

Next Generation OPACS: Library Catalogs and the RDA Cataloging Code

Implications for the Field of Teacher Education

Jud H. Copeland

University of Central Arkansas

Abstract

Resource Description and Access (RDA) is the new cataloging code that will replace the traditional Anglo-American Cataloguing Rules (AACR2) in late 2011. But how will these fundamental changes in the cataloging code impact teacher educators? Will they be required to learn a new vocabulary and to develop search strategies to access the digital resources needed to support their role in a global community of learners? Teachers will discover that the RDA initiative provides a more holistic, conceptual model for information retrieval with a stronger emphasis on helping users find, identify, select, and obtain the information they want. RDA supports clustering of bibliographic records to show relationships between works and their creators. This important new feature will inform teachers of a work's different editions, translations, or physical formats – an exciting development. This article will address the basic concepts of the new RDA code and provide teacher educators a framework of understanding for effective information retrieval in a global learning environment.

Introduction

RDA (Resource Description and Access) is the new cataloging standard that will replace the Anglo-American Cataloguing Rules, 2nd edition, (AACR2) in late 2011. What should teacher educators know about these proposed changes in the cataloging code? How will they impact strategies for retrieving information relevant to the field of teacher education? Teachers should note that recent texts in the field of cataloging highlight the fact that the traditional cataloging vocabulary is shifting and that the International Standard Bibliographic Standard (ISBD) template, data elements and punctuation will not be required (Intner & Weihs, 2007).

Furthermore, in a fundamental way, RDA goes beyond earlier cataloging codes in that it provides guidelines on cataloging digital resources and a stronger emphasis on helping users find, identify, select, and obtain the information they want. RDA also supports clustering of bibliographic records to show relationships between works and their creators (Maxwell, 2008). This important new feature will inform teachers about a work's different editions, translations, or physical formats. These changes are reconfiguring the contours of traditional cataloging and expanding the potentials of information retrieval for the field of teacher education. Indeed it is an exciting change in the fundamental traditions of cataloging and information retrieval. In reference to this fundamental change, Howarth and Weihs (2007) note:

The cataloging community is clearly at a crossroad, navigating the transition from forty years of creating bibliographic records using the Anglo-American Cataloguing Rules within a print-dominant environment to a proposed new content standard that reaches beyond the library domain to a world of digital objects and multipurpose metadata.

For some time now, professionals in the field of teacher education and other academic disciplines have been hearing about this new standard and the momentous changes in cataloging practices and procedures that it may require in libraries. However, few professionals seem to have a clear understanding of what the new RDA standard is or what it will really mean for libraries and the way they are cataloged once it is implemented. The intent of this paper is to clarify some of the mystery and confusion surrounding RDA and enable teachers and teacher educators to make the transition from AACR2 to RDA search strategies without undue angst and fear.

Most experienced catalogers indicate that a shift in cataloging rules is much needed, but it is not welcomed by all constituencies (Miksa, 2009). Blogs and listservs such as *Planet Cataloging* or *RDA-L* within the global cataloging community are actively engaged in discussions about RDA and functional requirements. These discussions have become portals for venting frustrations brought on by the imminent change in well established cataloging traditions and procedures. Some of the main questions being asked are: “How do we use RDA?” “How do we implement it in our library?” and “Are the vendors creating new systems that use it?” Yet the most challenging aspect of this transition may be learning the complexity of the FRBR entity-relationship model in which information resources are classified as Works, Expressions, Manifestations, and Items (Maxwell, 2008).

The principal goal of RDA is to facilitate resource access through library catalogs in a more consistent and powerful way than is currently possible with AACR2. However, in order to understand this new rule concept, one should first examine *Functional Requirements for Bibliographic Records* (FRBR), the conceptual reference model underpinning RDA. This particular set of concepts was published through the International Federation of Library

Institutions and Associations (IFLA). After reviewing a number of alternatives, IFLA decided that a new standard designed for the digital environment was more appropriate. Their vision included guidelines and instructions that would cover description and access for all digital and analog resources, resulting in records that could be used in a variety of digital environments (the Internet and Web OPACs). The FRBR theoretical model forms the backbone of the RDA (IFLA, 1998).

The FRBR Conceptual Model

Denton (2007) notes that the IFLA Group considers FRBR as a set of axioms that can underlie a catalog code without defining exactly how it should work. The FRBR model represents, as far as possible, a generalized view of the bibliographic universe; it is intended to be independent of any particular cataloging code or implementation of the concepts it represents.

Tillett (2009) emphasizes that:

The universe [for the model] is characterized in terms of the entities in it and the relationships that hold among them. As such, the conceptual schema is not restricted by the capabilities of any particular database system and is independent of any particular record definition. . . . It is perceived as being more easily understood, more stable, and easier to design than a schema conditioned by assumptions pertaining to what constitutes a bibliographic record or by storage and efficiency consideration.

In effect, the FRBR conceptual model resulted from the global cataloguing community's initiative to address "a constantly changing information environment and the emergence of new forms of information resources and increasing density of networked information systems" (Miksa, 2009). The new principles supporting the model are built on the cataloging rules and

traditions of Cutter, Ranganathan, and Lubetzky. The FRBR model includes a set of entities, relationships, and attributes. (Figure 1)

FRBR's Entity-Relationship Model

- Entities
- Relationships
- Attributes (data elements)

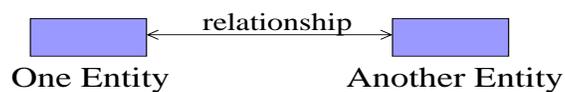


Figure 1. Adapted from *Introducing RDA: A guide to the basics* (p. 21) by C. Oliver, 2010, Chicago, IL: American Library Association.

The **entities** defined in the above model are charted in three groups. In Group 1, there are the products of intellectual or artistic endeavor. In this context, **Work** is defined as the intellectual or artistic creation as an abstract entity. **Expression** is the realization of a work in a particular form, e.g. a particular language or notation. **Manifestation** is the physical embodiment of an expression of a work. The manifestation level is the one represented in bibliographic records. **Item** is a single exemplar of a manifestation; it is what you might think of as a copy. (Figure 2) These four levels of bibliographic structure lead to interesting possibilities for the future of catalogs and cataloging. If one work-level record, and all of its work-level attributes, can be shared by every expression of that given work, teacher educators might eliminate much of the repetition and redundancy commonly experienced in information retrieval today.

FRBR Entities



Group 1: Products of intellectual & artistic endeavor

- Work**
- Expression**
- Manifestation**
- Item**

Figure 2. Adapted from *The RDA Primer: A guide for the occasional cataloger* (p. 16) by A. Hart, 2010, Santa Barbara, CA: Linworth.

Using the above model as the basis for Group 1 entities, RDA will include the FRBR terminology when appropriate (for example, use of the names of bibliographic entities: “work”, “expression”, “manifestation”, and “item”), will use the FRBR attributes as the basis for specific data elements to be included in bibliographic descriptions, will address FRBR relationships, and will use the FRBR user tasks (Find, Identify, Select, Obtain) as the basis for defining a set of mandatory data elements. RDA will also use FRAD (*Functional Requirements for Authority Data*) as the basis for instructions on authority control. (IFLA, 1998)

This set of entities, relationships and attributes in turn are linked to specific user tasks that bibliographic records are intended to fulfill. The premise underpinning these objectives is to serve the convenience of the users of the catalog (Oliver, 2010). Essentially, based on this premise, FRBR maps the above attributes and relationships to specific user tasks: to *find* entities that correspond to the user’s stated research criteria; to *identify* an entity; to *select* an entity that is appropriate to the user’s needs; and to acquire or *obtain* access to the entity described.

In the next step in the FRBR model, the user tasks are plotted into tables with the entities, attributes, and relationships. It is noted in FRBR that resources can exist as a unit or as aggregates of units or as components of a unit. The primary relationships, as FRBR calls them, among the Group 1 entities link the Group 1 entities in a hierarchy: a *work* is “realized through” an *expression*, an *expression* is “embodied in” a *manifestation*, and a *manifestation* is exemplified by an *item*. (Figure 3)

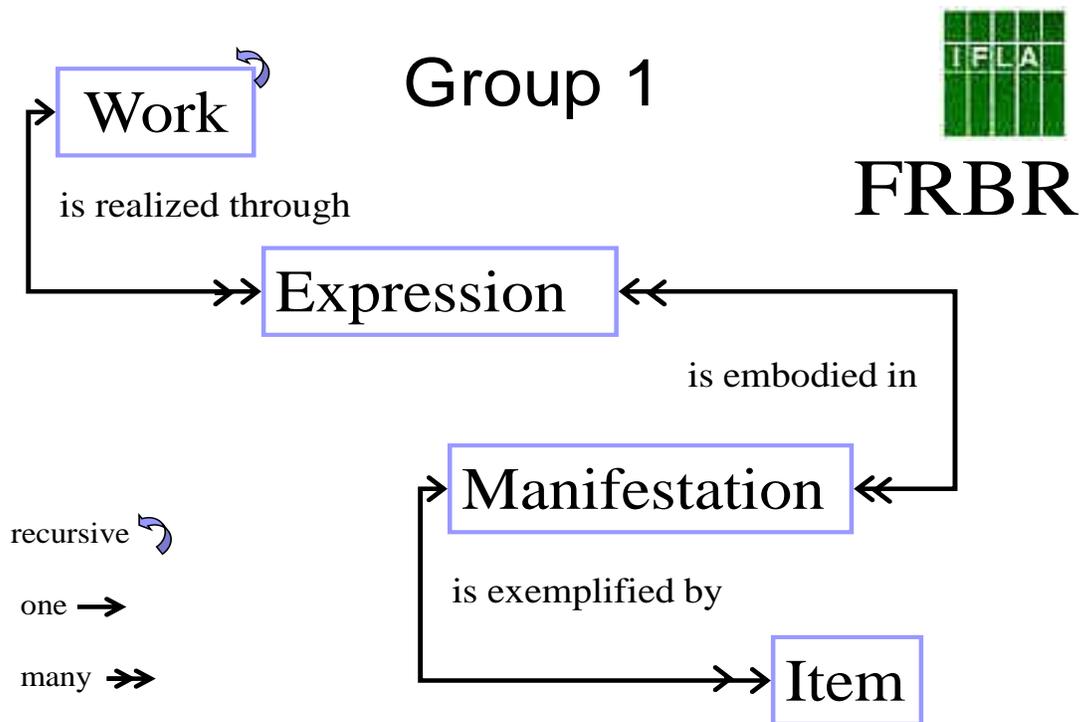


Figure 3. Adapted from *The RDA Primer: A guide for the occasional cataloger* (p. 16) by A. Hart, 2010, Santa Barbara, CA: Linworth.

Using the FRBR conceptual model as its structural basis, the RDA code becomes a content standard, not a display standard nor a metadata schema. RDA is basically a set of guidelines that indicates how to describe a resource and it focuses on the items of information (or attributes) that a user is most likely to need to know. The RDA code also encourages the

description of relationships between related resources and between resources and persons or bodies that contributed to creation of that particular resource. Although RDA is not an actual display standard, the possibilities of new display options in cataloging systems is quite intriguing (Miksa, 2009).

In Group 2, one finds the entities responsible for the intellectual or artistic content, the physical production, and similar entities. In particular, there are also relationships that present the “role” of the Group 2 entities, person or *corporate body*, to the Group 1 entities. (Figure 4)

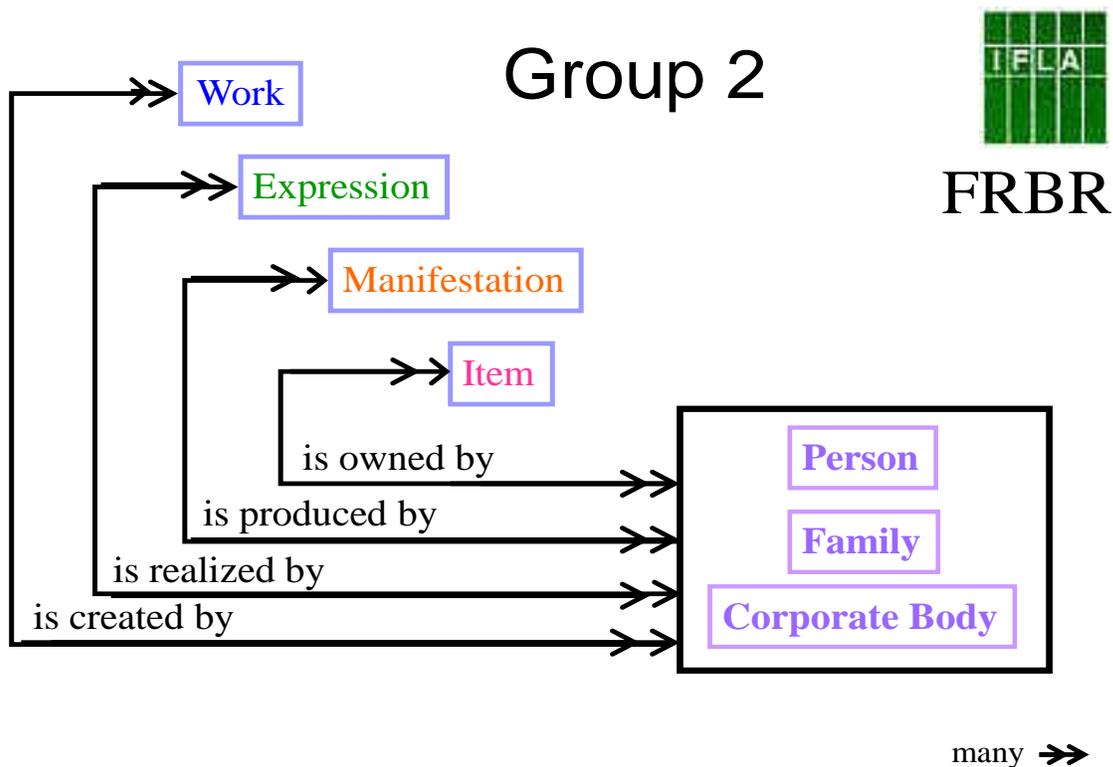


Figure 4. Adapted from *The RDA Primer: A guide for the occasional cataloger* (p. 17) by A. Hart, 2010, Santa Barbara, CA: Linworth.

FRBR describes these relationships as: a “created by” relationship that links a *person* or a *corporate body* to a *work*, that is, the person or *corporate body* plays the role of creator with respect to the *work*; a “realized by” relationship to link to the *expression*; “produced by” for links to the

manifestation; and “owned by” for links to the *item*

The Group 3 entities encompass concepts, objects, events, and places, and there is simply the “subject relationship” to the *work*. (Figure 5)

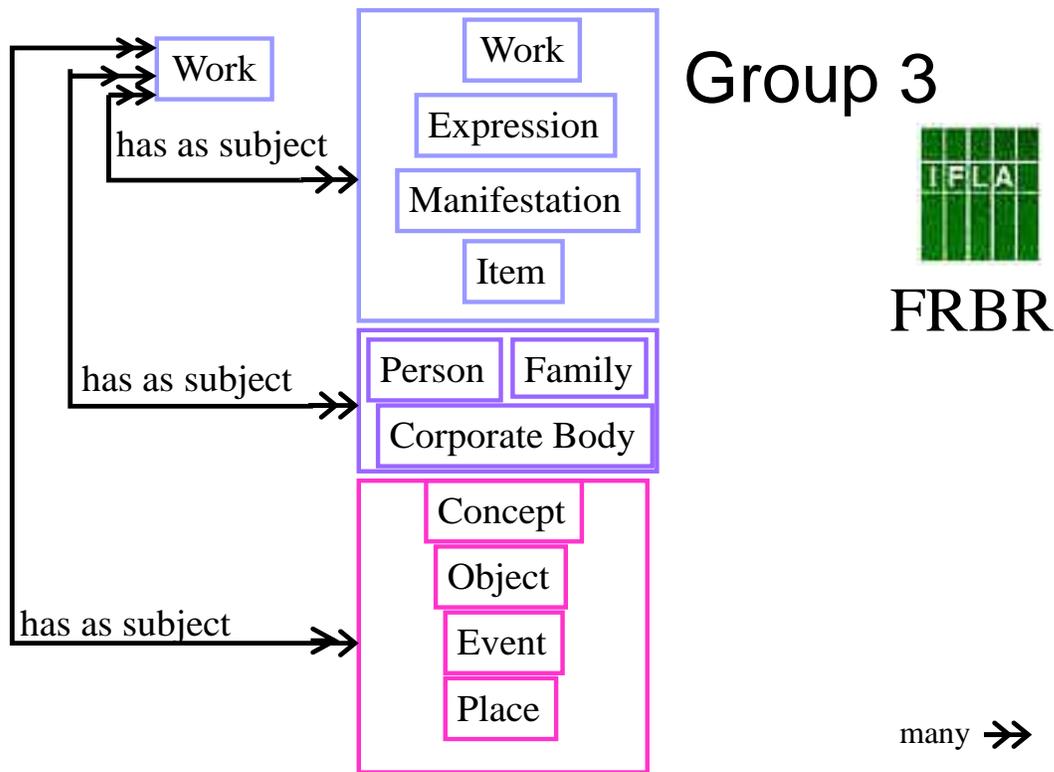


Figure 5. Adapted from *FRBR: A guide for the perplexed* (p. 92) by R.L. Maxwell, 2008, Chicago, IL: American Library Association.

In sum, the FRBR model identifies and defines bibliographic entities, their attributes, and the relationships between them. However, FRBR does more than simply list the entities, attributes, and relationships. As noted, an important feature of the model is that it relates the data recorded in bibliographic and authority records to the needs of the users of those records. It does this by mapping the data elements to the specific user tasks they assist.

At this point, one might wonder how the FRBR entities are mapped on the teacher's side of an OPAC display. Based on the entity-relationship model, one might further note that an "entity" is something that can be described. "Attributes" are the features of the entity that characterize it." Relationships" are thus expressed between entities. Yet how would the teacher or teacher educator navigate through the record using the new terminology as search indices? Perhaps it is important to examine the record from the perspective of a cataloger who has applied the FRBR vocabulary to a bibliographic record. An example from the Library of Congress' Voyager integrated library system provides a "FRBR-ized" display of all the Group 1 entities. The following bibliographic record is a translated version of William Shakespeare's *Hamlet* indicates where the entity hierarchy is evident. (Figures 6 and 7)



Shakespeare, William, 1564-1616. Hamlet. French.

LC Control No.	: 47023612
LCCN Permalink	: http://lccn.loc.gov/47023612
Type of Material	: Book (Print, Microform, Electronic, etc.)
Personal Name	: Shakespeare, William, 1564-1616.
Main Title	: Gide.
Published/Created	: [Paris] Gallimard [1946]
Description	: 2 p. l., 7-237, [2] p. 17 cm.
CALL NUMBER	: PR2779.H3 G5 Copy 1
-- Request in	: Jefferson or Adams Bldg General or Area Studies Reading Rms

Figure 6. Adapted from *Introducing RDA: A guide to the basics* (p. 78) by C. Oliver, 2010, Chicago, IL: American Library Association.

LIBRARY OF CONGRESS ONLINE CATALOG

Shakespeare, William, 1564-1616. Hamlet. French.

LC Control No. : 47023612
LCCN Permalink : <http://lcn.loc.gov/47023612>
Type of Material : Book (Print, Microform, Electronic, etc.)
Personal Name : [Shakespeare, William, 1564-1616.](#)
Main Title : Gide.
Published/Created : [Paris] Gallimard [1946]
Description : 2 p. l., 7-237, [2] p. 17 cm.
CALL NUMBER : PR2779.H3 G5 Copy 1
-- Request in : Jefferson or Adams Bldg General or Area Studies Reading Rms

Work (blue arrow pointing to Hamlet.)
Expression (green arrow pointing to French.)
Manifestation (orange arrow pointing to PR2779.H3 G5 Copy 1)
Item (pink arrow pointing to Jefferson or Adams Bldg General or Area Studies Reading Rms)

Figure 7. Adapted from *Introducing RDA: A guide to the basics* (p. 78) by C. Oliver, 2010, Chicago, IL: American Library Association.

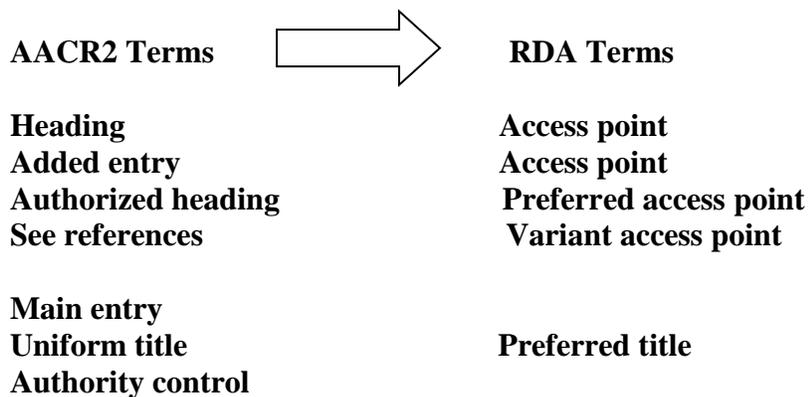
When we browse under Shakespeare in the online catalog, we should group the various works together and let the user select which work s/he wants. Then we should group the various expressions together that we have of that particular work; this is similar to what we already do with uniform titles. With AACR2, we provide a uniform title that includes the name of the creator of the work and a preferred title for the work. We also include expression-level information in the uniform title to indicate that this particular description is for a French translation of *Hamlet*. The OPAC display also shows us the specific manifestation in terms of the body of the bibliographic description and also the individual items that we hold in our collections with location information.

Tillett (2009) notes:

You see, FRBR is not so very different from what we do now. The point of using the FRBR model is to help clarify concepts that have been very muddy in our rules in the past and to clarify things that we typically ended up learning through experience. Using the FRBR language in the rules and identifying the specific elements or attributes of each entity should make concepts clearer to the next generation of catalogers.

Organization & Structure: RDA versus AACR2

The above example (Figure 7) will provide the teachers and teacher educators with an idea of how FRBR vocabulary is applied to a record. The broader shift from AACR2 vocabulary to the new RDA terms can be seen in the following chart:



Yet there are other fundamental changes in organization and structure that should be noted in the shift from AACR2 to RDA. The AACR2 Rules arrange chapters by the type of information resource and then by type of main or added access points. In AACR2's Part I, Chapters 2-12 each focus on a separate format and address only the description of the resources. According to Miksa (2009), the AACR2 code is weak on access points, even though Part II focuses on the choice and formation of personal, corporate body and title access points and addresses main and added access points. This has always been "a sore point for many catalogers,

especially in the digital environment.” Catalogers have to look all over Part II for access point provisions (for example, title access points are mentioned in chapter 21 only – and then more as a default provision and with little sense of direction). Most importantly, AACR2 is not based on the idea of a *work*. Rather, it is very much based on the unit record system (that is, the *item*).

Furthermore, RDA has a vastly different structure from AACR2. As outlined in the “RDA Scope and Structure” the new rules are divided into ten sections (Joint Steering Committee, 2009). Sections 1-4 cover elements corresponding to the entity *attributes* as defined in FRBR and FRAD and sections 5-10 cover elements corresponding to the *relationships* as defined in FRBR and FRAD.” Furthermore the choice of what type of record to create, once based on the format, is shifted to what “type of description” the record should represent – comprehensive, analytical or multi-level (that is, both comprehensive and analytical). In cataloging terminology an entry is “analytical” if it includes a description or analysis of the sub-parts of the resource being cataloged. In other words, with the RDA, the variety of resource formats represented in a library catalog is not in question. The question now centers more heavily on the scope of the representation. This shift in focus enables the catalog to accommodate the interpretation and/or depiction of relationships between resources more readily within a dynamic library environment. Current catalogs mostly operate on the premise that one record represents one resource. With RDA, it is now possible to create records that may represent more than one resource, should the cataloger choose to do so, or to group and display single-item records in order to show more clearly how they are related.

The idea that seasoned catalogers may have to re-learn the fundamentals of library cataloging and that bibliographic control systems will require re-engineering is a daunting task.

Nonetheless, one should consider some of the areas of potential new research that may arise as a result of the FRBR model and the RDA code (Miksa, 2009).

Conclusion

In summary, RDA is a content standard intended for the digital environment. As Tillett (2009) notes:

It continues some of the traditions from its Anglo-American cataloging roots and IFLA's international descriptive standards. It focuses on the user-oriented conceptual models of FRBR and FRAD and their user tasks, elements, relationships, attributes, and the new vocabulary from those models. Throughout all of this is the increased awareness of how small the world has become with Internet capabilities and how important it is to share bibliographic information globally and also help reduce global costs. Our bibliographic and authority information is being used worldwide and also across different information communities.

Although the changes in RDA are significant, RDA is nevertheless founded on the strengths of its predecessor, AACR. These are exciting times in the area of resource description and access. In particular, the transition to RDA is an important and necessary step in building better catalogs and information retrieval systems for teachers and teacher educators. From a global perspective, RDA can serve as an effective information retrieval initiative "To stimulate and facilitate research, experimentation, and evaluation in education of professional school personnel and related problems of learning and teaching." (Arkansas Association of Colleges for Teacher Education, 2011).

References

- Arkansas Association of Colleges for Teacher Education. (2011). *About ArACTE* (Objective No. 5). Retrieved from <http://www.aracte.org>
- Denton, W. (2007). FRBR and the history of cataloging. In A. G. Taylor (Ed.), *Understanding FRBR: What it is and how it will affect our retrieval tools* (p. 51). Westport, CT: Libraries Unlimited.
- Hart, A. (2010). *The RDA primer: A guide for the occasional cataloger* (pp. 13-28). Santa Barbara, CA: Linworth.
- Howarth, L., & Weihs, J. (2007). Making the link: AACR to RDA: Part I: Setting the stage. *Cataloging and Classification Quarterly*, 45(2), 3-18.
- IFLA (International Federation of Library Institutions and Associations) Study Group on the Functional Requirements for Bibliographic Records. (1998). *Functional requirements for bibliographic records: Final report*. Retrieved from http://archive.ifla.org/VII/s13/frbr/frbr_2008.pdf
- Intner, S., & Weihs, J. (2007). 4th ed. *Standard cataloging for school and public libraries* (p. 24) Westport, CT: Libraries Unlimited.
- Joint Steering Committee for the Development of Resource Description and Access. (2009). *Resource description and access*. Retrieved from www.rdaonline.org/constituencyreview
- Maxwell, R. L. (2008). *FRBR: A guide for the perplexed* (pp. 1-6). Chicago, IL: American Library Association.
- Miksa, Shawn (2009). Resource Description and Access (RDA) and New Research Potentials. *Bulletin of the American Society for Information Science and Technology*, 35 (5), 47.
- Oliver, C. (2010). *Introducing RDA: a guide to the basics* (pp. 29-30). Chicago, IL: American Library Association.

Planet Cataloging (web log): Retrieved from <http://planetcataloging.org/>

RDA-L (listserv): Retrieved from www.collectionscanada.gc.ca/jsc/rdadiscuss.html

Tillett, B. (2009). *International cataloguing principles (ICP) report*. Paper presented at the 2009 IFLA Conference Session 215, Milan, Italy. Retrieved from www.ifal.org/files/hq/papers/ifla75/215-tillett-en.pdf