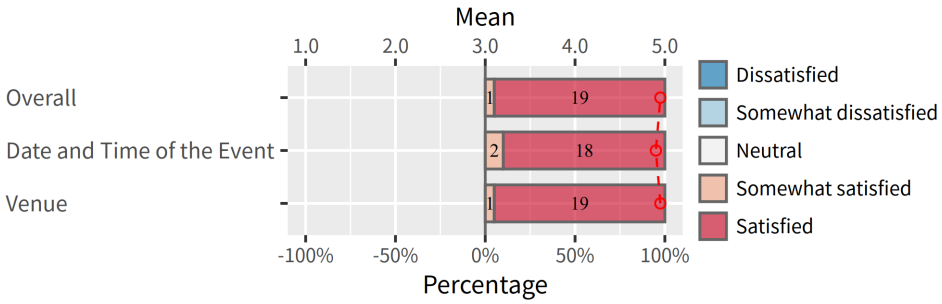

Figure 13: Percentage band graph of satisfaction with the training course (2023): The red circles in these figures represent the average for all participants when the diffi-culty level “Dissatisfied” to “Satisfied” was replaced by a score of 1 to 5. Furthermore, the “Neutral” responses were placed in the center, with the “Dissatisfied” and “Somewhat dissatisfied” responses on the left and the “Somewhat satisfied” and “Satisfied” responses on the right.

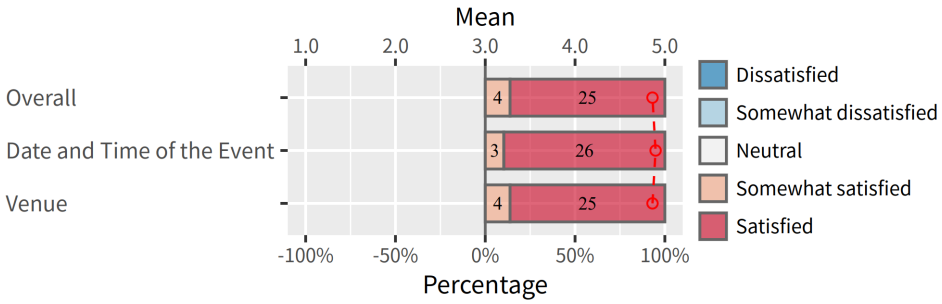

Figure 14: Percentage band graph of satisfaction with the training course (2024): This figure uses the same representation method as Figure 13.

  - Greater confidence in data interpretation and analysis
  - Tendency to underestimate their practical skills initially

- **Staff Characteristics**

  - Superior practical data handling skills
  - More variable self-perception patterns
  - Strong interest in immediate practical application
  - Need for theoretical framework understanding

These differences suggest that future IR training programs might benefit from role-specific tracks while maintaining opportunities for cross-role collaboration and knowledge sharing.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

5.2 Experience-Based Learning Patterns

We divided participants into groups of two years or less and three years or more experience, partly due to our observation that many IR practitioners tend to leave their positions after about two years. The analysis of participants based on their IR experience revealed important patterns:

- **Novice Practitioners ($\leqq$2 years)**
  - Benefit most from structured, step-by-step instruction
  - Show significant changes in self-perception after training
  - Express strong interest in basic visualization techniques
  - Need more guidance in data interpretation
- **Experienced Practitioners ($\geqq$3 years)**
  - Show particular improvement in data organization skills
  - Demonstrate more accurate initial self-assessment
  - Seek advanced applications and techniques
  - Value peer discussion and experience sharing

5.3 Training Format Effectiveness

The tool-independent, discussion-based format proved effective for several reasons:

- Enables focus on fundamental concepts rather than specific software
- Facilitates peer learning and experience sharing
- Accommodates diverse skill levels simultaneously
- Provides flexible learning paths for different roles

5.4 Challenges and Limitations

Several challenges emerged during our research:

- **Time Constraints**
  - Limited duration restricts depth of coverage
  - Challenges in balancing theory and practice
  - Need for efficient content delivery methods
- **Diverse Skill Levels**
  - Wide range of participant backgrounds
  - Varying levels of statistical knowledge
  - Different institutional contexts
- **Implementation Challenges**
  - Maintaining engagement across all skill levels
  - Ensuring practical value for all participants
  - Balancing general principles with specific applications

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

6 Conclusion and Future Directions

6.1 Key Findings

Our research has demonstrated that effective IR training requires:

- Careful consideration of role-specific needs
- Recognition of experience-based learning patterns
- Flexible, interactive training formats
- Balance between theoretical understanding and practical application

6.2 Practical Implications

Based on our findings, we recommend:

- Development of role-specific training modules
- Integration of experience-based learning paths
- Maintenance of interactive, discussion-based formats
- Inclusion of both basic and advanced visualization techniques
- Regular assessment of participant self-perception

6.3 Future Research Directions

Future research should focus on:

- Long-term impact assessment of training programs
- Development of standardized skill assessment tools
- Investigation of online and hybrid training formats
- Cross-institutional collaborative training approaches
- Integration of emerging IR technologies and methods

6.4 Final Remarks

The evolution of IR in Japanese higher education requires continued development of effective training approaches. Our research suggests that successful IR training must be flexible, role-aware, and experience-sensitive while maintaining high standards of practical applicability.

The small sample size in this study limits the generalizability of the results and requires cautious interpretation. Participants were self-selected, which may have introduced a bias toward individuals with a strong interest in IR training. The potential influence of this bias on the results should be considered. Consequently, future efforts should focus on expanding the number of participants.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

This study implemented a training program designed specifically to address the needs of IR practitioners. While participant satisfaction levels were high, notable variations emerged in perceived difficulty levels and self-perception. These findings suggest the potential need for preliminary learning materials and supplementary sessions to address these disparities.

The study's focus was specifically limited to the Japanese context, with the primary aim of understanding the current state of IR training in Japan and identifying necessary training approaches within this context. One potential significance of this research lies in its ability to communicate Japan's situation to the international community, thereby enabling observation and analysis of global responses.

Acknowledgments

This work was supported by JSPS KAKENHI Grant Number 21K02653.

References

[1] Tetsuya Oishi, Eiichi Takata, and Masao Mori, "Current Status and Issues of IR Human Resource Development Curriculum - Focusing on the Verification of Efforts in Kyushu University," Proceeding of Japan Society of Educational Information Annual Conference, Vol.31, pp.182-185, 2015.

[2] Eiichi Takata, Tetsuya Oishi, and Masao Mori, "Verification of the IR Human Resource Development Curriculum at Kyushu University - Challenges and Future Directions after Two Years of Efforts," University Management, 11(8), pp.43-50, 2015.

[3] Tetsuya Oishi, Masao Mori, and Eiichi Takata, "Curriculum of Human Resource Development for Institutional Research in Japan," The 14th Annual Hawaii International Conference on Education, 2016.

[4] R.D. Howard, Ed., "Institutional Research: Decision Support in Higher Education," Tamagawa University Press, 2012.

[5] Masao Mori and Tetsuya Oishi, "Current Status and Issues of IR Theory at Professional Academy of Tokyo Institute of Technology," Proceedings of 10th Meeting on Japanese Institutional Research, vol.10, pp.44-47, 2021.

[6] Professional Academy of Tokyo Institute of Technology, "Institutional Research Theory," https://www.academy.titech.ac.jp/course-category/ins (accessed 28th March, 2024).

[7] Shuntaro Iseri, Tetsuya Oishi, Nobuhiko Kondo, and Kunihiko Takamatsu, "Actual Conditions of Training Opportunities on IR in Japan - Based on Archived Data from Asagao ML," Proceedings of 11th Meeting on Japanese Institutional Research, vol.11, pp.164-169, 2022.

[8] Shuntaro Iseri, Tetsuya Oishi, Nobuhiko Kondo, and Kunihiko Takamatsu, "Training Opportunities and Required Skills for Institutional Research Programs in Japan," SEAAIR 2023 Annual SEAAIR Conference Proceedings, Vol.3, pp.85-95, 2023.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

[9] Tetsuya Oishi, "A questionnaire survey for the development of a brand-new curriculum for the training of IR personnel," Proceedings of 10th Meeting on Japanese Institutional Research, vol.10, pp.38-43, 2021.

[10] Tetsuya Oishi, "What is the Essential Curriculum for IR in Japan?," Proceedings - 2022 11th International Congress on Advanced Applied Informatics, IIAI-AAI 2022, Vol.001, LIR009, pp.1-5, 2022.

[11] Tetsuya Oishi, Hirofumi Fukumaru, Akihiro Hayashi, and Hiroshi Sakamoto, "Establishment of an IR System for Institutional Decision-Making in Kyushu Institute of Technology," Proceedings - 2022 11th International Congress on Advanced Applied Informatics, IIAI-AAI 2023, Vol.003, LIR116, pp.1-8, 2023.

[12] Tetsuya Oishi, Hirofumi Fukumaru, Akihiro Hayashi, and Hiroshi Sakamoto, "Development of an Automated Institutional Research System for Institutional Decision-Making in Kyushu Institute of Technology," International Journal of Institutional Research and Management, International Institute of Applied Informatics, Vol.8, No.1, IJIRM839, pp.1-16, 2024.

[13] Tetsuya Oishi, "Designing an Individual Survey for Developing an Essential IR Human Resource Development Curriculum - Based on the Results of a Web Questionnaire Survey," Proceeding of Japan Society of Educational Information Annual Conference, Vol.38, pp.238-241, 2022.

[14] Tetsuya Oishi, "Individual surveys and additional analysis for the development of a brand-new curriculum for the training of IR personnel," Proceedings of 11th Meeting on Japanese Institutional Research, vol.11, pp.112-117, 2022.

[15] Tetsuya Oishi and Takashi Nishide, "Designing a Practical Survey for Developing an Essential IR Human Resource Development Curriculum - Focusing on Self-Perception of IR Skills and Knowledge," Proceeding of Japan Society of Educational Information Annual Conference, Vol.39, pp.199-202, 2023.

[16] Tetsuya Oishi and Takashi Nishide, "Survey on self-perception of IR skills and knowledge - Focusing on the gap with the training required by the participants," Proceedings of 12th Meeting on Japanese Institutional Research, vol.12, pp.72-77, 2023.

[17] Takashi Nishide, "Enhancing Communication in University IR through Data: Practical Know-How in Effective Data Visualization and Representation," Departmental Bulletin Paper of Ritsumeikan University Policy Science Association, vol.31(4), pp.101-122, 2024.

[18] Takashi Nishide and Tetsuya Oishi, "Presentation Method of 'Data' and Value of 'Information' in IR - Differences in Information Amount Due to Purpose of Data Use and Analysis, Visualization, and Reporting Methods," Proceeding of Japan Society of Educational Information Annual Conference, Vol.40, pp.54-57, 2024.

[19] Tetsuya Oishi and Takashi Nishide, "Design of Additional Research Contributing to the Development of Essential IR Human Resource Development Curriculum - Considering Training Course Implementation Methods and Survey Contents," Proceeding of Japan Society of Educational Information Annual Conference, Vol.40, pp.222-225, 2024.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.

[20] Tetsuya Oishi and Takashi Nishide, “A Survey on Self-Perception of Institutional Research Skills and Knowledge by Focusing on the Gap with the Participants Needs of Training Courses,” Proceedings - 2024 16th International Congress on Advanced Applied Informatics, IIAI-AAI 2024, Vol.004, LIR239, pp.1-12, 2024.

[21] Tetsuya Oishi and Takashi Nishide, “Results and Discussion of a Additional Study Contributing to the Establishment of an Essential IR Human Resource Development Curriculum,” Proceedings of 13th Meeting on Japanese Institutional Research, vol.13, pp.40-46, 2024.

Copyright © by IIAI. Unauthorized reproduction of this article is prohibited.