
Historical and Current Implications of Cataloguing Quality for Next-Generation Catalogues

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ABSTRACT

Discussions of quality in library cataloguing are traced from early library science literature to current debates. Three studies that examine dimensions of quality cataloguing in academic libraries, public libraries, and school libraries and a review of vendor processes update the issues surrounding a definition of bibliographic record quality and quality assurance processes. The implications of perceptions of bibliographic record quality on next-generation catalogues are presented with emphasis on the shift in the cataloguer's judgment from rigid standards for transcription to meeting the requirement for more metadata that matches the user need of find-ability.

INTRODUCTION

Discussions of quality in library cataloguing have been found in library science literature for the past forty years. However, a fresh look at quality cataloguing is needed with the rise in popularity of next-generation catalogues (NGCs). The ability of NGCs to better utilize library data than traditional catalogues has presented the cataloguing community an opportunity to reassess established notions of "quality" in cataloguing. The concept and philosophy of quality and quality assurances processes may shift as the cataloguing world transitions from *Anglo-American Cataloguing Rules, 2nd edition (AACR2)* to the nascent Resource Description and Access (RDA) cataloguing standard (Joint Steering Committee for the Development of RDA, 2010). Without an understanding of how well current processes affect library record quality, implementing the new RDA standard and NGCs could replicate or even amplify existing deficiencies in library catalogues. A lack of quality bibliographic records could negatively impact the discovery of resources for use by students, educators, and the public, degrading perhaps even further the perception of catalogue relevance.

There are several definitions of NGCs in the literature. Nagy (2011) bases his on the four principles as stated by Eric Lease Morgan in a 2006 posting on the NGC4Lib listserv (p. 13). In essence, an NGC (1) is not a catalogue, (2) avoids multiple databases, (3) is bent on providing services against search results, and (4) is built using things open (i.e., open source) (Morgan, 2006). Wynne and Hanscom (2011) state that “a next-generation catalogue/discovery tool is an interface that interacts with a library’s existing ILS to display data in different ways than the ‘traditional’ online catalogue. . . . The basic goal of an NGC is to bring searching and navigation of library resources closer to the current expectations and behaviors of library users” (p. 180). Naun (2010) writes that these new catalogues use “the strategy of improving the end user experience by creatively reinterpreting the data in the catalogue. They typically offer keyword search, relevance ranking, and faceted navigation, along with additional features such as enhanced content like book jacket illustrations and user tagging” (p. 330). It is evident from these three definitions alone that a single agreed-on definition has not yet emerged. For purposes of this discussion of NGCs and catalogue quality, our definition falls more in line with the definitions of Naun, Wynne, and Hanscom. That said, we do not necessarily reject the view of Morgan and Nagy. The current debate on what a library catalogue is, or should be, is stimulating a lot of discussion, debate, and research.

The following discussion of quality cataloguing and NGCs includes an examination of three current studies that discuss quality in cataloguing. A study of cataloguing tool and resource use in public libraries (Miksa, 2008), a current examination of the perception of quality cataloguing among cataloguers in academic libraries (Snow, 2011), and a recent study of the school library cataloguing processes (Schultz-Jones, Snow, & Hase-nyager, 2010) update the issues surrounding a definition of bibliographic record quality and quality assurance processes.

School libraries, which are the most dependent on vendor-supplied records and the least likely to have trained cataloguing librarians (In-ner & Weihs, 2007), have been woefully underexamined. Academic and public library records have received considerably more scrutiny (Bade, 2002; Beall, 2000; Dobb, 1998; Kellsey, 2002; Libby & Caudle, 1997; Propas & Johnson, 1998). While catalogue quality has been examined for some criteria (Dunkle, 1996; Harmon, 1996; Jeng, 2002; Klein, 2000), it has not been examined for other criteria, including a process perspective. Although librarians are represented in most studies (Bade, 2002; Beall, 2005; Chapman & Massey, 2002; Hanson & Schalow, 1999), vendors and their processes have not been included.

Specific research questions addressed include: What is the definition of quality in relation to bibliographic records and related processes? What is

the quality level of vendor-supplied records? What are the overall implications for ensuring and maintaining quality in NGCs?

LITERATURE REVIEW

Discussions specifically addressing quality cataloguing started to appear in library science literature in the 1970s and 1980s. This appearance coincides with the rise of cooperative cataloguing networks such as the Online Computer Library Center (OCLC) that allowed for quicker and more efficient sharing of bibliographic data between libraries. Libraries who participated in the electronic networks no longer had to spend as much time and money creating new records for items in their inventory; records were created by and shared among libraries in the network. Although many cataloguers viewed this sharing of the workload positively, cataloguers also expressed concern about the quality of the cataloguing produced within these networks (Hafter, 1986; R.M.D., 1977). Some studies concluded that this concern over poor quality was really more about network records deviating from local practice (Luquire, 1976; Schoenung, 1981). Studies conducted on error rates within the networks and participant satisfaction demonstrated that the networked data were largely of good quality and that concerns over errors were overblown (Davis, 1989; Intner, 1989; Schoenung, 1981).

The adoption of minimal level cataloguing (MLC) in 1979 by the Library of Congress also caused concern over its quality. MLC records consisted of the author, title, Library of Congress card number, edition, publication/distribution information, physical description, a series statement, and notes (Stamm, 1996, p. 193). However, "MLC did not provide for subject access, classification beyond a single LC class letter at the end of the 050 field, or authority work," and the work of creating the MLC records "was not performed by professional cataloguers" (Stamm, 1996, p. 193). Even though MLC created a baseline standard for bibliographic records and saved time in their creation, some argued that the information excluded in MLC records hindered access and created more work for other cataloguers who needed to add the missing information (Mann, 1991; Rhee, 1986; Ross & West, 1986).

The purpose of MLC records was not necessarily to demonstrate a standard of quality but rather to facilitate a need to reduce arrears at the Library of Congress. In the 1990s and 2000s, more effort was made to identify a baseline standard that would not only make the cataloguing process for efficient and consistent but also produce quality cataloguing. The Program for Cooperative Cataloguing (PCC), formed in 1995, specified standards for core- and full-level records that participating libraries must follow. In 2010, the PCC decided to use one level of record as its standard: the BIBCO (the Bibliographic Component of the PCC) standard record

(BSR). According to the current PCC values statement, PCC members adhering to the minimum standards produce “quality cataloguing records, rich enough in content to be used with little or no modification at the local level and reasonable enough in cost to be generated in large numbers” (Library of Congress, 2010). During this time frame, there were also other studies conducted to determine specific quality cataloguing standards. Researchers looked at both academic and public libraries to see if a baseline standard could be created but ultimately found that the best means of determining what is quality is to evaluate cataloguing at the local level to see what best meets the needs of the library’s users (Chapman & Massey, 2002; Hider & Tan, 2008).

In his article, Graham (1990) introduced the concept of an “essential record” that would be sufficient for users searching a library’s catalogue to find their desired information. According to Graham, quality has two characteristics: extent (“how much information is provided in the record”) and accuracy (“the correctness of what is provided”) (p. 214). The idea of “extent” tends to present more controversy than “accuracy” due to the fact that most cataloguers may share similar views on what is accurate but may differ on how much information should be included in a record for quality to be achieved.

Hill (2008) examined quality cataloguing from a managerial point of view but also pointed out that there are several factors, such as the shift from local control of the library catalogue to cataloguing in a cooperative environment, the decrease in the professional review of cataloguing at the local level, and the change in catalogue technology from cards to computers, that have forced a rethinking of what quality cataloguing means in the modern, online era. Hill suggested that examining quality cataloguing from the point of view of the accuracy of the individual record is not enough. Instead, cataloguers need to reexamine the cataloguing process and focus on the bigger picture: “extent and content of individual records, extent and content of the database as a whole, and the effectiveness and accuracy of mechanisms to expose those records and that database to the World Wide Web have become the real measures of database quality” (Hill, 2008, p. 21).

Calhoun, Cantrell, Gallagher, and Hawk (2009) conducted a study for OCLC titled *Online Catalogues: What Users and Librarians Want* that looked at both user and librarian ideas of cataloguing quality. This study found that there is a disconnect between user and librarian perceptions of quality and that these perceptions are driven by different outlooks and goals. The user identifies more with the information environment on the World Wide Web and seeks more direct access to online content. Users also want more of what OCLC calls “enrichment data” such as tables of contents and summaries in catalogue records (p. 50). The librarian, on the other hand, is more focused on the most efficient means of fulfilling work as-

signments. Therefore, librarians' ideas of quality cataloguing are biased toward attributes like the elimination of duplicate records and fixing MARC coding errors, which may or may not affect information retrieval on the user's end. This, of course, does not mean that the librarians' views of quality are inconsistent with the users' views. Users are often unaware of what goes on behind the scenes of catalogue creation and do not understand the mechanisms that allow them to find what they seek. However, the OCLC report recommends that, in light of these findings, librarians "pay more attention to the library's delivery services and the data elements that support a positive experience for the end user" (p. 55).

The librarian and user viewpoints of quality could be seen as two sides of the same coin when examined from the perspective of library NGCs: quality data and coding are the backbone of a useful NGC. However, cataloguing practice long used to creating traditional online catalogues must reimagine quality cataloguing in light of the possibilities created by NGCs. Breeding (2010) wrote that quality cataloguing for NGCs should focus on two major areas: conveying the full range of a library's collections and then presenting these collections using an interface that behaves more like sites on the Internet. The narrow scope of traditional online library catalogues often neglects individual chapter titles of books, individual article titles in periodicals, and specific items within larger collections. The library Web site may provide descriptions of books, periodicals, collections, etc., as a whole, but there may be different resources outside the catalogue that provide more granular information, and the user must determine how to locate these resources. This narrow scope may cause problems for users accustomed to search interfaces that provide more granular information and integrated results.

In addition to the problem of content is the interface itself—many users expect the online public access catalogue to behave like the Internet (Breeding, 2010). Many users are also leery of having to spend too much time learning the system they are using. "In today's environment," Breeding (2010) writes, "it's just expected that Web-based services allow users to think about what they want to accomplish on the site, not about the mechanics of operating the interface" (p. 14). NGCs should provide the means for users to locate desired information using intuitive interfaces and familiar features. Some of the current next-generation features include faceted browsing that presents users with various options and then allows users to drill down to what they want; relevancy rankings; images such as book cover art; outside and library user reviews; recommendations (during the search process as well as in search results: "more like this"); tag clouds; and personalization. Several of these upgrades can be accomplished by complete and correct coding in variable and fixed MARC fields, as well as correct and complete summaries, tables of contents, and subject headings/subheadings (coded correctly in MARC so it is clear

what is topical, chronological, geographical, and format for proper faceting). The creation of access points for all authors, contributors, and titles allows the user multiple points of entry to a work and will make search results more granular. A greater emphasis on authority control will help prevent split headings, which are more noticeable in faceted displays. Finally, NGCs should provide better integration of multiple library resources and improve federated searching so that resources outside the catalogue can be searched (e.g., e-journals, databases, and other various collections of library material that must be searched separately). More focus on these areas should help to improve the quality of the library catalogue and the user's information-seeking experience.

Wynne and Hanscom's (2011) survey of cataloguers whose libraries use NGCs supports many of Breeding's conclusions. When asked to list the most common data problems that prevent the NGC from functioning properly, survey participants gave these answers (p. 187):

- Fixed fields required for faceting or display are not consistently coded.
- Name and subject headings are not maintained consistently.
- There is incorrect 6XX subfield coding (\$v, \$x, \$y, \$z).
- The e-resources are not classified, excluding them from a classification facet.
- There is integration of multiple controlled vocabularies (such as LCSH and MeSH) or data sources with no controlled vocabulary.
- Non-MARC metadata (such as Dublin Core) is integrated with MARC metadata.

These are certainly not new problems within cataloguing, but NGCs are often better at exposing them. Some of these problems may be fixed by increasing focus on clean-up efforts within the system, but other problems may require changes to policies and procedures. The extent of these changes largely depends on the "quality and consistency maintained in the database" (Wynne & Hanscom, 2011, p. 196). Therefore, the "accuracy of content and conformity to data structure and data entry conventions is growing in importance" (p. 197).

NGCs will greatly depend on the metadata in existing systems to migrate to newer models. In some cases, the data available will not be sufficient based on current decisions being made by cataloguing agencies and individual cataloguers. Cataloguer's judgment, as it is most commonly named in the literature, is defined as the decisions cataloguers make while creating bibliographic records for information entities to be included in the library catalogue. These decisions include not only the information that appears in the record but where it may exist in the record or be left out entirely. The basis of these decisions is the level of education, training, and "practice" in which a cataloguer engages while applying rules, even

though there may not be an exact rule to meet every scenario in order to meet their user's need (Snow, 2011). Due to the nature of cataloguer's judgment, one cataloguer may describe the same information entity quite differently than another cataloguer. This practice allows for variances among records for the same entity and so the perception of varying levels of record quality is introduced (Snow, 2011).

Last, yet another factor affecting decision making, and thus record quality, is the use, or nonuse, of cataloguing tools and resources. The literature includes very few studies detailing the extent and utilization of tools and resources in a typical technical service department. Most of these focus on cataloguing education and continuing education of cataloguing professionals, and skills and knowledge as found in job position descriptions.

In a study commissioned by OCLC, Wilkie and Strouse (2003) assessed "interest and needs for education and training of library workers and how widely these needs vary worldwide" (p. 3). Park, Tosaka, Maszaros, and Lu (2010) surveyed continuing education needs of cataloguing and metadata professionals as it pertained to metadata creation and management. They found that these needs were not being met by the types of training available. In particular the results indicated that "cataloguing and metadata professionals had a strong interest in receiving future training in topics related to planning and management for metadata application, such as metadata quality control mechanism and documentation practices" (p. 172). Schottlaender's (2007) study of job position descriptions within the University of California at San Diego and the variety of position functions (e.g., aptitude for complex, analytical skills, create authority records, metadata standards, exercise creativity, etc.) listed are basic skills that could reasonably be expected to be demonstrated by cataloguers in the course of using specific tools and resources or within interactions with institutions and agencies on a daily basis. However, there is no professional requirement to use any of these materials, nor is there any standard by which to check to make sure they are being used properly beyond that of examining the quality of cataloguing products.

Several books on cataloguing education and the profession as a whole (Hill, 2002; Intner & Hill, 1989, 1991) offer opinions and studies on how to keep professionals from lowering their standards or becoming overwhelmed by the complexity of information objects, standards, and metadata schemes, etc. Joudrey (2002) surveyed bibliographic courses in library schools and broke down the areas of bibliographic control (e.g., subject analysis, cataloguing technology, etc.) and talked in broad terms of the responsibilities, skills, qualities, and knowledge needed by cataloguers.

The American Library Association's (ALA) Association of Library Collections and Technical Services (ALCTS) division offers a variety of discus-

sion groups and publications on issues surrounding library cataloguing practice and education but does not specifically address what tools and resources a cataloguer should possess or have the ability to access when needed. The Cataloguing Policy and Support Office at the Library of Congress lists some cataloguing tools and documentation, and its Cataloguing Distribution Service offers a comprehensive resource for cataloguing tools and products for purchase, but neither give a realistic indication of how many, or which, tools a typical library should acquire.

The research presented here is timely because the cataloguing world is transitioning from the *AACR2* standard to the nascent RDA cataloguing standard (Joint Steering Committee for the Development of RDA, 2010) and the advent of NGCs. However, implementing the new RDA standard will merely replicate or even amplify existing deficiencies if there is no solid understanding of how well current processes affect library record quality. RDA is partially based on the Functional Requirements for Bibliographic Records (FRBR), which in turn is based on an entity-relationship database model. This will allow each individual library record to be linked to all related resources, or entities. Thus, an error in one resource will be replicated in all related resources.

The review of the literature found that quality and quality assurance have been addressed in various ways over the years. The next section discusses three recent research studies that meaningfully contribute to this discussion of quality and quality assurance, including utilization of cataloguing tools and resources, in public, academic, and school libraries. These studies have implications on the implementation of NGCs.

CURRENT STUDIES

Public Libraries

Miksa (2008) examined the local cataloguing environment of the North Texas public libraries in order to identify the level of professional and paraprofessional utilization of cataloguing tools and resources, how currency and reliability of the tools and resources were determined, and how often staff were trained or updated in the use of these tools and resources. The study also sought to identify the effect that bibliographic record outsourcing had on in-house utilization of these tools as well as how budgetary and staff limitations affected the availability of these tools and resources. Last, the study sought, but ultimately failed, to identify any bibliographic vendor benchmarks or standards that clearly stated appropriate tools and resources for a typical cataloguing department.

Methodology. A comprehensive questionnaire was used to determine the categories of tools and resources and identify any common in-house practices in the cataloguing departments that would impact acquisition and utilization of tools and resources. The participants were pulled from

the North Texas Regional Library System (NTRLS) and the Northeast Texas Library System (NETLS) for a total of approximately 170 libraries. Library directors were asked to complete the survey themselves or pass it on to the person responsible for cataloguing in their library. A final total of 103 libraries completed the survey, for a 60 percent response rate.

The questionnaire consisted of sixty-three questions that asked participants about their use of specific cataloguing tools and resources and frequency of use.¹ The study did not address the question of where catalogue records originate or the specific amount and quality of cataloguing training and education possessed by those who perform cataloguing, nor did it look at quality of catalogue records. A random cross section of eight libraries was selected for follow-up interviews and/or site visits. These interviews allowed for clarification of any prominent issues revealed by the surveys. Results were evaluated and verified by presentation at a focus group open to librarians and library administrators at the Texas Library Association (TLA) Annual Conference held in April 2005 in Austin, Texas. All surveys, interviews, and focus groups were anonymous. Only the questionnaire results are discussed for this report.

The questions were divided into multiple sections with the first pertaining to general demographics, library services, cataloguing services, and what vendor ILS, if any, they used. This was followed by a comprehensive list of descriptive and subject cataloguing tools, including cataloguing rules, MARC standards, manuals, books, and other supplementary resources such as OCLC or LC materials or "toolkits," either in print or online. Participants were also asked what percentage of bibliographic record or authority record outsourcing was used in their libraries, if and how those records were reviewed, what cataloguing literature they read, and if they were subscribed to any cataloguing listservs. Last, participants were asked if any budget or staff limitations affected their access to the tools and resources and, if so, whether they thought these limitations were detrimental to the service they provided to library patrons as far as providing them with a reliable catalogue system. The survey ended with an open-ended question that allowed participants to discuss any practices or tools and resources (e.g., in-house or local) not addressed by the survey (table 1).

The respondents (N = 103) were grouped by type of library: rural (fifty-five), suburban (thirty-nine), urban (seven), and not applicable (two). General demographic information included gender (85 percent female, 15 percent male), library work experience, current position, and level of education. Work experience ranged from less than six months to greater than thirty-five years, with 76 percent having between one and twenty years of experience, 21 percent have between twenty-one and thirty-five years of experience, and the remaining 3 percent having more than thirty-five years of experience. Of the 103 respondents, forty-eight (47.5 percent) possessed master's degrees from ALA-accredited library schools. Library

Table 1. Distribution of Current Position and Level of Education

Current Position and Library Type	Please Indicate Formal Library/Information Training or Certification Level.	
Director		
Rural (50)	Associate's degree	8
Suburban (17)	Bachelor's degree	13
Urban (2)	High school or GED	18
N/A (1)	High school or GED; bachelor's degree; HS plus 33 hours of college	1
	MLS; non-ALA-accredited school	1
	MLS; ALA-accredited school	25
	N/A	1
	Other: county librarian, grade III, 33 hours toward bachelor's plus extensive library-related CE; master's of education; some college, no degree	3
Professional staff	MLS; ALA-accredited school	14
Rural (1)		
Suburban (12)		
Urban (1)		
Technical services	Associate's degree	1
Suburban (6)	MLS; ALA-accredited school	7
Urban (2)		
Cataloguing	Associate's degree	2
Rural (2)	Doctorate	1
Suburban (2)	MLS; ALA-accredited school	1
Urban (2)	Other: staff and workshop training; certificate from a church-related library association	2
Paraprofessional staff	Bachelor's degree in non-library/information training, currently pursuing master's degree at ALA-accredited school	1
Rural (2)		
Suburban (1)	Bachelor's degree	1
	High school or GED	1
	MLS; ALA-accredited school	1
Other		
Suburban (1)		
N/A (1)	N/A	1
Total respondents		103

directors accounted for seventy (67 percent) of the total library positions described, but only twenty-five (36 percent) of the seventy of those possessed a master's degree. One cataloguer had a doctorate and one had a master's degree, as did fourteen (13 percent) of the professional staff and seven (6.7 percent) of the technical staff. The majority of those with a master's degree worked in suburban libraries.

The majority (80 percent) of the 103 respondents did not use the centralized cataloguing services of another library. Furthermore, seventy-nine (78 percent) did not provide cataloguing services to other libraries, five (6

percent) did provide services, and sixteen (15 percent) responded *does not apply*. These responses in turn varied with responses to the question, “Has your library entered into agreement with another library who assumes responsibility for your bibliographic services?” Eighty-nine (88 percent) had not, nine (8.9 percent) chose *does not apply*, and three (3 percent) did have an agreement. When asked about semioriginal or original cataloguing, sixty-nine (66 percent) performed less than ten hours a week, nineteen (18 percent) performed eleven to twenty hours per week, and only fifteen (16 percent) of the total participants performed between twenty-one and forty hours per week. Table 2 shows this breakdown by type of library.

Given that the majority of the respondents were library directors in rural libraries, who are generally responsible for all tasks within the library,

Table 2. Average Hours per Week Semioriginal or Original Cataloguing

If Your Library Performs Its Own Semioriginal or Original Cataloguing, What Are the Average Hours per Week?		Number of Respondents
N/A	N/A	2
Rural	11–20 hours per week	11
	21–30 hour per week	3
	31–40 hours per week	2
	<10 hours per week	39
Suburban	11–20 hours per week	8
	21–30 hour per week	6
	31–40 hours per week	2
	<10 hours per week	23
Urban	21–30 hour per week	1
	31–40 hours per week	1
	<10 hours per week	5
Total respondents		103

Table 3. Percentage of In-House Copy Cataloguing

What Percentage of Your In-House Cataloguing Is Copy Cataloguing?	Unspecified Type				
	Rural (n = 55)	Suburban (n = 39)	Urban (n = 7)	Type (n = 2)	All (N = 103)
10%	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)
11–30%	0 (0%)	2 (5%)	0 (0%)	0 (0%)	2 (2%)
31–50%	4 (7%)	1 (3%)	0 (0%)	0 (0%)	5 (5%)
51–70%	5 (9%)	1 (3%)	2 (29%)	0 (0%)	8 (8%)
71–80%	9 (16%)	10 (25%)	1 (14%)	0 (0%)	20 (19%)
81–99%	16 (29%)	18 (46%)	4 (57%)	0 (0%)	38 (37%)
100%	1 (2%)	2 (5%)	0 (0%)	0 (0%)	3 (3%)
Skipped	17 (31%)	5 (12%)	0 (0%)	2 (4%)	24 (21%)
Total respondents	55	39	7	2	103

it is evident that little time is given to actual cataloguing duties each week. Furthermore, most of the time that is given to cataloguing is spent copy cataloguing, as demonstrated in table 3.

Within the libraries surveyed, most of the in-house cataloguing (ranging from 71 to 99 percent) was copy cataloguing. In particular, copy cataloguing accounted for 45 percent of cataloguing within rural libraries, 71 percent within suburban libraries, and 71 percent within urban libraries. Nearly a quarter of the respondents (23 percent) skipped this question.

In addition, outsourcing of records (table 4) ranged fairly evenly from 0 to 90 percent across each type of library, with approximately 30 percent of those libraries reviewing records either before or after updating their catalogue. A small percentage (3 to 5 percent) specified that they only *sometimes* reviewed records before or after update for a variety of reasons (e.g., spot-check bibliographic record vendor performance, add description, call numbers, subjects, holdings information, when mistakes were discovered, etc.). As with the question on copy cataloguing, just under 30 percent of respondents skipped the question on outsourcing.

Participants were presented with six categories of materials: Cataloguing Rules, Subject Headings, Classification, Cataloguing Manuals, Supplementary Tools, and MARC Standards. Tables 5 through 8 show the collected responses of all 103 respondents for only the categories Cataloguing Rules, Cataloguing Manuals, Supplementary Tools, and MARC Standards.

Fourteen (13.5 percent) respondents skipped this question concerning cataloguing tools (table 5). Overall, five (5.6 percent) respondents used AACR2; at the time of the survey, only the 2004 updates were available) on a daily basis, nine (10 percent) on a weekly basis, thirteen (14.6 percent) only occasionally, and one (1.1 percent) rarely. Just under 10 percent used Cataloguer's Desktop at the time, with only 4 percent using it to access AACR2.

Table 4. Percentage of Outsourced Records

What Percentage of Your Bibliographic Records Are Outsourced?	Rural (n = 55)	Suburban (n = 39)	Urban (n = 7)	All (N = 103)
10%	3 (6%)	1 (3%)	0 (0%)	4 (4%)
11-30%	3 (6%)	0 (0%)	1 (14%)	4 (4%)
31-50%	4 (7%)	3 (8%)	1 (14%)	8 (8%)
51-70%	4 (7%)	3 (8%)	1 (14%)	8 (8%)
71-80%	1 (2%)	11 (28%)	0 (0%)	12 (11%)
81-99%	3 (5%)	5 (13%)	1 (14%)	9 (9%)
100%	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Skipped	21 (38%)	4 (10%)	1 (14%)	28 (27%)
Total respondents	55	39	7	103

Table 5. Use of Cataloguing Rules (N = 103)

Cataloguing Rules	Daily	Weekly	Occasionally	Rarely	N/A
Anglo-American Cataloguing Rules, 2nd edition, 2002 Revision – with 2004 Update	5	9	13	1	52
Anglo-American Cataloguing Rules, 2nd edition, 2002 Revision – with 2003 Update	0	0	9	2	66
Anglo-American Cataloguing Rules, 2nd edition, 2002 Revision	1	2	7	5	64
Anglo-American Cataloguing Rules, 2nd edition, 1998 Revision	1	2	3	6	67
Anglo-American Cataloguing Rules, 2nd edition, 1988 Revision	0	1	6	3	69
Concise AACR2, 1998	1	0	5	4	66
Concise AACR2, 1988	0	1	3	5	65
Use AACR2 via Cataloguer's Desktop (CD-ROM)	1	2	2	0	72
Use AACR2 via Cataloguer's Desktop (Online)	2	1	1	0	71
Library of Congress Rule Interpretations (LCRI)	7	2	10	8	53
ALA Filing Rules	4	1	7	11	54
Library of Congress Filing Rules (skipped)	8	5	8 14	5	54
Total respondents			89		

To get a sense of the use of various types of cataloguing manuals, the participants were presented with a list of as many titles as possible, regardless of format addressed within the manuals (table 6). At best, there was occasional (55 percent) or rare (73 percent) use of these resources by the eighty-two (80 percent) respondents who answered the question. Many participants (69 percent) responded with *not applicable*.

Supplementary tool use has a similar range with authority tools and databases being one of the most used within this category (table 7). A series of questions concerning authority control were included and revealed that fifty-two (50 percent) of the participants perform authority control on name and subject access points, thirty-three (32 percent) did not, and eighteen (17 percent) skipped the question altogether. Respondents also indicated that standard reference materials such as dictionaries, as well as Fritz's manual on AACR2 and MARC, were used occasionally.

Overall, there was very little daily or weekly use of materials related to MARC (table 8). This is particularly interesting when taking into account the earlier data on the extent of original or semioriginal cataloguing per week (see table 4). For example, a combined total of twenty-nine (28 percent) respondents indicated their use of the MARC format for bibliographic records, and these responses are cross-referenced with data on cataloguing performed per week (see table 13, later). Forty respondents

Table 6. Use of Cataloguing Manuals (N = 103)

Cataloguing Manuals for Various Formats, etc.	Daily	Weekly	Occasionally	Rarely	N/A
CONSER Cataloguing Manual (2002 or older edition)	0	0	1	2	74
CONSER Editing Guide (1994 edition only or with all updates through 2002)	0	0	1	2	74
Integrating Resources: a cataloguing manual	0	0	4	3	71
Other Serials/continuing resources cataloguing manuals, etc	1	0	4	3	69
Descriptive Cataloguing of Rare Books, 2nd edition (1991)	0	0	0	3	74
Other rare book cataloguing manuals	0	0	1	2	74
Cartographic Materials, 2002 Revision	0	0	0	2	74
Cartographic Materials, 2002 Revision, with 2004 Updates	0	0	0	2	75
Map Cataloguing Manual (1991)	0	0	0	3	74
Other map cataloguing manuals, etc.	0	0	0	3	74
Music cataloguing manuals	0	0	5	4	69
Audiovisual cataloguing manuals	1	0	14	8	57
Archival Moving Images Materials: a cataloguing manual, 2nd edition (2000)	0	0	0	1	74
Archival Moving Images Materials: a cataloguing manual via Cataloguer's Desktop	1	0	0	1	75
Motion picture and video recording cataloguing manuals	0	2	9	7	61
Rules and Tools for Cataloguing Internet Resources (2004)	1	1	2	5	68
Cataloguing Non-print and Internet Resources (2002)	0	1	1	4	72
Other electronic resource cataloguing manuals	1	3	6	4	65
Graphic material cataloguing manuals	0	0	0	3	74
Other cataloguing manuals (skipped)	1	4	9	13	47
Total respondents			82		

(39 percent) indicated no use of MARC bibliographic format standard, despite performing some semioriginal or original cataloguing every week.

One of the last areas surveyed dealt with how tools and resources were ordered and updated as needed (table 9). Publishers, professional associations (e.g., ALA), Library of Congress, and vendors were the main source for materials. Yearly scheduled updates or consensus of staff or director were only indicated by 15 percent of the respondents. Occasional updating was performed by only 24 percent of respondents. Other responses included "attending larger library book sales" or "updates as provided by vendor."

Discussion. This study raised some serious questions about the root causes for such a low utilization of cataloguing tools and resources. How are decisions to not use cataloguing tools and resources a reflection of

Table 7. Use of Supplementary Tools

Supplementary Tools	Daily	Weekly	Occasionally	Rarely	N/A
Cataloguing with AACR2 and MARC 21 (Fritz)	3	3	12	1	54
Maxwell's Guide to AACR2	0	0	3	3	67
Maxwell's Guide to Authority Work	0	0	2	2	68
LC Authorities Database	9	10	7	1	50
Other Authorities Database	5	7	9	2	50
Authority control tools or manuals of any kind	3	7	5	11	50
Art and Architecture Thesaurus (AAT)	0	0	1	3	69
ERIC Thesaurus	0	0	2	2	69
Thesaurus for Graphic Materials (1995 print edition or updated online version)	0	0	0	3	70
Other thesauri	0	0	3	3	68
World Fact Book (CIA)	0	0	8	10	56
Dictionaries (biographical, geographical, online, etc.)	1	10	21	11	35
Atlases	0	4	14	9	48
(skipped)			19		
Total respondents			84		

cataloguers' satisfaction that the cataloguing product provided is sound and of good quality? Is it a reflection of their having very little knowledge (and thus, education) of tools and resources, or of sound cataloguing practices, in the first place? Of particular interest is what this indicates about how well cataloguing educators have prepared students to be cataloguers. Participants indicated the major factors affecting availability of cataloguing tools and resources were budget limitations (71 percent) and staff limitations (60 percent), but thirty-nine (38 percent) also felt that they simply did not know enough about the tools and resources (e.g., one person commented, "We are amazed at the resources out there!") in the first place. The most surprising finding was the response to whether they felt "these limitations were detrimental to the service provided to library patrons as far as providing them with a reliable catalogue system"—the overwhelming response (45 percent) was that they did not. What does this mean in light of the current scramble to keep public libraries on the radar as continuing viable public resources?

The survey also revealed a disturbing lack of participation in the area of professional communication and the exchange of information. For instance, only eighteen (17 percent) of respondents subscribed to ALA-supported listservs, and of those that do, only three (3 percent) have a master's degree from an ALA-accredited library school. *Library Journal* is the one journal to which 64 percent of the respondents subscribe, and only 15 percent subscribed to specialized journals such as *Cataloguing and Classification Quarterly* and *Library Resources and Technical Services*. Approxi-

Table 8. Use of MARC Standards and Resources

MARC Tools	Daily	Weekly	Occasionally	Rarely	N/A
BIBCO/CONSER MARC Record Sets	0	1	3	3	63
MARC 21 Concise Formats	3	4	8	5	53
MARC 21 Format for Bibliographic Data and Updates	2	11	13	3	44
MARC 21 Format for Authority Data and Updates	2	2	14	6	47
MARC 21 Format for Holdings Data and Updates	3	2	2	6	58
MARC 21 Format for Classification Data and Updates	3	2	3	3	60
MARC 21 Format for Community Information and Updates	2	1	1	4	61
MARC Code List for Languages	1	7	10	5	50
MARC Code List for Countries	1	6	10	5	51
MARC Code List for Geographic Areas	1	5	12	5	50
MARC Code Lists for Relators, Sources, Description Conventions MARC Code List for Organizations MARC 21 Specifications for Record Structure, Character Sets, and Exchange Media All MARC standards via Cataloguer's Desktop (online or CD-ROM)	1	3	9	2	57
Understanding MARC Bibliographic (any edition, online or print)	1	3	17	5	46
Understanding MARC Authority Records (any edition, online or print)	1	0	11	8	52
MARC 21 Lite Bibliographic Format (online)	0	0	2	2	66
MARC Manual, 2nd edition, 1998	0	0	4	5	61
ArtMARC Sourcebook (skipped)	0	0	0	2	68
Total respondents			79		

mately eighty (77 percent) of respondents did not regularly monitor the literature and announcements coming from the then-named Joint Steering Committee for Revision of the Anglo-American Cataloguing Rules (now called the Joint Steering Committee for the Development of RDA).

A primary goal of this study was to inform both cataloguing educators and cataloguing practitioners about tools and resource use, as well as serve as a resource for course curricula in library schools and a training tool for technical service administrators. This would, at the very least, help ensure a level of consistency in library cataloguing across the board as it relates to what tools and resources are available to cataloguers, and hopefully serve as a necessary benchmark for cataloguers responsible for the quality control of library catalogues. The results of this survey should give library technical services departments the initiative to perform self-evaluation of the resources and tools used by their professional and paraprofessional staff. Library administrators and library cataloguers should be more aware

Table 9. Use of MARC 21 Bibliographic Format and Semioriginal or Original Cataloguing per Week

If Your Library Performs Its Own Semioriginal or Original Cataloguing, What Are the Average Hours per Week?	MARC 21 Format for Bibliographic Data and Updates	
0 hours per week	N/A	3
	No	4
	Rarely	1
< 10 hours week	Daily	2
	N/A	13
	No	27
	Occasionally	9
11–20 hours per week	Weekly	8
	N/A	4
	No	11
	Occasionally	3
21–30 hours per week	Weekly	1
	N/A	6
	No	1
	Occasionally	1
31–40 hours per week	Weekly	2
	N/A	2
	No	1
N/A	Rarely	2
	N/A	2
Total respondents		103

of the minimal standards that support the efficiency and effectiveness of cooperative library catalogue systems. This is especially relevant now as NGCs are being implemented in many libraries.

Academic Libraries

A study by Snow (2011) explored cataloguers' perceptions of quality cataloguing. The study investigated the ambiguous nature of "quality" in cataloguing, a concept that may be defined differently depending on varying factors, such as type of library and user population, local practice, level of cataloguing education/training, and the demands of one's position. This study looked specifically at cataloguers (professional and nonprofessional) who work in academic libraries and perform original cataloguing to gain insight on what they believe is quality cataloguing, what has influenced their thinking on the topic, and how this thinking has influenced their work and their department. Studying this particular population's perceptions of quality cataloguing is important because original cataloguers in academic libraries contribute a greater proportion of cataloguing copy to cataloguing networks than cataloguers in other types of libraries (Fischer & Lugg, 2009).

Methodology. Qualitative and quantitative methods were used to collect and analyze data. Survey and interview data-collection tools were chosen in order to collect qualitative and quantitative data pertaining to academic cataloguers' opinions of quality cataloguing. Survey participants were identified using a random sampling of academic libraries from the early 2010 LibWeb listing of academic libraries in the United States. Snow surveyed 296 professional and nonprofessional cataloguers who work in academic libraries to elicit their opinions of what quality cataloguing means to them. The survey was distributed online using Survey Monkey from August to September 2010. Twenty of the survey participants were chosen to participate in a telephone interview that contained more in-depth questions about their opinions of quality cataloguing.

Results. Snow found that definitions of quality cataloguing tend to contain attributes from one or more of the following four categories: (1) the technical details of the bibliographic record, such as the accuracy of the data, error rates, and the inclusion or exclusion of fields; (2) the adherence to standards on the local, national, professional, or network level; (3) the cataloguing process, including the pace of the workflow, staff training and performance, and administrative support; and (4) the impact of cataloguing upon the users, such as the find-ability and accessibility of bibliographic records in the system as well as how well they lead the user to his or her desired information object.

When asked to give their personal definition of quality cataloguing, study participants most often chose attributes that fell within the technical details of the bibliographic record category (81 percent of respondents). The impact of cataloguing upon users was the next most frequently mentioned (58 percent of respondents), closely followed by definitions that discuss adherence to cataloguing standards (53 percent of respondents). The cataloguing process was discussed with the least frequency of the four categories (13 percent of respondents) (Snow, 2011, p. 97). Snow also performed a word-frequency count that revealed that respondents most frequently used the words "record" or "records" when describing quality cataloguing. In addition, respondents also focused on accuracy and completeness, especially subject headings and access points (table 10).

Study participants were asked to rank MARC fields and subfields by level of importance in a quality bibliographic record. The top ten "Very Important" MARC fields and subfields were, with only one exception (260\$c date of publication), access point fields; 245\$a (title proper) was the MARC field that respondents chose as "Very Important" most frequently. Author/contributor access points (MARC fields 100, 110, 111, 700, 710) and subject access points (MARC fields 600, 610, 650, 651) compose the rest of the top ten "Very Important" MARC fields/subfields (table 11).

Study participants were also asked to rank by level of importance attributes frequently used in library science literature to define quality cata-

Table 10. Top Ten Most Frequently Used Words or Phrases Describing Quality Cataloguing

Word/Phrase	Frequency
Record/records	247
Accuracy/accurate/accurately	175
Item	160
Subject/subjects	151
Information	126
User/users	114
Heading/headings	112
Access	105
Complete/completeness/completely	69
Catalogue	66

Table 11. Top Ten "Very Important" MARC Fields/Subfields (N = 296)

MARC Field/Subfield	Number of Respondents	Percentage of Respondents
245 \$a (Title Proper)	291	98%
100 (Personal name Main Entry)	278	94%
650 (Topical Subject Heading)	268	91%
110 (Corporate Body Main Entry)	258	87%
651 (Geographic Subject Heading)	250	85%
600 (Personal name Subject Heading)	248	84%
700 (Personal name Added Entry)	238	80%
610 (Corporate Body Subject Heading)	236	80%
260 \$c (Date of Publication)	233	79%
111 (Meeting name Main Entry)	216	73%
710 (Corporate Body Added Entry)	216	73%

loguing. Attributes related to users and the find-ability of information were the most frequently chosen as "Very Important" by survey participants.

Even though most of the answers ranked in the top ten "Very Important" fall within the "technical details of a bibliographic record" category, the top three answers focused on users and the find-ability of information in the catalogue (table 12). A chi-squared test was used to determine that the answers on the survey did not vary significantly by age range, years of cataloguing experience, level of cataloguing education, type of position, and number of employers.

Discussion. Even though cataloguers may focus on different attributes when defining quality cataloguing, their definitions as a whole generally fell into one or more of the same four categories: the technical details of a bibliographic record, adherence to standards, impact on users/find-ability, and the cataloguing process. Study participants most frequently described the technical details of a record when asked to define quality cataloguing such as the accuracy of the data transcription, the exis-

Table 12. Top Ten "Very Important" Quality Cataloguing Attributes (N = 296)

Attribute	Number of Respondents	Percentage of Respondents
Creating a bibliographic record that is helpful/useful to the user	279	94%
Enough access points are included so that the record can be found	268	91%
The user is able to find records in the catalogue efficiently	264	89%
Subject headings are included and accurate	246	83%
Access points conform to authority records/controlled vocabulary used by library	243	82%
Transcription of bibliographic data is as accurate as possible	238	80%
Access points are correctly identified & formulated according to AACR2	236	80%
Creating a bibliographic record that best represents the item in-hand	233	79%
Creating a bibliographic record that is free of typographical errors	212	72%
Call number is included and accurate	206	70%

tence of typographical errors, and the inclusion of specific data/fields. This suggests that when academic cataloguers define quality cataloguing, they largely think about it in terms of the accuracy and completeness of the bibliographic record. However, it is important to note that 78 percent of survey respondents used attributes from two or more of the four categories when defining quality cataloguing. This means that the academic cataloguers participating in this study do not view quality in only one dimension.

School Libraries

In a 2009–2010 study conducted in Texas, Schultz-Jones, Snow, and Hasenager investigated a recommended standard of practice for the assurance of quality of bibliographic data for science resources found in K-12 school library catalogues. Since budget constraints and staffing concerns affect the formulation of school library cataloguing policies and practices, a recommended standard and a process for addressing bibliographic record quality would benefit practitioners and end users and would position school libraries for the introduction of the new international cataloguing standard designed for the digital world, as well as NGCs.

The study investigated the concern that issues in the quality of K-12 scientific bibliographic records negatively impact the efficiency and effectiveness of record production and maintenance and impede the discovery of these resources by students and educators. Specific research questions addressed in this study included: What is the quality level of vendor-supplied records? What do processes involving record cleanup by vendors and school media specialists entail? To what extent do school library cataloguers identify a consistent standard of quality?

Methodology. The issue of cataloguing quality was examined by using quantitative and qualitative approaches: a broad survey of K-12 school librarians, interviews with cataloguers and school library media specialists across Texas, and examination of existing bibliographic data in an independent school district in San Antonio.

The survey of cataloguing practices in Texas school libraries was designed for any size of library, with the realization that some school libraries manage cataloguing functions themselves while some districts offer centralized processing of materials. The survey was constructed in Survey Monkey for online delivery from November 10 to December 31, 2009, and included seven sections: Demographics, Library Management, Library Collection, Catalogue Management, Bibliographic Record Quality, Science Collection, and the Future of Cataloguing. These sections addressed the staffing and education levels of library support, availability of catalogue access, size and scope of the science collection, processes to ensure quality bibliographic records, and knowledge of the emerging standard RDA. There were seventy questions in total.

Interviews were scheduled with survey respondents who indicated they would be interested in discussing school library cataloguing activities. A range of respondents was selected, from large districts where a centralized group handles the cataloguing, to small districts where the librarian is the sole cataloguer. The interview schedule was distributed among the project team, and ten interviews were completed by May 2010. The interviewees were asked nine questions:

- Do you create/import new records into your catalogue? If not, who does?
- What is your cataloguing process?
- When new records are placed in your catalogue, what is the review process?
- When you do review the records, what fields do you check?
- Do you review the science records differently from any other record?
- Do you do any local customization of the records?
- What is your personal definition of quality cataloguing for school libraries?
- Have you heard about the new cataloguing standard, Resource Description and Access (RDA)?
- Do you have any concerns about the new cataloguing standard?

The cataloguing department of an independent school district in San Antonio, Texas, provided 1,000 bibliographic records imported from vendors. The records were queried for entries with a Dewey Decimal Classification (DDC) number in the 000 (Computers, information and general reference), 500 (Science), and 600 (Technology) classes. These classifications reflect the focus on resources that support the science, technology, engineering, and mathematics (STEM) curriculum. The records were assessed for conformance to the current AACR2, accuracy, and inclusion of

appropriate subject headings, summary, and table of contents fields. The assessment of these records was completed by June 2010.

Results. The survey was completed by 366 respondents. Not all questions were answered by all respondents, so the results are reported in terms of the number of respondents to each question. The survey was completed by respondents from 242 school types. These are reported in table 13. Of the 242 individual schools, three are charter schools, while 239 are public schools.

Questions related to library management included staffing levels and the level of education for those staffing levels, as reported in table 14.

Table 15 indicates the activities related to cataloguing for various staffing levels.

The section related to the library collection asked a number of questions about the accessibility of the collection and the number of hold-

Table 13. School Types Represented in the Survey

School Type	Number	Total Students	Minimum No. of Students	Maximum No. of Students
Elementary	105	63,747	140	1,281
Middle/junior high	39	28,421	125	1,800
High school	63	81,244	95	3,300
Elementary–middle/ junior high school	8	2,790	165	750
Middle/junior high school–high	11	4,379	110	1,576
Elementary–middle/ junior high school–high school	13	7,301	137	1,200
Not specified	3	1,670	800	870
Total	242	189,552		

Table 14. Education Levels for Staffing Levels in the Survey (N = 185)

Education Levels	% Staffing Levels
Less than bachelor's degree	84
Bachelor's degree without teacher certification	27
Bachelor's degree w/teacher certification and ExCet	19
Bachelor's degree w/teacher and library science certification	31
Master's degree without teacher or library credentials	0
Master's degree or higher w/library credentials without teaching certification	4
Master's degree or higher w/teacher certification without library credentials	1
Master's degree or higher w/teacher certification and other library credentials	16
Master's degree or higher w/teacher and librarian certification (TEXES)	94

Table 15. Cataloguing Activities Represented in the Survey (N = 185)

Title	% Copy Catalogue		% Import Vendor Records		% Check Records		% Amend Records		% Original Catalogue	
	Main	Add	Main	Add	Main	Add	Main	Add	Main	Add
Certified librarian	75	40	72	37	73	2	13	12	2	0
Librarian/SLMS	12	4	13	2	13	59	12	2	0	0
Library assistant	12	55	12	59	12	59	12	2	0	0
Teacher	2	0	2	0	2	0	2	0	0	0
Student aide	0	0	0	0	0	0	0	0	0	0
Volunteer	0	0	0	0	0	0	0	0	0	0

ings in the collection. Of the 227 respondents to the question on whether the library has a library automation system, 94 percent responded yes. The number of schools coordinating activities with the public library was 35.7 percent (eighty-one) of 227 respondents. Libraries with laptops numbered 73 percent (165) of 226 respondents. And 74.5 percent (172) of 231 respondents reported that the school campus provided wireless access.

Management of the catalogue included questions regarding how catalogue records are acquired and the type of cataloguing reference resources used. Table 16 depicts where catalogue records are acquired. Table 17 reports the cataloguing reference resources used.

The section on bibliographic record quality involved choosing the ten items for a variety of scenarios. Table 18 reports the top ten items chosen by the 123 respondents to best define a quality bibliographic record for science resources in a school library. Table 19 reports the top ten important MARC fields identified by the 115 respondents. In terms of the top ten MARC fields checked, 115 respondents reported the fields in table 20.

When asked if the criteria for a quality bibliographic record were different for subjects other than science, 95.5 percent (107) of respondents answered no. They apply the same standard to all subjects.

The future of cataloguing section asked questions regarding the im-

Table 16. Resources for Catalogue Records (N = 111)

Resource	Percentage
Vendors	73%
Original cataloguing	53%
MARC Wizard	31%
Library of Congress	27%
Central Processing Center	24%
Other	16%
SchoolCat	7%
OCLC	4%
Biblios.net	0%

Table 17. Resources for Cataloguing Reference (N = 109)

Resource	Percentage
Sears Subject Headings (Print)	29%
Anglo-American Cataloguing Rules, 2nd ed., Revised	28%
Dewey Decimal Classification, 14th ed. (Abridged)	25%
Easy MARC (Piepenburg)	19%
Dewey Decimal Classification, pre-14th ed. (Abridged)	18%
Anglo-American Cataloguing Rules, 2nd ed.	14%
Library of Congress Subject Headings (Online)	13%
Dewey Decimal Classification, 22nd ed., (Unabridged)	12%
Cataloguer's Desktop	12%
Sears Subject Headings (Online)	12%
None	10%
Other	10%
Library of Congress Children's Subject Headings (Print)	9%
Library of Congress Children's Subject Headings (Online)	8%
Subject Headings for School & Public Libraries (Fountain)	8%
Library of Congress Subject Headings (Print)	7%
MARC21 for Everyone (Fritz)	6%
OCLC Connexion	5%
Cataloguing Correctly for Kids (Intner & Fountain)	4%
Dewey Decimal Classification, pre-22nd ed. (Unabridged)	4%
Catalogue It! (Riedling & Kaplan)	3%

Table 18. Top Ten Quality Attributes for a Bibliographic Science Record (N = 123)

Attribute	Respondents' Overall Rank	Elementary Rank	Middle/Junior High Rank	High School Rank
Call number is accurate	1	2	3	1
All words properly spelled	2	1	2	4
Summary of the item included	3	4	5	3
Subject headings included	4	5	8	2
MARC tags are correct	5	3	6	8
ISBN is included	6	6	10	7
Subject heading appropriate	7	8	9	6
Call number is included	8	10	4	5
Description conforms to standards	9	7	11	12
Subject headings appropriate specificity	10	16	1	10

pending adoption of the new cataloguing standard, RDA, from the long-standing *AACR2*. A smaller number of respondents answered these questions. Of 128 respondents, 39 percent (fifty) had heard of RDA, while 61 percent (seventy-eight) had not. When asked what they were doing to prepare for RDA, 106 respondents provided the answers in table 21.

The ten interviewees were unanimous in declaring that they rely on vendor records for the majority of items in the school library catalogue.

Table 19. Top Ten Important MARC Fields to Include in a Quality Bibliographic Record (N = 115)

MARC Field	Respondents' Overall Rank	Elementary Rank	Middle/Junior High Rank	High School Rank
082/092 (Dewey Decimal Call Number)	1	1	5	1
245 (Title Statement)	2	2	2	2
520 (Summary)	3	4	1	6
020 (ISBN)	4	3	3	4
650 (Topical Subject Heading)	5	6	4	5
100 (Personal name Main Entry)	6	5	6	3
260 (Pub., Distribution, etc.)	7	7	8	7
440/490 (Series Statement)	8	8	7	10
300 (Physical Description Area)	9	9	9	8
250 (Edition Statement)	10	12	10	9

Table 20. Top Ten Important MARC Fields to Check in a Quality Bibliographic Record (N = 115)

MARC Field	Respondents' Overall Rank	Elementary Rank	Middle/Junior High Rank	High School Rank
082/092 (DDC Number)	1	1	2	1
245 (Title Statement)	2	2	1	3
100 (name/Main Entry)	3	3	3	7
020 (ISBN)	4	4	4	2
650 (Topical Subject Heading)	5	5	5	4
520 (Summary)	6	7	6	5
300 (Physical Description)	7	6	7	6
260 (Pub., Distribution, etc.)	8	8	8	10
440/490 (Series Statement)	9	11	9	8
250 (Edition Statement)	10	9	10	9

Table 21. Ways that Respondents Are Preparing for RDA

Preparations	Number	No. of Respondents
I've not done anything specific to prepare for the future changes	63	59%
I've been reading everything I can to understand RDA better	16	15%
I attend workshops or meetings when RDA is discussed	11	10%
Other	9	8%
I've started working on the authority files within my ILS	4	4%
I've spoken with my ILS vendor to see if our system is compliant	3	3%

Whether the cataloguing was handled by a central group or performed by the individual school librarian, vendor records were the primary source. Each of the school librarians identified that they have a review process for new records, focused specifically on the following MARC tags: 020, 100, 245, 245 \$c, 300, 520, 600, 650, and occasionally the 700 field. The school district prepares a specification list for potential vendors, and those vendors who supply records that meet those specifications are maintained as ongoing suppliers of records to accompany purchased items. Records for science items were not handled separately or differently; all records were considered of equal importance regardless of time constraints. The responses to a definition of a quality record included the following: accurate (in terms of data within the fields); accurate (in terms of matching the actual item); complete (in terms of more than a few MARC tags); accessible (able to connect patrons to the item); and searchable by students (records may be customized to add subject terms considered "child friendly"). Most of the interviewees had little or no knowledge of RDA, and the concerns expressed included hoping that the new standard would make cataloguing easier, be applicable for the new changes in technology, be adopted quickly by vendors to ease the transition for school libraries, and be useful to patrons.

The assessment of 1,000 bibliographic records revealed that these vendor records averaged 95 percent data accuracy. The MARC fields of concern were the obsolete 440 being used for series information instead of the 490 field, inadequate summary information in the 520 field, and 3 percent inaccuracies in Dewey Decimal Classifications recorded in the 082 field. Subject headings were found to be accurate but limited, and additional subject headings were added by the school district cataloguers to provide more find-ability options for patrons. This was also true of data in the MARC 505 field where vendor-supplied table of contents information was often absent. Again, school district cataloguers added this information to aid patron retrieval.

Discussion. For a majority of the libraries, the librarian is the primary person responsible for cataloguing and copy cataloguing, but almost half rely on the assistant to complete the work as well. This may mean that the librarian is expected to work as an instructional partner and leaves cataloguing to others to focus on students. Assistants are only used in creating new records, copy cataloguing, and importing vendor records; they are not involved in the validation of records. It is only the librarians who verify records. This may mean that the validation of records is not perceived as a requirement of assistants or other nonprofessional librarians or a consideration of qualifications for the task. More research is needed to determine whether this is due to the level of trust in records found or if the librarian does not believe the assistant is qualified for such work. The assumption based on the interviews is that librarians have a high trust in the record quality.

Not surprisingly, the majority of schools obtain their records from vendors. Vendor records require no additional searching. Interviews have shown that librarians prefer vendor records since they perceive that vendors use professional cataloguers to create these records. Despite the large investment in cataloguing, Library of Congress records constitute only about one quarter of the cataloguing records used. These are accessed for original cataloguing in many instances and as a basis for comparison. Despite the national attention on the STEM curriculum, these materials receive the same level of scrutiny as do other materials. Quality is not viewed as subject specific.

As we move toward the adoption of a new cataloguing standard, it was interesting to note that for the cataloguing tools used, only thirty-two of the respondents use the current standard of *AACR2* as a tool to catalogue materials. This may be because many librarians use only vendor records or copy cataloguing and avoid original cataloguing, seeing the MARC format as a source to catalogue instead of a coding schema to display the standard cataloguing rules.

The ranking of attributes for a quality bibliographic record included some surprises. The importance of fields and the fields checked are in alignment, although the order of some *items* may differ slightly. The call number field (MARC 082) is the number one indicator of record quality, and by extension accessibility. If the call number is erroneous, then the item cannot be found on the shelf. However, not all automation systems display the 082 field, and cataloguers use the local holdings of MARC 852 or 949 to display the call number. While summaries (MARC 520) were seen as important, the table of contents field (MARC 505) did not make the top ten. This may be a result of the expectation that the summary assists keyword searching and provides the best indication of what the work is about. However, the table of contents can be valuable for subject searches as well. Another MARC field that was expected to be one of the top ten fields was MARC 856 for electronic resources. This may have been ranked lower because often the only information in the 856 field is a link to the Library of Congress information. Users expect different material here such as an eBook or Web site instead of bibliographic information which may contain a table of contents. Some libraries strip the 856 field when it only includes the Library of Congress information since having that information confuses users into thinking there is greater content than what is actually there.

The low awareness of the impending introduction of the new cataloguing standard, RDA, indicates that the majority of school librarians have not heard of RDA. Conferences and journal articles have had the greatest effects in communicating RDA, but a review of the Texas Library Connection and LM-Net listservs reveals very few messages to school librarians about RDA. Even fewer librarians have talked to vendors about RDA (less than 1 percent). Vendors respond to the needs of the school and school

librarians. If these needs are not articulated, vendors may be slow to update their automation products to accept records compliant with the new standard. So, while RDA is not on the radar for most school librarians, more needs to be communicated in listservs and professional journals to enlighten them. School librarians may view cataloguing as secondary to many of their duties, with instruction being primary. However, accessibility to resources is a fundamental expectation of the school library, and the impact of being out of date with regard to new standards may be significant.

TREATMENT OF VENDOR RECORDS

Cataloguing agencies have many options to obtain bibliographic records to copy into their library catalogues. One of most popular methods for small and school libraries is the use of vendor-supplied MARC records. Book vendors supply these records for a low fee or free of charge. Anecdotal evidence suggests that there is a wide discrepancy among organizations in how they chose to include vendor records into the library catalogue. Some review each record for quality markers the local agency has established, while others conduct no review whatsoever. The study on the quality of school library cataloguing above confirms these findings, including varying levels of quality assurance. This study provides a window into current cataloguing practices that will influence the success or failure of implanting NGCs.

The scope of this study was limited to school libraries, and the analysis of MARC records was limited to only one independent school district. The research team had an opportunity to visit the school district to evaluate records and learn more about the process in which the district library processing staff adds vendor-supplied bibliographic records to the library catalogue.

The process described is the same process used for the addition of monographs, realia, kits, audiovisual materials (DVDs, CDs, Playaways, etc.), and eContent (eBooks, eAudio, steaming video, etc.) into the school district's union catalogue. This process does not include any authority work, since the district relies on the vendors to have already completed this in the creation of bibliographic records.

The process of adding vendor-supplied MARC records begins with assigning the order of new materials to a library processing specialist. The specialist is a paraprofessional under the direction of a professional cataloguer. The processing specialist uploads the batch of records into a bibliographic utility where she reviews the bibliographic record prior to adding the asset into the integrated library system (ILS). In this review, she reviews the fields the cataloguers have identified as the most important fields: 020, 1xx, 245, 260, 300, 490/830, 590, 6xx, 856, and the 949. Although all of these fields are checked, not every subfield of the MARC tag receives the same level of scrutiny. Table 22 describes the level of review for each field.

Table 22. MARC Tags and Subfields and Levels of Review

MARC Tag	Subfield(s)	Levels of Review
020	\$a	Verify the ISBN. No additional ISBNs are added, but none are removed if the ISBN for the item being described is listed.
1xx	\$a	Verify the main access point parallels the statement of responsibility; however, no authority work is completed.
245	\$a, \$h, \$b, \$c	Verify the title and statement of responsibility with the chief source of information and ensure verification of the order of the indicators. Often times, vendors place the \$h after \$b.
260	\$a, \$b, \$c	Verify the publishing information with the chief source of information.
300	\$a, \$b, \$c, \$e	Verify physical description information and add any accompanying information. If the item is eContent, then make sure \$a states "1 Online resource"
490/830	\$a	Verify the series information and ensure that if it is to be traced, the correct information is in the 8xx.
590	\$l, \$n	Add \$l and \$n for eContent. These subfields provide information as to which campus added the item to the virtual collection and the number of users that are able to access the item at any one time.
6xx	\$a, \$v	Verify the subject headings and remove any duplicate headings and "Juvenile Literature"
856	\$u	Verify any links for eContent and remove any publisher links that do not provide enhanced content.
949	\$a, \$h, \$i, \$p	Verify the local holdings information with the call number, campus collection, barcode, and price.

It is also at this point that the library processing specialist removes any "junk" tags that are not used for any purpose in the district's catalogue. Once reviewed in the bibliographic utility, the library processing specialists uploads 10 MARC records at a time into the ILS to ensure that should there be an existing record in the system, it is attached to the correct record. Often times, a MARC record is attached to an incorrect manifestation of the same expression (i.e, e-book is attached to a print copy). It is also at this time that the specialist does a final review and makes any final editing before repeating this process for a new batch of MARC records.

IMPLICATIONS

In this time of transition to relational catalogues, libraries need to be forward-thinking. Nagy (2011) believes that NGCs provide a great opportunity for libraries to help shape the Semantic Web by building these relationships between entities. He writes that

by participating in the Semantic Web and evolving cataloguing practices, libraries can foster and define these relationships. A next-generation solution can be the tool that allows libraries to do this. The library catalogue is an authoritative source on materials held by the library, and other sources are authoritative on subject terms, authors, and call

numbers. When these connections are made, the researcher can be better equipped to browse at a more macroscopic level through this notion of the Semantic Web (p. 13).

As we prepare for next-generation solutions, it is also important to consider the presentation of these relationships to a wide range of users. Calhoun, Cantrell, Gallaher, and Hawk (2009) examined user perceptions alongside cataloguer expectations of quality. While the age ranges of users in the study did not encompass anyone younger than an undergraduate at college, the issues that were raised by users complement the concerns of cataloguers across our library studies. More research is needed to examine the implications for young users of NGCs. Cataloguers must be sensitive to different user groups; they must understand the age ranges of users, how to meet search and retrieval needs of different users groups, and varying levels of information behavior. This is particularly true for subject headings. The vocabulary range of very young users is limited, and visual search options have been developed to accommodate these limitations. However, should we also be ready to accommodate natural-language processing? Or, is that the purview of the systems programmers—to translate natural-language processing or limited language searches into the formal controlled vocabularies prescribed by formal authorities?

Is it a matter of judgment or a matter of quality, or both? Cataloguer's judgment is often mired in practices that are based on cataloguer convenience and ease of quality judgment rather than on user information behavior and needs. While Miksa (2008) did not measure the quality of catalogue records in relation to cataloguing tool and resource use, there is an implication that low utilization of cataloguing tools and resources impacts cataloguer judgment and record quality. This is beyond the scope of this particular study, but it does raise the questions: What is the point of having standards to promote consistency if no one is using them? Do we even need them? (By all indications, this is not the case.) NGCs are capable of using traditional catalogue data much more efficiently, but if cataloguers do not even use the resources in place to help them make good cataloguing decisions, then what assurance is there that they will understand how an NGC provides the user with more layers of discovery based on the data already present in the system? For example, the data encoded in the 008 fixed fields can be used more advantageously within NGCs to provide the kind of faceted access that users demand, but the 008 has been, and sometimes still is, deemed unnecessary by many libraries due to limitations within traditional integrated library systems. Therefore, this field is left uncoded or removed completely. If it is not there, then an NGC cannot be used to its fullest potential. Additionally, if cataloguers base most of their assessment of quality on the presence or absence of MARC fields and the granularity of MARC encoded data, then more time will be spent

fixing records than enhancing them with the kind of data that users want and expect. This is especially true if cataloguers tend to implicitly trust the quality of vendor records without some sort of quality assurance process in place. It follows, then, that another implication is that the successful implementation of NGCs may face a very steep and costly upward battle.

How will NGCs and RDA force changes in the ways that cataloguers evaluate quality metadata and the ways in which quality assurance checks need to be implemented? In order to address this question, we must first ask how a lack of knowledge of new developments such as FRBR and RDA will affect implementation of NGCs, let alone assurance of quality records in NGCs? RDA represents a fundamental shift in how catalogues function and thus a shift in decisions cataloguers make about the kind of data that goes into a record and the level of detail or granularity of that data. Cataloguers new to the profession, and who may be more educated on the differences between *AACR2* and RDA, will most likely be the ones driving these changes. Thus, one very key implication that libraries, and in particular library administrators, must realize is that NGCs are heavily dependent on a strong generation of cataloguers.

Naun (2010) poignantly states that the “emergence of the new catalogue designs has come both as a vindication of the traditions of library cataloguing and a challenge to them” (p. 181). Cataloguers are often characterized as being very nit-picky, obsessed with following rules. *AACR2* emphasized consistency and efficiency of data (i.e., precise and concise) to the point of sometimes leaving data out. RDA is more forgiving of inconsistencies and inefficiencies. Regardless, cataloguers should still be nit-picky, but they need to be nit-picky in terms of find-ability. The new measure for cataloguers’ judgment is against find-ability, and not against rigid rules of transcription.

Given the current and historical perceptions of quality records, and the actual practices and processes to ensure quality, where are we going? What are the implications of the different ways in which NGCs highlight poor quality metadata? What aspects of current library cataloguing practice should be incorporated into NGCs? What is inevitable? The attention to quality has shifted. In the past, quality meant accuracy and completeness, but is that enough? We have moved our catalogues from index cards to online discovery and now to Web-scale discovery—so the magnitude of completeness shifts in terms of quality. To be sure, the definition of quality does provide a platform, but does quality now equal what it did before if there are specific standards that we need to meet for NGCs? We have no answers yet for these types of questions. Despite that, libraries need cataloguer’s metadata, now more than ever. In fact, libraries need more data. Quality metadata is not just a nice-to-have, it is a must-have. This is true for both NGCs and the ones that come after.

NOTE

1. Funded in 2005 by an OCLC/ALISE Library and Information Science Research Grant. Some of the tables and findings in this section were taken from a previously published article by Miksa (2008).

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