



*Evidence Summary*

**The Library of Congress, Dewey Decimal, and Universal Decimal Classification Systems are Incomplete and Unsystematic**

**A Review of:**

Zins, C., & Santos, P. L. V. A. C. (2011). Mapping the knowledge covered by library classification systems. *Journal of the American Society for Information Science and Technology*, 62(5), 877-901. doi:10.1002/asi.21481

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**Abstract**

**Objective** – To determine the extent to which knowledge is currently addressed by the Library of Congress (LCC), Dewey Decimal (DDC), and Universal Decimal (UDC) classification systems.

**Design** – Comparative analysis of the LCC, DDC, and UDC systems using Zin's 10 Pillars of Knowledge.

**Setting** – The Faculty of Philosophy and Science at a Brazilian university.

**Subjects** – Forty one subject-related classes and 386 subclasses from the first two levels of the LCC, DDC, and UDC systems.

**Methods** – To evaluate the LCC, DDC, and UDC systems, the researchers employed the 10 Pillars of Knowledge, a “hierarchical knowledge tree” developed by the lead author of this study (p. 878). According to the authors, the 10 Pillars of Knowledge seek to illustrate relationships between fields of knowledge while capturing their breadth. The first level of the Pillars consists of the following categories: Knowledge, Supernatural, Matter and Energy, Space and Earth, Nonhuman Organizations, Body and Mind, Society, Thought and Art, Technology, and History. Each of the 10 Pillars is further subdivided, resulting in a four level hierarchical structure of 76 categories. Of the 76 categories, 55 are unique subject areas. A selection of subject-based classes and

subclasses from the first two levels of the LCC, DDC, and UDC systems were then mapped to the relevant subclasses within the Pillars. Analysis was limited to the first two levels of LCC, DDC, and UDC, except for the LCC categories of BF and BL where further subclasses were analyzed. Classes or subclasses in LCC, DDC, or UDC that were not subject based (for example, those based on publication type) were excluded from the study. In total, 41 main classes and 386 subclasses from LCC, DDC, and UDC were categorized using the 10 Pillars.

**Main Results** – The LCC, DDC, and UDC systems were deemed to be complete and systematic in their coverage of only three of the 10 Pillars: Matter and Energy, Thought and Art, and History. This means that there was at least one class or subclass in each of the three systems that corresponded to the subclasses in these pillars. The remaining seven pillars were only partially covered by the three systems to varying degrees. For example, the coverage of religion in LCC and DDC show evidence of a bias towards Christianity and incomplete coverage of other faiths. In addition to the lack of completeness in terms of subject coverage, the researchers found inconsistencies and problems with how relationships between subjects were illustrated by the systems. For example, botany should be a subclass of biology, but the subjects occupy the same level in the LCC, DDC, and UDC systems. Researchers also noted cases where subclasses on the same level were not mutually exclusive e.g., the BR (Christianity) and BS (The Bible) subclasses in LCC. Overall, LCC performed slightly better than DDC or UDC, covering 47 of the 55 unique subject categories in the 10 Pillars. It was followed by UDC with 44 out of 55, and DDC with 43 out of 55. Some of the 55 unique subject categories in the 10 Pillars system were not represented by any of the systems: 3 subclasses under Society (Society at Large – Area Based, Social Groups – Age, and Social Groups – Ethnicity), 2 under Technology (Technologies – Materials and Technologies – Processes), and 1 under Foundations (Methodology).

**Conclusion** – The researchers conclude that none of the three major classification systems analyzed provides complete and systematic coverage of the world of knowledge, and call for the library community to move to new systems, such as the 10 Pillars of Knowledge.

### **Commentary**

Those of us who work with LCC, DDC, or UDC on a daily basis can certainly speak to some of the inconsistencies or limitations of these systems. Zins and Santos' work provides a spotlight on many of the weaknesses of these systems individually and collectively. In fact, the strength of the study is that it allows for comparison between the systems.

However, Zins and Santos clearly anticipate criticism of the methodology they employed. In the paper, they acknowledge concerns expressed by some scholars around the fact that they limited their analysis to the top two levels of LCC, DDC, and UDC, when a deeper analysis of further levels would have revealed greater coverage of the 10 Pillars subclasses. Zins and Santos respond, "We decided to focus on the first two levels of the hierarchical structures because these levels embody the essence of the classification system" (p. 896). That said, it should be noted that the researchers used the third and fourth levels of the evaluation tool, the 10 Pillars, when making judgments about the completeness of the LCC, DDC, and UDC systems. The comparisons being made are further undermined by the researchers' occasional deviation from their stated focus on the first two levels of the systems under review. In several instances, the third level of LCC subclasses were analyzed (e.g., BF and BL), without clear justification for why lower levels were included in the study in these circumstances and not others.

The 10 Pillars of Knowledge system itself provides potential researchers with an area of future study, as it does not appear to have yet been the focus of review by other scholars. The reference to the primary author's own work in

lieu of a robust literature review also isolates the research being presented from pre-existing debates in the literature. Zins and Santos lead us to question the systems currently employed

in many libraries, but further debate and discussion is necessary before it can be definitively said that the 10 Pillars of Knowledge is a worthy successor.