Comparative Analysis of National Classification Systems: Cases of Korean Decimal Classification (KDC) and Nippon Decimal Classification (NDC)

Dong-Geun Oh

Department of Library and Information Science, Keimyung University,
1095 Dalgubeol-daero, Dalseo-gu, Daegu 42601, South Korea,
<odroot@kmu.ac.kr>

Dong-Geun Oh, Ph. D., MLIS, MBA, is Professor and Chairperson of the Department of Library and Information Science, Keimyung University, South Korea, since 1992. He has contributed to the library communities both in Korea and internationally through writing, teaching, lecturing, and promoting cooperative work. He is the President of I-LISS (International Library and Information Science Society, 2017-2022), President of the Korean Library and Information Science Society (2016-2017), Chairperson of the Classification Committee of the Korean Library Association (2012-2017, 2019-2021), and Co-editor in Chief of the *Journal of Information Science Theory and Practice* (2012 to present).

Oh, Dong-Geun. 2023. "Comparative Analysis of National Classification Systems: Cases of Korean Decimal Classification (KDC) and Nippon Decimal Classification (NDC)." *Knowledge Organization* 50(2): 83-98. 49 references. DOI:10.5771/0943-7444-2023-2-83.

Abstract: The Korean Decimal Classification (KDC) and Nippon Decimal Classification (NDC) are national classification systems of Korea and Japan. They have been used widely in many libraries of each country and maintained successfully by each national library associations of Korean Library Association (KLA) and Japan Library Association (JLA). This study compares the general characteristics of these two national classification systems using their latest editions of KDC 6 and NDC 10. After reviewing the former research, their origins, general history and development, and usages were briefly compared. Various aspects including classification by discipline, not by subjects, decimal expansion of the classes using pure notations of Arabic, hierarchical structure, and mnemonics quality are checked for both systems. Results of the comparative analyses of major auxiliary tables, main classes and 100 divisions of schedules of two systems are suggested one by one with special regards to Dewey Decimal Classification (DDC). The analyses focus on the differences between both systems as well as the characteristics which reflect the local situations of both countries. It suggests some ideas for future developments and research based on the results of their strengths and weaknesses.

Received: 28 February 2023; Revised: 16 April 2023; Accepted: 18 April 2023

Keywords: Korean Decimal Classification, Nippon Decimal Classification, National classification system. Korean Library Association, Japan Library Association.

1.0 Introduction

The classification system has long been one of the key tools for libraries to arrange their collections and then for users to access them using the systemic approach by subject. For this reason, many scholars in library science and national library associations have tried to develop good classification systems. Some of them have been successfully developed and maintained till now, but many of them have not been maintained continuously as in the cases of Colon Classification (CC) (Satija 2017) and Korean Decimal Classification by Park (Oh 2012), even after the successful developments and wide uses for certain period in many libraries in their own nations as well as in other countries.

Both nations of Korea and Japan have maintained their own national classification systems of Korean Decimal Classification (KDC) and Nippon Decimal Classification (NDC). Both systems are selected for this study because they have been maintained successfully as standard systems by the national library associations of their own countries and used widely by many of the libraries in the nations for more than 50 years, even though their historical back-

grounds and development are not the same. In addition, there is another practical justification in that, because both systems use their own vernacular national scripts, KDC in Korean Hangeul and NDC in Japanese Kana, even though many headings of the classes having corresponding English headings in both systems, only those who can understand both languages (including the author) can carry out a comparative study of them.

It is somewhat interesting that the numbers of libraries all over the world using the international systems such as Dewey Decimal Classification (DDC), Universal Decimal Classification (UDC), et al. have increased continuously, and as a result, some nations including Sweden have ceased to maintain their own national systems. The National Library of Sweden switched to DDC stopping use of the Swedish classification scheme (SAB) created in 1921 (Svanberg 2011).

The main purpose of this article is to analyze the general characteristics of these two widely used national classification systems of KDC and NDC through comparative study focusing on their similarities and differences in various aspects. The first objective for it is to carry out in-depth comparative study of their historical backgrounds and developments to find out which strengths and major features of both systems make them sustainable in their countries. The second objective is to compares the main Tables and 100 divisions, with special regards to the points which reflects their own national and local characteristics. The results of this study can be helpful for revising and upgrading their own classification systems for nations and organizations having their own existing systems, including KDC and NDC themselves, or for developing new systems for those national library associations or national libraries which are considering developing their own ones.

This article, after reviewing former studies, investigates the brief histories, developments and general characteristics of two systems, and compares the major tables and schedules of their latest versions of KDC 6th edition and NDC 10th edition, with special regards to similar and different characteristics. The last chapter concludes and suggests some ideas for the future developments and research. This article focuses on comparing the major parts by the general expansions and orders of 100 divisions and auxiliary tables of KDC and NDC rather than approaching by specific topical themes in detail because it is the first one to analyze and suggest both systems internationally. It uses a general comparative methodology to analyze both systems at the basic levels of major tables and 100 divisions of schedules one by one. For this purpose, many vernacular Korean and Japanese books and articles were investigated which are not included in the references.

2.0 Literature review

National classification systems in general have rarely been the focus of the international research community, mainly because there are not so many such systems successfully developed and maintained, as indicated by Oh (2021). From another perspective, major classification systems including Dewey Decimal Classification have gradually had more influence on practical library classification, and expanded their power not only in English speaking nations but also in other parts of the world, this based on their competitive advantage to respond to the rapidly changing bibliographical situations as well as "the world view of a dominant culture" (Masterson et al. 2019, 280).

It is very natural that many more research articles have written about the major systems, and it is hard to discover those on the national systems. Because Oh (2021) has reviewed the situation already, this article just suggests some articles published in international journals, on respective national systems in general, and KDC and NDC in specific.

Some articles on the well-known Colon Classification (CC) investigate various aspects of it including its general features and future implications (Satija 1997; 2016; 2017), its relationship with UDC (Chatterjee 2016), revival efforts (Raghavan 2016), bibliographic review (Sathikumar 2019), teaching strategy (Saravanan 2021), and so on. Other articles have analyzed and introduced some of the specific national or nation-wide classification systems including the Brian Deer Classification Scheme (Cherry and Mukunda, 2015; Bosum and Dunne 2017; Masterson et al. 2019), Classification for Chinese Libraries (CCL) (Zhang 2003; Price 2012; Bu 2019), and the Russian LBC (Library-Bibliographical Classification) (Goltvinskaya and Sukiasyan 1993; Sukiasyan 2008;]y 2009).

Limiting the scope to KDC and NDC, both have been rarely introduced internationally, even though there are many research articles and books about them in their own languages. Related to KDC, Oh has investigated it in various aspects of its development and maintenance (2012b), its revision process (2018), and general aspects including future prospects (2021). Choi has also investigated it from socio-cultural perspectives (2018) and in relation to intercultural warrant (2022). In the case of NDC, fewer articles in English are found. Fujikura (2023) introduces general aspects, including its history, schedules, notation system, and so on, in *ISKO Encyclopedia*, even though not in the form of a research article. Others focus on its application on the web or automatic classification (Ishida 1998; Murakami et al. 2013).

Only a few comparisons of classification systems have been made at the international level. For example, Bury (1980) compares LCC, DC, and BC based on the basic criteria of library classification; Kumar (1981) has made a comparative study of DDC, UDC, LCC, CC and BC;

Herla and Baradol (1997) compare the physics schedules of CC and DDC; Choi (2017) and Choi and Park (2018) compares KDC and DDC from the perspective of cross-cultural aspects; Lund et al. (2019) compare the preference and use of DDC and LCC in USA and Nigeria; and Das (2021) compared the literature schedules of DDC and CC. In contrast, there are many articles in those countries where national classification systems have been developed and maintained, including Korea and Japan. Most of them are published in their national journals or as a chapter in a book in their own vernacular languages, with special regard to the revisions of their systems in general and/or in special subject areas. For example, Oh (2015) includes a chapter introducing KDC, NDC, and DDC with simple comparison, many parts of which are expanded in this article; Zhang (2016) compares DDC, New Classification Scheme for Chinese Libraries and NDC; and many others choose some subject areas of selected classification systems including their own systems to compare each other. But it is hard to find in-depth analysis to compare some national systems including KDC and NDC in various aspects.

From the above review, we can see that neither KDC nor NDC have been analyzed enough to reflect their popularity in their own nations as successful national systems, maintained by the national library associations in cooperation with their national libraries respectively. This article analyzes both through a comparative study to investigate the possibility of suggesting a model for the national library classification system to be benchmarked by other nations.

3.0 Brief histories, developments, and usages

As can be inferred from the above literature review, there must be good reasons that library communities of both countries of Korea and Japan developed their own national classification systems, even though many international classification systems including Dewey Decimal Classification and Library of Congress Classification existed. One of the reasons must be their dissatisfaction with those systems because they could not reflect the needs of other nations, especially in areas including history, religion, and so on, as one reviewer suggested.

But the invention of two classification systems, Korean Decimal Classification and Nippon Decimal Classification, arise from different backgrounds. KDC had started its history in 1961 and has been maintained by cooperative efforts from a group of librarians from Korean Library Association (KLA) as explained by Oh (2012a; 2021). NDC was initiated by Kiyoshi Mori in 1929 and transferred to and maintained by the Japan Library Association (JLA) since its 6th edition (1950).

3.1 Historical backgrounds: reasons why national classification systems were needed in Korea and Japan

In Korea, before the advent of KDC, there were some classification systems developed after the independence of Korea (1945) by Korean librarians. Among them, the Korean Decimal Classification by Park (KDCP, published in 1947) had been used widely by most libraries during 1950s before the Korean War; the editor, Bong-Suk Park, had performed many important leadership roles in the Korean library community at those times (for more information about Park and KDCP, see Oh 2012a). But unfortunately, it was not used widely after the war, and has not been preferred to other systems including KDC. It could not be revised or upgraded because Park was missing during the Korean War (1950-1953). In addition, it limited the expansion of the notations to maximum of 4 digits which made close classification impossible (Oh 2012b).

After the Korean War, librarians had more interest in Dewey Decimal Classification (DDC) than any other systems. Formal library education began at Yonsei University with support from the George Peabody College for Education in the late of 1950s, where the faculty members taught DDC as a main system. As DDC began to spread and be used widely, many librarians, especially from medium and small libraries, realized that DDC had some problems for them in applying it to Korean library collections.

Just after the War, the newly organized Korean Library Association (KLA) had been requested to develop a new system which could reflect the bibliographic characteristics of East Asian collections and Korean library situations. The Classification Committee of the Association published the first edition of Korean Decimal Classification (KDC 1) in 1964 the result of a year's cooperative efforts.

In Japan, most libraries used their own systems mainly based on DDC during the Meiji and Daisho periods, so that they could not reasonably arrange Japanese vernacular materials in addition to Western ones (Fujikura 2018, 2). In this situation, Mori Kiyoshi who worked at Mamiya-shoten (a library supplies shop) and was a member of the League of Young Librarians (now expanded as Nippon Association for Librarianship) developed the original version of NDC in 1929, and it was published by Mamiya-shoten. This version has sometimes been called the zeroth version of NDC (Shihota 2014, 89-90). This publication was a result of his continuous efforts to develop the draft of the system as suggested in the journal of the League. This classification (whose 5th edition was published in 1942) was widely adopted by many libraries including member libraries of the above-mentioned League as a standard system especially before the Second World War, even though some other general classification systems had also been developed in Japan dur-

ing the time (for more information about it, see Mori 2014, 15-16 and Fujikura 2018).

In 1948, the newly organized Classification Committee of Japan Library Association started to revise and enlarge the 5th edition of Mori's NDC to transform the version into a Japanese standard classification, based on in-depth discussion from some of the leading scholars in Japan, and the advice of R. B. Downs of the Civil Information and Educational Section, General Headquarter of Supreme Commander (for the) Allied Powers (Fujikura 2018). The Committee, which Mori himself also participated in, published the revised version as "newly revised 6th edition" of NDC in 1950, under the joint authorship of Mori and JLA. It was subtitled, following the practice of Mori's earlier versions, as *Decimal Classification and Index Both for Japanese and Western Books*, which was deleted from the next edition. That is the reason why NDC started from the 6th edition, not from the first edition.

3.2 Developments and usages

Both systems have been maintained and revised successfully by the classification committees of the national library associations of each country, KLA and JLA, respectively. They are also widely used in their nations, because of these continuous efforts.

KDC have published six editions until the present. All the editions have been published by the Classification Committee of KLA, with various numbers of committee members and at different intervals. The second edition was published only two years later (1966), but the third (1980), fourth (1996), and fifth (2009) editions more than ten years later, and the sixth edition (2013) only four years after that. The first and second editions were one volume only, third to fifth editions two volumes, and the latest sixth edition consists of three volumes: Schedule (vol. 1), Relative index (vol. 2), and Manual (vol. 3). During the revision of the latest two editions, the Committee collaborated with many relevant personnel, both library practitioners and subject specialists. They attempted to get feedback from the library community through public hearings (for more information about cooperative efforts during the revisions, see Oh 2018).

KDC has been used in the Korean library community from its inception, especially in public and in school libraries. According to Oh (2021), public libraries use it for 99.5 percent of Chinese, Japanese, and Korean (CJK) collections and 99.3 percent of Western collections (in 2018); academic libraries use it for 55.8 percent of CJK collections and 38.7 percent of Western collections (in 2016). Compared with the past, the ratio of public libraries using it continues to be almost the same, but that of academic libraries has gradually decreased. Almost all school libraries in which most of the collection are Korean language use KDC.

In the case of Japan, Mori had revised his original version many times at three or four years intervals (2nd edition in 1931, 3rd edition in 1935, 4th edition in 1938, and 5th edition in 1942). After the period of individual work by Mori, the Classification Committee of JLA published a new version, called the new 6th edition, in 1950, and new editions have subsequently been revised and published at various intervals: 7th edition in 1961, 8th edition in 1978, 9th edition in 1995, and 10th edition in 2014. The latest (10th) edition consists of two volumes of Schedule and Auxiliary tables (vol. 1) and the Relative index and User guide (vol. 2). Now NDC has two kinds of electronic version of Machine-Readable Data File (MRDF) and Linked Data format (Nakai et al. 2016; Fujikura 2023)

Before the final publication of the 10th edition, all the drafts were published in JLA's own journal and uploaded on the JLA homepage by main classes, and JLA had a public hearing (Maitani et al. 2014), in order to get feedback from the library community.

Regarding the usage of NDC, before the official publication of the new 6th edition, the National Diet Library decided to use NDC in classifying their Japanese and Chinese materials in 1948, and a book, the *School Library Guide* (1948, 30-38), published by the Ministry of Education introduced NDC by Mori in detail. The new NDC was accepted widely by the library community in all types of libraries, just after the publication of its new edition by JLA in 1950 (Matsumura 1952, 1). Even though it is somewhat difficult to discover more recent data, most school and public libraries and many university libraries are reported to use it. According to Omagari (2010), 99.4 percent of public libraries and 92.1 percent of university libraries use NDC.

Most textbooks on library classification in both countries include at least one chapter dealing with their own national classification systems, KDC or NDC, and almost all departments of library and information science in both nations have some provision for teaching their students about them. Also there have been many special lectures to train practitioner librarians from both the national library associations and/or the national libraries of both countries (Fujikura 2023; Oh 2021). These activities have helped to encourage awareness and usage of the systems in the library communities in both countries.

4.0 General characteristics: similarities and differences

Korean Decimal Classification and Nippon Decimal Classification have many similar characteristics because both are decimal classifications, and KDC has referenced NDC in its development. But they have their own characteristics reflecting their own national bibliographic and other situations.

4.1 Classification by discipline, not by subject

KDC and NDC have basically adopted classification by discipline not by subject, like DDC. That means some materials having the same subject may be classified in more than one different place according to the viewpoints or aspects of the subjects, treatments of them, and so on. For example, the subject "marriage" may be classified in adult psychology, family ethics, folklore, social system, and so on in KDC, and in gender issues, statistics, folklore, civil law, ethics, and so on in NDC. Both systems have relative indexes to bring together the related various aspects of the subjects classified in the different disciplines. Only one thing to check is that some subjects in KDC are integrated and collocated in the same classes (Oh 2012b), e.g., the subjects building and construction in 540, hardware and software of computer science in 004, religious music in 672, and so on (for more information, see Oh 2021).

Both systems have divided the discipline or knowledge into nine main classes as with other decimal classifications including DDC, and one more class, general works, is added. But their allocated classes and order of classes are not the same because KDC follows DDC model applying Bacon's classification of knowledge (Miksa 1998), and NDC follows the Expansive Classification (EC) model (Mori 2014, 16) applying Comte's classification (see Table 1). KDC has the same main classes as DDC, and rearranges the order by moving the class Language (700) to be placed closer to the class Literature (800). NDC integrates Religion into the main class "1" under the name of Philosophy and divides Technology into two classes of Technology (5) and Industry (6) and rearranges the order following that of EC. Comparing the orders of KDC and NDC, they have very similar orders, except that NDC moves the class History (2) next to Philosophy (1).

4.2 Decimal expansion of the classes using pure notation of Arabic numerals

KDC and NDC use the same Arabic numerals as their basic notations and expand the classes by decimal subdivision, as in the case of DDC. That means both systems divide each of their main classes suggested in Table 1 into ten divisions, each division again into ten sections, each section again ten subsections, and so on, employing decimal principles. Each subsection can be continuously subdivided by this decimal system until enough subdivisions are established for the libraries using the systems. By this decimal expansion, both systems have expressed hierarchical structures by numbers.

KDC fills out zero(s) in main classes and divisions to maintain the three digits as in DDC, but NDC makes them remain as one digit in main classes and two digits in divisions as they are. Both systems place decimal points after the third digit for classes having more than three digits, as in DDC.

The use of Arabic and decimal systems in both systems is very helpful both for users to recognize the numerical sequences easily and for classifiers to expand and subdivide the disciplines and subjects as needed. But both systems have inherent limitations in hospitality, in that subdividing all cases of narrow subjects into tens (in fact nine because 0s in subdivisions mean the general) in the same hierarchies is impossible both in theory and in practice, as in case of DDC. Therefore, it must be inevitable there are some exceptions in both systems in decimal fractions of some subjects.

4.3 Hierarchical structure

Both systems have their hierarchical structures expanded from the general to the specific, as with DDC. These structures are also expressed by their notational systems. In general cases in decimal systems, more general super-ordinate classes are divided into more specific subordinate classes

KDC 6	NDC 10	DDC 23
000 Generalities	0 General works	000 Computer science, information & general works
100 Philosophy	1 Philosophy(/Religion)	100 Philosophy & psychology
200 Religion	2 History	200 Religion
300 Social sciences	3 Social sciences	300 Social sciences
400 Natural sciences	4 Natural sciences	400 Language
500 Technology	5 Technology	500 Sciences
600 Arts	**6 Industry**	600 Technology
700 Language	**7 The arts**	700 Arts & recreation
800 Literature	8 Language	800 Literature
900 History	9 Literature	900 History & geography

Table 1. Comparison of main classes.

KDC 6	NDC 10
900 History	200 History
940 North America	250 General history of North America
942 United States of America	253 United States of America
942.3 South Atlantic of United States	253.3 South Atlantic states
942.33 North Carolina [synthesized]	253.36 North Carolina
942.34 South Carolina [synthesized]	253.37 South Carolina

Figure 1. Expressions of hierarchical structure by notation.

with the addition of one more new digit (see Figure 1). The shorter the numbers, the broader the topics, and the longer the numbers, the narrower the topics, in both systems. For example, 942 is the super-ordinate class of its subordinate class 942.3 in KDC. The numbers with same lengths under the same classes must be the coordinate classes in the hierarchical structures, e.g., 253.36 and 253.37 in NDC.

These hierarchical structures have hierarchical force, but these hierarchical principles in both systems are not necessarily applied to all classes all through the systems, as in case of DDC. So, the users should be careful about the exceptions.

4.4. Mnemonic quality

KDC and NDC have well used the mnemonic quality of notations to help to memorize them. Both systems have tried to apply the same consistent notations to the same recurring concepts, subjects, geographic areas, or forms, all throughout the systems.

Most typical ones both systems widely use are scheduled mnemonics, employing various kinds of auxiliary tables. For example, there are so many examples saying that "Subdivide applying standard subdivisions", and so on in KDC. In NDC, it is indicated such as "* Geographic areas", when the tables need to be added (for more details about auxiliary tables, see 5.0).

KDC employs the device to add number(s) from other parts of the schedule to some base number(s), as in DDC. For example, under 016 Subject bibliographies and catalogs in KDC, there is a note to use all the subjects in the system, saying that "Divide by subject like 001-999, e.g., bibliographies and catalogs of political science 016.34". As another example employing other part(s) of the schedule in the base number(s), KDC has a note under 371.1-5 General policy and administration of education saying that "Subdivide like 350.1-5. Example: social positions of school personnel 371.31". These devices can maintain mnemonics with the subject(s) in the systems. NDC limits the synthesis of numbers to as minimal as possible, just using four general and ten special tables.

These mnemonic qualities of both systems help them to be more analytico-synthetic systems, not staying as simple enumerative ones.

5.0 Comparison of auxiliary tables

KDC and NDC have their own six auxiliary tables respectively, five of which are very similar and some of which are completely different in detailed expansions, even though their names are not the same. KDC establishes six auxiliary tables: Table 1 Standard subdivisions, Table 2 Geographic Areas, Table 3 Languages, Table 4 Subdivisions of individual languages, Table 5 Subdivisions of individual literatures, Table 6 Subdivisions of individual religions. NDC establishes four general tables: Form division, Geographic division, Sea division, and Language division; and ten special tables which can be applied only to specific classes. Special tables includes three tables for specific religious denominations (1) for Shinto, (2) for Buddhism, (3) for Christianity; (4) Historical periods of specific areas of Japan; (5) Common geographic and travel tables for other nations and areas; (6) Economical and managerial aspects of technology and engineering; (7) Illustrated books of architecture; (8) Illustrated art books (except photography and printing); and interestingly, (9) Subdivisions of individual languages, and (10) Subdivisions of individual literatures. This section analyzes the common tables of both systems and the table of Subdivisions of individual religions of KDC and Sea division of NDC. This part will compare the auxiliary tables of KDC and NDC one by one, with the synthesized classification numbers as appropriate.

5.1 Standard subdivisions (KDC) and form divisions (NDC)

Both the Standard subdivisions in KDC and the Form divisions in NDC are provided for classifiers to apply the patterned repetition of physical forms (e.g., encyclopedias, periodicals) or treatments or representations of subjects (e.g., theory, research, history) to the schedules, as in the case of Table 1 of DDC.

KDC follows the general structure of DDC, except that -04 is used for Lectures, and so on, and -08 for Series, and so on; and NDC has the same structure with KDC including the above two subdivisions, except that -02 is used for Historical/geographic treatments (see Table 2). These changes in both systems are made in order to retain the mnemonics with the related divisions (KDC) or with main class (NDC). Expansions of tables in NDC are much shorter and simpler than that of KDC. General rules for applying the tables in both systems are almost the same as Table 1 of DDC.

5.2 Geographic areas (KDC) and geographic division (NDC)

Both geographic areas in KDC and geographic division in NDC are tables to be applied to subjects limited to the specific areas, nations, or regions, like Table 2 of DDC (see Table 3). Both systems place local emphases on Asia and their own nations to reflect their own national characteristics, differently from DDC. KDC subdivides Korea under the notation of Asia (-1) as -11 followed by China (-12) and Japan (-13), but NDC precedes Japan as -1 to Asia (-2) and subdivides Asia more such as -21 Korea, -22 China, and so on. The sequence from Europe to Oceania and polar regions are same in both systems, even though the specific notations are different. KDC provides numbers for Areas in general (-7) and Oceans and seas (-8). NDC does not include the notation for the oceans, because it has a separate Ocean division (see 5.6 also).

5.3 Languages (KDC) and language divisions (NDC)

Both languages in KDC and language divisions in NDC are tables to be applied to subjects limited to some aspects of specific languages, like Table 6 of DDC (see Table 4). KDC and NDC give local emphases to their own and East-Asian languages, differently from DDC. Both systems arrange their own languages first and then Chinese next; KDC locates Japanese in -3 and NDC locates Korean in -291. Even though the specific notations are different, the sequence from English to Italian are same in both systems, including the same Spanish and Italian order reflecting the literary

	KDC 6	NDC 10	DDC 23
-01	Philosophy and theory	Philosophy, theory	Philosophy and theory
-02	Miscellaneous	**Historical geographic treatments**	Miscellaneous
-03	Dictionaries, encyclopedias, glossaries	References	Dictionaries, encyclopedias, concordances
-04	**Lectures, essays, speeches**	**Treatises, Lectures, essays**	
-05	Serial publications	Serial publications	Special topics
-06	Organizations and management	Organizations	Serial publications
-07	Instructions, research, & education, educational materials	Research, instructions, education	Organizations and management Education, research, related topics
-08	Series, collections, selections	Series, collections, & selections	Group of persons
-09	Historical, geographic treatment	---	Historical, geographic treatment, biography

Table 2. Comparison of standard subdivisions (KDC) and form divisions (NDC).

KDC 6	NDC 10	DDC 23
-1 Asia	**-1 Japan**	-1 Areas, regions, places in general; oceans and seas
-11 Korea	**-2 Asia. Eastern world**	
-12 China	**-21 Korea**	-2 Persons
-13 Japan	**-22 China**	
-2 Europe	-23 South-east Asia	
-3 Africa	-3 Europe. Western world	-3 The ancient world
-4 North America	-4 Africa	-4 Europe
-5 South America	-5 North America	-5 Asia
-6 Oceania. Polar regions	-6 South America	-6 Africa
-7 Areas in general	-7 Oceania. Polar regions	-7 North America
-8 Oceans, seas	-8 [Not assigned]	-8 South America
-9 [Not assigned]	-9 [Not assigned]	-9 Other parts . . .

Table 3. Comparison of geographic areas (KDC) and geographic division (NDC).

warrant in Korean and Japanese libraries respectively (Oh 2012b). In addition, NDC includes Russian in first hierarchy as -8.

As Oh (2012b) has already suggested, both tables of languages and geographic areas in KDC have good mnemonics. As a result, those classes employing those tables, such as the main classes of Language (700), Literature (800), and History (900), and the divisions of Geography (980) and Biography (990), also have mnemonic characteristics among them (see Table 5). Even though not as extensive as KDC, NDC has also taken advantage of this kind of mnemonic among Language divisions, Languages (80), and Literature (90); and between parts of Geographic divisions and History (20).

5.4 Subdivisions of individual languages (KDC and NDC)

Subdivisions of individual languages, both of KDC and of NDC, are tables to be applied to the main classes Languages (700 in KDC and 8 in NDC) in both systems, as Table 4 of DDC. They allocate specific numbers for the major linguistic characteristics appearing commonly in individual languages. The specific notations of the subdivisions of both systems are almost the same, but they are different from DDC except for the first three numbers. The reasons for both systems expanding the subdivisions differently from DDC must be because they reflect the literary warrants of the libraries in East Asian countries. Namely they have so many materials about vocabularies (-4), grammars (-5), compositions (-6), conversations and so on (-7) especially for foreign languages (see Table 6).

5.5 Subdivisions of individual literatures (KDC and NDC)

Subdivisions of individual literatures both of KDC and of NDC are tables to be applied to the main class Literature (800 in KDC and 9 in NDC) of both systems, like Table 3 of DDC. The notations from -1 to -4 and -7 of both systems are same as those of Table 3B of DDC (-1 Poetry, -2 Drama, -3 Fiction, -4 Essays, -7 Humor and satire). KDC follows DDC in -5 (Speeches) and -6 (Letters), except -8 as a notation for Reportage and miscellany. NDC arranges them as -5 Letters; -6 Reportage, etc.; and -8 Anthology, collections, and selections. In addition, NDC establishes specific nota-

KDC 6	NDC 10	DDC 23
-1 Korean	**-1 Japanese**	-1 Indo-European languages
-2 Chinese	**-2 Chinese**	-21 English
-3 Japanese	**-29 Other Asian languages**	-31 German
-4 English	**-291 Korean**	-41 French
-5 German	-3 English	-51 Italian
-6 French	-4 German	-61 Spanish
-7 Spanish	-5 French	-71 Latin
-8 Italian	**-6 Spanish**	-8 Hellenic languages
-9 Others	**-7 Italian**	-951 Chinese
-928 Russian	**-8 Russian**	-956 Japanese
	-9 Others	-957 Korean

Table 4. Comparison of languages (KDC) and language divisions (NDC).

Geographic Areas	Languages	Language (700)	Literature (800)	History (900)
-11 Korea	-1 Korean	710 Korean	810 Korean	911 Korea
-12 China	-2 Chinese	720 Chinese	820 Chinese	912 China
-13 Japan	-3 Japanese	730 Japanese	830 Japanese	913 Japan
-24 UK	-4 English	740 English	840 English	924 UK
-25 German	-5 German	750 German	850 German	925 German
-26 France	-6 French	760 French	860 French	926 France
-27 Spain	-7 Spanish	770 Spanish	870 Spanish	927 Spain
-28 Italy	-8 Italian	780 Italian	880 Italian	928 Italy

Table 5. Mnemonic among geographic areas, languages, history, language and literature in KDC 6 (Source: Adapted from Oh (2012). "Developing and Maintaining a National Classification System, Experience from Korean Decimal Classification." *Knowledge Organization* 39(2), 77.).

tions for children's literature, such as -18 for Poetry; -28 for Drama; -38 for Fiction; and -88 for Anthology, collections, and selections. The citation orders in specific literatures and the usages of the tables of both systems are almost the same with those of DDC.

5.6 Subdivisions of individual religions (KDC) and sea divisions (NDC)

In addition to the common tables investigated above, both systems have their own unique ones, namely subdivisions of individual religions in KDC and sea divisions in NDC.

Subdivisions of individual religions in KDC have been established reflecting Korean religious situations where various religions including Buddhism, Protestant, Catholic, and so on, co-exist (Oh and Yeo 2001, 76-77), different from DDC. In KDC, six major religions are arranged in the divisions from 220 to 280 of the main class Religion, as suggested in Table 7. So, it is possible for KDC to introduce mnemonic table for Religion (200), such as Religious doctrines (-1), Founders and leaders (-2), Sources and scriptures (-3), Religious life and practice (-4), Missions and religious education (-5), Religious organization (-6), Public worship and other practices (-7), Sects and dominations (-8).

Sea division in NDC is a table to subdivide subjects or topics mainly focusing on any specific sea or ocean, reflecting the Japanese unique geographic situation of a maritime nation. They include the numbers for Pacific Ocean (-1), North Pacific Ocean (-2), South Pacific Ocean (-3), Indian Ocean (-4), Atlantic Ocean (-5), Mediterranean Sea (-6), Arctic Sea (-7), Antarctic Sea (-8).

6.0 Comparison of divisions in schedules

Even though KDC and NDC have different arrangements of main classes, some divisions in the main classes in the same subject areas of both systems have very similar kinds and similar arrangements and others have those much different from each other. The following sections will compare the divisions in the related main classes of both systems, with special references to DDC.

6.1 Generalities (000-090 of KDC and NDC)

The divisions of Generalities both of KDC and NDC are almost the same as each other in the expansion and the order of the subjects, except that KDC follows DDC in 010 and 020 and NDC does not. Differently from DDC, both sys-

	KDC 6	NDC 10	DDC 23
-1	Phonetics, phonology, writing systems	Phonetics, phonology, writing systems	Writing systems, phonology, phonetics*
-2	Etymology, semantics	Etymology, semantics	Etymology*
-3	Dictionaries	Dictionaries	Dictionaries*
-4	Vocabularies	Vocabularies	[Unassigned]
-5	Grammar	Grammar	Grammar*; Syntax*
-6	Composition	Sentence, composition	[Unassigned]
-7	Readers, interpretations,	Readers, interpretations,	Historical and geographical variations,
-8	conversations	conversations	modern nongeographic variations
	Dialects	Dialects	Standard usage of the language; Applied linguistics

Table 6. Comparison of subdivisions of individual languages (* of the standard form of the language).

Religion	Base No.	-1 Doctrine	-2 Founders	-3 Sources	-4 Practice	-5 Mission	-6 Organization	-7 Worship	-8 Sects
Buddhism	22	221	222	223	224	225	226	227	228
Christianity	23	231	232	233	234	235	236	237	238
Taoism	24	241	242	243	244	245	246	247	248
Chondoism	25	251	252	253	254	255	256	257	258
---	26	---	---	---	---	---	---	---	---
Hinduism	27	271	272	273	274	275	276	277	278
Islam	28	281	282	283	284	285	286	287	288

Table 7. Applying the Subdivisions of Individual Religions to Class 200 in KDC (Source: Oh (2020). *Introduction to Library Classification*, Deaegu: Taeilsa, 353. Originally adapted from Shihota (2012, 198).

tems introduce the division of General collected essays in 040 (see Table 8).

6.2 Philosophy and religion (100-190 of KDC and 100-150 of NDC; 200-290 of KDC and 160-190 of NDC)

The expansions of Philosophy and Religion and the order of their divisions in KDC and NDC are completely different, even though both systems place local emphases on Oriental philosophy and religions (see Table 9 and 10). In the subject of Philosophy, KDC establishes a division of Chinese classics (140) and rearranges the order of divisions differently from DDC. In NDC, only 5 divisions of Philosophy are designated for the subject because it integrates Philosophy and Religion in one main class of 10. Therefore, some subjects of Philosophy in NDC are arranged in Special treatises on philosophy (110) as Metaphysics (111), Epistemology (115), and Logic (116), based on the order of the Class B of the Expansive Classification (Fujikura 2018, 66-67).

In the divisions of Religion, both systems give local emphases to religions originated from Asian countries, but the details are somewhat different (see Table 10), to overcome the Christianity centered bias of DDC, as one reviewer pointed out. KDC arranges major religions of the world as well as those of East Asia in 6 divisions proportionately following Comparative religion (210), differently from DDC which allocates most of them into Christianity from 220-280. In KDC, the two major ones of Buddhism (220) and Christianity (230) come before the East Asian ones of Taoism (240) and Chondoism (250), followed by the other remaining two major religions of Hinduism (270) and Islam (280). In NDC, Religion (160) comes first and is followed by Japanese Shinto (170), Buddhism (180), and Christianity (190). Other religions are arranged in Religion (16) in the order of Taoism (166), Islam (167), and Hinduism (168).

6.3 Social sciences (300-390 of KDC and NDC)

The divisions of social sciences both of KDC and NDC are different from that of DDC, except Education (370) (see Table 11). KDC explains that this class is expanded based on LCC (OH 2012b, 75), even though the last two divisions are very similar to those of NDC. The order of divisions in this class of NDC is basically based on that of EC, except that the division "Commerce" is moved into 670 (Fujikura, 2018: 67).

	KDC 6	NDC 10	DDC 23
000	General works	General works	Computer science, knowledge & systems
010	Books, Bibliography	Libraries. Library & information sciences	Bibliographies
020	Library & information science	Books. Bibliography	Library & information sciences
030	General encyclopedias	General encyclopedias	Encyclopedias & books of facts
040	General collected essays	General collected essays	[Unassigned]
050	General serial publications	General serial publications	Magazines, journals & serials
060	General societies	General societies	Associations, organizations & museums
070	Newspapers, Journalism.	Journalism. Newspapers	News media, journalism & publishing
080	General collected works	General collections	Quotations
090	Materials of province	Rare books. Local & special collections	Manuscripts & rare books

Table 8. Comparison of divisions of generalities.

	KDC 6	NDC 10	DDC 23
100	Philosophy	Philosophy	Philosophy
110	Metaphysics	Special treatises on philosophy	Metaphysics
120	Epistemology, Caution, philosophical anthropology	**Oriental thought**	Epistemology
130	Systems of philosophy	Western philosophy	Parapsychology & occultism
140	**Chinese classics**	Psychology	Philosophical schools of thought
150	**Oriental philosophy & thought**	Ethics. Morals	Psychology
160	Western philosophy		Logic
170	Logic		Ethics
180	Psychology		Ancient, medieval & eastern philosophy
190	Ethics, moral philosophy		Modern western philosophy

Table 9. Comparison of divisions of philosophy.

KDC 6	NDC 10	DDC 23
200 Religion	160 Religion	200 Religion
210 Comparative religion	**170 Shinto**	210 Philosophy and theory of religion
220 Buddhism	**180 Buddhism**	220 Bible
230 Christian religion	190 Christianity	230 Christianity & Christian theology
240 Taoism		240 Christian practice & observance
250 Chondoism		250 Christian pastoral practice & religious orders
260 [Unassigned]		260 Christian organizations, social work & worship
270 Hinduism, Brahmanism		270 History of Christianity
280 Islam, Mohammedanism		280 Christian denominations
290 Other religions		290 Other religions

Table 10. Comparison of divisions of religion.

	KDC 6	NDC 10	DDC 23
300	Social sciences	Social sciences	Social sciences, sociology & anthropology
310	Statistics	Political science	Statistics
320	Economics	Law	Political science
330	Sociology & social problem	Economics	Economics
340	Political sciences	Public finance	Law
350	Public administration	Statistics	Public administration & military science
360	Law	Society	Social problems & social services
370	Education	Education	Education
380	Customs, etiquette & folklore	Customs, folklore & ethnology	Commerce, communications & transportation
390	**Military science**	**National defense. Military science**	Customs, etiquette & folklore

Table 11. Comparison of divisions of social sciences.

6.4 Natural sciences (400-490 of KDC and NDC)

The first part (400-450) of the divisions of natural sciences both of KDC and NDC are the same, somewhat different from DDC, because both systems move the division of Astronomy to 440 closer to that of Earth sciences (450). The second part of this class in the two systems are different, because NDC integrates the class Mineralogy into Earth sciences as a section (459) and moves the division Medical sciences (490) in this class and rearrange the part (see Table 12).

6.5 Technology (500-590 of KDC and 500-690 of NDC)

The expansions of the divisions of Technology of NDC are completely different from KDC as well as DDC, because NDC arranges the subjects in two main classes (see Table 13). Namely, NDC classifies Technology, Engineering in 500-580 and Domestic arts and sciences in 590 and primary and tertiary industries under the main class name of Industry (600-690) (Mori 2014, 40). As a result, the class numbers of the classes under these two main classes of NDC can be much shorter than any other decimal classification system.

6.6 Arts (600-690 of KDC and 700-790 of NDC)

The expansions and orders in the divisions of arts of KDC and NDC are somewhat different from each other and from DDC (see Table 14). But both systems move the class Architecture into the same main classes of Technology (in 540 in KDC and 520 in NDC, respectively), and establish the same divisions of Stage performance (Theater) (in 680 in KDC and 770 in NDC) and Amusements (in 690 in KDC and 790 in NDC), differently from DDC.

6.7 Language (700-790 of KDC and 800-890 of NDC) and literature (800-890 of KDC and 900-990 of NDC)

In the divisions of language and literature, KDC and NDC give local emphases to their own and East-Asian languages and literatures (see Tables 15 and 16), even though KDC includes Japanese language and literature in 730 and in 830 but NDC locates Korean language and literature in subdivisions of 829.1 and of 929.1. Both systems adopt the same orders of the divisions of "Spanish – Italian", both in language and literature, as opposed to those of DDC. In addition, NDC includes Russian in 880 and in 980 as divisions.

	KDC 6	NDC 10	DDC 23
400	Natural science	Natural sciences	500 Science
410	Mathematics	Mathematics	510 Mathematics
420	Physics	Physics	520 Astronomy
430	Chemistry	Chemistry	530 Physics
440	**Astronomy**	**Astronomy. Space sciences**	540 Chemistry
450	Earth science	Earth sciences	550 Earth sciences & geology
460	Mineralogy	Biology	560 Fossils & prehistoric life
470	Life science	Botany	570 Life science; Biology
480	Botany	Zoology	580 Plants (Botany)
490	Zoological science	**Medical sciences**	590 Animals (Zoology)

Table 12. Comparison of divisions of natural sciences.

KDC 6	NDC 10		DDC 23
500 Technology	500 Technology. Engineering	600 Industry & commerce	600 Technology
510 Medical science	510 Construction. Civil engineering	610 Agriculture	610 Medicine & health
520 Agriculture		620 Horticulture	620 Engineering
530 Engineering, technology, civil & environmental engineering	520 Architecture. Building 530 Mechanical engineering	630 Sericulture. Silk industry	630 Agriculture
540 Construction & architecture		640 Animal husbandry	640 Home & family management
550 Mechanical engineering	540 Electrical engineering	650 Forestry	650 Management & PR
560 Electrical, communication & electronic engineering	550 Maritime engineering 560 Exploitation.	660 Fishing industry. Fisheries	660 Chemical engineering
570 Chemical engineering	Ore dressing	670 Commerce	670 Manufacturing
580 Manufactures	570 Chemical technology	680 Transportation service	680 Manufacture for specific use
590 Human ecology	580 Manufactures 590 Domestic arts & sciences	690 Communication services	690 Buildings & construction

Table 13. Comparison of divisions of technology.

KDC 6	NDC 10	DDC 23
600 Arts	700 The arts. Fine arts	700 Arts
610 [Unassigned]	710 Sculpture. Plastic arts	710 Landscaping & area planning
620 Sculpture, plastic arts	720 Painting. Pictorial arts	720 Architecture
630 Crafts	730 Engraving	730 Sculpture, ceramics & metal work
640 Calligraphy	740 Photography & photographs	740 Drawing & decorative arts
650 Painting, design	750 Industrial arts	750 Painting
660 Photography	760 Music	760 Graphic arts
670 Music	770 Theater	770 Photography & computer arts
680 Stage performance, medium arts	**780 Sports & physical training**	780 Music
690 Amusements, sports & physical training	**790 Accomplishments & amusements**	790 Sports, games & entertainment

Table 14. Comparison of divisions of arts.

6.8 History (900-990 of KDC and 200-290 of NDC)

In the divisions of History, KDC and NDC give local emphases to their own and East-Asian countries) to overcome the Western centered bias of DDC, and arrange Geography (in 980 in KDC and 290 in NDC) and Biography (in 990 in KDC and 280 in NDC) as the last parts of the divisions (see Table 17), differently from DDC. NDC establishes a division for Japanese history in 210, whereas KDC establishes Korean history as a section (911) under the division of History of Asia (910).

KDC 6	NDC 10	DDC 23
700 Language	800 Language	400 Language
710 Korean language	**810 Japanese**	410 Linguistics
720 Chinese language	**820 Chinese**	420 English & Old English languages
730 Japanese & other Asian languages	830 English	430 German & related languages
740 English	840 German	440 French & related languages
750 German	850 French	450 Italian, Romanian & related languages
760 French languages	**860 Spanish**	460 Spanish & Portuguese languages
770 Spanish & Portuguese languages	**870 Italian**	470 Latin & Italic languages
780 Italian languages	**880 Russian**	480 Classical & modern Greek languages
790 Other languages	890 Other languages	490 Other languages

Table 15. Comparison of divisions of language.

KDC 6	NDC 10	DDC 23
800 Literature	900 Literature	800 Literature, rhetoric & criticism
810 Korean literature	**910 Japanese literature**	810 American literature in English
820 Chinese literature	**920 Chinese literature**	820 English & Old English literatures
830 Japanese & other Asian literature	930 English & American literature	830 German & related literatures
840 English & American literatures	940 German literature	840 French & related literatures
850 German literature	950 French literature	850 Italian, Romanian & related literatures
860 French literature	**960 Spanish literature**	860 Spanish & Portuguese literatures
870 Spanish & Portuguese literature	**970 Italian literature**	870 Latin & Italic literatures
880 Italian literature	**980 Russian**	880 Classical & modern Greek literatures
890 Other literatures	990 Literature of other languages	890 Other literatures

Table 16. Comparison of divisions of literature.

KDC 6	NDC 10	DDC 23
900 History	200 General history	900 History
910 Asia	210 General history of Japan	910 Geography & travel
920 Europe	220 General history of Asia	920 Biography & genealogy
930 Africa	230 General history of Europe	930 History of ancient world
940 North America	240 General history of Africa	940 History of Europe
950 South America	250 General history of North America	950 History of Asia
960 Oceania & Polar regions	260 General history of South America	960 History of Africa
970 [Unassigned]	270 General history of Oceania, Polar regions	970 History of North America
980 Geography	280 General biography	980 History of South America
990 Biography	290 General geography. Description & travel	990 History of other areas

Table 17. Comparison of divisions of history.

7.0 Conclusions and suggestions

This article investigates the various characteristics of the two national classifications of Korean Decimal Classification and Nippon Decimal Classification, these having been successfully maintained more than half century to meet the needs of their library communities. It tries to find the points which give them comparative advantage to both systems, in that there must be some reasons for their sustainability, despite their strengths and weaknesses.

Both systems are maintained by their national library associations, Korean Library Association and Japan Library Association, with cooperative efforts from many of their library communities including the classification committees and their members. Each association has also continuously cooperated with and been supported by their national libraries in relation to their systems in various ways. They have tried to enhance library practitioners' understanding of each system through various training programs to maintain constant interest in them. It must be a great advantage for them, because

"the survival and thriving of a scheme depends largely upon the influence of its sponsoring body" (Kumar 1981, 392). Most library schools in both nations also have some provision to teach those systems in classes. Many articles about KDC and NDC have been continuously published in each country by scholars as well as by library staff, some of which are very critical about them (e.g. Fujimura 2018 introduced some of them). These must be a great force for future development and an expression of interest and affection, in that there will be no criticism if there is no interest.

In technical aspects, both systems provde most of the basic requirements of the classification scheme, including main schedules, auxiliary tables, and manuals for the detailed explanation of their use. They have adopted many characteristics of DDC which can be regarded as strong points. In addition, they include English headings corresponding to the vernacular Korean or Japanese headings, for users to apply both to their domestic materials and to the Western language materials. They also prepare relative indexes for the distributed relatives within subjects. Moreover, they give local emphases to those items which need to reflect their own national and cultural characteristics and literary warrant in subjects such as history, religion, language and literature, and so on, even though the specified treatments are somewhat different in some cases. It is one of the important factors for national systems, "because classification is socially constructed, it carries its own assumptions about the world" (Choi 2017, 39).

Both systems have shown many differences not only in history and usage but also in other areas including the arrangement of main classes, divisions and subdivisions. KDC has a strong point in inviting subject specialists during the revision process, whereas DDC has its merits in transforming into an electronic version. Both systems have not been revised and published with regular intervals to reflect the trends of rapidly and continuously changing academic world in them. They have not prepared interactive communication channels with users, such as Social Network Services (SNS) or blogs, even though they have tried to use their associations' homepages for similar works.

The author hopes that this article can be helpful for nations and/or their scholars who want to develop a new classification system because of some dissatisfaction with the existing major systems, as in the cases of Korea and Japan when they developed their own systems. Latecomers have the additional advantages of an opportunity to benchmark the antecedents because they can learn from the experiences of success and failure of those who went ahead. So future research can suggest some ideas of developing new national classification systems or transforming any former ones into national ones. Related to this, Oh and Malee (2018) suggested an idea for the general framework of the so-called "Thai Decimal Classification (TDC)" for the Thai library community which has no standard national classification system.

Some ideas suggested in this article can also be helpful in revising the major universal classification systems including DDC, because it analyzed some areas in which both systems adopted the local emphases to reflect their own national and cultural characteristics, including religion, history, language and literature. They can introduce any kind of options also, in that any other nation using the major systems can have the same or similar problems with them.

This article compares the general characteristics of KDC and NDC but limits the analysis to divisions of the systems. Therefore, future research can expand the analysis into sections and subdivisions in general and/or in selected subject areas. Of course, cooperative studies with other subject specialists and/or foreign scholars must be helpful and could create fruitful results for the subject areas and/or for their own national systems.

Comparative studies of classification systems between/among national systems and any major systems including DDC in general and/or in selected subject areas must be important areas in future research, in that this article is limited to KDC and NDC. And it would be very helpful to do it as a cooperative work between or among scholars in different nations to overcome the language barriers, because most of them are made in their own vernacular languages. In this study, this author can understand both the Korean and Japanese languages as well as English so that he can investigate the literatures in both languages.

This article analyzed KDC and NDC focusing on the basic levels of auxiliary tables and divisions of the schedule through comparative study, rather than approaching by some topical themes such as "philosophy of class structure, cultural context, adoption, and adjustment", and so on, as one reviewer reasonably pointed out. Even within this limitation, this study compares the first level of the tables and one hundred divisions of the schedule. Therefore, future research should expand the study to include more detailed classes of subdivisions of each division.

Nobody can ensure the sustainability of KDC and NDC in the future. Some say the strong will survive, and others say those who survive are strong. In this regard, the fact that both systems survived the waves of time in the age of universality proves they must have unique competitive advantages hopefully some of which must be analyzed in this article. Some people can prefer universal classification systems and try to develop or maintain those kinds of systems (Dahlberg 2017). But others think that what is the most nationalistic might be the most global, as we can see in many other areas. If both of KDC and NDC can be improved and innovated continuously as till now and, hopefully, more than before, then they can be monumental systems to be benchmarked by other nations in the future.

References

Bosum, Annie and Ashley Dunne. 2017. "Implementing the Brian Deer Classification Scheme for Aanischaaukamikw Cree Cultural Institute." *Collection Management* 42 (3/4): 280-93.

Bu, Shuqing. 2019. "Chinese Library Classification (CLC)." Available in *ISKO Encyclopedia of Knowledge Organization,* edited by Birger Hjørland and Claudio Gnoli. https://www.isko.org/cyclo/clc.

Bury, Susan. 1980. "Comparison of Classification Schemes for Libraries." *SRELS Journal of Information Management* 17, no. 3: 73-82.

Cherry, Alissa. 2016. "Universal Decimal Classification and Colon Classification: Their Mutual Impact." *Annals of Library and Information Studies* 62: 226-30.

Cherry, Alissa and Keshav Mukunda. 2015. "A Case Study in Indigenous Classification: Revisiting and Reviving the Brian Deer Scheme." *Cataloging & Classification Quarterly* 53 (5/6): 548-67.

Choi, Inkyung. 2018. "Toward a Model of Intercultural Warrant: A Case of the Korean Decimal Classification's Cross-cultural Adaptation of the Dewey Decimal Classification." PhD diss., University of Wisconsin Milwaukee. https://dc.uwm.edu/cgi/viewcontent.cgi?article=2780&context=etd

Choi, Inkyung. 2022. "Intercultural Warrant: Deploying Cultural Warrant Ethically." *Journal of Documentation* 78: 1476-86.

Choi, Inkyung. 2017. "Visualizations of Cross-Cultural Bibliographic Classification: Comparative Studies of the Korean Decimal Classification and the Dewey Decimal Classification." *Proceedings of the North American Symposium on Knowledge Organization* 6: 39-55.

Choi, Inkyung and M. S. Park. 2018. "A Cross-cultural Comparison of Medical Science Subject Classification in the KDC and the DDC." Available in *Advances in Classification Research Online.* https://doi.org/10.7152/acro.v29i1.15457

Dahlberg, Ingetraut. 2017. "Why a New Universal Classification System is Needed." *Knowledge Organization* 44: 65-71.

Das, Binai Krishna. 2021. "Literature Schedule Practiced in DDC 22nd and CC 6th Revised ed.: A Comparative Study." *Library Philosophy and Practice* (e-journal). https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=9944&context=libphilprac

Fujikura, Keiichi. 2018. *Establishment and Development of the Nippon Decimal Classification: Road to Standard Classification in Japan, 1928-1949*. Tokyo: Jusonbo. [In Japanese].

Fujikura, Keiichi. 2023. "Nippon Decimal Classification (NDC)." Available in *ISKO Encyclopedia of Knowledge Organization*, edited by Birger Hjørland and Claudio Gnoli. https://www.isko.org/cyclo/clc

Goltvinskaya, Tamara S. and Eduard S. Sukiasyan. 1993. "Library-Bibliographical Classification: On the Path of Renovation." *Knowledge Organization* 20, no. 2: 77-9.

Herla, M. Krishnanand and A. K. Baradol. 1997. "Comparative Study of Physics Schedules in the Seventh Edition of Colon Classification and the Twentieth Edition of Dewey Decimal Classification." *SRELS Journal of Information Management* 34: 115-47.

Ishida, Emi. 1998. "An Experiment of Automatic Classification of Books Using Nippon Decimal Classification." *Library and Information Science* 39: 31-45.

Korean Library Association. 2013. *Korean Decimal Classification*. 6th ed. Seoul: KLA. [in Korean].

Kumar, K. 1981. *Theory of Classification*. New Delhi: Vikas Publishing House.

Lund, B., D. Agbaji, S. Tijani and I. Omame. 2019. "Evaluating Knowledge Organization in Developed and Developing Countries: A Comparative Analysis of Dewey Decimal and Library of Congress Classification Scheme Preference and Use in the United States and Nigeria." *Technical Services Quarterly* 36: 249-68.

Masterson, Maeva, Carol Stableford and Anja Tait. 2019. "Re-imagining Classification Systems in Remote Libraries." *Journal of the Australian Library and Information Association* 68: 278-89.

Matsumura, S. 1952. "On the Memory Feature in Some Kinds of Decimal Classification Scheme in Japan." *Humanities* 2: 89-101. [in Japanese].

Miksa, Francis L. 1999. *The DDC, the Universe of Knowledge, and the Post-Modern Library*. Albany, NY: Forest Press.

Ministry of Education, Japan. 1948. *School Library Guide*. Tokyo.

Mori, Kiyoshi. 2014. *Nippon Decimal Classification*. New 10th ed. revised by Japan Library Association. Tokyo: Japan Library Association. [in Japanese].

Murakami, Harumi and Yoshinobu Ura. 2011. "People Search Using NDC Classification System." *ESAIR* 11: 13-14.

Nakai, M., K. Fujikura, A. Hasjizume, J. Fukuyama and M. Kanzaki. 2016. "The Nippon Decimal Classification Linked Data Project: Utilizing Semantic Web Technologies." *Journal of Information Processing and Management* 59: 209-17. [in Japanese].

Oh, Dong-Geun. 2012a. "Ranganathan, Dewey, and Bong-Suk Park." *Journal of the Korean Society for Library and Information Science* 46: 11-27.

Oh, Dong-Geun. 2012b. "Developing and Maintaining a National Classification System, Experience from Korean Decimal Classification." *Knowledge Organization* 39: 72-82.

Oh, Dong-Geun. 2018. "Revision of the National Classification System through Cooperative Efforts: A Case of Korean Decimal Classification 6th Edition (KDC 6)." *Knowledge Organization* 45: 559-73.

Oh, Dong-Geun. 2020. *Introduction to Library Classification*. Daegu: Taeil Press.

Oh, Dong-Geun. 2021. "Korean Decimal Classification (KDC): Its History, Development, Characteristics, and Future Prospect." *Knowledge Organization* 48: 248-62.

Oh, Dong-Geun and Malee Kabmala. 2018. "Developing Thai Decimal Classification (TDC) for Knowledge Organization: A Proposal with Some Suggestions." In *Proceedings of International Conference on Convergence: Content, Media and Technology, Nov. 22-23, 2018, Mahasarakham, Thailand*. Mahasarakham University, 167-75.

Oh, Dong-Geun and Ji-Suk Yeo. 2001. "Suggesting an Option for DDC Class Religion (200) for Nations in Which Religious Diversity Predominates." *Knowledge Organization* 28: 75-84.

Omagari, Toshio. 2010. "A Survey of the Use of Classification Schedules in Japan." *Libraries Today* 48: 129-41. [in Japanese].

Price, L. 2012. "Evaluating the Past, Present and Future of Chinese Library Classification (CLC)." https://hcommons.org/deposits/objects/hc:33066/datastreams/CONTENT/content

Raghavan, Koti S. 2016. "The Colon Classification: A Few Considerations on its Future." *Annals of Library and Information Studies* 62: 231-8.

Saravanan, T. 2021. "Teaching Colon Classification Using Revised Bloom's Taxonomy: Teachers' Strategy." *Library Philosophy and Practice* (e-journal). https://digitalcommons.unl.edu/libphilprac/4877/

Satija, Mohinder P. 1997. "The Future and Revision of Colon Classification." *Knowledge Organization* 24: 18-23.

Satija, Mohinder P. 2016. "Save the National Heritage: Revise the Colon Classification." *Annals of Library and Information Studies* 62: 239-48.

Satija, Mohinder P. 2017. "Colon Classification." *Knowledge Organization* 4: 291-307.

Sathikumar, C. S. 2019. "Colon Classification Research: A Select Bibliography: 1950-2015." *Informatics Studies* 6, no. 4: 69-93.

Shihota, Tsutomu. 2014. *Theory of Information Resources Organization*. Kyoto: Minerva Book Store.

Sukiasyan, Eduard. 2008. "Library-Bibliographical Classification (LBC): General Characteristics and Basic Functions and Prospects for Development." *Scientific and Technical Information Processing* 35: 55-61.

Sukiasyan, Eduard. 2019. "Library-Bibliographical Classification (LBC)." In *ISKO Encyclopedia of Knowledge Organization*, edited by Birger Hjorland and Claudio Gnoli. https://www.isko.org/cyclo/lbc

Svanberg, Magdalena. 2011. "Dewey in Sweden: Leaving SAB after 87 Years." *Subject Access: Preparing for the Future* 42: 101-10.

Zhang, Hui. 2016. "A Comparative Study among Dewey Decimal Classification, New Classification Scheme for Chinese Libraries and Nippon Decimal Classification." Master's thesis, University of Tsukuba, Japan.

Zhang, Wenxian. 2003. "Classification for Chinese Libraries (CCL): Histories, Accomplishments, Problems and Its Comparisons." *Journal of Educational Media and Library Sciences* 41: 1-22.