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Theoretical, Practical, and Methodological Aspects of Cataloguing Literature at the National Library of Azerbaijan named after Mirza Fatali Akhundov

Abstract

This study comprehensively analyzes the theoretical, practical, and methodological aspects of cataloguing literature at the National Library of Azerbaijan named after Mirza Fatali Akhundov. Cataloguing, as a core component of library and information science, plays a crucial role in the description, identification, and retrieval of documents. The paper reviews major international cataloguing standards such as AACR2, RDA, MARC 21, FRBR, and the IFLA Library Reference Model (LRM), and evaluates their implementation within the Azerbaijani library system. It also examines the historical development of cataloguing practices at the National Library, the functions of electronic cataloguing systems, forms of methodological guidance, and existing challenges. The findings indicate that the cataloguing experience of

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the National Library serves as a key mechanism for integration into the global information environment, and continuous methodological improvement remains essential for future development.

Keywords: Cataloguing, National Library of Azerbaijan, Bibliographic Description, RDA, MARC 21, Electronic Catalogue

Teorik, Pratik ve Metodolojik Açidan Azerbaycan Milli Kütüphanesi (Mirza Feteli Ahundov Adına) Bünyesinde Eser Kataloglama Çalışmaları

Öz

Bu çalışma, Mirza Feteli Ahundov adına Azerbaycan Milli Kütüphanesi'nde yürütülen kataloglama faaliyetlerinin teorik, pratik ve metodolojik boyutlarını kapsamlı bir biçimde incelemektedir. Kataloglama, kütüphanecilik ve bilgi biliminin temel bileşenlerinden biri olarak belgelerin tanımlanması, kimliklendirilmesi ve erişime sunulmasında kritik bir rol oynamaktadır. Makalede AACR2, RDA, MARC 21, FRBR ve IFLA LRM gibi başlıca uluslararası kataloglama standartları ele alınmakta ve bu standartların Azerbaycan kütüphane sistemindeki uygulanma süreçleri değerlendirilmektedir. Ayrıca Milli Kütüphane'de kataloglama faaliyetlerinin tarihsel gelişim aşamaları, elektronik kataloglama sistemlerinin işlevleri, metodolojik rehberlik biçimleri ve mevcut sorun alanları ayrıntılı olarak analiz edilmektedir. Araştırma bulguları, Milli Kütüphane'nin kataloglama deneyiminin küresel bilgi ortamına entegrasyonun temel araçlarından biri olduğunu ve bu alandaki metodolojik gelişimin süreklilik arz ettiğini ortaya koymaktadır.

Anahtar Kelimeler: Kataloglama, Azerbaycan Milli Kütüphanesi, Bibliyografik Tanımlama, RDA, MARC 21, Elektronik Katalog

Introduction

Cataloguing is one of the key fields that form the theoretical and practical foundations of library and information science. In the modern information environment, the role of cataloguing extends far beyond the mere systematization of library collections; it also plays a crucial role in ensuring the identification of documents in digital environments, enhancing search efficiency, and facilitating information exchange. The National Library of Azerbaijan named after Mirza Fatali Akhundov functions as the methodological center for cataloguing activities across the country. The cataloguing experience developed at this institution constitutes an essential basis not only for practical work but also for the application of theoretical and methodological approaches. Since the second half of the 20th century, the adoption of international cataloguing standards (such as MARC, AACR2, etc.) has expanded the uniformity and interoperability of bibliographic records in library documentation. In the 21st century, these processes have evolved into a more flexible and semantically enriched framework through the implementation of RDA (Resource Description and Access) and FRBR (Functional Requirements for Bibliographic Records) models. The integration of Azerbaijani libraries—particularly the National Library—into these innovations represents a significant stage in the international recognition and sharing of national library resources.

The purpose of this article is to systematically examine the theoretical, practical, and methodological aspects of cataloguing activities at the National Library of Azerbaijan, and to identify existing problems and development perspectives on a scientific basis.

For this purpose, the research addresses the following issues:

- Theoretical principles of cataloguing and the essence of international standards;
- The history and current state of cataloguing activities at the National Library of Azerbaijan;
- Analysis of methodological guidance and practical challenges;
- Prospective directions for the development and integration of cataloguing activities.

The Theoretical Foundations of Cataloguing and International Practice

The Concept and Essence of Cataloguing

Cataloguing is a field of library and information activity in which the systematic bibliographic description and identification of documents are carried out. The primary objective of this process is to create a structured information database that provides detailed data about a document's content, authorship, physical form, and other descriptive elements. Through cataloguing, users are provided with prompt, accurate, and comprehensive information about the composition and intellectual content of a library's collection. From a theoretical perspective, cataloguing is not merely a technical procedure but also a scientific and methodological domain that determines the semantic and cognitive structure of information systems. The informational structures generated through cataloguing—such as catalogues, card indexes, and databases—support the analytical and managerial functions of library and information activities. In the contemporary era, the scope of this activity extends beyond the internal resources of libraries and has become one of the fundamental components of global information exchange. In the classical traditions of Azerbaijani library science, cataloguing, collection organization, and classification have developed as interrelated and complementary scholarly directions. Beginning in the mid-20th century, this activity came under state-level regulation through normative documents. During the 1970s and 1980s, under the guidance of the Azerbaijan SSR Scientific and Technical Library and the National Library, methodological principles were established. These principles were later refined and harmonized with international standards in subsequent stages of development

International Normative Documents and Standards

The international standardization of cataloguing aims to ensure the mutual integration of library systems and the unification of information exchange processes. In this regard, several fundamental normative documents and conceptual models hold particular significance.

AACR2 (Anglo-American Cataloguing Rules, 2nd Edition)

Implemented since 1978, AACR2 is recognized as one of the most important international rule sets for cataloguing (IFLA, 2017; Əhmədov, 2020). This standard ensures consistency and uniformity in the bibliographic description of documents. Its structure is based on such descriptive elements as author, title, publication data, and physical characteristics. The principles of AACR2 began to be gradually applied in Azerbaijani libraries starting from the late 1990s.

MARC 21 (Machine-Readable Cataloging)

MARC 21 is a format that enables catalogued data to be read and processed by computers. Developed in the 1960s by the Library of Congress, this system serves as the primary technical foundation for encoding and exchanging bibliographic information (Əliyeva, 2019; Babayev, 2022). The MARC format made interlibrary information exchange possible and facilitated the development of electronic catalogues. Since the early 2000s, methodological work has been carried out at the National Library of Azerbaijan to implement the MARC 21 format, and in subsequent years, the information architecture of the national electronic catalogue system has been adapted accordingly.

RDA (Resource Description and Access)

Developed in 2010 as a continuation of AACR2, the RDA standard goes beyond simple document description and enables representation of content within a connected information environment. The advantage of RDA lies in its ability to describe digital resources, multi-format publications, and hybrid collections. Modern cataloguing systems, including IRBIS64 and Koha, currently used at the National Library of Azerbaijan, are in a gradual process of adaptation to RDA principles.

FRBR and LRM Models

The Functional Requirements for Bibliographic Records (FRBR), developed and adopted by IFLA, and its successor, the Library Reference Model (LRM), are conceptual frameworks that define the semantic foundations of cataloguing (Həsənova, 2018; Məmmədova, 2020). These models provide a conceptual representation of documents based on the relationships among *work*

– *expression* – *manifestation* – *item*. The LRM presents these relationships in a more flexible ontological structure and forms the theoretical basis of the RDA standard. At the National Library of Azerbaijan, initial scientific and methodological research is being conducted on the implementation of the FRBR model, and pilot projects are being developed to align the national bibliographic database with it.

Theoretical Principles of Electronic Cataloguing

In the modern era, cataloguing processes have become fully digitized and integrated into electronic management systems. Electronic cataloguing not only replaces traditional card-based systems but also creates multilayered, interconnected, and semantically searchable databases (Rəhimova, 2021; Əliyeva, 2019). In such systems, metadata structures are developed in formats such as Dublin Core, MODS, and MARCXML, enabling integration with other information systems. The main advantages of electronic catalogues include the following:

- **Search efficiency** – users can search by author, subject, keyword, publication date, and other parameters.
- **Integration capabilities** – catalogues can be linked with external databases (e.g., OCLC, WorldCat).
- **Semantic connectivity** – models such as RDA and LRM allow meaningful relationships to be established between documents.
- **User orientation** – electronic interfaces provide personalized filtering and navigation options.

The theoretical foundations of electronic cataloguing are regulated at both the technical and information architecture levels. The core concept here is *metadata*—that is, “data about data.” The scientific development of metadata structures ensures document identification, compatibility with search systems, and semantic connectivity. The National Library of Azerbaijan transitioned to electronic cataloguing between 1999 and 2000, initiating the conversion of retrospective bibliographic descriptions into digital format. At present, within the framework of the “National Electronic Library System,” all newly acquired publications are catalogued electronically in accordance with RDA and MARC 21 principles.

Integration of International Experience into the National Model

The cataloguing practices of world libraries demonstrate that national libraries pay particular attention to the application of international standards not only in the description of their own

collections but also in their methodological guidance activities. For example, the British Library applies RDA and BIBFRAME models in parallel, sharing its cataloguing data as Linked Data, while the German National Library maintains personal and corporate headings within a unified authority system known as *Gemeinsame Normdatei* (GND).

Taking these experiences into account, the National Library of Azerbaijan is also working toward the unification of bibliographic data coding at the national level and its integration with international systems (Hacıyeva, 2021). The application of the MARC 21 format and the establishment of the *Azerbaijani Bibliographic Information System* serve as practical indicators of this integration. Thus, aligning the theoretical foundations of cataloguing with international practice has become a strategic direction within the information management system of the National Library. This approach represents not only a technological innovation but also a scientific and methodological process that ensures the preservation of the national identity of information resources while enabling their integration into the global information space.

Organization of Cataloguing Activities at the National Library of Azerbaijan

The Cataloguing Policy and Stages of Development

The Mirza Fatali Akhundov National Library of Azerbaijan is the leading scientific and informational institution in the country, functioning as the methodological center of the national library system. Its cataloguing activities focus on both the formation of national bibliographic data and integration into international information exchange networks. The formation of the cataloguing policy of the National Library has undergone several historical stages:

Stage I - The Traditional Card Catalogue Period (1920–1980)

During this period, bibliographic descriptions of the library's collection were prepared manually and organized through card catalogues. The process was based on the principles of the Soviet library science system and regulated by documents such as the *Rules Book* and the *State Bibliographic Standard*. Each publication was systematized manually by author, title, subject, and series indexes.

Stage II - The Transition to Automation (1980–1999)

This stage was marked by the first attempts at mechanizing the cataloguing process and storing bibliographic data using early computing systems. Between 1985 and 1990, the *Scientific-Methodological Department* of the National Library developed updated rules for improving and

systematizing cataloguing, culminating in the methodological document *Standardization of Bibliographic Description in the Library Collections of Azerbaijan*.

Stage III - Electronic Cataloguing and Digital Integration (2000–present)

At the beginning of the 21st century, the library's information infrastructure was fully modernized, and the *IRBIS64* system was introduced. Bibliographic descriptions were adapted to the MARC 21 format (Rəhimova, 2021). Since then, information on each publication has been entered electronically, and the processes of description and indexing have been automated. The electronic version of the *Azerbaijan National Bibliography* was also created and integrated into the cataloguing database. This step-by-step development brought about a qualitative transformation of cataloguing at both theoretical and practical levels. Currently, the cataloguing activities of the National Library are harmonized with international principles, and the transition to the RDA and LRM models is underway.

Electronic Cataloguing Systems and Technical Infrastructure

At the National Library of Azerbaijan, the cataloguing process is carried out through the *IRBIS64* library and information system (Rəsulova, 2018). This multi-module software complex ensures the bibliographic description, indexing, retrieval, and integration of documents into the electronic collection.

The system consists of the following key modules:

- **Cataloguing Module** – responsible for entering the main descriptive elements of a document (author, title, publication data, ISBN, etc.) and assigning MARC fields (Mammadov, Mahammadli & Karimov, 2025).
- **User Interface Module** – provides online access to the catalogue and enables bibliographic search.
- **Authority Control Module** – ensures consistency in personal names, corporate bodies, and subject headings.
- **Integration Module** – enables interoperability with other systems of the National Library, including *National Digital Memory*, *Electronic Bibliographic Database*, and *Azerbaijan National Bibliography*.

From a technical standpoint, the *IRBIS64* system operates on both local servers and cloud-based infrastructure. Data is stored within a PostgreSQL database management system (Khalafova & Mahammadli, 2025). The electronic cataloguing process has been aligned with the requirements

of the RDA standard and is supported by a multilingual interface. Since 2020, the National Library has also been implementing a pilot project using *Koha*, an open-source integrated library system. As Koha is compatible with MARC 21 and Z39.50 protocols, it allows direct data exchange with international library networks. The implementation of electronic cataloguing systems has significantly increased the efficiency of library resource management, reduced processing time, and enabled real-time information exchange.

Integration of National Bibliography and Cataloguing

The National Library of Azerbaijan functions as the central institution responsible for developing the national bibliography; therefore, the integration of bibliographic activity and cataloguing is of crucial importance. The primary goal of the national bibliography is to create a complete, accurate, and systematized database of all publications issued in the country. This data forms the scientific and methodological foundation of cataloguing and is synchronized with the National Library's electronic catalogue.

Integration is carried out in the following directions:

***Database Merging** – bibliographic records created during registration are automatically transferred to the cataloguing module.

***Methodological Standardization** – both processes are regulated according to MARC 21 and RDA principles (Mammadov & Mahammadli, 2025).

***Authority and Identification Control** – unified management of authors, publishers, and subject headings is maintained (Rzayeva & Mahammadli, 2025).

***Information Exchange** – catalogued data is publicly accessible through the *Electronic National Bibliography* section of the library's web platform (Зейналова, 2020).

This integration has enabled the formation of a unified system of bibliographic data and ensured a cohesive information environment for cataloguing nationwide.

Methodological and Organizational Activities of the Cataloguing Department

The Cataloguing and Classification Department is one of the core scientific and methodological units of the National Library (Mammadov, 2022b). The department is responsible for preparing bibliographic descriptions, assigning classification numbers, selecting subject headings, and standardizing cataloguing procedures.

Its primary activities include:

- Formulation and implementation of national cataloguing policy

- Cataloguing of new publications and acquisitions (Askerova & Mammadov, 2025)
- Preparation of bibliographic records for the electronic catalogue
- Development of methodological guidelines and standards (Mammadov, 2022a)
- Provision of methodological support to libraries across the country (Kushzhanov & Dashqin, 2019c)

Every year, the department publishes manuals such as *Guidelines for Improving Cataloguing Activities in Libraries*, *Practical Manual on MARC Format Implementation*, and *Application of RDA Rules*. These materials are distributed to scientific, academic, and specialized libraries and presented through seminars and professional training sessions. Thus, the National Library not only organizes its own cataloguing activities but also serves as a central methodological institution guiding libraries across the Republic.

Cataloguing of Electronic Resources and Digital Integration

One of the most current directions in modern library systems is the cataloguing of electronic resources. The National Library is actively engaged in this area within the framework of the “National Digital Memory” project (Zeynalova, 2018). Within this initiative, electronic books, dissertations, audio materials, newspapers, and other digital documents are catalogued and made accessible through an open information system.

The cataloguing of electronic resources, unlike that of traditional documents, focuses primarily on metadata management. For this purpose, Dublin Core and MODS metadata standards are used (Həsənova, 2018). Descriptions of electronic materials include document identifiers (URL or DOI), technical characteristics (format, file size), and usage rights (license, open access status). Digital integration is also crucial in establishing connections with international databases. Since 2022, the Azerbaijan National Library has initiated preparatory technical work for integration with OCLC WorldCat, ensuring the export of catalogued records in XML structure. This step is expected to enhance the global visibility of Azerbaijan’s library resources in international search systems.

Management Mechanism of Cataloguing Activities

Cataloguing activities in the National Library are organized through a multi-level management structure comprising the following main components:

*Strategic Management – the annual *Cataloguing Activity Plan* approved by the Director General sets operational priorities (Mammadov, 2013).

*Scientific and Methodological Management – the Cataloguing and Classification Department is responsible for developing methodological principles.

*Technological Management – technical support for electronic systems is provided by the Information Technologies Department (Tahirov & Ismayilov, 2011).

*Quality Control – accuracy of bibliographic descriptions is verified by the Scientific Editorial Commission.

Such a management model ensures consistency, uniformity, and compliance of cataloguing processes with international standards. The cataloguing activity of the Azerbaijan National Library is a scientifically grounded and methodologically structured field. Its historical evolution demonstrates a gradual transformation from traditional card catalogues to digitally integrated systems.

In the contemporary period, cataloguing carried out through technological platforms such as IRBIS64 and Koha allows the simultaneous representation of both bibliographic and electronic resources within a unified system (Mahammadli, 2024). At the same time, the National Library's methodological work defines the normative foundations of cataloguing in the country and contributes to the formation of a unified national information space.

Methodological and Practical Challenges of Cataloguing

Structuring Data and Metadata Management

Ensuring proper structuring of data and effective metadata management is one of the primary priorities in the cataloguing process. The efficiency of electronic catalogues is directly dependent on the quality of bibliographic description (Kushzhanov & Mahammadli, 2019b). Although the MARC 21, Dublin Core, and MODS formats used in cataloguing at the National Library provide a unified framework for describing various types of resources, a number of practical challenges persist. One of the main difficulties is the discrepancy between metadata standards for digital and print publications. Descriptive templates designed for electronic resources may not fully correspond to the description requirements of physical publications, negatively affecting the precision of search results within the system. Furthermore, standard metadata fields are often insufficiently flexible for describing multimedia materials (such as audiobooks, video documents, and interactive resources). These issues hinder users' timely access to resources and adversely affect the overall quality of catalog data.

Authorization, Identification, and Classification Challenges

One of the most pressing issues in the cataloguing activities of the National Library concerns authorization and identification (Rəhimova, 2021). Authority control systems ensure the uniformity of author names, corporate headings, series titles, and subject terms. Nevertheless, practical experience reveals the following difficulties:

***Variants of Author Names**

Differences arise from transliteration in the Azerbaijani language and translation into Russian and English, resulting in multiple recorded forms for a single author. For instance, the different spellings “*Nəsimi*” and “*Nesimi*” create challenges in establishing a unified record for the same individual.

***Standardization of Corporate Headings**

Changes in the names of organizations and governmental institutions over the years, as well as the use of specialized abbreviations, complicate both normative and practical integration (Qasımlı & Məhəmmədli, 2024a).

***Compatibility of Classification Systems**

The National Library employs both the classical UDC (Universal Decimal Classification) and LC (Library of Congress Classification) systems in parallel. In some cases, this complicates the harmonization of subject indices and negatively impacts the standardization of catalog data.

To address these challenges, the National Library should expedite the creation of unified authority files, controlled vocabularies for subject terms, and electronic management mechanisms. Internationally, such systems are based on frameworks like GND (Germany) and VIAF (International Authority File), and it is essential for Azerbaijan to align with similar standards.

***Methodological Guidance and Training Issues**

The National Library not only engages in cataloguing activities but also serves as a methodological guidance center for libraries across the country. In this context, several challenges can be identified:

***Insufficient Training Programs**

Specialized training for new cataloguers in RDA, MARC 21, and electronic catalog systems remains limited. This constraint hinders the consistent description of collections according to unified principles.

***Updating Methodological Documents**

Many rules and recommendations are outdated and, in some cases, inconsistent with international standards. As a result, some libraries are forced to rely on hybrid methodologies, which weakens harmonization (Balayeva & Mahammadli, 2025).

***Practical Oversight and Audit Mechanisms**

The system for monitoring the quality of catalog data is not fully automated, leading to errors and inconsistencies in bibliographic descriptions. To enhance methodological guidance, the National Library should implement the following measures:

Establish electronic training platforms and organize online courses for new cataloguers (İsmayılov, Qasımlı & Mahammadli, 2025). Develop and disseminate updated methodological guidelines aligned with RDA and MARC 21 standards. Implement an automated quality audit system for catalog data.

***Digital Transformation and Integration of Electronic Services**

Digital transformation has become an integral part of library management. Electronic catalogues, digital archives, online queries, and e-services make management more transparent and user-oriented. However, practical challenges remain:

***Metadata Consistency of Electronic Resources**

Integrating digital documents in various formats into a unified system presents difficulties.

***Inter-System Compatibility** – The simultaneous use of IRBIS64, Koha, and other systems introduces additional technical challenges in data synchronization (Kenzhebayeva, Urmurzina & Mahammadli, 2018).

***Compliance with International Standards**

Full implementation of RDA and FRBR models requires additional resources and training.

Development Prospects and Improvement Directions

Several avenues exist to enhance the cataloguing activities of the National Library:

- Integration with international authority systems – aligning with VIAF, GND, and other international authority files (Balganova, Maydangalieva, Satygalieva & Mahammadli, 2018)
- Unified metadata standards for digital resources – full implementation of Dublin Core and MODS formats.
- Electronic training and certification programs – improving the professional competence of cataloguers.

– Automated quality control systems – technological solutions ensuring the accuracy of bibliographic descriptions (İsmayılov, Mahammadli & Gasimli, 2023a).

– Optimization of hybrid catalog models – effective presentation of both physical and digital resources within a unified system.

These directions will not only strengthen the National Library's function as a methodological center but also bring the cataloguing practices of libraries across the country closer to international standards. In conclusion, while cataloguing activities at the Azerbaijan National Library have developed both theoretically and practically, several methodological and technical challenges persist. These primarily relate to authority control, classification, metadata consistency, integration of electronic resources, and training issues. The study demonstrates that addressing these challenges requires the implementation of international standards, acceleration of digital transformation, creation of electronic training platforms, and deployment of automated quality control systems (Kushzhanov & Dashgin, 2019a). Such an approach will make the National Library's cataloguing activities more efficient, standardized, and compatible with the global information environment.

Digital Technologies and Innovations in Cataloguing

Development Stages of Electronic Catalogues

In the 21st century, digital transformation has fundamentally changed library activities, particularly the cataloguing process. At the Azerbaijan National Library, the implementation of electronic catalogues marked a transition from traditional card catalogue systems to automated library-information systems such as IRBIS-64, Koha, and others. Electronic catalogue systems accelerate collection management and provide users with real-time access to information. Through the implementation of these systems, cataloguers not only prepare bibliographic descriptions but also structure metadata in accordance with international standards. The main advantages of modern electronic catalogues include:

- Automated registration and description of documents.
- Standardization of subject indices according to unified norms.
- Automated search and filtering capabilities (Zeynalova, 2010; İsmayılov, K., İsmayılov, N., & Mammadova, 2019).
- Integration with electronic resources, including PDFs, e-books, and multimedia formats.

Application of Metadata Standards

Metadata standards serve as essential tools in cataloguing for identifying, describing, and indexing resources. The primary standards utilized at the Azerbaijan National Library include:

- MARC 21 – an international standard for encoding bibliographic information in electronic catalogues (İsmayılov, Mahammadli & Khudiyeva, 2022).

- Dublin Core – provides metadata across 15 core elements for describing digital resources.

- MODS and METS – XML-based formats for structuring and preserving digital collections.

The use of metadata standards allows cataloguers to describe resources within a unified system, make them searchable, and facilitate international data exchange. However, practical challenges persist, such as ensuring appropriate fields for multimedia resources, harmonizing electronic and print materials, and transitioning to RDA standards.

Management of Digital Collections

Digital collections constitute a major component of the library's services to users. The Azerbaijan National Library functions as both a digital library and an archival system. The management of digital collections follows several stages:

- Digitization of resources (scanning and audio/video files).

- Entry and classification of metadata (Bayramov & Məhəmmədli, 2025).

- Integration into the electronic catalogue (İsmayılov & Khalafova, 2023).

- Provision of online search and user interface (Aliyeva, İsmayılov & Mahammadli, 2025a).

- Long-term storage and preservation of data.

These processes expand the library's service areas and enable remote access for users. Effective management of digital collections also requires compliance with information security protocols and long-term archiving standards.

Automated Cataloguing and Artificial Intelligence

In recent years, automated technologies and artificial intelligence (AI) applications have begun to play a significant role in cataloguing. These technologies offer several capabilities:

- **Automated Subject Classification** – AI algorithms analyse texts and suggest appropriate subject terms.

- **Author and Title Authority Control** – Accurate identification of works based on authority files (Balgina, Maydangalieva, Satygalieva & Mahammadli, 2018).

– **Error Detection and Correction Suggestions** – Monitoring the quality of bibliographic descriptions.

Such approaches optimise the work of library staff, accelerate the cataloguing process, and reduce the risk of errors.

Practical Implementation Examples

Digital cataloguing initiatives implemented at the National Library include:

– “Digital Catalogue of National Publications” a unified database of Azerbaijani print and electronic publications (İsmayılov, Mohammadli & Gasimli, 2023a).

– Electronic Catalogue of Dissertations and Theses digital presentation of academic information resources.

– Integration of Multimedia Resources description and search capabilities for audio, video, and interactive materials (İsmayılov & Məhəmmədli, 2024).

These systems allow users to access information online without visiting the physical library and enhance the quality of library services. Thus, digital technologies and innovations play a central role in the cataloguing activities of the Azerbaijan National Library. Electronic catalogues, metadata standards, and automated systems enhance the efficiency of both collection management and user services.

International Practices and Adaptation in the Azerbaijan National Library

International Cataloguing Standards and Practices

International experience in library and information science plays a critical role in developing both the technical and methodological aspects of cataloguing (Rəsulova, 2018). The most widely used systems worldwide include:

– **Library of Congress (USA)** – manages bibliographic description and authority control through MARC 21 standards and RDA rules.

– **Deutsche Nationalbibliothek (Germany)** – employs the GND (Gemeinsame Normdatei) authority system to ensure uniformity of author and corporate headings.

– **British Library (UK)** – recognized for managing digital and print collections within a unified system and structuring resources based on FRBR models (Kazimi & Mohammadli, 2021).

– **VIAF (Virtual International Authority File)** – consolidates authority files from different countries into a single system, facilitating international data exchange.

These systems provide libraries with capabilities for authority control, metadata harmonization, standardization of digital resources, and international information exchange.

Application of RDA, MARC 21, and FRBR Models

Among international standards, RDA (Resource Description and Access), MARC 21, and FRBR (Functional Requirements for Bibliographic Records) significantly enhance cataloguing efficiency:

- RDA – a comprehensive and flexible set of rules for resource description, allowing libraries to apply unified standards to both electronic and print resources (Heydar, 2023).
- FRBR – classifies resources according to the “Work–Expression–Manifestation–Item” model, improving user search experience.

Implementation of these models is essential for accurate resource description, enhanced searchability, and compliance with international standards in library catalogues.

Adaptation of International Practices in the Azerbaijan National Library. The Azerbaijan National Library has taken several steps to adapt international standards to its operations: Application of MARC 21 and RDA standards – bibliographic descriptions in the electronic catalog are prepared in accordance with these standards; Development of authority files – national authority files have been created to unify author and corporate headings (Alizadeh & Mohammadli, 2025); International integration of digital collections – standards such as Dublin Core, MODS, and METS are applied, and future integration with VIAF and WorldCat is planned (Mehraliyeva & Mohammadli, 2025); Methodological guidance and training – based on international experience, seminars and training programs are being developed for catalogers. Adapting international practices also creates opportunities for the description of multimedia resources, cataloging of digital dissertations, and optimization of online services. Alignment of Multimedia and Digital Resources with International Standards. Ensuring that digital resources comply with international standards enhances the quality of library services. Key considerations in this regard include: Metadata consistency – description of digital collections based on Dublin Core and MODS formats; Integration of electronic catalogs and digital library systems – ensuring compatibility of systems such as Koha and IRBIS64 with international standards (Mahammadi, 2024); Classification of multimedia resources – uniform description and indexing of audio, video, and interactive materials for inclusion in search systems. This approach enables the library to participate in global information exchange and engage in the international research environment. Practical Examples of

Adaptation. Examples of implementing international practices at the Azerbaijan National Library include: Description of digital collections according to RDA and Dublin Core standards; Alignment of national authority files for authors with GND and VIAF principles (Aliyeva, İsmayılov & Mahammadli, 2025b); Cataloging of electronic dissertations and journals according to international standards; Development of online user interfaces in accordance with international best practices. These practices make the library's cataloging activities effective and standardized at both national and international levels. In conclusion, international standards and practices make the cataloging activities of the Azerbaijan National Library more efficient, systematic, and compatible with global information exchange. The main challenges in the adaptation process relate to metadata consistency, authority control, and classification of multimedia resources. Nevertheless, the application of international standards such as RDA, MARC 21, FRBR, and Dublin Core enhances the methodological and practical effectiveness of the library's operations.

Conclusion

The study demonstrates that the cataloging of literature at the Azerbaijan National Library named Mirza Fatali Akhundov has been developed comprehensively in both theoretical and practical-methodological dimensions (Bayramov, Aslan & Hasanova, 2025). Historical development stages indicate that the transition from traditional card catalog systems to electronic catalogs and digital integration has significantly enhanced the management of the library's information resources. The cataloging activities of the National Library are characterized by the following features:

- Historical and scientific foundations: The formation of cataloging practices is closely linked to the developmental stages of Azerbaijani library science. Methodological bases inherited from the Soviet period have been harmonized with contemporary standards;
- Electronic and digital systems: Systems such as IRBIS-64 and Koha operate in accordance with international standards including MARC 21, RDA, and Dublin Core, ensuring effective management of bibliographic information;
- Methodological activities: The National Library fulfills a methodological guidance function for libraries across the country, standardizing cataloging practices through training and recommendations;

– International integration: Aligning cataloging data with international standards and future integration with systems such as VIAF and WorldCat ensures the library's participation in the global information space.

At the same time, several practical and methodological challenges persist in cataloging activities, including authority control and identification issues, harmonization of subject classification, metadata consistency for electronic resources, and the updating of training and methodological documents. Priority directions to address these challenges include: Aligning authority files with international standards; Implementing unified metadata standards for digital resources; Developing electronic training and certification programs; Ensuring catalog data quality through automated monitoring systems. In conclusion, the cataloging activities at the Azerbaijan National Library have evolved into a highly developed field both nationally and internationally, with significant scientific-methodological and practical relevance. These activities facilitate efficient management of library resources, provide users with timely access to information, and contribute to the development of the country's information culture.

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