

Western University

Scholarship@Western

Final Projects Winter 2023

Classification & Indexing

4-2023

Crosswords as an Educational Tool

Nicole Lippay

Follow this and additional works at: https://ir.lib.uwo.ca/classification_indexing_winter2023

9201: Classification and Indexing
Alex Mayhew
April 13, 2023
Nicole Lippay

Crosswords as an Educational Tool

The purpose of this exercise is to review and consolidate concepts that were taught in the 9201 Classification and Indexing course. As there are many concepts to remember, this exercise offers the opportunity to recall terms and discuss as a class how classification can have consequences. The way each student approaches solving the crossword is a way to illustrate the idea that everyone will approach organizing knowledge differently, and that's why a universal organization system is unattainable. This exercise offers a way to take some ideas we've talked about in class and put them into practice, and then discuss the experience afterwards.

Accompanying discussion questions for 9201 crossword exercise:

- 1) Describe how you initially approached the crossword puzzle – do you work through all of the across clues first? Do you go through filling in the words you knew first, or did you work through the clues sequentially?
- 2) If you used overlapping letters as hints to help you with words you weren't sure of, do you think this is consistent with using our existing knowledge structures to classify something we are unfamiliar with? Why or why not?
- 3) Did you think of any answers to clues that did not fit within the structure of the puzzle? How do think this relates to classification?
- 4) What happened when you made a mistake, or even if you were uncertain of an answer – do you keep going and work around it? Do you think this is reflective of classification practice?
- 5) You had to rely on your own knowledge – what did you do when you came across a clue in an area outside of your area of expertise?

9201: Classification and Indexing Review

ACROSS

- 1 Ply with drink.
- 6 This development model is divided into three stages: thesis, antithesis and synthesis.
- 14 You may be feeling this way at the end of the semester (colloquially).
- 16 Relative time (immediately, soon, later) is an example of a _____ relation.
- 17 The authority a classificationist invokes first to justify and subsequently to verify decisions (according to Clare Beghtol).
- 18 Phases of the moon.
- 19 What describes relationships between records that are conceptually close, but where the relationship is neither equivalent or hierarchical?
- 23 Young Skywalker's nickname.
- 24 Yukon and Sierra.
- 28 A classification system where individuals attach their own terms, allowing a coherent system to emerge through group consensus.
- 34 "Yes" in the language that Otlet and La Fontaine intended to translate the Dewey Decimal Classification System.
- 35 The individual unit of measurement in taxonomy.
- 36 Go _____ great length (2 words).
- 37 Tiebreaker periods, briefly.
- 38 Moans and groans.
- 40 Cleaving reality at the _____ refers to dividing up thing-space where there's a cluster point.
- 42 A league for fun.
- 43 Ace.
- 46 Level in a hierarchy.
- 47 School org.
- 48 The reality in physical library spaces that influences (dictates?) classification (2 words).
- 50 US taxpayer's IDs
- 51 An auto-reply a librarian creates when they're on vacation.

- 53 Credited with the introduction of the term facet in the knowledge management field, also created the colon classification system.
- 60 Created the most wide-spread classification system, had a very narrow worldview.
- 64 Epoch when primitive giraffes and deer appeared.
- 65 Talented speaker.
- 67 Full of books, maps, and PACs.
- 68 A classification system based on Indigenous ways of knowing, focused on local knowledge networks.
- 69 The _____ Classification System was formed in 1967, their first published classification manual was intended to be used for school libraries.

DOWN

- 2 Flight data, briefly.
- 3 Overrepresented in subject headings.
- 4 A small village 20km from the famous pilgrimage town of Rajgir in Ranganathan's home country.
- 5 Japanese audio equipment maker.
- 6 Linked _____ is the core of the semantic web.
- 7 A tiny crossword filler, or a poem by Rudyard Kipling.
- 8 The country code for this enclave in South Africa.
- 9 A palindrome and Caesar's "Behold!"
- 10 A low island.
- 11 "No Scrubs" singers.
- 12 Suffix with proverb.
- 13 Strains of bacteria that are resistant to an antibiotic class (carbapenem) used to treat severe infections.
- 15 A content warning on Twitter.
- 17 Conflict often leading to mass casualties.
- 20 An inventory management app born in a chemistry lab.
- 21 During 37-Across.
- 22 Vigor's pair.
- 25 A member of the Unification Church, colloquially.
- 26 Who believed that the catalogue should reflect "the public's habitual way of looking at things?"

1	2	3	4	5	6	7	8	9	10	11	12	13	
	14				15		16						
17							18						
19						20	21	22					
						23			24	25	26	27	
	28	29	30		31	32			33	34			
35					36					37			
	38			39				40		41			
42						43	44	45		46			
47				48	49								
50					51							52	
				53				54	55	56	57	58	59
60	61	62	63					64					
65					66		67						
68									69				

- 27 Lisa to Bart.
- 28 A grouping based on a consistent principle of subdivision. Hierarchical order can be embedded in the ones we decide are salient.
- 29 A resident of the city known for mezcal, chocolate and mole - if you made a typo that's too late to fix.
- 30 Also known as the white-handed gibbon.
- 31 The message a librarian might send out trying to figure out a Cutter code.
- 32 Province of the Toronto Public Library.
- 33 This Chinese athlete played for the Houston Rockets from 2002-2011.
- 39 Faux-_____.
- 40 Let's Get Loud because Love Don't Cost a Thing
- 41 _____ be great if we could explain that classification has consequences.
- 42 Rock, paper, scissors, briefly.
- 43 A type of colour that is too bright for human eyes.
- 44 Today I saw turtles basking on _____.
- 45 Another 7-down.
- 49 The word flower in Vietnamese.
- 52 The actual number of decimals in a Dewey decimal call number.
- 53 An eco-friendly fibre created from regenerated cellulose, commonly made from wood pulp - with one vowel removed.
- 54 The actor who played FBI agent Aram Mojtabai in the show The Blacklist.
- 55 The tiniest bit of lead in a pencil.
- 56 Simple choice.
- 57 Texas Council of Academic Libraries, briefly.
- 58 UCLA's Higher Education Research Institute, for short.
- 59 Plural of any.
- 60 Ranganathan's was August 8, 1892.
- 61 To put literature in the 500s is to _____.
- 62 A gesture with Buddhist origins that is a common greeting in Thailand.
- 63 A 2-down, singular.
- 66 Ron DeSantini, Robert Downey (Jr.), and Roald Dahl.
- 67 Pepe ___ Pew.

Crosswords as Learning Tools

Besides being a weekend morning ritual for many, crossword puzzles have been used as teaching tools to help students synthesize information. This is particularly well-researched in medical school capacities, where students have to learn a significant amount of precise terminology, and quickly but often lack the opportunity to practice and reinforce key concepts (Saxena et al, 2009). Crosswords offer the opportunity for active learning, problem solving and critical thinking (Kolte et al, 2017).

In a study of 78 pharmacology students, where some students received crosswords in self-study modules and some didn't, those who utilized the crossword produced higher test scores (Kolte et al, 2017). Furthermore, the perception from the students who utilized crosswords was overall very positive: 81.47% reflected that it was a good self-learning, recreational activity (Kolte et al, 2017, p. 1434). At the University of Saskatchewan, crosswords were implemented for second-year medical students in for the hematology system and the neoplasia section of undergraduate pathology courses. Researchers collected quantitative and qualitative data, and again found that most students found the collaborative review exercises to be helpful and engaging (Saxena et al, 2009). Perhaps emblematic of the students' experience, one student comment read: "The interactive nature of the large group sessions (where crossword is one of the tools) keeps the energy levels high in the class; the sessions are relevant and students look forward to these even though it is pathology and it is at the end of the day." (Saxena et al, 2009, p. 1460). If *even pathology* can be made interesting, is there room for crosswords in LIS?

Crosswords and LIS studies

First, a brief history. Though crosswords may have a cult-like following now, this wasn't always the case. As Martin Levinson (2020) outlines in his essay, "Crossword Puzzles: Mapping the Territory", these puzzles appeared in the New York World in 1913 as a word-cross puzzle in the supplementary "fun" section of the paper (Levinson, 2020). The original author, Arthur Wynne, was tasked by his editor with creating a mental-exercise additive for the Sunday newspaper. The second week, the paper accidentally ran the piece as crossword rather than word-cross. Readers quickly latched onto this supplemental piece creating a demand, and Wynne eventually delegated the task to his secretary Margaret Farr (nee Petherbridge)—who went on to become the editor of the New York Times crossword puzzle until her retirement (Levinson, 2020). File this information for later, it's a great crossword (or word-cross) clue.

Perhaps unsurprisingly, librarians at the time were dismissive of crossword puzzles and "some argued that crosswords were a threat to the reading habits of the American public, a diversion that kept people from perusing books and periodicals" (Levinson, 2020, p. 233). Now, public libraries often have collaborative jigsaw puzzle tables, so the thinking may have shifted. That being said, there is virtually no research on how crossword puzzles may be used as learning tools in our field.

While research has shown that crosswords can be helpful in STEM fields to synthesize knowledge of technical terms, LIS, specifically cataloging, isn't without its share of technicalities. Concepts like FRBR or RDA require critical thinking as well as a specific and

precise vocabulary to articulately be discussed. Moreover, the nuances in clues can shed light on dualities and the way that information is interpreted. As readers (taking a leap here and assuming that many who enter the LIS field identify as readers), crosswords provide the opportunity to engage with text and subtext, and I propose this would be appealing to the vast majority of those enrolled in LIS programs. With the prevalence of free software available to create crosswords online, this could be utilized both as a teaching tool and learning opportunity, and could be an exciting new avenue of research.

Reflection

The process of creating this crossword puzzle was a challenge, and I realized, deep into the process, that I approached it backwards. Essentially, I thought my way of organizing the steps made sense and that reality should map onto that—call me Dewey, I guess.

I went through my lecture notes, pulling out concepts that we explored each class and wrote out a list of words I wanted to include along with the clues to go with them. I knew that the crossword software I was going to use allows the user to choose a template, populate words, and then auto-fill the rest, so I wasn't really considering much beyond trying to capture the core concepts of the course. It was only once I created my lengthy list of terms (Appendix 1) and clues that I calculated the number of letters in each word and started to think that I might have a problem. There are several templates in Crosserville, but as it turns out it's tough to combine lengthy words, and I had quite a few of those. I ultimately went with a "create your own adventure" and built it from scratch, which is perhaps why it's kind of visually unappealing. I had to axe a lot of my words from the initial list, and figure out how to make sense of random

two-, three-, and four-letter words and acronyms that I'd unintentionally created. In hindsight, I definitely could have created one of the skeletal crosswords that only contain a few words interlocked rather than a whole grid, but I was far too invested in my grid before reaching that conclusion. The project ended up being a lot more work than I'd anticipated, and while it's a bit rough and Will Shortz is unlikely to accept it, I was glad to have the chance to try it out.

I love doing crosswords: the mental challenge, the new vocabulary and the obscure facts you can learn about in an accessible way. There's also a sense of accomplishment upon completion, like being in the know or acing a test. I like doing them for fun, but I can also see that there's a lot of value in that for teaching. If students felt that same sense of accomplishment, but it could be tailored to their niche field of study, I think that could go a long way in boosting their confidence and building their skills. It could be a different way to interact with course material, and may help students connect with concepts who don't do as well learning through reading. This could be a great supplement for LIS courses, or final projects for students. I think it's important because it offers an alternative format for learning and practice and, as I mention in my analysis, it's an avenue for further research that is ripe with possibilities.

In terms of serving librarianship more broadly, I think that crosswords foster critical thinking skills and, occasionally, the ability to think outside the box (or the grid). Embedding crosswords as teaching tools in LIS curriculum will help to develop future librarians' ability to present information in different and engaging ways. Crosswords can easily be adapted to suit any theme, difficulty or skill level, and thus could be utilized in a wide variety of settings from

academic to public to school libraries. Besides being a learning tool, they are widely enjoyed and can be a great way to bring like-minded patrons together.

References (APA)

Aronow, I. (2021, November 8). *Crossword Constructor Resource Guide*. The New York Times. <https://www.nytimes.com/2021/11/08/crosswords/crossword-constructor-resource-guide.html>

Crosserville. (n.d). <https://www.crosserville.com/>

Kolte, S., Jadhav, P. R., Deshmukh, Y. A., & Patil, A. (2017). Effectiveness of crossword puzzle as an adjunct tool for active learning and critical thinking in Pharmacology. *International Journal of Basic and Clinical Pharmacology*, 6(6), 1431–. <https://doi.org/10.18203/2319-2003.ijbcp20172236>

Kwaśnik, B. H. (2010). Semantic Warrant : A Pivotal Concept for Our Field. *KO Knowledge Organization*, 37(2), 106-110. doi.org/10.5771/0943-7444-2010-2-106

Levinson, M. H. (2020). CROSSWORD PUZZLES: MAPPING THE TERRITORY. *Etc.*, 77(3-4), 232–239. https://ocul-uwo.primo.exlibrisgroup.com/permalink/01OCUL_UWO/t54l2v/cdi_proquest_journals_2675713483

Saxena, A., Nesbitt, R., Pahwa, P., & Mills, S. (2009). Crossword puzzles: active learning in undergraduate pathology and medical education. *Archives of Pathology & Laboratory Medicine*, 133(9), 1457–1462. <https://doi.org/10.5858/133.9.1457>

Appendix 1 – Initial list of clues

- 1) Joints – Cleaving reality at the _____ refers to dividing up thing-space where there are cluster points.
- 2) Universality – the desire to organize information with one single system that is used by everyone
- 3) Whole – Approximating the _____ - an important concept for DDC classification, choosing one concept that best encapsulates the work
- 4) Classification – Provides a system for organizing knowledge.
- 5) Indexing – the succinct and systematic representation of the subject content of a document.
- 6) Ontology – a field of study and also the product of a field of study
- 7) Epistemology – a discipline of philosophy concerned with “what we know and how we know it”
- 8) Scalar – Relative time (immediately, soon, later) is an example of a _____ relation
- 9) Facets – A grouping based on a consistent principle of subdivision. Hierarchical order can be embedded in which of these are prioritized.
- 10) Ranganathan – credited with the introduction of the term facet in the knowledge management field, also created the colon classification system
- 11) Dewey – The Universal Decimal Classification system (UDC) was originally intended to be a French translation of which existing English classification system?
- 12) Taxonomy – what uses taxa as units of measurement?
- 13) Associative – what describes relationships between records that are conceptually close, but where the relationship is neither equivalent or hierarchical?
- 14) Resource – the “R” in LRM
- 15) Shelf order – the reality in physical library spaces that influences classification
- 16) Bliss – The _____ Classification Association was formed in 1967, their first published classification manual was intended to be used for school libraries.

- 17) Warrant – the authority a classificationist invokes first to justify and subsequently to verify decisions (Clare Beghtol)
- 18) Cutter – who believed that the catalogue should reflect “the public’s habitual way of looking at things”?
- 19) London – The Library of Congress started their collection with 740 books from _____ in 1801.
- 20) Bias – disproportionate weight in favour of or against an idea of thing, usually in a way that is prejudicial or unfair
- 21) Confirmation bias – seeking out information that supports what you already believe
- 22) Consilience – a principle based on the unity of knowledge, or where “no two true things should contradict”
- 23) Brian Deer – a classification system based on Indigenous ways of knowing, focused on local knowledge networks
- 24) Dialectic – this development model is divided into three stages: thesis, antithesis and synthesis
- 25) Folksonomy – a classification system where individuals attach their own terms, allowing a coherent system to emerge through group consensus
- 26) Precision – Controlled vocabulary offers high recall and high _____.
- 27) Semantic – Linked data is the core of the _____ web.
- 28) Predicate – OWL triples make use of the subject-_____-object relationship.

9201: Classification and Indexing Review

ACROSS

- 1 Ply with drink.
- 6 This development model is divided into three stages: thesis, antithesis and synthesis.
- 14 You may be feeling this way at the end of the semester (colloquially).
- 16 Relative time (immediately, soon, later) is an example of a _____ relation.
- 17 The authority a classificationist invokes first to justify and subsequently to verify decisions (according to Clare Beghtol).
- 18 Phases of the moon.
- 19 What describes relationships between records that are conceptually close, but where the relationship is neither equivalent or hierarchical?
- 23 Young Skywalker's nickname.
- 24 Yukon and Sierra.
- 28 A classification system where individuals attach their own terms, allowing a coherent system to emerge through group consensus.
- 34 "Yes" in the language that Otlet and La Fontaine intended to translate the Dewey Decimal Classification System.
- 35 The individual unit of measurement in taxonomy.
- 36 Go _____ great length (2 words).
- 37 Tiebreaker periods, briefly.
- 38 Moans and groans.
- 40 Cleaving reality at the _____ refers to dividing up thing-space where there's a cluster point.
- 42 A league for fun.
- 43 Ace.
- 46 Level in a hierarchy.
- 47 School org.
- 48 The reality in physical library spaces that influences (dictates?) classification (2 words).
- 50 US taxpayer's IDs
- 51 An auto-reply a librarian creates when they're on vacation.

- 53 Credited with the introduction of the term facet in the knowledge management field, also created the colon classification system.
- 60 Created the most wide-spread classification system, had a very narrow worldview.
- 64 Epoch when primitive giraffes and deer appeared.
- 65 Talented speaker.
- 67 Full of books, maps, and PACs.
- 68 A classification system based on Indigenous ways of knowing, focused on local knowledge networks.
- 69 The _____ Classification System was formed in 1967, their first published classification manual was intended to be used for school libraries.

DOWN

- 2 Flight data, briefly.
- 3 Overrepresented in subject headings.
- 4 A small village 20km from the famous pilgrimage town of Rajgir in Ranganathan's home country.
- 5 Japanese audio equipment maker.
- 6 Linked _____ is the core of the semantic web.
- 7 A tiny crossword filler, or a poem by Rudyard Kipling.
- 8 The country code for this enclave in South Africa.
- 9 A palindrome and Caesar's "Behold!"
- 10 A low island.
- 11 "No Scrubs" singers.
- 12 Suffix with proverb.
- 13 Strains of bacteria that are resistant to an antibiotic class (carapenem) used to treat severe infections.
- 15 A content warning on Twitter.
- 17 Conflict often leading to mass casualties.
- 20 An inventory management app born in a chemistry lab.
- 21 During 37-Across.
- 22 Vigor's pair.
- 25 A member of the Unification Church, colloquially.
- 26 Who believed that the catalogue should reflect "the public's habitual way of looking at things?"

1	B	E	S	O	T	6	D	I	A	L	E	C	T	I	C				
		14	T	I	R	E	D	A	F	16	S	C	A	L	A	R			
17	W	A	R	R	A	N	T			18	C	Y	C	L	E				
19	A	S	S	O	C	I	A	20	T	21	I	22	V	E					
	R							23	A	N	I		24	G	M	C	S		
		28	F	O	L	K	S	O	N	O	M	Y		34	O	U	I		
35	T	A	X	A			36	O	N	A	T		A		37	O	T	S	
		38	C	A	R	P	S				40	J	O	I	N	T			
42	R	E	C		A			43	N	A	I	L		46	T	I	E	R	
47	P	T	A			48	S	H	E	L	F	O	R	D	E	R			
50	S	S	N	S			51	O	O	O								52	O
						53	R	A	N	G	A	N	A	T	H	A	N		
60	D	E	W	E	Y					64	M	I	O	C	E	N	E		
65	O	R	A	T	O	66	R			67	L	I	B	R	A	R	Y		
68	B	R	I	A	N	D	E	E	R			69	B	L	I	S	S		

- 27 Lisa to Bart.
- 28 A grouping based on a consistent principle of subdivision. Hierarchical order can be embedded in the ones we decide are salient.
- 29 A resident of the city known for mezcal, chocolate and mole - if you made a typo that's too late to fix.
- 30 Also known as the white-handed gibbon.
- 31 The message a librarian might send out trying to figure out a Cutter code.
- 32 Province of the Toronto Public Library.
- 33 This Chinese athlete played for the Houston Rockets from 2002-2011.
- 39 Faux-_____.
- 40 Let's Get Loud because Love Don't Cost a Thing
- 41 _____ be great if we could explain that classification has consequences.
- 42 Rock, paper, scissors, briefly.
- 43 A type of colour that is too bright for human eyes.
- 44 Today I saw turtles basking on _____.
- 45 Another 7-down.
- 49 The word flower in Vietnamese.
- 52 The actual number of decimals in a Dewey decimal call number.
- 53 An eco-friendly fibre created from regenerated cellulose, commonly made from wood pulp - with one vowel removed.
- 54 The actor who played FBI agent Aram Mojtabai in the show The Blacklist.
- 55 The tiniest bit of lead in a pencil.
- 56 Simple choice.
- 57 Texas Council of Academic Libraries, briefly.
- 58 UCLA's Higher Education Research Institute, for short.
- 59 Plural of any.
- 60 Ranganathan's was August 8, 1892.
- 61 To put literature in the 500s is to _____.
- 62 A gesture with Buddhist origins that is a common greeting in Thailand.
- 63 A 2-down, singular.
- 66 Ron DeSantini, Robert Downey (Jr.), and Roald Dahl.
- 67 Pepe ___ Pew.