

دراسة تحليلية عن واقع تعليم علوم المكتبات في العراق وتوصيات للتطوير

**An analytical study of the state of library and information
science education in Iraq and recommendations for
development**

ساره عبد الإله مسلم

Sarah Abdulilah Muslim

الجامعة التقنية الجنوبية - المعهد التقني الاداري

sarah.aljasem@stu.edu.iq;

الكلمات المفتاحية : المكتبات ، الاستبيان ، المناهج ، DSpace ، الرقمي.

**Keywords: Libraries, Questionnaire, Curricula, DSpace,
Digital.**



Abstract:

This study investigates the current state of Library and Information Science (LIS) education in Iraqi universities, surveying 150 participants to identify the gap between academic curricula and the demands of the digital era. The findings, summarized in Table 1, highlight a nuanced academic reality. While access to digital libraries and databases remains relatively strong, the results indicate a pressing need for comprehensive curriculum alignment with modern technological trends. Specifically, only 34.7% of respondents confirmed that curricula currently cover advanced topics like Artificial Intelligence and Big Data. The data further demonstrates that while 44.9% of departments provide specialized laboratories (e.g., Koha or DSpace), there is an urgent requirement to increase practical laboratory hours, which received the lowest satisfaction ratings Table 1. Although 51.0% of participants recognized the effectiveness of field training programs, the study identified a significant challenge in bridging the gap between academia and the labor market, with only 38.8% reporting clear, functional partnerships. Conversely and the study reveals a positive shift in professional identity, as 42.9% of participants acknowledged the department's role in training students as Data and Information Specialists rather, than traditional librarians. Ultimately, the results underscore that while technological foundations are present, Iraqi LIS education requires a strategic overhaul. To ensure graduate competitiveness in the modern labor market, the study recommends a comprehensive national strategy focused on intensifying practical technical training, updating curricula to reflect contemporary information science standards, and fostering sustainable partnerships with the professional sector.

الملخص :

تبحث هذه الدراسة الوضع الراهن لتعليم علوم المكتبات والمعلومات في الجامعات العراقية، من خلال استطلاع آراء 150 مشاركًا لتحديد الفجوة بين المناهج الأكاديمية ومتطلبات العصر الرقمي. وتُبرز النتائج، المُلخصة في الجدول 1، واقعًا أكاديميًا دقيقًا. فبينما لا يزال الوصول إلى المكتبات الرقمية وقواعد البيانات قويًا نسبيًا، تُشير النتائج إلى حاجة مُلحة لمواءمة شاملة للمناهج الدراسية مع التوجهات التكنولوجية الحديثة. وعلى وجه التحديد، أكد 34.7% فقط من المُستجيبين أن المناهج الدراسية تُعطي حاليًا موضوعات متقدمة مثل الذكاء الاصطناعي والبيانات الضخمة. وتُظهر البيانات أيضًا أنه في حين تُوفر 44.9% من الأقسام مختبرات مُتخصصة (مثل كوها أو دي سيبس)، إلا أن هناك حاجة مُلحة لزيادة ساعات التدريب العملي في المختبرات، والتي حظيت بأقل تقييمات الرضا (الجدول 1). وعلى الرغم من أن 51.0% من المشاركين أقرّوا بفعالية برامج التدريب الميداني، إلا أن الدراسة حددت تحديًا كبيرًا في سد الفجوة بين الأوساط الأكاديمية وسوق العمل، حيث أفاد 38.8% فقط بوجود شراكات واضحة وفعّالة. في المقابل، تكشف الدراسة عن تحول إيجابي في الهوية المهنية، حيث أقرّ 42.9% من المشاركين بدور القسم في تدريب الطلاب كأخصائيي بيانات ومعلومات" بدلاً من أمناء مكتبات تقليديين. وتؤكد النتائج في نهاية المطاف أنه على الرغم من وجود الأسس التكنولوجية، فإن تعليم علوم المكتبات والمعلومات في العراق يحتاج إلى إصلاح استراتيجي شامل. ولضمان تنافسية الخريجين في سوق العمل الحديث، توصي الدراسة باستراتيجية وطنية شاملة تركز على تكثيف التدريب التقني العملي، وتحديث المناهج الدراسية لتواكب معايير علوم المعلومات المعاصرة، وتعزيز شراكات مستدامة مع القطاع المهني.

Table 1: Statistical Results of the Evaluated Indicators

Figure No.	Indicator (Topic)	Yes (%)	No (%)	Acceptable (%)
Figure 1	Specialized Laboratories (Koha/DSpace)	44.9	26.5	28.6
Figure 2	Digital Access and Academic Databases	46.9	30.6	22.4
Figure 3	Modern Curricula (AI, Big Data)	34.7	34.7	30.6
Figure 4	Focus on Technological Aspects	42.9	38.8	18.4
Figure 5	Periodic Curriculum Updates	38.8	34.7	26.5
Figure 6	Field Training and Practical Experience	51.0	22.4	26.5
Figure 7	Practical Laboratory Hours	30.6	34.7	34.7
Figure 8	Competitive Skills (Language & Technical)	40.8	28.6	30.6
Figure 9	Labor Market Partnerships	38.8	36.7	24.5
Figure 10	Professional Orientation (Info Specialist vs. Librarian)	42.9	42.9	14.3

Chapter 1: Theoretical Framework: The Research Problem

Against the backdrop of the information revolution and the rapid transition toward a knowledge-based economy, libraries have transcended their traditional role as mere repositories of books. They have undergone a radical transformation with the rise of the knowledge economy, evolving from their traditional function of preserving printed materials to active centers for managing big data and digital processing. Despite this global shift, initial indicators in Iraq point to a growing gap between the outputs of library and information science education and the demands of today's digital job market. The problem lies in the inadequacy of current curricula to adapt to global information security standards, a problem exacerbated by numerous structural and legislative challenges. The regulatory frameworks and administrative standards governing these institutions remain insufficient to meet the demands of the digital economy. Moreover, the lack of strategic coordination between academic institutions and the business sector is a major obstacle to integrating practical training and skills into the educational process, resulting in weak educational outcomes and their unsuitability for the requirements of smart work environments. These institutions also face a dual challenge: limited connectivity to international information networks and a lack of unified databases. This has led to relative isolation from the Iraqi research community and restricted opportunities for academic exchange. Complicating matters further is the scarcity of studies that utilize bibliographic indicators and information metrics to analyze user trends. This has negatively impacted the effectiveness of acquisition plans and policies in academic libraries, rendering them inadequate to meet the demands of the digital stage.

Importance and Need for This Research:

This study investigates the current state of library and information science education at Iraqi universities, aiming to identify the significant gap between academic outcomes and the technical demands of today's job market. The study employs a comprehensive descriptive and analytical methodology, based on fieldwork that integrates quantitative and qualitative methods. A questionnaire was used to collect data from a sample of students and individuals outside academia, along with an analysis of course content .

Research Objectives :

The study aims to assess the suitability of curricula to global digital standards, measure the readiness of infrastructure and technical laboratories, identify the gap between acquired skills and the actual needs of the labor market, and finally, develop a strategic framework offering practical recommendations to the Ministry of Higher Education and Scientific Research. These recommendations aim to restructure academic programs to enhance the regional and international competitiveness of Iraqi graduates.

Based on these findings, the study proposes the following solutions to bridge the research and professional gap:

1. Curriculum Update: The study emphasizes the need to integrate focused teaching units in artificial intelligence and big data, moving beyond traditional theories.
2. Strategic Partnerships: The study stresses the importance of activating coordination with the labor market, especially since only 45.5% of the sample reported existing coordination. This necessitates the signing of memoranda of understanding with information technology institutions and companies.
3. Developing competencies: Intensifying practical and field training, which is accepted by (54.5%) of students as an effective tool for professional empowerment, and ensuring the transformation of academic knowledge into tangible applied practices, which ensures bridging the gap between university outputs and the requirements of the digital age (Sahhari et al., 2025).

Chapter 2: Theoretical Framework

Theoretical background and previous studies;

The education system in library and information science departments faces deep-rooted structural challenges. Studies indicate that curricula are rigid and fail to keep pace with rapid technological advancements. This has resulted in a clear gap between academic outputs and the actual demands of the labor market (Abdullah, 2019). Analyses confirm the absence of effective national policies for updating curricula to ensure the integration of advanced technological models such as artificial intelligence (Hussein, 2022). In addition to the shortcomings of legislative and academic frameworks in accommodating knowledge economy standards (Al-Zuhairi, 2025; Khudair & Jadhav), historically, Hassan (2012) demonstrated that Iraqi programs suffer from a clear technological lag, as curricula remained confined to traditional paper-based indexing instead of database management. This view was supported by Mahmoud (2015) in his comparative study, explaining that neighboring countries had preceded Iraqi institutions in adopting information technology and data science units. Ibrahim (2018) linked the low quality of academic research to the lack of infrastructure, particularly weak access to global databases. In the same vein, Saleh (2020) pointed to the lack of personal and technical skills among graduates necessary for managing information in competitive business environments. Al-Saadi (2021) observed that educational methods in many departments had not undergone any fundamental change for more than a decade. Regarding standards, Karim (2022) explained that the absence of unified national standards prevents Iraqi degrees from obtaining international accreditation, while Jabbar (2023) explored the administrative and psychological obstacles that limit the adoption of open learning platforms. Rashid (2024) warned of professional obsolescence if the integration of information ethics and artificial intelligence into core curricula continues to be neglected. Finally, Othman (2025) emphasizes that the current leading global trend is the integration of library science departments with computer science colleges, a path that has not yet gained the necessary momentum in the Iraqi academic environment. This is supported by Bezan's (2022) insights on the necessity of comprehensive digital transformation to ensure the profession's survival in the job market. Despite the richness of the aforementioned studies, there is a significant research gap that needs addressing. Most current studies are descriptive or historical in nature and lack primary empirical data collected directly from contemporary students and faculty members in Iraq. There is also a severe lack of analysis that directly links

students' technical competence to the actual requirements of the emerging digital job market. In addition, there is a scarcity of evidence-based research that provides practical recommendations tailored to the context of rebuilding Iraqi academic libraries after years of crises and isolation from global development. This is the gap that this study seeks to bridge. Based on field data collected from 33 participants, the study's findings revealed The reality is mixed; although 60.6% of participants confirmed the availability of digital libraries and global databases, satisfaction with curriculum updates did not exceed 39.4%, highlighting the gap noted in the literature. Regarding technological infrastructure, 57.6% indicated the availability of computer labs equipped with modern software (such as Koha or DSpace), a positive indicator that requires greater investment in practical hours, the adequacy of which was a point of contention among respondents. One of the most significant qualitative findings is the shift in professional identity; 57.6% of the sample believe that the specialization prepares them as data and information specialists, not merely traditional librarians.

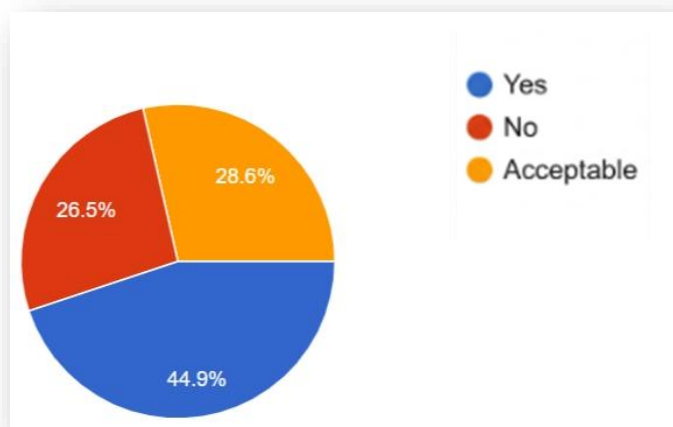
Chapter 3: Presentation and Analysis of Field Results

This study presents an analysis of the opinions of 150 participants regarding the reality of library science education in Iraq. The results were categorized into main themes, each followed by a graphical representation of randomly selected participants. The results showed an urgent need to develop curricula to reflect modern trends.

First: Evaluation of Infrastructure and the Digital Environment

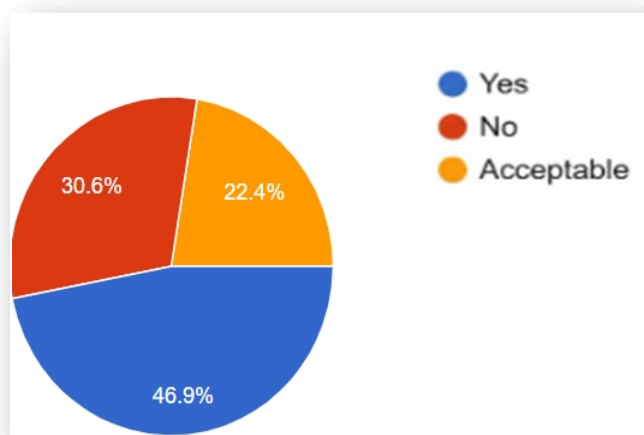
The results showed a disparity in infrastructure, with 44.9% of respondents confirming the availability of computer labs equipped with modern software, while 26.5% expressed dissatisfaction, as shown in Figure 1.

Figure 1. Shows whether the department has computer labs equipped with modern library and information center management software such as Koha or DSpace.



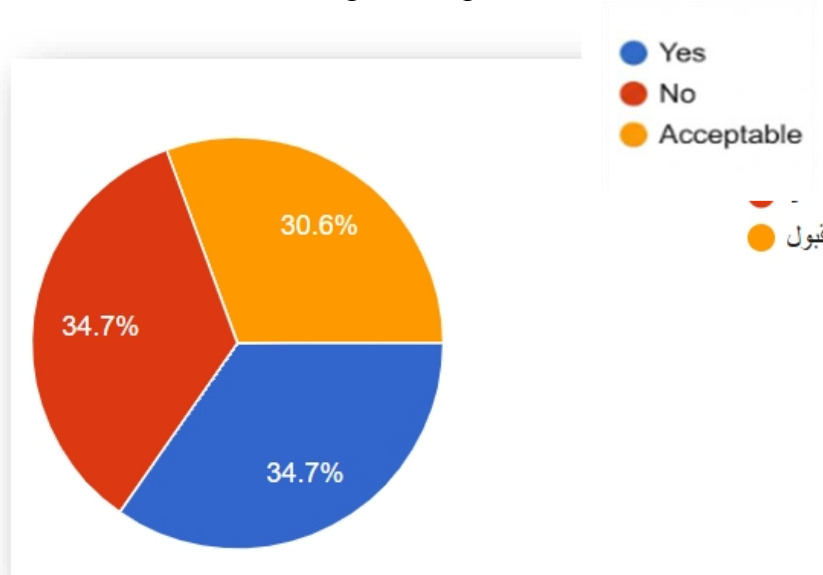
Regarding the college's provision of free access to global databases and libraries, a 52.5% approval rate was revealed, reinforcing the trend towards supporting digital scientific research, as shown in Figure 2.

Figure 2 .Shows whether the college provides students and researchers with free access to academic databases and global digital libraries for research and study purposes.



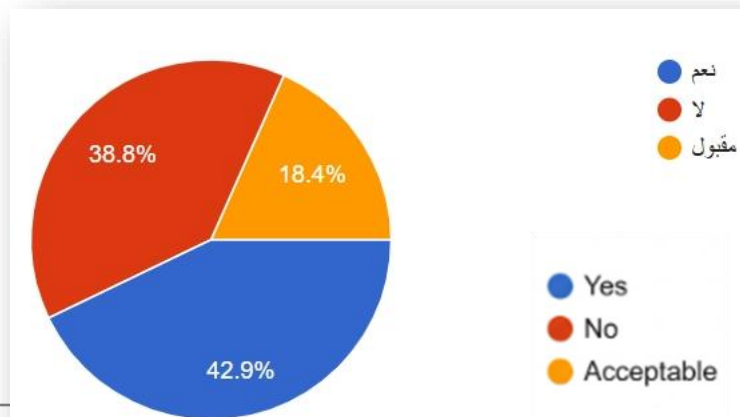
Second: Updating Curricula and Keeping Them Ahead of Modern Trends When measuring the extent to which curricula keep pace with contemporary technological developments (such as artificial intelligence and big data), it was shown that 34.7% believe the curricula keep pace, while 34.7% expressed dissatisfaction, and 30.6% expressed acceptance of the curricula, as shown in Figure 3.

Figure 3. Illustrates whether the current curricula cover modern trends in information science such as artificial intelligence, big data, and digital archiving .



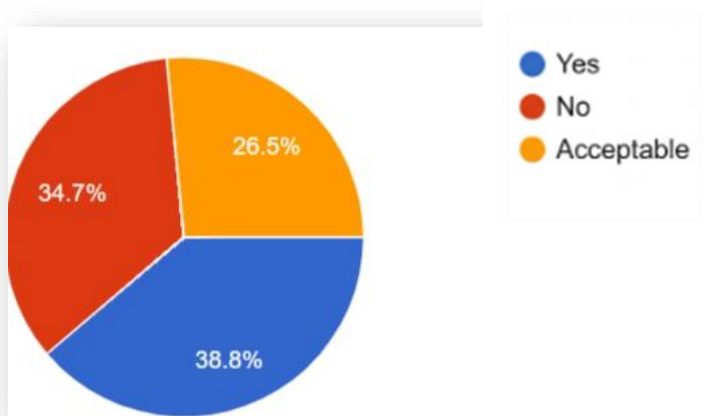
In this context, he emphasized that 42.9% of the courses currently focus on technological and digital aspects compared to traditional office processes, as shown in Figure 4.

Figure 4. The figure illustrates the courses' focus on technological and digital aspects more than traditional processes cataloging classification on office (such as and paper



The results also indicated that 38.8% of the sample support the periodic updating of curricula to keep pace with global changes, as shown in Figure 5.

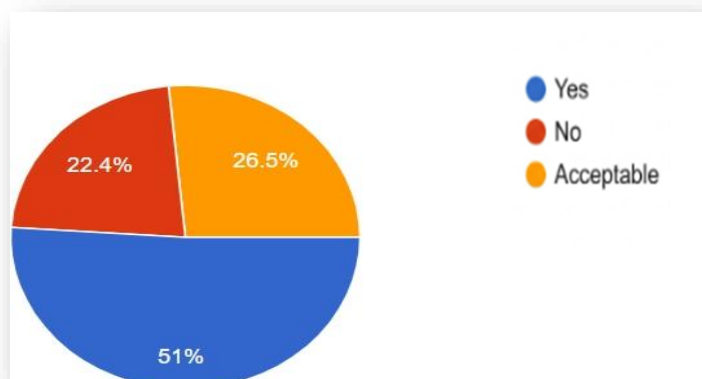
Figure 5. The figure shows that the department's curricula are updated periodically to keep pace with rapid global developments in the field



Third: Skills, Field Training, and Integration with the Labor Market

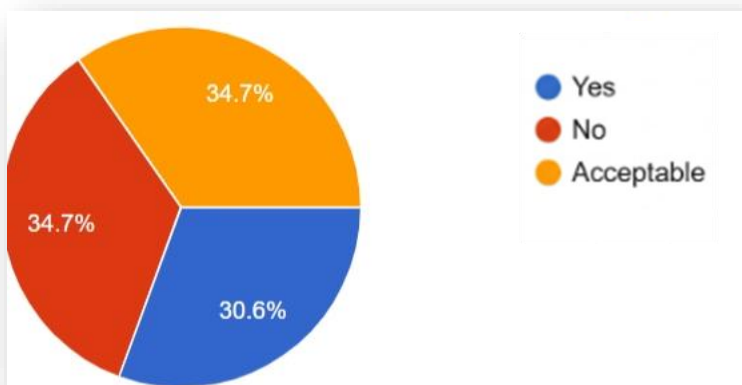
Regarding the quality of field training, a high satisfaction rate of (51%) was recorded, reflecting the effectiveness of these programs in providing students with real-world experience, as shown in Figure 6.

Figure 6. This figure illustrates whether the field training program (summer/practical) in libraries and government institutions provides students with real-world experience that qualifies them to practice the profession confidently.



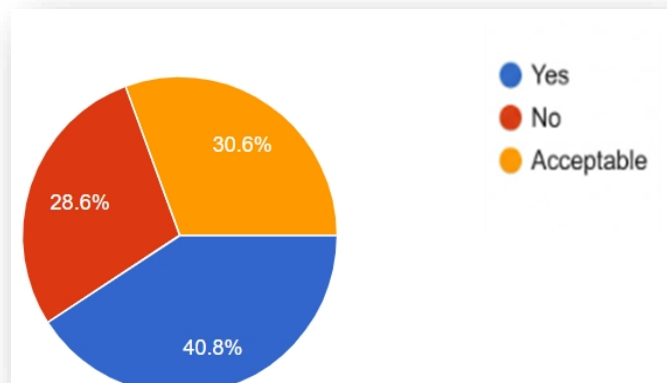
In terms of practical application, the study showed that only 30.6% of respondents found the allocated laboratory hours sufficient, presenting a time challenge that requires addressing through a plan, as illustrated in Figure 7.

Figure 7. The figure illustrates that the hours allocated for practical application within laboratories are sufficient for mastering the technical skills actually required in the job market.



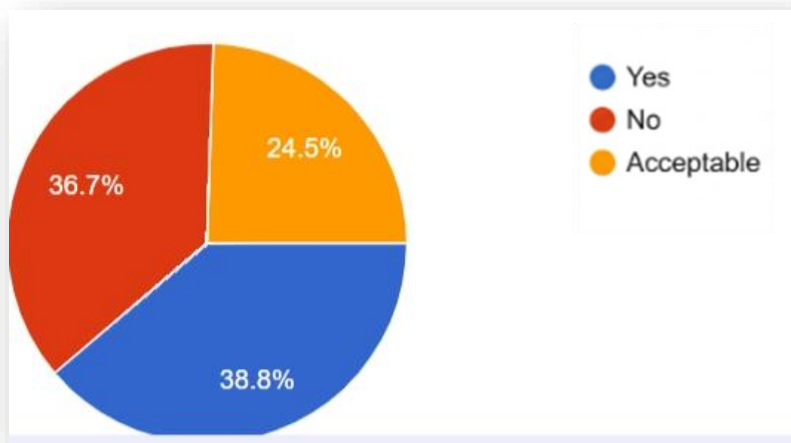
Regarding competitive skills (linguistic and technical), 40.8% believe that graduates possess these skills, as shown in Figure 8.

Figure 8. This figure illustrates whether graduates of the department possess sufficient linguistic (English) and technical skills to compete in the modern job market and employment channels.



Regarding coordination with the labor market, a disparity was revealed, with 38.8% supporting genuine partnerships, while 36.7% opposed them, as shown in Figure 9.

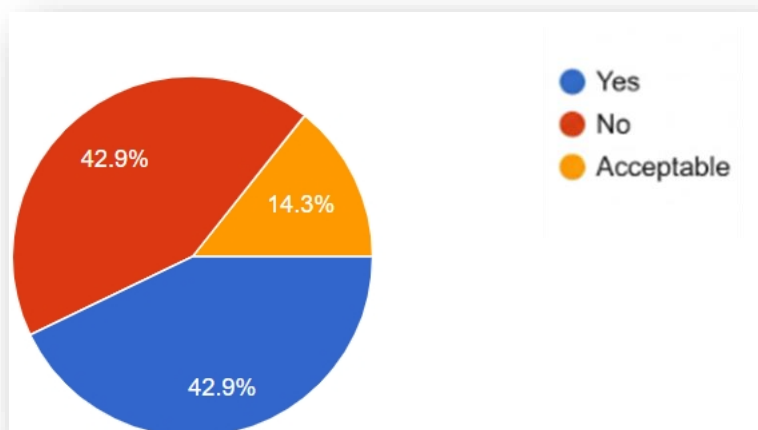
Figure 9. The figure illustrates whether there is clear coordination and genuine partnerships between university library departments and the labor market to develop students' skills and provide them with ongoing training..



Fourth: The Shift in Professional Identity

A strategic awareness was evident among (50%) of respondents that specialization contributes to preparing graduates as data and information specialists and transcends the traditional concept of the profession. Meanwhile, the percentage of dissatisfaction or lack of acceptance of this trend ranged from (14.3% to 42.9%), reflecting an intellectual conflict regarding future career paths, as shown in Figure 10.

Figure 10. The figure illustrates whether specialization contributes to preparing and guiding graduates to work as 'data and information specialists' and not just as 'traditional librarians'.



Chapter 4: Conclusions and Recommendations

The study concludes that Library and Information Science (LIS) education in Iraq is currently navigating a critical transitional phase. While there is evidence of an acceptable digital infrastructure, this progress is countered by a noticeable rigidity in educational curricula and a persistent failure to align academic outputs with the dynamic requirements of the contemporary labor market. The analysis of performance trends, as illustrated in **Figure 11: Variance Curve of Educational and Professional Performance Indicators (Analysis of Response Trends)**, reveals a significant strategic gap. The data shows distinct peaks in digital access indicators (52.5%) and field training (51%), demonstrating the availability of material resources and

external professional opportunities. In contrast, the performance curve reaches its troughs in practical laboratory hours (30.6%) and periodic curriculum updates. This suggests that the primary challenge facing LIS programs in Iraq is not merely a scarcity of resources, but rather the inefficient management of instructional time and a widening skills gap.

Furthermore, as shown in **Figure 12: Trend Analysis of Evaluation Indicators for LIS Education Programs**, the volatility across these metrics highlights a systemic imbalance. The intersection of these trends underscores that while technological foundations are present, Iraqi LIS education requires a strategic overhaul. To ensure the competitiveness of graduates in the modern information labor market, it is essential to move beyond traditional methods and adopt a comprehensive national strategy that prioritizes the intensification of practical technical training, the modernization of curricula to meet international standards, and the formalization of sustainable partnerships with the professional information sector.

First: Key Findings of the Study

Based on the analytical and statistical data, the following conclusions can be drawn:

1.The Paradox Between Availability and Utilization: The results confirm the existence of a technology utilization gap. Although more than half of the sample (52.5%) affirms the availability of access to global digital resources, satisfaction with the integration of these technologies into the curriculum remains low. This indicates that the technology is available but not systematically and effectively integrated.

2.The Curriculum Crisis: The data reveals a state of knowledge stagnation. The equal percentages of satisfaction and dissatisfaction (34.7%) regarding the coverage of modern trends indicate that the current curriculum remains confined to traditional approaches and lacks the periodic updating strategies necessitated by data science and artificial intelligence.

3 .The Shift in Professional Identity: The study highlights an important strategic indicator: the tendency of 50% of students to adopt a data and information specialist identity. This reflects a self-awareness of the need to move beyond the traditional function of libraries, representing an opportunity for academic reform that must be capitalized upon to restructure the discipline.

4. The practical gap: The results reveal a flaw in the link with the labor market, as practical and laboratory training hours are still insufficient (30.6%). Partnerships with the professional sector suffer from instability (a difference of 38.8% agree versus 36.7% disagree), which puts the graduate in a state of professional uncertainty .

Second: Strategic Direction

Based on the survey results and the trajectory of this curve, any future development direction should not focus on adding more technology, but rather on redesigning the timeline of the educational process. This necessitates shifting the academic focus from the theoretical sphere, which is high on the curve, to the practical, applied sphere, which is currently weak at the bottom of the curve. This will ensure the integrity of academic performance and its alignment with the demands of the competitive market.

Figure 11. Variance Curve of Educational and Professional Performance Indicators (Analysis of Response Trends).

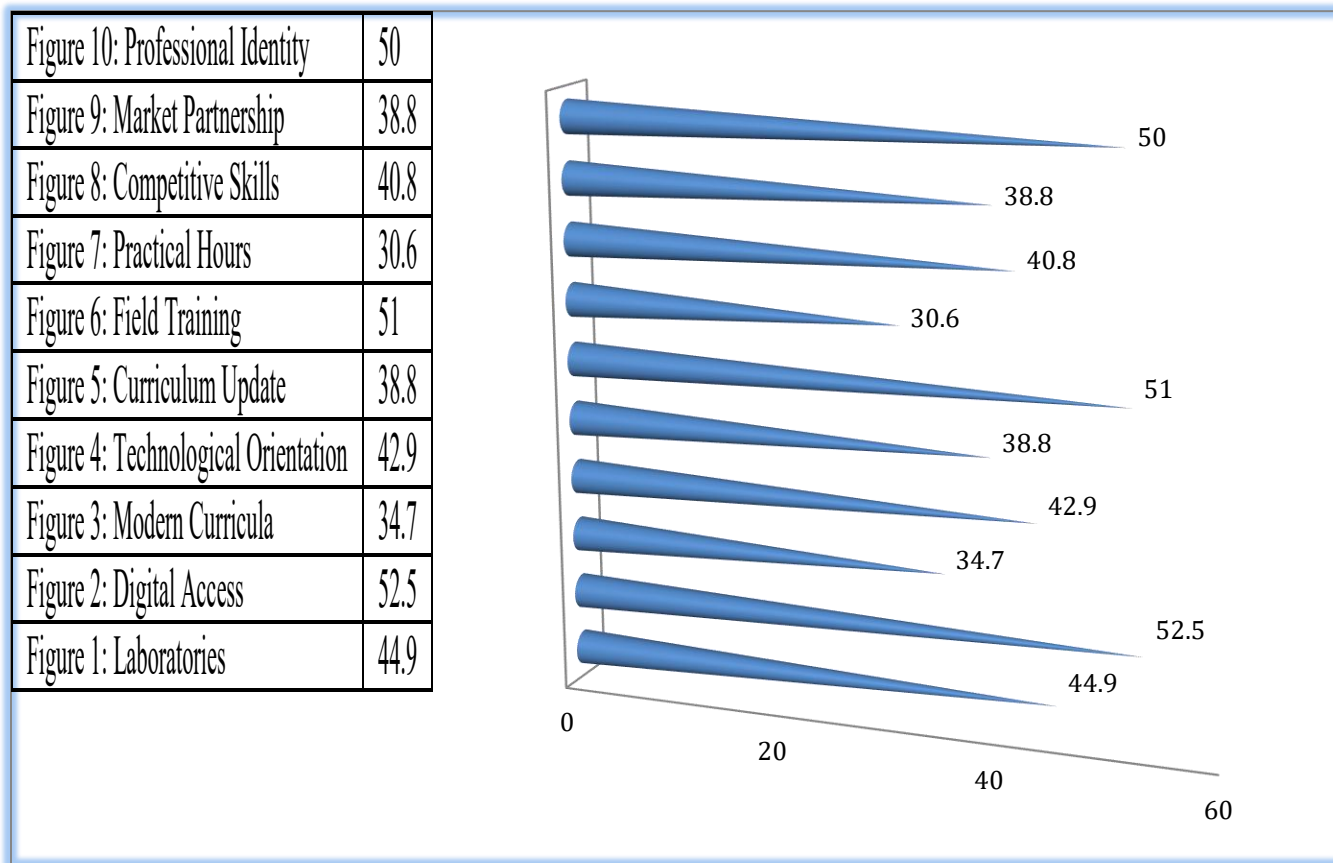
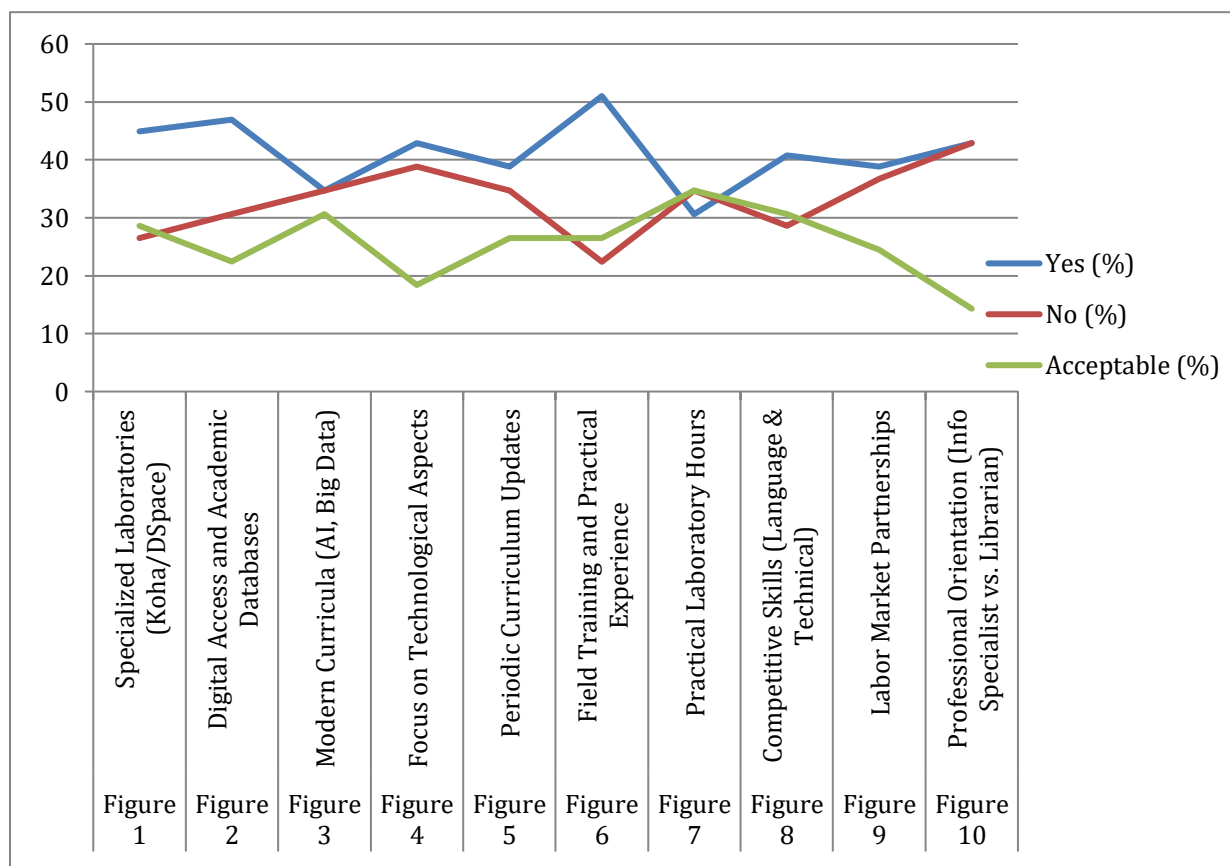


Figure 12. Trend Analysis of Evaluation Indicators for LIS Education Programs



Second: Recommendations

Based on the above findings and conclusions, the study recommends the following:

1. At the academic and methodological level:

- Curriculum Update: Immediately begin a comprehensive review of the curricula to integrate data science, artificial intelligence, digital archiving, and information ethics as essential graduation requirements.
- Adopting International Standards: Striving to align curricula with international accreditation standards (such as IFLA or CILIP) to ensure the global recognition of Iraqi degrees.

2. At the Infrastructure and Training Level:



- Intensifying Practical Application: Increasing the number of hours allocated to digital labs and activating the virtual lab system to enable students to continuously train on library management software such as Koha and DSpace.
- Developing Summer Training Programs: Transforming field training from a routine requirement into a training program accredited by smart information institutions, with student performance evaluated in cooperation with the training provider.

3. At the Labor Market Level:

- Professional Advisory Board: Establishing an advisory board comprising academics and experts from the labor market (digital libraries, data centers, technology companies) to contribute to the design and periodic development of courses.
- Job Fairs: Organizing periodic job fairs to introduce employers to the skills of new data and information specialists and promote graduates' capabilities in data analysis and knowledge management.



References

- Abdullah, M. (2019). Contemporary challenges of library science education in Iraq. *Mustansiriyah University Journal of Scientific Research*.
- Al-Saadi, A. (2021). The reality of professional development for faculty members in information departments. *Journal of Educational Sciences*.
- Al-Zuhairi, H., & Khudair, A. (2025). Digital transformation and the knowledge economy in Iraq. *Global Journal of Information Studies*.
- Bizan, M. (2022). Digital transformation strategies in information institutions. *Arab Journal of Library and Information Science*, 15(2).
- Hassan, L. (2012). *Information science curricula: Challenges of tradition and innovation*. University of Baghdad, College of Arts.
- Hussein, A. (2022). Artificial intelligence in the educational environment: An analytical study. *Scientific Journal of Information*.
- Ibrahim, A. (2018). *The reality of infrastructure in Iraqi academic libraries*. Dar Al-Ma'rifa for Printing and Publishing.
- Jabbar, S. (2023). Administrative and psychological barriers to open learning platforms. *Proceedings of the International Conference on Library and Information Science*.
- Mahmoud, J. (2015). *Library science curricula in the Middle East: A comparative study*. Centre for Arab Unity Studies.
- Othman, N. (2025). A bibliometric analysis of trends in integrating library departments with computer science. *International Journal of Informatics*.
- Rashid, F. (2024). *Ethics of artificial intelligence and the future of library professions*. National House for Books and Documents.



Saleh, A. (2020). The skills gap in the information labor market. *Journal of Library Studies*.