Planning Collections in the UFV Library

Faculty Sabbatical Leave Report
September to December 2014

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Introduction

In the fall of 2014, I was granted a four month faculty sabbatical leave to conduct a teaching and learning project. Although my original proposal was more specifically targeted to planning electronic resources collections, my activities expanded to look more broadly into planning all collections in the UFV Library.

UFV's strategic goals state that the University will "ensure that all decision-making is evidence-based, transparent, and accountable." They also state that the University will "provide services for students that…enable successful progress toward their educational goals." (Changing Lives). In this project I examined evidence-based practices used to evaluate and assess a library's collection, including print resources, serials, databases and e-books. These techniques and the information they provide will enable the library to make the best decisions regarding the future development of our library collection.

Although the UFV Library currently engages in a number of methods of collection assessments, there are a number of roadblocks and improvements which could be made. Our resources are limited, both in terms of time and staffing needed to undertake time consuming data gathering and analysis, and in terms of licensed tools to automate some of the process. Therefore, any procedures put into place must be realistic to accomplish with our current resources.

Selected Findings:

- Ratios such as turnover rate and Bonn's Use Factor are useful in demonstrating usage relative to the size of a collection. Although each calculation produces a different result, some patterns of use were clear. Well used areas of the collection (by LC Call Number range) include W (Medicine), N (Fine Arts), C (Auxiliary Sciences of History), E and F (History of the Americas). Our under used collections include S (Agriculture), V (Naval Science), K (Law), J (Political Science) and H (Social Science). These collections may need to be reduced in size to remove the excess material which is not receiving use.
- Our current method of cataloguing e-book collections without the inclusion of call number is negatively impacting our ability to analyze and evaluate our library holdings by subject.
- The Collection Development Policy should ideally be augmented to include detailed scope and collecting level information for all program areas at UFV. This information would help guide all acquisition, licensing and deselection decisions.
- Our policies and procedures for both program reviews and weeding should be re-examined, enhanced, solidified and documented.
- Lack of tools such as *Resources for College Libraries* or *OCLC's Collection Evaluation Tool* hamper our ability to do peer comparisons or compare our collection to authoritative lists.

The literature I reviewed reinforces a number of trends in higher education and in academic library collecting. The continued growth and importance of online courses, hybrid courses, the flipped classroom, mobile learning, and the handheld devices reinforce the need to provide mobile-friendly, device neutral online collections of all types of library resources. The expectations are that libraries will

almost entirely replace print journals with online and open access journals and significantly reduce the print journal collection size. Big deal packages of journals provide enticing per title price reductions and an addictive access to large quantities of academic journals, but the price increases are proving very difficult for libraries to absorb. Print book acquisition rates are declining and print collections are being weeded or stored. E-book purchasing is forecast to increase and many libraries are switching from "just in case" purchasing or title by title selection to "just in time" models using Demand Driven Acquisition.

Selected Findings:

- Of our seven big deal packages, our most expensive package also had the best cost per use, with Elsevier's *ScienceDirect* articles costing $1.64 per full text use.
- In 1999/2000 UFV spent 90% of its budget on physical items and 10% on electronic items. This has completely reversed and we now spend 70% on electronic items and 28% on physical items.
- UFV Library spent 62% of its budget in 2013/14 on serials and 24% of the budget on books, which is in line with the ARL average of 68% on serials and 20% on books.
- The e-monograph collection represents 49.11% of UFV's total monograph collection, slightly above the CPSLD average of 46.85%.

The UFV Library is facing some critical challenges in the coming year. The library's collection budget is facing pressures due to price inflation and reduced spending power, a sinking Canadian dollar, a declining share of the institutional budget, the increasing percentage required to fund our electronic resources, ever expanding program areas to support and a growing suite of worthy products to purchase or license. In order to understand how we are spending our funds and whether this has been line with trends in other libraries, I analyzed our spending by fund categories, type of material, physical versus electronic format and by faculty. I also compared our patterns to those found in our peer group of CPSLD libraries and the larger Association of Research Libraries (ARL) group.

Selected Findings:

- Almost all libraries are experiencing a decline in the share of institutional revenue, and UFV matches the 2.64% share that the average B.C. special purpose university receives.
- UFV allocates 36.06% of its overall budget to collection expenditures, compared to an average of 43% for ARL libraries.
- CPSLD Libraries all share a decline in print periodical expenditures.
- CPSLD Libraries all share a marked increase in electronic resource expenditures.
- 41.6% of our total collection spending is for the College of Arts. However, they also represent 37.03% of the FTE at UFV. The biggest discrepancies for spending compared to FTE are for Health Sciences and Sciences (overspending), and for Applied and Technical Studies and Access and Continuing Education (underspending).
- Electronic Resources spending by FTE is highest for the Health Sciences, at a rate of $167.79 compared to $67.27 for Arts and $65.35 for Professional Studies.

An imminent challenge is the critical lack of shelf space for the Abbotsford circulating collection, so as part of my research on collection assessment I investigated weeding methodologies and developed recommendations for a much needed major undertaking in this area. The Collection Manager tool I discuss has some utility in identifying popular and under-used areas of the collection and can be implemented with the current tools that we have.

An important part of planning a library collection is determining how to allocate funds between academic departments. The Library Advisory Committee has expressed an interest in revisiting our current allocation formula so I took the opportunity to research this topic area and explore ways that our methodology could be improved.

Librarians can play an important role on campus by initiating services, training students and faculty, promoting, and leading new developments in several key areas. The Association of College and Research Libraries (ACRL) has identified some of the top trends in academic libraries for 2014 as big or open data, the open access and open education movement, the use of altmetrics and Digital Humanities (ACRL).

The NMC Horizon Report also identifies a "low digital fluency of faculty" as a current challenge in higher education, with faculty lacking the skills or training required. Digital literacy is defined as "the ability to use information and communication technology to find, evaluate, create, and communicate information" (Johnson et al. 22). The report identifies librarians as being able to pay a key role in "helping instructors efficiently locate, vet, and cite information sources" (22). During my readings I encountered many new web-based tools related to collections, including citation managers, data repositories, and commercial sites for purchasing full text journals. In order to update my own digital literacy and prepare for future training of faculty, students and staff, I investigated a number of interesting products. Although librarians at UFV are faced with numerous competing demands, and lack dedicated time for re-education and training, it will help us stay relevant and integrated to take whatever steps we can in these areas.

In addition to more traditional forms of assessment, this report discusses upcoming types of bibliometrics and altmetrics used to measure and communicate the value of journals and faculty research output. I also looked at the reporting capabilities of our EBSCOhost administrative interface, including the browser and device report and database report.

Selected Findings:

- More patrons use the EBSCO Discovery Service interface than the traditional EBSCOhost interface, although there is more full text retrieved per search session in the traditional interface.
- The most popular browser being used is Safari. 26% of our users are on the Macintosh operating system.
- The majority open-access databases included in the EDS have very little use, but it does drive a significant amount of traffic to the UFV Library Catalogue.

My work involved the creation of a large number of spreadsheets, from which I have selectively included representative tables and graphs. Readers wishing to examine these in more detail may contact the author for copies.

Works Cited

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Section 1: Collection Analysis

Introduction

Collection analysis is a fundamental task which needs to be conducted in libraries on an ongoing basis, in a variety of ways. As stated by Johnson, collection analysis is not used to determine the quality of a collection, "the real objective is to measure the collection's utility – how effective the collection is in satisfying the purpose for which it is intended and, by extension, how effective the library is in expending funds to develop and maintain that collection." (297).

Collection analysis is complicated because of the numerous components of a collection, including print and electronic serials, online databases, print monographs, e-books, reference books, audio-visual materials, and more. Each component may require different and multiple types of data gathered, and information may be unattainable, flawed or extremely time consuming to collect and analyze. In a library with limited staffing resources, Johnson's statement is especially applicable. "The challenging aspect of measuring and demonstrating value is using meaningful methods that are not overly onerous in their execution." (297). Many libraries in the literature have teams of librarians engaged in collection work and expect subject librarians to spend a considerable time on collections tasks (Martin, Kamada, and Feeney 229; Reich 207; vanDuinkerken et al. 146). During my readings I have kept in mind the feasibility of applying different methodologies in our current UFV situation.

Recent surveys of collections librarians show some interesting realities in terms of assessment activities in libraries. Of the 127 respondents in Wilde and Level's survey, only 11% of the respondents had a formal collection assessment process in place and only 14.96% had a formal new program review process (Wilde and Level, "How to Drink" 225). "From the comments that were collected, it is clear that most collection assessment is done on an as-needed basis. It is also evident that the lack of guidelines and sheer amount of information that has to be processed makes collection assessment an overwhelming task." (226). Brown and Stowers found that that 73.1% of their over 200 respondents did not have a commercial collection analysis tool (148) and that "training in the use of data in collections work is clearly lacking" (153).

Despite the difficulties, the need to focus on collection evaluation and assessment is very evident in the literature. After several years of difficult budgets in many academic libraries throughout the United States and Canada, librarians are turning to collection analysis to make data driven decisions on how to best expend their diminishing funds (Wilde and Level 217). Usage patterns are changing, such as the declining circulation of print monographs, reference collections, and serials. New formats and new products appear on the horizon every month, all competing for a share of the library's budget. Shelving for collections is being removed, as spaces are being converted to Learning Commons or collaborative study areas (Reich 207), or stacks are rapidly reaching capacity (Martin, Kamada, and Feeney 226). Institutions regularly add new courses and programs without removing existing offerings, putting pressure on libraries to support them without additional dollars (Bobal, Mellinger, and Avery 288).

Collection analysis and data gathering can serve a variety of purposes in libraries. Brown and Stower's survey found that the most frequently reported uses of data are "monitoring expenditures, analyzing

database use, and weeding" (150). Other uses include modifying approval plans, determining collection strengths and weaknesses, identifying database overlap, adjusting departmental allocations and demonstrating value to patrons and stakeholders (150-151). Johnson details several other purposes for collection analysis, including justifying budget requests and allocations, preparing program accreditation reports, informing librarians and faculty about their subject collections, and for accountability and showing progress towards goals (298-299).

The methods employed in collection analysis are numerous. Johnson breaks these methods into two main categories, collection-based techniques and use or user-based techniques. "Collection-based techniques examine the size, growth, depth, breadth, variety, balance, and coverage of library materials – often in comparison with an external standard or the holdings of one or more libraries know to be comprehensive in the relevant subject area." (302-303). Use or users-based techniques "look at who is using the materials, how often, and what their expectations are." (303). Quantitative measures such as circulation counts, interlibrary counts, cost per use, collection size, citation analysis, and comparative ratios are common. Libraries may also engage in qualitative measures, such as user surveys, focus groups, citation analysis, checking against established bibliographies, and peer comparisons. "The goal of qualitative analysis of a collection is to determine the collection's strengths, weaknesses, and non-strengths, which reflect conscious decisions not to collect, and the degree to which the collection meets the needs and expectations of users." (304). Many journal articles and conference presentations are written by librarians engaged in some method of assessment new to their institution. My objective has been to learn more about the theories of collection assessment, investigate techniques used for different purposes, determine what it is possible to do at UFV, experiment with analysis of our data and think about future steps we need to take. As other sections of my report deal with serials and electronic resources, I have concentrated here on reporting on methods for analyzing a physical library collection.

Methods of Collection Analysis

Mapping the Curricula

A well curated library collection should meet the academic needs of the institution. One interesting method to examine this was used by a library which assigned LC call numbers to all the courses in the university calendar. They then compared this to their library holdings for the same call number, to count the number of books available to support individual courses (Gabriel 95-96). It would be an interesting project at UFV to map our course offerings and our collection sizes in a similar, systematic way. One challenge would be to include our e-book holdings in this type of study.

Interlibrary Loan Data

Libraries often use interlibrary loan data to analyze new or unmet areas of demand. In a study presented by Negrucci, the library analyzed interlibrary loan transaction data in detail, enriching the information with LC call numbers and publisher details. They then determined the high demand areas by call number ranges, and adjusted their approval plans to include popular publishers (239-242). In another study, interlibrary loan requests were categorized by conspectus subject category. For each category a ratio of the library's holdings divided by the number of ILL requests was calculated (Knievel, Wicht and Connaway 45). This ratio indicated how many books they owned in a subject area compared

to the number being borrowed. At UFV, we fortunately record the course number for each interlibrary loan request, and can compile a report of books ordered by course number. Librarians can then look for gaps in the collection, and frequently pass the report along to the departmental liaisons. Interlibrary loan counts by department are also included in our allocation formula. It may be an interesting project for the future to compile a number of years of recent interlibrary loan requests and analyze in more detail the areas of repeated and continued demand, rather than the unique demands based on a single research topic.

Citation Analysis

Libraries often employ some type of citation analysis to determine if the library holdings are providing the items that faculty and/or students are citing in their publications, and to see what types of publications are being used. The information may be used to guide purchasing and cancellation decisions for serials and databases, or for "quantifying institutional research trends." (Wilde, "Local Journal" 102). The University of Kansas did a study of their science faculty publications, based on a random sampling of their output. A list was compiled of the citations from this sampling, and then every twentieth citation was analyzed in detail, including date of publication, and whether it came from an aggregator, publisher package or direct subscription. Their results found that the library provided 73% of the journals cited, and that 81% of the citations came from journals. The use of books varied between science disciplines studied, but was much less than journal use. They also provided a much lower number of the book citations from their own library. (Currie and Monroe-Gulick 118-124).

As Johnson states, "citation analysis is time consuming and labor intensive." (323). To fill this need, Thomson Reuters sells an automated product called a Local Journal Utilization Report, which will provide details on which publications your researchers are publishing in, and which publications they are citing, based on the Web of Science. According to an article by Wilde, "the information contained in the LJUR is incredibly useful, but the delivery mechanism is quirky at its best and horribly inconvenient at its worst." (Wilde, "Local Journal" 104). The pricing is also high, ranging at the time of her article from $7000 to $10,400 (104).

A citation analysis project, either done manually or through a paid custom report, is probably premature at UFV, as the volume of our faculty research output is still quite small and the amount of information gained would not likely be worth the time to collect it.

Peer Comparisons and Standards

In order to evaluate the adequacy of a library's collection, comparisons to other peer institutions, library standards, or recognized lists or bibliographies are frequently used.

Collection Size Formulas

In previous decades, associations such as the Association of College and Research Libraries (ACRL) and the Canadian Library Association (CLA) published standards with prescriptive formulas for the number of volumes per FTE student. For example, in *Standards for Canadian College Libraries* (2004), the CLA recommended that for an FTE between 5000 – 6999 students, libraries should hold 80,000 current

volumes, 700 current periodicals, 10,000 e-journals and 11,250 other formats (CTCL Standards Committee 8). In 1965, Clapp and Jordan published a detailed formula for determining an adequate collection size, based on a basic number of volumes for an undergraduate library, and then adding a multiplier of volumes per faculty FTE, student FTE, number of students in honours programs, number of majors, and number of master's degrees.

These types of volume count formulas have largely been dropped. Collections are much broader now than the traditional number of print volumes held, and sheer numbers do not indicate the quality or usefulness of the collection. In the ACRL's latest *Standards for Libraries in Higher Education,* libraries are encouraged to identify and compare themselves to a peer groups. Suggested points of comparison are expenditure ratios such as "total library materials expenditures per instructional faculty" and "total library materials expenditures per full-time undergraduate student." (Association of College and Research Libraries, 23). Libraries are also guided to formulate performance indicators, such as "the library provides access to collections aligned with areas of research, curricular foci, or institutional strengths" (20) and to measure their outcomes in meeting these, such as "students discover the appropriate library resources needed for their coursework." (20).

Peer Institutions

Lists of peer institutions and their comparative statistics may be gathered in different ways. In the U.S., the National Center for Education Statistics (NCES) offers a Library Statistics Program for comparing academic libraries (Blake and Schleper 462-463). There are a number of interesting statistics available from the site, such as expenditures for staffing and collections. However, the tool does not provide much functionality to help identify good comparison libraries, so knowing the possible peer libraries in advance would be required. Also, as there are many differences with funding for post-secondary education in the U.S., it may be of limited value to compare ourselves to U.S. institutions.

The Association of Research Libraries (ARL) gathers annual statistics from member libraries, however, the detailed reports are only available to subscribing members.

Our best source of benchmarking comparisons is the annual statistics report published by the Council of Post-Secondary Library Directors (CPSLD) of B.C. These publicly available statistics (http://cpsld.ca/home/statistics) provide information on services and collections, and calculate ratios similar to those recommended by ACRL, for example, Library Expenditures per FTE Student. We are able to compare UFV to the other special purpose universities in B.C., as well as to the other post-secondary institutions. I have done several analyses using the CPSLD statistics.

Collection Comparisons

Comparing the spending and collection patterns of peer libraries does not analyze the actual titles held. For example, in a program review, it would be useful to ascertain if UFV has a core collection that is comparable to other libraries offering that program. Manually checking titles in library catalogues is extremely time consuming. For this reason, libraries are subscribing to software utilities such as OCLC's Collection Evaluation Tool. I attended a webinar on the product, and learned some useful information

about it (Randall). If your library has its holdings in Worldcat, you can license the product. The software can compare your library collection to peers or benchmark library groups. You can see what percentage of titles in a subject area are not held by your library compared to peer libraries, or can generate lists of widely held titles by peer libraries. You can compare holdings to authoritative lists, such as Choice Outstanding Academic Titles. You can analyze your own collection by subject conspectus, and can create lists of unique and shared titles. You can upload text files with circulation data. Results can be filtered, for example, by publication date, number of circulations, and by the number of libraries which share titles. This can create lists of possible weeding candidates. For information purposes, I obtained a quote from our OCLC representative, and annual subscription for UFV would cost $3,649.00 CDN. If there is sufficient interest in this product by the liaison librarians, the next steps are to do more investigation into its strengths and weakness, as well as testing how difficult it is to export a text file of our circulation information.

Libraries may evaluate their collections by checking against bibliographies of recommended titles, choosing to keep or withdraw a title based on its inclusion in an authoritative list. This process can again be very time consuming if done manually, and depends on lists being sufficiently current, inclusive and relevant to the local (and Canadian) context. A title frequently mentioned in the literature is “Resources for College Libraries” or RCL (Reich 209; Snyder 23). This product is created by Proquest, and has the Global Books in Print database as its underpinning. RCL provides a searchable database of core titles selected to meet the needs of college and university curricula, including over 85,000 titles in 117 subject areas (Proquest). I obtained a short-term trial access to test the database, and found it useful but with some of the annoying oddities that plague Global Books in Print. Users can limit searches by subject area, or browse by subject or LC call number range. An individual record may provide a varying amount of information, such as a Choice book review (if available), table of contents, publisher information, audience level, comparative pricing from vendors such as alibris and Abebooks, and e-book supplier information. The information is only as good as the tagging. One title I retrieved as a core book on the history of Canada was a 1995 National Geographic book called “Traveling the Trans-Canada from Newfoundland to British Columbia”. It was labelled for an audience level of upper/faculty, yet this book is a pictorial work held by mostly public libraries in Outlook. A search for homelessness in the default search (all subjects) only retrieved 49 hits, including a book on Robert Schumann, the composer, but doing an advanced search with homelessness as a subject keyword (which should have been restrictive) retrieved 158 hits. Our price quote for an annual subscription is $1785 U.S., and further tests by other librarians would have to be conducted to determine the usefulness of this product to our library.

Collection Assessment Ratios

There are a number of possible formulas and ratios which can be applied to analyze a library’s collection. I tried a number of different methods to see what light they would shed on our collection. To save time, I limited my analysis to the broadest LC call number ranges, although a finer breakdown could also be done for any areas of interest.

Turnover Rate

As defined by Hibner, "Collection turnover is the ratio of circulations (uses) in a given time period over the number of items in a collection", in other words, total checkouts divided by total copies (92). This measure can indicate the relative use of different areas of the collection, taking into account the size of the collection. I analyzed the turnover rate using circulations counts for all years included in SIRSI's Director's Station. I only included the item counts for items with a home location that circulates, such as STACKS, CURRICULUM, and VIDEO.

Table 1
Turnover Rate by Call Number Range, All Years

Call Number Range	Total Copies	Total Checkouts	Turnover Rate
A	89	593	6.663
B	10187	95845	9.409
C	745	4617	6.197
D	9854	91061	9.241
E	6661	66682	10.011
F	8359	88098	10.539
G	5823	52885	9.082
H	38274	345644	9.031
J	4744	30820	6.497
K	3006	19613	6.525
L	7218	57787	8.006
M	724	3571	4.932
N	5824	60789	10.438
P	33113	224929	6.793
Q	12185	80002	6.566
S	2590	18943	7.314
T	4752	29283	6.162
U	592	3739	6.316
V	86	286	3.326
W	7651	105152	13.744
Z	1424	10245	7.195
	163901	1390584	

Source: Turnover Rate spreadsheet.

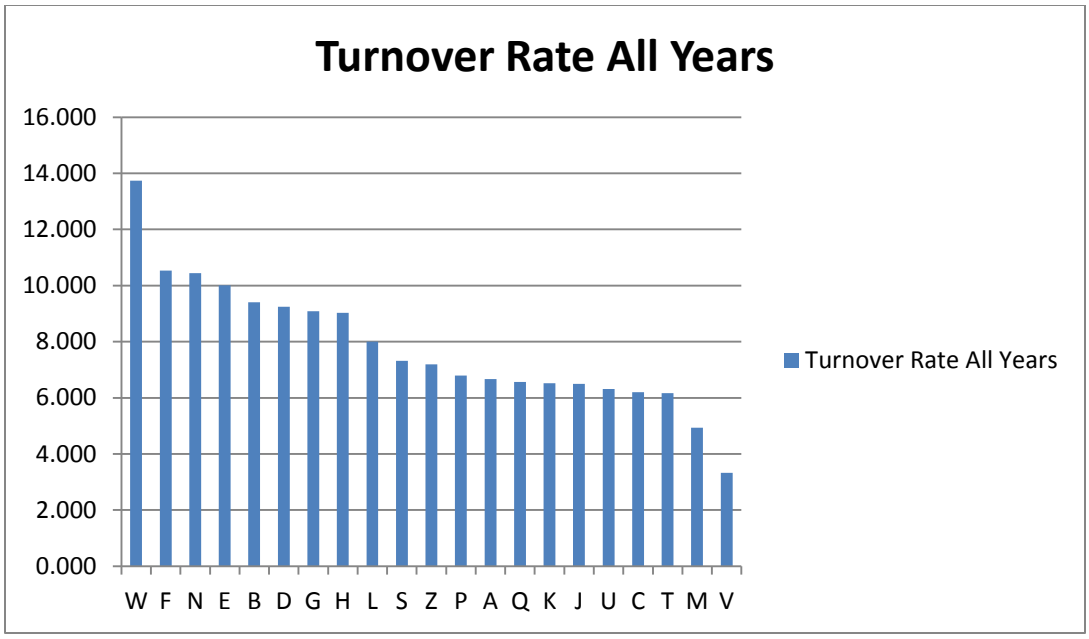
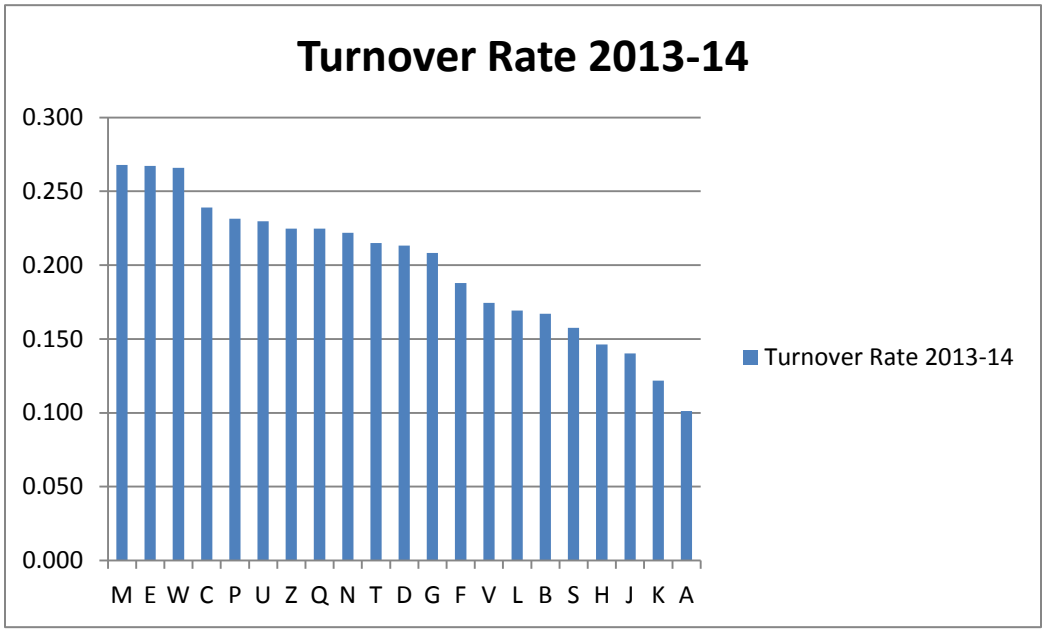


Fig. 1 Turnover Rate by Call Number Range All Years
Source: Turnover Rate spreadsheet.

The highest turnover rate historically has been for W (Medicine), F (History of the Americas) and N (Fine Arts) (see fig. 1). This indicates that there has been relatively high circulation compared to the number of items in those subject areas. The lowest turnover rate has been for M (Music) and V (Naval Science), which is understandable given our lack of courses in those areas.

I also did an analysis using circulation counts for 2013 to 2014 only, which produced a different result. In this time period, our small music collection had a high turnover rate, followed by E (History of the Americas) and W (Medicine).

Table 2
Turnover Rate by Call Number Range 2013-14.



Source: Turnover Rate spreadsheet.

I also calculated the turnover rate by item type, for 2013-14. The highest turnover rate was for kits, DVD's and curriculum books, showing that these types of collections have good use compared to their collection size (see table 3 and figure 2). Certain types of items have virtually no circulation, including government publications, 16 mm films, curriculum videos, easy reading tapes and slide sets. These would be good candidates for weeding, unless they are of local or historical importance.

Table 3
Turnover Rate by Item Type 2013-14

Item Type	Turnover Rate
KIT	1.46
DVD	0.83
CURRIC-BK	0.68
EASY-BOOK	0.45
CURRIC-DVD	0.42
CURRIC-CD	0.39
CD-CIRC	0.36
VIDEOGUIDE	0.29
BOOK	0.16
VIDEOTAPE	0.14
STD-ESSAY	0.11
AUDIO-TAPE	0.08
LANGTAPE3D	0.02
PERIODICAL	0.01

GOV-PUB	0.00
16MM-FILM	0.00
CURRIC-VID	0.00
EASY-TAPE	0.00
SLIDE-SET	0.00
CURRIC-PO	0.00

Source: Turnover Rate spreadsheet.

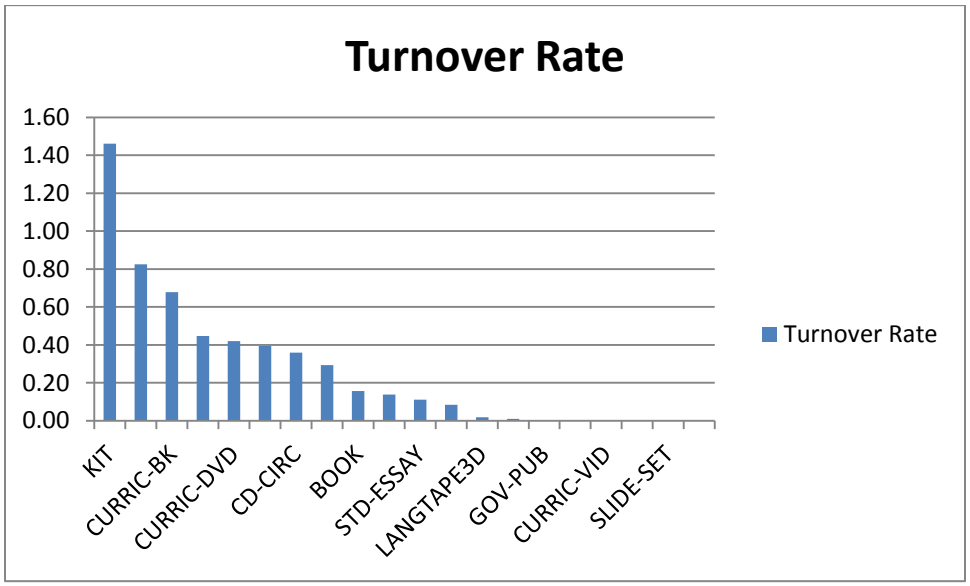


Fig. 2 Turnover Rate by Item Type 2013-14

Source: Turnover Rate spreadsheet.

I was also interested to see how well our recently added books are being used. I was able to find counts by call number range for books catalogued in 2012-2013, and used the total circulation counts these items have had to date (see table 4). Books added in E (History of the Americas), C (Auxiliary Sciences of History), P (Language and Literature), and W (Medicine) have been the most used since being added to the collection. It would be beneficial to redo this for a longer time frame, as the sample sizes are small in some call number ranges.

Table 4

Turnover Rate for Items Catalogued in 2012-13

Call Number Range	Total Copies Catalogued 2012/13	Total Checkouts	Turnover Rate
A	3	2	0.667
B	338	287	0.849
C	15	22	1.467
D	199	146	0.734
E	138	246	1.783
F	138	102	0.740
G	198	166	0.838

H	972	828	0.850
J	158	113	0.710
K	99	74	0.750
L	405	235	0.580
M	58	46	0.790
N	247	168	0.680
P	882	978	1.110
Q	511	357	0.700
S	37	28	0.760
T	218	137	0.630
U	16	9	0.560
V	24	0	0.000
W	236	259	1.100
Z	97	103	1.060

Source: Turnover Rate spreadsheet.

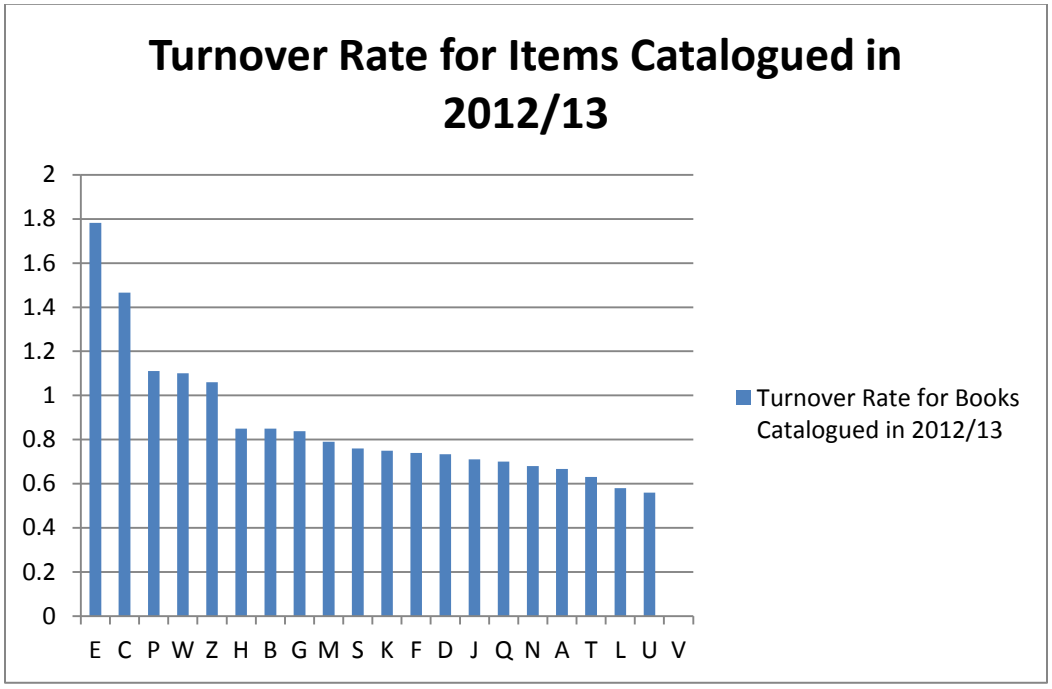


Fig. 3 Turnover Rate for Items Catalogued in 2012-13.
Source: Turnover Rate spreadsheet.

Bonn's Use Factor

George Bonn's 1974 article "Evaluation of the Collection" included a formula which has come to be known as "Bonn's Use Factor" (Knievel 35). The use factor is "the ratio of use to holdings…both expressed as percentages of the respective totals" (Bonn, 273). It may also be stated as the ppercentage of circulations for a collection divided by the percentage of holdings that collection represents. As Bonn states, "use factors can measure the intensity of use of all or part of the …

collection" (273). They can indicate which sections of a collection are considered overused or underused. "Consequently, subject areas whose use percentage exceeds their holdings percentage are called "overused," while those whose circulation percentage is less than the holdings percentage are called "underused." (Hughes 120).

Using data from SIRSI's Director's Station, I calculated Bonn's Use Factor for an average of three years. Again, I only included item counts and circulation information for areas of the collection which circulate (see table 5).

Table 5
Bonn's Use Factor by Call Number Range, 3 year Average

Call #	Total Copies	% of Collection	Circulation for 3 years	Average Circ over 3 years	% of circulation	Bonn's Use Factor 3 years
A	89	0.054	67	22.333	0.062	1.136
B	10187	6.215	6389	2129.667	5.885	0.947
C	745	0.455	617	205.667	0.568	1.250
D	9854	6.012	7887	2629.000	7.265	1.208
E	6661	4.064	4949	1649.667	4.558	1.122
F	8359	5.100	5031	1677.000	4.634	0.909
G	5823	3.553	3953	1317.667	3.641	1.025
H	38274	23.352	20800	6933.333	19.159	0.820
J	4744	2.894	2183	727.667	2.011	0.695
K	3006	1.834	1441	480.333	1.327	0.724
L	7218	4.404	4300	1433.333	3.961	0.899
M	724	0.442	591	197.000	0.544	1.232
N	5824	3.553	5105	1701.667	4.702	1.323
P	33113	20.203	22728	7576.000	20.935	1.036
Q	12185	7.434	8593	2864.333	7.915	1.065
S	2590	1.580	1368	456.000	1.260	0.797
T	4752	2.899	3141	1047.000	2.893	0.998
U	592	0.361	362	120.667	0.333	0.923
V	86	0.052	45	15.000	0.041	0.790
W	7651	4.668	7919	2639.667	7.294	1.563
Z	1424	0.869	1098	366.000	1.011	1.164
	163901	100		36189.000	100	1.000

Source: Turnover Rate Spreadsheet.

Table 6
Bonn's Use Factor by Call Number Range, 3 year Average, Sorted

Call Number	Bonn's Use Factor 3 years
W	1.563

N	1.323
C	1.250
M	1.232
D	1.208
Z	1.164
A	1.136
E	1.122
Q	1.065
P	1.036
G	1.025
T	0.998
B	0.947
U	0.923
F	0.909
L	0.899
H	0.820
S	0.797
V	0.790
K	0.724
J	0.695

Source: Turnover Rate Spreadsheet.

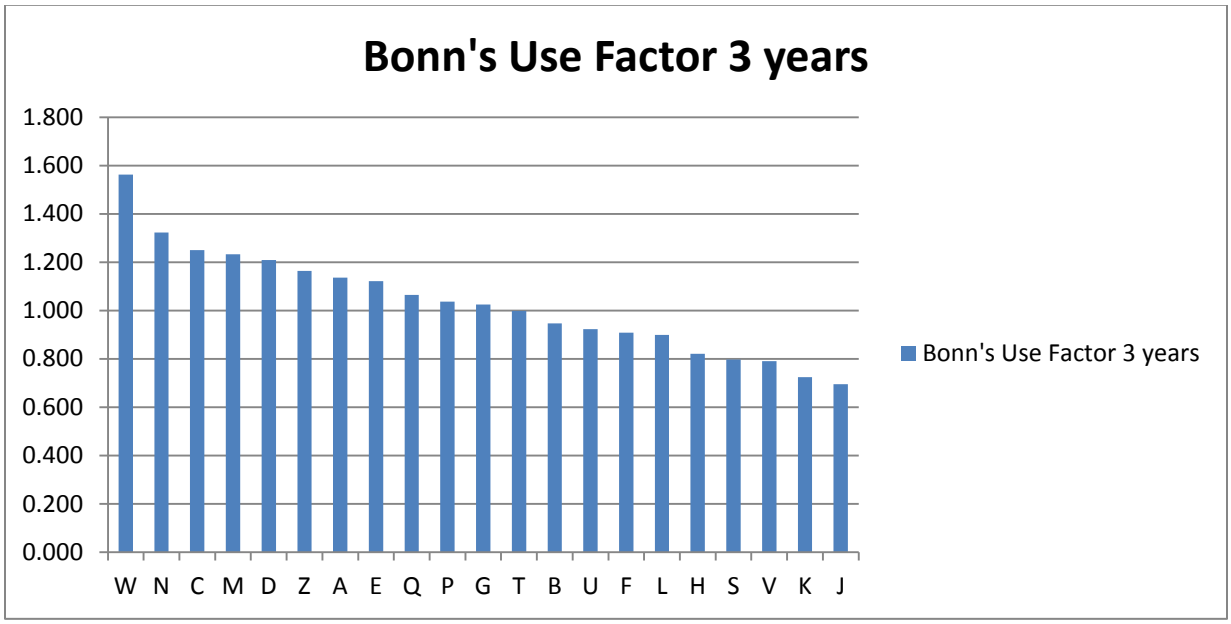


Fig. 4 Bonn's Use Factor by Call Number Range, 3 year Average, Sorted
Source: Turnover Rate Spreadsheet.

According to this type of analysis, well-used parts of the collection have been W (Medicine), N (Fine Arts), C (Auxiliary Sciences of History), M (Music), D (World History, History of Europe), Z (Library

Science), A (Generalities), E (History of the Americas), Q (Science) and P (Language and Literature) (see table 6 and fig.4). Our under used collections include S (Agriculture), V (Naval Science), K (Law) and J (Political Science). These collections may need to be reduced in size to remove the excess material which is not receiving use.

Circulation Count

A simple count of total circulations by call number range provides a very different picture when not combined with a collection size factor (see table 7). In 2013-14, our highest circulation was in the P (Language and Literature) call number range, but the turnover rate and use factor calculations for P indicate that this circulation is middle of the road compared to the size of the collection. We recently added circulation counts to our formula for departmental allocation, but we need to consider if this provides us with the most valid information.

Table 7
Circulation Counts by Call Number Range 2013-14

Call Number Range	Circ 2013-2014
P	7667
H	5595
Q	2738
D	2101
W	2035
E	1780
B	1703
F	1571
N	1293
L	1221
G	1213
T	1022
J	665
S	408
K	366
Z	320
M	194
C	178
U	136
V	15
A	9

Source: Turnover Rate spreadsheet.

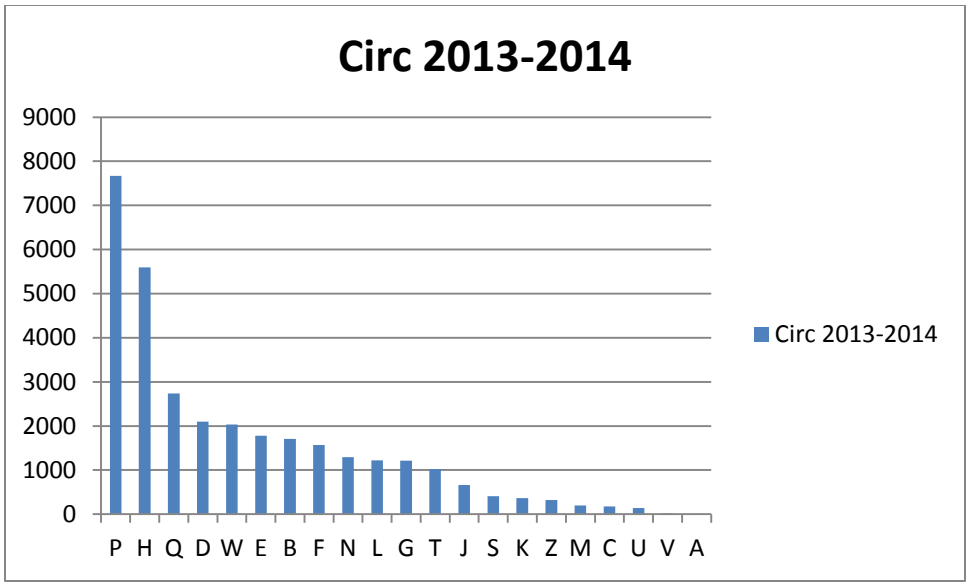


Fig. 4 Circulation Count by Call Number Range 2013-14
Source: Turnover Rate spreadsheet.

Further Analysis

There are other types of analysis I would like to test next year, given more time and the as yet unknown capabilities of the new Blue Cloud Analytics product. These include:

1. Average age of the collection, by call number area (Hibner 87). Currently, this is difficult to gather with any kind of accuracy, due to the number of items in the UFV Library catalogue with missing or strange publication dates. It may require some type of clean-up project to remediate this.
2. The number of circulations an item has during its first year on the shelf (Hibner 85). I did not find an existing SIRSI report that would produce this.
3. Average transactions per item. "This average represents the total number of circulations within a given subject area, divided by the number of circulated monographs in that subject area. For example, if 100 books in a given subject area circulated, and those same 100 books tallied a total of 600 circulations, the average circulation per title would be 6.0." (Knieval 42).
4. A ratio of the number of circulations over the number of items in the collection which circulated (Hipner 92). For example, 2000 circulations divided by 1000 books that circulated gives a ratio of 2.
5. Anticipated collection growth rates by subject area based on current acquisitions. Use to project space requirements.
6. Comparison of collection size to FTE counts by LC call number area.
7. Circulation Counts by Fund Code. This combination of factors is not available in existing SIRSI reports.

Purposes of Collection Assessment

Collection Development Policies

In order to assess a collection, it is important to have defined what the expectations for that collection are. Is it intended to be a comprehensive, research collection supporting graduate and faculty research? What are the important areas of concentration? Collection development policies guide libraries in deciding what to collect and what not to collect, with specific details on formats, languages, subject areas or scope, collection levels, key resources, selection responsibilities, institutional and library priorities, selection criteria, weeding criteria and more. The policies are used in creating approval plan profiles, in evaluating donations, in making weeding decisions, in deciding on resources to add or cancel, in acquisitions decisions, and in evaluating how well the collection is meeting the academic goals of the institution. The UFV Library has a policy, last reviewed in 2005, which provides a good foundation to guide our collection decisions. However, there are components which are lacking, such as guidelines for electronic resources, or detailed collection guidelines for different program areas.

Wisneski recommends that collection development and subject liaison librarians write subject collection development policies for their departments (145). He advises having two different versions of the policy, one written for the general public and one written for the subject librarians. The version for the public should be 3 to 4 pages in length and include "purpose; description of materials collected, collected selectively, and excluded; collection development department policy and procedures (e.g., ordering requests, policies regarding the book repository, time frames to order materials); and levels of collections" (146). The version for librarians would include details on the faculty and their research interests, curriculum, degrees offered, subject areas, publishers, formats collected and more (147).

Hibner also advises that libraries create collection objectives for specific parts of the collection, either by subject or by format (79-85).

Preparing subject specific collection policies could be of great benefit at UFV. It would cause librarians to closely examine the curriculum and courses for their departments and to consider the subject areas these fall into (by LC call number or Conspectus category), the academic level of the material required, the comprehensiveness of the collection needed, the obsolescence rate of the material (Snyder 120), formats of importance (such as audio-visual material, maps, data collections), key resources (such as key databases), weeding policies and more.

As part of this process, we could consider using some (simple) form of Conspectus method, which categorizes subjects into broader disciplines and then more detailed subtopics. These topics are rated on a scale of 0 to 5 as follows:

Table 8
Conspectus Collecting Levels

0 Out of Scope
1 Minimal Information Level
2 Basic Information Level

3 Study or Institutional Support Level (This can be refined to Basic, Intermediate or Advanced Study)
4 Research Level
5 Comprehensive Level

Source: Johnson 307-311; International Federation of Libraries 4.

For example, the collection level assigned to Music may be 2, while the collection level assigned to History of Canada may be 4.

Discussions would need to be held with all liaison librarians to determine the viability of creating subject collection policies given our diverse workloads, the template and format to follow, the granularity of subject breakdowns, and the understanding of collecting levels. Details on how to prepare a collection development policy using Conspectus are available from IFLA, and many examples are available in books and websites.

New Program Reviews

Collection analysis is a key component of library reviews for new programs and courses. At UFV, the librarians have been involved in different ways for several years, first as members of the Program Advisory Committee and lately as part of the e-mail consultation process for new courses. Librarians are also asked to prepare detailed reports for accreditation reviews.

An interesting article on collection assessment and new academic programs was written by Bobal, Mellinger and Avery in 2008, and makes statements that seem familiar to me. "Believing that "everything is online", faculty and administrators often disregard the effect new programs will have on campus libraries tasked to support them." (289). In addition, feedback on program reviews "was expected to be positive" (291). This seems to be the situation at UFV as well, with a negative and dismissive reception being given to library feedback which questions our ability to support a program. The Oregon library has made a number of improvements and changes to their processes, and while some of these steps also occur at UFV, there are a number of new ideas as well.

1. The library only responds now to "category 1" proposals for new programs, and doesn't respond to program changes or new courses.
2. Templates and guidelines have been created, and previous reviews are available to view.
3. Information on peer institution holdings is included. (Peer institutions may be named in the program proposal itself.)
4. They subscribe to Worldcat's Collection Analysis tool (now called Collection Evaluation tool) which allows them to compare their holdings to selected OCLC member libraries by subject area.
5. They determine rates of publication in a field, and see if they are keeping pace with collecting.
6. They analyze if they have the core journals in a field, and use *Journal Citation Reports* to identify them.
7. They generate local custom journal reports from Thomson Reuters, which analyze where faculty are publishing and where they are being cited
8. They create holdings lists from their ILS of books, videos, reference titles, journals
9. They analyze gaps in holdings by looking at ILL requests
10. They analyze which online databases they have, as well as streaming video, data sets, etc.

11. They compile the information into a report, and the librarian "provides a cost estimate for collection-related expenses necessary to support the proposed program at the appropriate level." (295).
12. Library support is rated as "adequate", "marginally adequate" or "inadequate".

In reality, they have only received the requested funding for 2 out of 13 proposals with cost estimates. They still feel there are other benefits to this process, such as opportunities for dialogue on information literacy, the Institutional Repository, open access, for librarians to learn more about their own collections, and for raising institutional awareness of the library (296-298).

In another article by Kennedy, the library gathered information on the projected enrollment over the next five years in the proposed program, the number of faculty who would be teaching, and proposed course descriptions. In their report, they included the number of volumes in relevant call number ranges, the number of relevant journal subscriptions and details on available databases. They also prepared a five year plan for future expenditures and budget increases that would be required to support the program, including the cost of additional databases (18-20).

Ideas for UFV:

1. Review our templates and make them more useful and evaluative, rather than generic and descriptive. Ask faculty what they would like to see.
2. Gather more details on projected enrollments, faculty numbers.
3. Incorporate more peer comparisons into all our program reviews. Consider getting a subscription to the OCLC tool if we are going to do this often.
4. Assign a rating system for our current level of library support (adequate, minimally adequate, inadequate)
5. Define the desired collection level and report the level we are currently at.
6. Always include a review of our holdings of key journals, as defined by Google Metrics, Eigenfactor, SCImpact or other available bibliometric tools.
7. Calculate a dollar amount needed to bring the collection up to required level, including new journal subscriptions and new databases needed.
8. Include a five year plan for library expenditures to support the program.

Weeding

Libraries everywhere are feeling the pressure to reduce their physical collections. One recent book stated it as follows, "In the 20 years since the World Wide Web was introduced, we have seen a true revolution in the way that scholars access information. As a result of this revolution, print collections have become less relevant and it has become time to reduce the size." (Tyckosan 60). Libraries are running out of space for their books and journal collections, print circulation is dropping, and demands for spaces such as group study rooms, maker-spaces, or computer labs are growing.

Weeding or deselection of materials from the library collection frequently uses techniques of collection assessment to determine which items to discard, transfer to storage or transfer to a regional repository. I am particularly interested in this topic, as the circulating collection in the Abbotsford stacks is almost

full to capacity, and we do not have off-site storage options available. We would also like to repurpose space on the main floor of the library to incorporate more student study and meeting areas. We have undergone a number of weeding projects over the years on all campuses, utilizing a variety of methods and parameters. Most recently, I completed a project to withdraw print journals that were duplicated in JSTOR, available in a stable print archive, and which had minimal image content. Also in the past year, the reference collection has been reduced substantially in size, and the government publications collection is being evaluated. A gradual process to replace the obsolete VHS format with streaming video or DVD alternatives is also taking place. These types of projects are common in academic libraries.

The University of Wisconsin-Stevens Point is engaged in a four-year Collection Assessment Project that "not only involves weeding but will provide the opportunity to improve our core collection, address curricula changes and areas of academic program growth, augment unique subject niches, and identify related resource." (Reich 207). This team project involves all the subject librarians working in partnership with the faculty liaisons. Dividing the collection by Library of Congress classification, they are examining the collection size and projected growth based on departmental allocations, subject expenditures and future needs. They are examining circulation and in-house use statistics. They are assessing how well the collection meets the goals of the collection development policy and identified collection levels. The library subscribes to a number of utilities, including *Books in Print*, the *Bowker Book Analysis System* (BBAS), and *Resources for College Libraries*. The BBAS system does an automated comparison of their holdings against RCL, and they are using this as an authoritative list to help with both selection and deselection decisions. Reich provides details on the retention guidelines they developed, retaining items with: 5 or more transactions; circulation after the year 2000; added to the collection after the year 2000; included in RCL; or having local or historical interest (209). They post a list of all potential discards for 3 months, and will re-evaluate items upon faculty request.

University of Arizona Libraries (UA) is in a similar position to UFV. They have almost reached capacity for housing their physical collection, have limited options for off-site storage, and have pressures to repurpose space (Martin, Kamada, and Feeney 226). Taking a holistic approach, their team developed an overall plan to manage the physical collection size, including reducing acquisition of physical materials, replacing physical items with digital formats, and participating in a regional repository. Reduced acquisition of physical materials was through the following: migration of journals from print to online, adding more streaming video and ebooks, using PDA for purchasing the majority of their English language monographs, and adopting "a very narrow approval plan." (230). After their first year of the PDA project, the print book ordering was down ten-fold.

In addition to slowing down their rate of acquisition, UA is starting a weeding project. Parameters for deselection include:

- Duplication of content, such as multiple copies, branch copies, or multiple editions.
- Availability of journals online
- Books that were catalogued more than 10 years ago, with zero circulations and zero in-house uses

- Books that have not circulated in the past 10 years (last checkout date). They need to vary this according to the discipline, due to different obsolescence rates.
- Importance of material to the curriculum and fit with collection development policy
- Regional importance
- Completeness. They may withdraw journals with only partial holdings, but may keep zero use items if they are a volume in a series or set.
- Availability of copies within the local region. They tried using the Worldcat Collection Analysis tool, but in the end it was too laborious of a process. (231-235).

As is very typical of this type of project, the library is proceeding slowly and cautiously, with only duplicate copies and print journals being withdrawn to this point.

At Rollins College, the library recently did a pilot project with Sustainable Collections Services (SCS) for weeding sections of their collection (Snyder 17-31). This article was of interest to me as an upcoming COPPUL Print Sharing program may be using the same software. SCS terms itself a "deselection decision-support tool" (Lugg). The automated process combines a number of decision points, such as number of circulations, number of years held by the library, date of last circulation, number of copies held by other OCLC members, and number of copies in a local repository. There are added features that differentiate SCS from OCLC's Collection Evaluation tool, such as information on the presence of titles in Hathitrust, and inclusion in *Resources for College Libraries*. Libraries may set their local parameters for identifying withdrawal candidates. The Rollins College library used the criteria of no circulations since 1996, more than 100 holdings in OCLC, held in a state repository, not one of the last 10 copies in the U.S, and not about Florida. Titles that were identified for weeding were manually flagged, but left on the shelf. Faculty were notified and encouraged to reviews titles, with two months allowed for responses. Although weeding is often a controversial undertaking at libraries, their faculty felt that the criteria were very reasonable. The librarians concluded that the project was a success, and that it was beneficial to use multiple decision points, rather than just circulation statistics or date of publication. They thought the threshold of 100 copies in other OCLC libraries was too conservative, and would lower this next time. The SCS software was time effective, and they would contract the company again for future weeding projects.

Chris Rippel, of the Kansas Library System, has created a Collection Manager Tool in Excel. In his "Weeding Made Easy" webinar, Chris demonstrated how to use collection size, circulation by collection and number of titles added to each collection to give a measurement of what is popular in your library collection (Rippel). The spreadsheet is freely available (http://db.tt/iUAhAuhj) and comes prepopulated with formulas. The analysis indicates what areas to weed, which areas to develop, where to spend more money, and even estimates the number of copies to buy in the next year. It is possible to analyze the collection by item type, such as DVD or Book, or by call number ranges.

I did a test of this system using item type collection size and circulation by item type (see table 9). In order to even out the differences in loan periods between item types, I only used the initial charge count, rather than including renewals. I also limited the results to home locations that circulate, such as

STACKS, VIDEO and CURRICULUM. I did not include item types that are non-circulating, such as REF-BOOK, STREAMING-VIDEO or CD-REF.

The analysis shows that our most popular collections are BOOKS, DVD's and CURRIC-BK, while the least used collection compared to collection size is PERIODICALS. The automated recommendation is to purchase more books, but to weed periodicals by 39.5%. Other item types which could be weeded based on lack of use are government publications, 16mm films, audio tapes, easy reading tapes, language tapes, and slide sets. The item type with the highest turnover rate (circulation divided by collection size) is KIT.

Table 9
Collection Manager Analysis by Item Type

Template	Type only in white columns 1, 2, and 3;			Calculations are in columns 4, 5, and 6;			Recommendations are given in columns 7, 8, 9, and 10.			
Col. 0	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10
	Collection size (Now)	Circulation 2013/14	Added to collection 2013/14	Percent of total collection	Percent of total circulation	Percent of total added	**Circulation** percent (Col. 5) - **Collection** percent (Col. 4) Green = popular collection Red = weed this %	**Circulation** percent (Col. 5) - **Additions** percent (Col. 6) Green = buy more Red = buy fewer	**Turnover rate** = (Col. 2 / Col. 1) Green = buy Red = weed	Recommende # of titles to buy during coming yea
DVD	3,766	3,108	451	1.20%	9.22%	6.55%	8.02%	2.67%	0.8	635
CURRIC-DVD	100	42	29	0.03%	0.12%	0.42%	0.09%	-0.30%	0.4	9
KIT	202	295	40	0.06%	0.88%	0.58%	0.81%	0.29%	1.5	60
VIDEOTAPE	6,723	930	-6	2.14%	2.76%	-0.09%	0.62%	2.85%	0.1	190
BOOK	159,674	24,939	3,671	50.78%	73.99%	53.33%	23.20%	20.66%	0.2	5093
CURRIC-BK	2,703	1,833	339	0.86%	5.44%	4.92%	4.58%	0.51%	0.7	374
EASY-BOOK	1,724	770	23	0.55%	2.28%	0.33%	1.74%	1.95%	0.4	157
GOV-PUB	636	1	-1	0.20%	0.00%	-0.01%	-0.20%	0.02%	0.0	0
PERIODICAL	137,294	1,400	2,288	43.66%	4.15%	33.24%	-39.51%	-29.08%	0.0	286
16MM-FILM	40		1	0.01%	0.00%	0.01%	-0.01%	-0.01%	0.0	0
AUDIO-TAPE	262	22	-1	0.08%	0.07%	-0.01%	-0.02%	0.08%	0.1	4
CURRIC-VID	21		1	0.01%	0.00%	0.01%	-0.01%	-0.01%	0.0	0
EASY-TAPE	3			0.00%	0.00%	0.00%	0.00%	0.00%	0.0	0
LANGTAPE3D	114	2		0.04%	0.01%	0.00%	-0.03%	0.01%	0.0	0
SLIDE-SET	27			0.01%	0.00%	0.00%	-0.01%	0.00%	0.0	0
STD-ESSAY	18	2		0.01%	0.01%	0.00%	0.00%	0.01%	0.1	0
VIDEOGUIDE	636	186	27	0.20%	0.55%	0.39%	0.35%	0.16%	0.3	38
CD-CIRC	424	152	8	0.13%	0.45%	0.12%	0.32%	0.33%	0.4	31
CURRIC-CD	66	26	18	0.02%	0.08%	0.26%	0.06%	-0.18%	0.4	5
CURRIC-PO	1		-4	0.00%	0.00%	-0.06%	0.00%	0.06%	0.0	0
TOTAL	314,434	33,708	6,884	100.00%	100.00%	100.00%			0.1	6884

Source: Collection Manager by Item Type spreadsheet.

I also created an analysis based on call number ranges (see table 10). I was able to obtain current collection size counts and transaction statistics for "charge item" by call number for 2013 to 2014 using SIRSI Workflows. I was also able to combine date catalogued and call number range in an "All Catalog Measures" report in SIRSI's Director's Station, although there was no data available for catalogued items in 2013/14. Therefore I used data for items catalogued in 2012/13.

Table 10
Collection Manager Analysis by Call Number

Template	Type only in white columns 1, 2, and 3;			Calculations are in columns 4, 5, and 6;			Recommendations are given in columns 7, 8, 9, and 10.			
Col. 0	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10
LC Call Number Range	Collection size (Now)	Circulation	Added to collection in 2012/13	Percent of total collection	Percent of total circulation	Percent of total added	**Circulation** percent (Col. 5) - **Collection** percent (Col. 4) Green = popular collection Red = weed this %	**Circulation** percent (Col. 5) - **Additions** percent (Col. 6) Green = buy more Red = buy fewer	**Turnover rate** = (Col. 2 / Col. 1) Green = buy Red = weed	Recommended # of titles to buy during coming year
A	89	9	3	0.05%	0.03%	0.06%	-0.03%	-0.03%	0.1	1
B	10187	1703	338	6.22%	5.28%	6.77%	-0.93%	-1.49%	0.2	264
C	745	178	15	0.45%	0.55%	0.30%	0.10%	0.25%	0.2	28
D	9854	2101	199	6.01%	6.52%	3.99%	0.51%	2.53%	0.2	325
E	6661	1780	138	4.06%	5.52%	2.77%	1.46%	2.76%	0.3	276
F	8359	1571	138	5.10%	4.87%	2.77%	-0.23%	2.11%	0.2	243
G	5823	1213	198	3.55%	3.76%	3.97%	0.21%	-0.21%	0.2	188
H	38274	5595	972	23.35%	17.36%	19.48%	-5.99%	-2.12%	0.1	866
J	4744	665	158	2.89%	2.06%	3.17%	-0.83%	-1.10%	0.1	103
K	3006	366	99	1.83%	1.14%	1.98%	-0.70%	-0.85%	0.1	57
L	7218	1221	405	4.40%	3.79%	8.12%	-0.62%	-4.33%	0.2	189
M	724	194	58	0.44%	0.60%	1.16%	0.16%	-0.56%	0.3	30
N	5824	1293	247	3.55%	4.01%	4.95%	0.46%	-0.94%	0.2	200
P	33113	7667	882	20.20%	23.79%	17.68%	3.59%	6.11%	0.2	1187
Q	12185	2738	511	7.43%	8.50%	10.24%	1.06%	-1.75%	0.2	424
S	2590	408	37	1.58%	1.27%	0.74%	-0.31%	0.52%	0.2	63
T	4752	1022	218	2.90%	3.17%	4.37%	0.27%	-1.20%	0.2	158
U	592	136	16	0.36%	0.42%	0.32%	0.06%	0.10%	0.2	21
V	86	15	24	0.05%	0.05%	0.48%	-0.01%	-0.43%	0.2	2
W	7651	2035	236	4.67%	6.31%	4.73%	1.65%	1.58%	0.3	315
Z	1424	320	97	0.87%	0.99%	1.94%	0.12%	-0.95%	0.2	50
TOTAL	163,901	32,230	4,989	100.00%	100.00%	100.00%			0.2	4989

Created by Chris Rippel, Central Kansas Library System, Great Bend, Kansas

Source: Collection Manager by LC Call Numbers spreadsheet.

The most popular areas of the collection based on this method are call number ranges P (Language and Literature), W (Medicine) and E (History of the Americas). The areas of the collection most in need of weeding based on usage are H (Social Sciences), B (Philosophy, Psychology, Religion), J (Political Science), L (Education) and K (Law) (see table 11).

Table 11
Popular Collections

LC Call Number Range	Circulation percent (Col. 5) - Collection percent (Col. 4) Green = popular collection Red = weed this %
P	3.59%
W	1.65%
E	1.46%
Q	1.06%
D	0.51%
N	0.46%
T	0.27%
G	0.21%
M	0.16%
Z	0.12%
C	0.10%
U	0.06%

V	-0.01%
A	-0.03%
F	-0.23%
S	-0.31%
L	-0.62%
K	-0.70%
J	-0.83%
B	-0.93%
H	-5.99%

Source: Collection Manager by LC Call Numbers spreadsheet.

The one area of the collection with a "buy more" recommendation is P (Language and Literature) (see Table 10, Column 8).

This spreadsheet was based on a single year's worth of circulation data. To be more accurate, the analysis could be redone with 2 or 3 years of circulation information and 2 or 3 years of items catalogued numbers.

The final weeding methodology I researched was the CREW method. The CREW weeding manual was developed by the Texas State Library and Archives Commission for public libraries, but has many useful pointers applicable to all types of libraries. They consider weeding as part of the life cycle of selection, acquisition, cataloguing, and circulation and that the process needs to be incorporated into the regular workflow of the library. (Larson 28). One fun acronym they use is MUSTIE, standing for Misleading, Ugly (worn or damaged), Superseded, Trivial, Irrelevant and Elsewhere (57).

From my readings on weeding, there are a number of steps we could be taking at the UFV Library.

1. Develop a more standardized approach to weeding, rather than the ad hoc methods being used by different librarians at different times.
2. Define our thresholds for weeding candidates, including age of item, date added to the collection, date of last circulation, number of circulations, number of copies or editions, physical condition, obsolescence of information, local relevance, fit with curricula and collection policy
3. Document the criteria and make it publicly available. Revise this section of the Collection Development Policy.
4. Create a plan for systematically weeding all areas of the stacks
5. Engage faculty and allow 2 to 4 months for feedback
6. Make lists of books to be weeded publicly available
7. Get into the stacks and physically check the collection. This used to be done at least annually during the shelf-reading process, but has largely been dropped.
8. Reinforce the need for circulation staff to pull any books that are MUSTIE.
9. Consider availability of items in the region. This may be analyzed for us if the COPPUL Shared Print project goes ahead, using SCS software. Consider subscribing to a tool like OCLC's Collection Evaluation.

10. Consider checking items in standardized lists, such as *Resources for College Libraries*.
11. Use tools such as the Collection Manager or other benchmarks to identify areas of the collection which are underutilized.
12. Analyze projected collection growth based on number of volumes being added by departments
13. Discuss an overall print management strategy, such as migrating spending from print books to e-books
14. Continue to weed the journal collection based on stable online or print repository availability.

Conclusion

Librarians have developed and utilized many different approaches in analyzing a library's physical collection. All have caveats and require a substantial investment of time and resources. Currently we are using a number of techniques at the UFV Library to inform our purchasing and weeding decisions, including analyzing interlibrary loan reports, running ILS reports of publication age, circulation counts, and date of last circulation, doing shelf checks for wear and tear, preparing program reviews and gathering user feedback in the form of suggestions and the LibQual+ Survey. However, there are many other types of analysis we could add on a project or regular basis, such as using the Collection Manager spreadsheet to analyze popular and underused components of the collection, or analyzing the turnover rates and use factors for the collection by item type and subject area. This will help guide our priorities for scheduling a much needed weeding project for the collection, and for determining areas of the collection which are in demand. These calculations can be done with our current resources.

In an ideal world future projects could involve a mapping of the UFV course subject areas to our holdings, a retrospective analysis of interlibrary loan requests, preparation of subject specific collection development policies, assignment of collecting levels to our program areas, solidifying and documenting our weeding processes and procedures, conducting a major weeding of the circulating collection, revising our new program assessment templates and processes, and including both peer comparisons and list checking in our systems.

During my research, I was struck by a number of roadblocks that are hampering our ability to perform collection analysis as described by other libraries.

1. We have a limited number of librarians, all with many other responsibilities other than liaison work. The Collections Librarian portfolio of duties is large and includes many other areas of responsibility, such as reference, teaching, and management of electronic resources. Many libraries conducting systematic collection assessment have larger teams of librarians to draw from.
2. We have a 14 to 15 month backlog of cataloguing, so there is no circulation information available for many items ordered in the 2013/14 Fiscal Cycle. Items may also not have call numbers assigned.
3. Our E-Book collections have historically been loaded with a call number of "E-Book on the Internet", rather than using an LC call number. This makes it very, very difficult to include our e-book holdings in an analysis of our holdings in subject areas. It is too cumbersome to pull these titles out using subject headings. As we move forward with more and more books being

acquired in electronic format, this problem should be addressed. Should we consider a project to reload all these catalogue records, including call numbers? Should we include just our purchasing collections, or count our leased collections as well? Here is a sample record from Kwantlen Polytechnic University, which demonstrates how our records could be handled.

Kwantlen Polytechnic University Library Record:

Interdisciplinary frameworks for schools: best professional practices for serving the needs of all students

Author
Berninger, Virginia Wise.
Call number
LC4019 .B42 2015EB
Publisher
online resource
Edition
Pub date
2015
Holdings
1 copy available at Internet resources in Online

4. Running reports in SIRSI's Director's Station is problematic. The system frequently crashes, or gets hung up for several minutes trying to bring back results. We only have a single log in.
5. We don't have the ability to run ILS reports that combine fund codes with circulation statistics, meaning this type of analysis would have to be done in a slow, manual process.
6. We do not load serials records for e-journals into SIRSI, as keeping up with this would be difficult for our very over stretched cataloguing department. Therefore, it is difficult to generate reports of our serials holdings by subject. There are subject headings in the UFV Journals List online, but titles are often missed. This is also the situation at Kwantlen and Vancouver Island University, with their electronic journals not being included in their catalogue. We also don't assign call numbers to our print serial collection.
7. We don't subscribe to tools such as *Journal Citation Reports*, *Resources for College Libraries*, *Bowker Book Analysis System*, *Intota Assessment*, *EBSCO Usage Consolidation*, or *Worldcat Collection Evaluation*. Although not without their own problems and limitations, these tools are automating some collection assessment processes for other libraries.
8. We don't have a detailed Collection Assessment Policy, broken down by program area. This would require a great deal of work, first to create our template, and secondly by all the liaison librarians who would be responsible for preparing and maintaining this for their areas.
9. We have never assigned Conspectus levels or other level of collecting for our program areas.

Of the items above, I feel that reloading our e-book catalogue records to include call numbers is the most pressing issue to address.

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Collection Manager by LC Call Numbers spreadsheet

Section 2: Journal Collections

Trends in Journal Collecting

Academic journals are one of the keystones of an academic library collection. The UFV Library spent 62% of the 2013/14 collection budget on serials (journals, magazines and newspapers), and this pattern will likely continue in years to come.

The importance of journal content to faculty and students is reinforced in surveys. In the Ithaka Faculty Survey, "Virtually all respondents indicated that peer reviewed journals and journal articles are very important in their research…" (Housewright et al. 14). Faculty also widely assign scholarly articles as readings, "About two-thirds of respondents reported assigning scholarly articles in their lower division courses, while almost 9 out of 10 reported doing so in upper level courses." (19).

Many academic libraries across Canada and the U.S. participate in the LibQUAL+® survey, which seeks to find the minimum expectation, perceived level and desired level of service on a number of parameters. Question IC-8, "the print and/or electronic journal collections I require for my work" is widely problematic at universities, with faculty dissatisfaction with journal collections rampant. A 2013 study of 21 ARL Libraries who conducted the LibQUAL+® survey between 2006 and 2009 showed that "faculty across ARL libraries remain dissatisfied with journal collections. None of the libraries achieved a positive adequacy gap, in which the perceived level of service exceeded minimum expectations." (Rutner 115). This gap has not improved over time (p. 120). As reported by Rutner, a previous study in 2006 "… concluded that there was no correlation between expenditures and faculty desired scored for journal collections." (117).

Perhaps in response to this demand, library directors surveyed reported their second highest priority for spending any budget increase would be on online or electronic journals (first priority was for staffing.) (Long and Schonfeld 28). The second highest priority library function was licensing electronic journals, particularly at the masters and doctoral levels (39).

Unlike the more gradual transition to e-books, for journals "the shift from print to electronic collecting has been, from a budget allocation perspective, nearly completed." (7). According to library directors, the very lowest priority spending area for new budget increases was print journals (28), the percentage of the budget directed towards print journals was much lower than for online/digital journals and databases (43,) and there was a predicted decline in print journal spending looking forward to 2018, with an attendant climb in online spending predicted (44).

Circulation of print journals is also languishing, with issues sitting unused on the shelf, while the online equivalents experience heavy use. The brief list below illustrates the usage for some of UFV's journals in 2013-2014 (see table1).

Table 1
Comparative Print vs Online Use of UFV Journals 2013-14

Journal Title	Print Circulation	F/T Views Online

American Indian Culture and Research Journal	7	405
Ethnohistory	0	222
Ethnology	0	61
Feminist Studies	0	131
Herizons	0	82
Journal of Advertising Research	0	574
Latin American Research Review	0	78
Signs - Journal of Women in Culture & Society	0	102
Social Problems	1	149
Social Research	2	351

The advantages of online journal articles are numerous: remote, desktop access with (hopefully) only a few clicks, unlimited simultaneous use, a convenient page length for both reading online or printing, the acceptance of PDF formats, relative ease of saving, sharing and downloading articles, and the lack of physical processing, shelving and handling required. As stated in the Rutner study, "Overwhelming the flexibility and access to electronic journals was highly desired and praised, particularly when PDFs are available." (124).

Library directors are comfortable with replacing print subscriptions with electronic only subscriptions, and also with eliminating print journal collections where suitable alternatives exist online. "Majorities of directors at doctoral and master's institutions (and 48% of directors at baccalaureate institutions) believe that print journal collections will be unnecessary in five years." (Long and Schonfeld 48). Interestingly, faculty are not as comfortable with this trend, with only about 40% agreeing to this (Housewright et al. 28).

In reality, libraries for several years have been downsizing print journal collections that have stable, equivalent online alternatives, such as being included in a safe archive, as part of a subscribed collection like JSTOR, or part of a regional shared collection.

What does this mean for collection decisions? It seems clear that the majority share of an acquisitions budget should be delegated to electronic journals, in the form of individual subscriptions or aggregated collections (such as *Sage Journals Online*.) Print subscriptions should be transferred to online formats if available and viable. The budget also needs to be spent as efficiently as possible. Collection coverage should be analyzed to identify subject gaps, overlaps and inadequacies. Do our holdings match the curricular demands at our institution? Are there upcoming areas of need that are under-represented? Cost per use information should be gathered to analyze high demand areas, low or no use titles, and to justify expenditures.

Assessment of Journals

Given the expenditure level on journals, it very important to try to analyze and assess the library's journal holdings. I have investigated a number of different possible assessment techniques, as time would permit.

Circulation

Analyzing use of print journal collections is difficult for many libraries, as they do not circulate their journals and have to rely on measures such as in-library use counts. The UFV Library does circulate journals, and in previous decades our circulation statistics for journals were robust. In past years when the Canadian dollar declined sharply against the U.S. dollar, the UFV Library calculated cost per circulation figures to create short lists of possible titles to cancel. Recently, the use of print journals has greatly declined and is only a small piece of our use picture. SIRSI's Director's Station can be used to generate a list of top circulated journals. It is interesting to note that items with highest use tend to be magazine types, with shorter articles on current topics and more visual content (see table 2). Titles like *The Economist, Macleans and the New Yorker* can almost be thought of as traffic drivers, enticing users into the library to browse the latest issues.

Table 2
Top Circulating Periodicals 2012/13.

Checkouts and Renewals	Title
127	ECONOMIST
59	CONSUMER REPORTS
38	MACLEANS
31	NEW YORKER
31	SCIENCE WEEKLY
30	BORDER CROSSINGS WINNIPEG MAN
29	HISTORY TODAY
28	ARTNEWS
26	NEW YORK REVIEW OF BOOKS
19	NATURE LONDON ENGLAND
19	LIBRARY JOURNAL
19	SIGHT AND SOUND
19	TODAYS PARENT
17	CHATELAINE
17	FORTUNE
16	FOREIGN AFFAIRS COUNCIL ON FOREIGN RELATIONS
16	CELL
16	PRINT NEW HAVEN CONN
16	NEW SCIENTIST 001971
15	BUSINESS WEEK
15	HEALTH SAN FRANCISCO CALIF
15	JOURNAL OF MENNONITE STUDIES

This circulation count report was used in 2014 to analyze possible journal titles to cancel completely, migrate to online, or drop in print format.

Gathering usage statistics for our individual online subscriptions is time consuming given the variety of publishers involved and methods involved. It requires username and password access to administrative portals which may or may not gather COUNTER statistics. However, this information can be very useful in making cancellation decisions. I would like to implement a more organized system for recording our credentials, annually gathering these statistics and recording the information in a centralized location. This work could be done by our Serials Technician.

Interlibrary Loan

Interlibrary loan data is sometimes used to analyze demand, and the UFV Library has in the past created reports of interlibrary loan requests by journal title. The process was time consuming and few clear winners emerged, so the practice was largely dropped. With the reporting capabilities of our *Relais* interlibrary loan software, it may be possible to automate the process and take another look at the current trends. Libraries also analyze which of their own journals are in demand by external users (Blecic "Methods" 298), although the UFV Library likely has very little which would be unique in our region.

Surveys and Citation Analysis

Other assessment techniques include surveys and citation analysis. Librarians may survey faculty to ask them which journals they read, which journals they cite in their research, which journals they are cited in and which journals they are published in (294-295). The results can be analyzed to create a list of titles which faculty value, and then the list compared to library holdings. Librarians also take samplings of faculty research output and analyze the citations included in the works cited. There are a few difficulties with these methods for the UFV Library, in that they are time consuming and rely on a critical mass of faculty publishing. Also, there may not be a strong correlation between which journals faculty are citing and actual journal use statistics (294-95), or the journals may not be at the appropriate academic level for a primarily undergraduate student audience.

Top Lists

Another assessment technique is to analyze top lists of titles to see if a library has the most important journals in a subject area. Lists may be generated from resources such as *Magazine for Libraries*, which publishes evaluative descriptions of journals by subject area, from *Journal Citation Reports,* or from various other bibliometric sites such as Eigenfactor, Google Scholar Journal Metrics, and SCImago (see Report Section: Bibliometrics for a broader discussion of these tools.) These lists are certainly beneficial, and have been used by the UFV Library in preparing program reviews and in cancellation or subscription decisions. Top lists may also be derived from the surveys or citation analysis mentioned above, or from database use statistics. However, all these lists are generated using different methods and parameters and all will differ from each other, making the compilation of the perfect list difficult to generate (301). Also, finding ratings for journals in the arts and humanities is sometimes difficult, as many sites concentrate on science and technology journals.

EBSCOnet Reports

The majority of UFV's direct subscriptions are ordered from a serials vendor, EBSCO, and their EBSCOnet interface offers some interesting options for analysis. Libraries can get a snapshot of their distribution of print, print + online, or online only orders (see fig. 1).

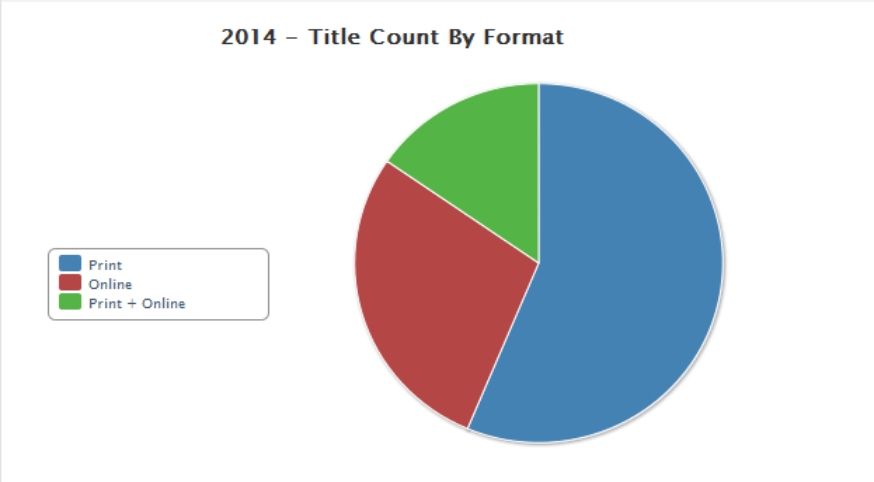

Fig. 1 Title Count by Format. Screen capture from EBSCOnet Analysis Reports.

EBSCOnet can also generate graphs for title counts and for costs by subject, fund code, and publisher (see fig. 2). However the output is not very usable for a number of reasons; the percentage of our journal holdings represented by direct orders is now very small, fund codes are too numerous and complex, and too many items are grouped into categories such as "Other", or "Subject Not Specified."

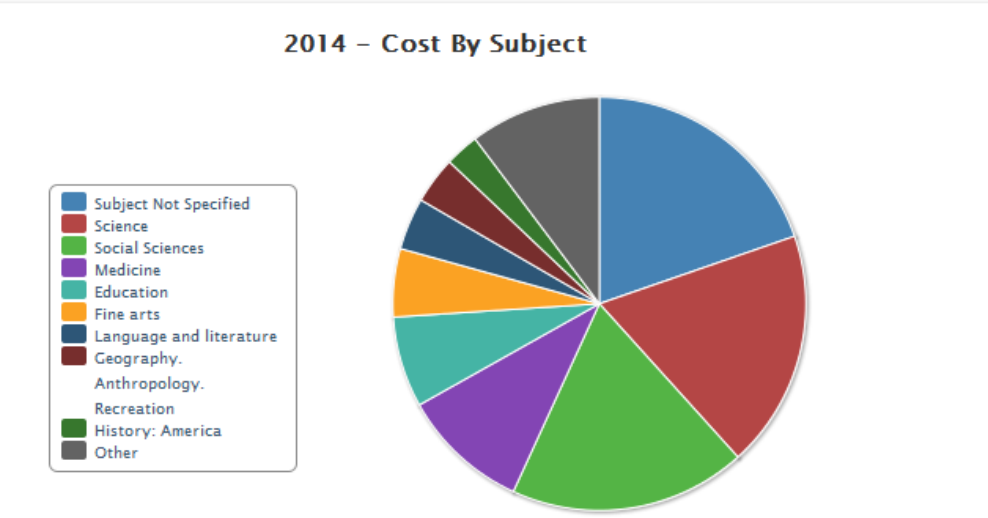

Fig. 2 Cost by Subject. Screen capture from EBSCOnet Analysis Reports.

In another section of the administrative interface, various reports can be generated and exported into EXCEL, and these can be more useful. The "Collection Assessment" report includes title, cost, format,

publisher, fund code, and Library of Congress classification (such as American Literature or Anthropology). Although this report requires quite a bit of clean up to remove the numerous duplicated entries, and would require sorting and analysis, some librarians may find it useful to identify our direct subscriptions relevant to their liaison areas or to compare relative spending (see fig. 3).

FORTUNE - DOMESTIC ED /FOR CANADA/	0015-8259	Print	93.45	CAD	TIME INC / TIME & LIFE BLDG	BUSECO	COMMERCE
FORTUNE - DOMESTIC ED /FOR CANADA/	0015-8259	Print	0.00		TIME INC / TIME & LIFE BLDG	BUSECO	COMMERCE
HARVARD BUSINESS REVIEW - PRINT + ONLINE /SINGLE USER/ /FOR CANADA/	0017-8012	Print + Online	114.45	CAD	HARVARD BUSINESS REVIEW	BUSECO	COMMERCE
HARVARD BUSINESS REVIEW - PRINT + ONLINE /SINGLE USER/ /MUST ORDER DIRECT/ /FOR CANADA/	0017-8012	Print + Online	0.00		HARVARD BUSINESS REVIEW	BUSECO	COMMERCE

Fig. 3 Extract from Collection Assessment Report, EBSCOnet.

EBSCO Usage Consolidation

EBSCOnet's free tools can be beefed up with the addition of a license to *EBSCO Usage Consolidation.* I arranged a phone meeting with Jeff Arsenault, Anna Ramsay and Doug Lynch of EBSCO on November 24, 2014 to learn more about this product. In theory the product has interesting capabilities, combining subscription costs with usage data into one platform, and then generating a variety of analytical reports related to this data, such as cost-per-use. The reality is that this product would probably not work for us. Although it comes pre-populated with the cost information for our direct subscriptions, it does not include any information on the thousands of journals we order through our consortia, such as *Sage Journals Online, Taylor & Francis Journals,* or *Cambridge Journals Online.* There is no mechanism or arrangement available to order and pay for our CRKN, COPPUL and ELN packages using EBSCO as the vendor. There is no way to manually upload the pricing for the packages into the system. We could arrange to have our COUNTER reports uploaded into the product, either by manually configuring it ourselves or paying for their Usage Loading service. However, without the pricing information included, no cost per use reports could be generated from the system. Our direct order online journals come from a wide variety of small and large publishers, and setting up COUNTER reports for each title would be either very time consuming or very costly. The price quote for the Usage Consolidation Tool with Usage Loading Service was $2420 per year for 10 platforms, and $105 per year for each additional platform.

In one recent study, two university libraries reported on their experiences implementing EBSCO's Usage Consolidation product (DePope). Neither took advantage of the SUSHI protocol to automatically schedule uploads of COUNTER reports, as there were a number of issues with implementation. Usage data was manually loaded into the system, a process which took a few months. There were more problems involving subscription years and usage statistics years not matching. In the end, they found

the tool useful for spotting trends of most and least used journals. I question the value of using this tool for them, when so much of the work was done manually and could have been done in EXCEL.

Big Deal Packages

"Big deal packages" are large, inclusive bundles of hundreds or thousands of journals sold by publishers at a much discounted price compared to the individual list prices for the same titles. For example, a recent CRKN spreadsheet shows the list price for *Child and Family Services Review* as $ 1,789.00, but our price within the *ScienceDirect* package to be $33.89. Many academic libraries, including UFV, have been participating in these package deals for a number of years. They offer online, unlimited access to scholarly journals in previously unheard of numbers, and enable smaller academic libraries to play in the big leagues with their larger counterparts. UFV had approximately 1400 print subscriptions in the late 1990's, while our journal count today is approximately 59,000. Faculty and students come to rely on this rich resource of readily available full text journals for their research and assignments, and usually make good use of the content. The downside of the big deal is that they take up an increasing portion of a library's budget; in 2013/14, the UFV Library spent $303,516.24 of the $1,051,180 collections budget on seven big packages.

Librarians worry that this level of spending is unsustainable as package prices increase faster than library budgets do. In one study by Blecic et al., the library undertook a large project to analyze and compare packages in order to make cancellation decisions (Blecic, "Deal"). The article outlines their methodology, which included merging three years of Counter JR1 reports ("Successful Full-Text Article Requests" or SFTARs) into one spreadsheet, matching on ISSN number. They did many types of analysis, including identifying the titles within a package that generated 80% of the SFTARs, and calculating the subscription costs to subscribe to those titles individually. The article conclusion states:

> Results from the present study suggest both good news and bad. The good news is that 80 percent of SFTARs from Big Deals may derive from fewer than 30 percent of the journals in those deals. The bad news is that, after subscribing to journals that supply 80 percent of the SFTARs, savings are not large; also, SFTARS…are so numerous that obtaining the other 20 percent may lead to increases in interlibrary loan costs. The really bad news is that, lacking sufficient funding, libraries will eventually have to terminate Big Deals, and they and their communities will have to cope with the consequences (192).

Cancelling these inclusive collections is very difficult. Rights to perpetual access for subscribed years may be available, but the mechanism for access may involve locally loading content onto in-house servers, or paying an ongoing platform access fee. In the case of *ScienceDirect*, we only retain perpetual access to a small subset based on our legacy print subscriptions at the time of joining the license. The costs to individually subscribe to the highest used titles may add up to more than the entire package, or offer very little savings. We have cancelled hundreds of print or direct online subscriptions that are included in these packages, and each title would have to be re-evaluated and priced for re-subscription. For example, we have cancelled 91 important journals that are in the Taylor & Francis database. At a conservative estimate for $500 US each for unlimited, multiple campus online access, replacement of these 91 journals would cost $45,500 alone, with the entire package of 2271 journals costing

$49,540.61. Some libraries have been instituting pay-per-view plans, but this would require careful calculation to see if they save money. A rough web-generated estimate of our cost for a *ScienceDirect ArticleChoice 500 Plan* would be $11,500 US, or $23.00 per article, while our current cost per use is $1.64 US. Cancellation is also disruptive and upsetting to our patrons. Brock University has recently announced the cancellation of *Wiley Online Library*, and the reaction has been swift and strong. A Dec. 15, 2014 posting on the Brock Bee lab blog states:

> I am really, really glad that the Brock University Faculty Association has filed a grievance, as this is an intolerable assault on our conditions of employment, especially as this latest cut follows several other major cuts to support for research at Brock, especially in science. We cannot be scholars without a decent library. My research students and I cannot do our jobs without journals that are being cancelled. I cannot do my teaching properly without journals that are being cancelled ("Devasting Cut").

At the least, faculty relying on the material for course readings and assignments may be forced to change their syllabus. Interlibrary loan remains an option, but the delay of waiting days can be a deterrent and students frequently leave their research until the last minute.

CRKN Tools

The CRKN consortium is providing some important tools and guidelines for libraries to analyze their "big deal" subscription packages. In 2013 they prepared an Institutional Annual Review which included cost per download/use statistics for five of our big deal packages. This is a useful way to compare the value we are obtaining from these packages, and I would like to institute our own program of calculating this for all our databases each year.

In 2014, CRKN introduced a Journal Value Analytics Tool, and undertook a very detailed title by title analysis of the journal content in *ScienceDirect, Taylor & Francis* and *Wiley Online Library*. The reports provide detailed information on the cost per use for each journal in the databases, the cost per use by subject, cost per use by publisher, use by subject, use by publisher, and expenditure by subject. One striking graph of cost per use by subject shows the lack of use of mathematics, statistics, engineering, physics and astronomy, polymer and materials sciences journals (see fig. 4 and fig. 5). I would like to find out more about the lack of journal use in the hard sciences, such as gathering more data for other databases, looking at course assignments, and seeing where else the students and faculty are getting their research material from. A quick search of the Taylor & Francis JR1 report showed no use for journals with physics or mathematics in the title, and only a few uses for engineering journals. A few years ago we cancelled the *Institute of Physics* database because of its extremely low use and high cost per use over several years of subscribing.

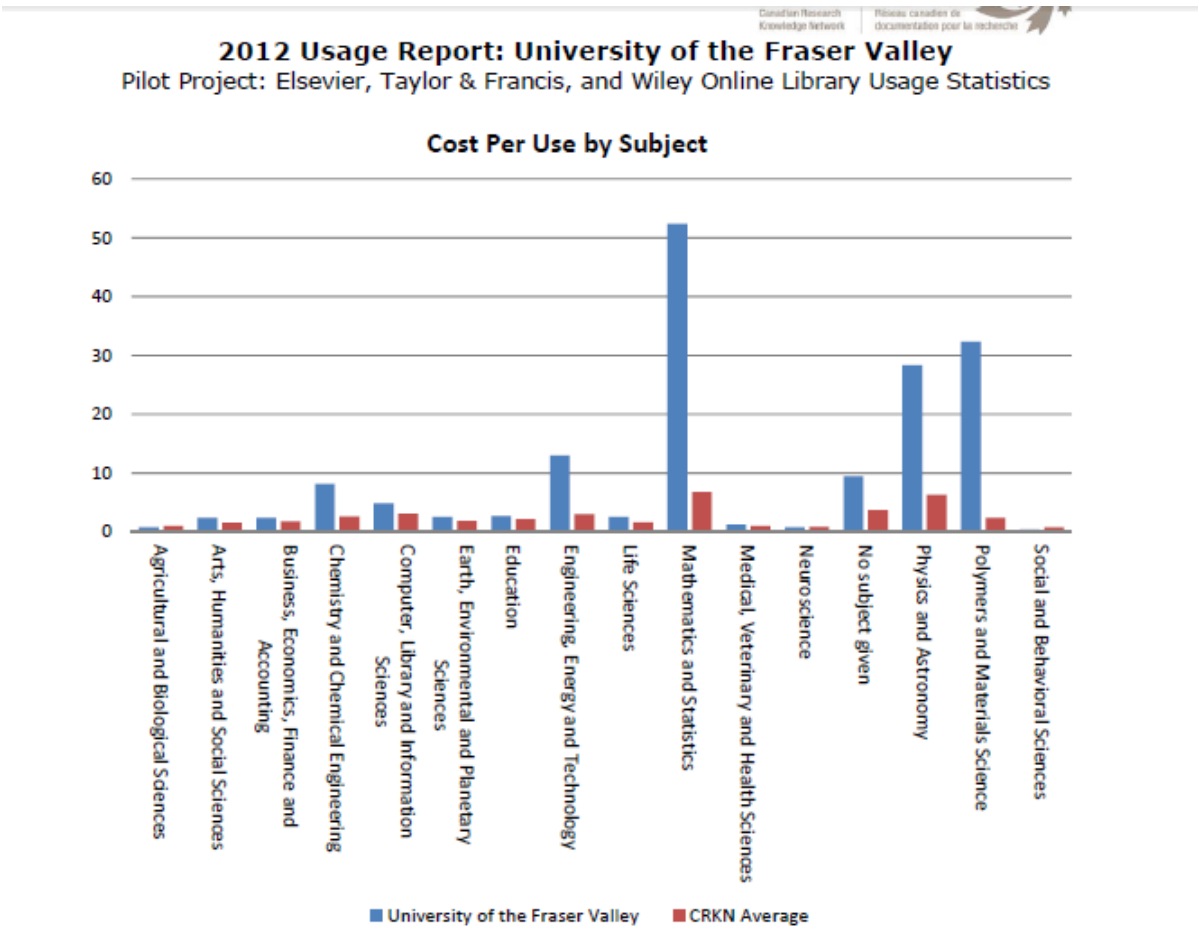

Fig. 4 Cost per Use by Subject. Source: CRKN Journal Value Analytics files, Dashboards – University of the Fraser Valley

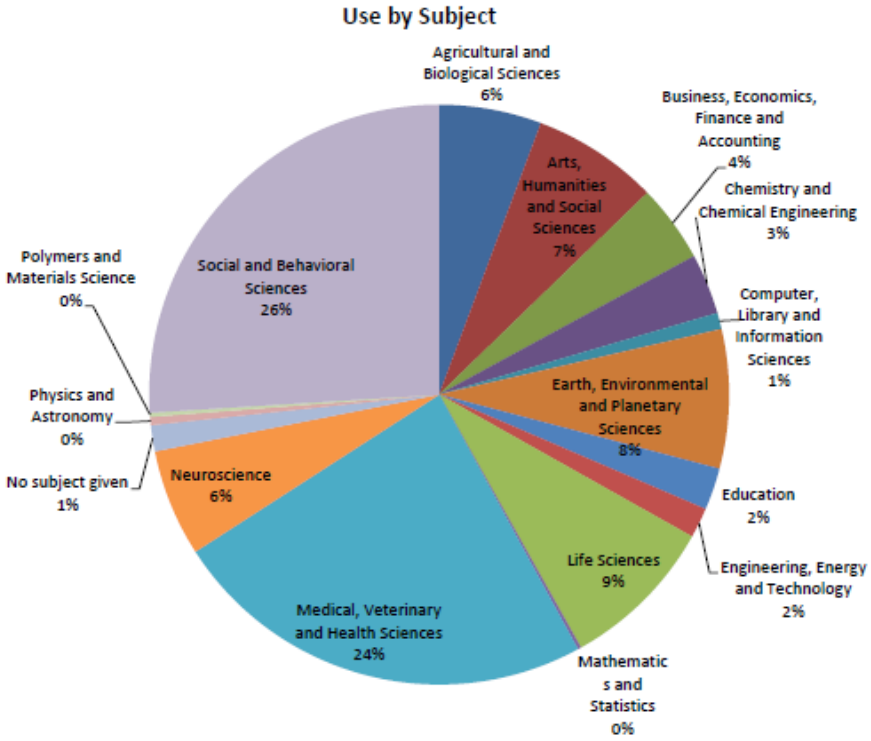

Fig. 5 Use by Subject. Source: CRKN Journal Value Analytics files, Dashboards – University of the Fraser Valley

In contrast, the social and behavioral sciences, medical and health sciences, arts, humanities and social sciences, environmental science and agricultural and biological sciences journals show a much lower cost per use, sometimes below the CRKN average (see fig. 4). The analytics tool utilizes a three part calculation to assign a total score to each journal, taking into account full-text uses, quality score based on a SNIP (Source Normalized Impact Per Paper) rating, and a cost per use score. They provide a list of our top 30 titles based on these scores, and not surprisingly, the titles fall into these high use categories (see table 3).

Table 3
Top 30 Journals in Elsevier, Sage and Wiley (Source: CRKN Spreadsheet)

Animal Behaviour	Elsevier	Ecology, Evolution, Behavior and Systematics	Agricultural and Biological Sciences
Soil Biology and Biochemistry	Elsevier	Soil Science	Agricultural and Biological Sciences
Journal of Membrane Science	Elsevier	Biochemistry	Biochemistry, Genetics and Molecular Biology
Landscape and Urban Planning	Elsevier	Ecology	Environmental Science

Quaternary Science Reviews	Elsevier	Global and Planetary Change	Environmental Science
Forest Ecology and Management	Elsevier	Nature and Landscape Conservation	Environmental Science
International Journal of Offender Therapy and Comparative Criminology	SAGE Publications	Pathology and Forensic Medicine	Medicine
International Journal of Drug Policy	Elsevier	Health Policy	Medicine
Criminal Justice and Behavior	SAGE Publications	Pathology and Forensic Medicine	Medicine
Child Abuse & Neglect	Elsevier	Pediatrics, Perinatology and Child Health	Medicine
Journal of Adolescent Health	Elsevier	Pediatrics, Perinatology and Child Health	Medicine
The Lancet	Elsevier	Medicine (all)	Medicine
Crime & Delinquency	SAGE Publications	Pathology and Forensic Medicine	Medicine
Drug and Alcohol Dependence	Elsevier	Psychiatry and Mental Health	Medicine
Journal of Pain and Symptom Management	Elsevier	Neurology (clinical)	Medicine
International Journal of Law and Psychiatry	Elsevier	Pathology and Forensic Medicine	Medicine
Journal of Electromyography and Kinesiology	Elsevier	Neurology (clinical)	Medicine
Journal of Adolescence	Elsevier	Pediatrics, Perinatology and Child Health	Medicine
Neuropsychologia	Elsevier	Cognitive Neuroscience	Neuroscience
Journal of Pediatric Nursing	Elsevier	Pediatrics	Nursing
Journal of Criminal Justice	Elsevier	Social Psychology	Psychology
Personality and Individual Differences	Elsevier	Psychology (all)	Psychology
Psychology of Sport and Exercise	Elsevier	Applied Psychology	Psychology
Computers in Human Behavior	Elsevier	Psychology (all)	Psychology
Aggression and Violent Behavior	Elsevier	Clinical Psychology	Psychology
Journal of Interpersonal Violence	SAGE Publications	Clinical Psychology	Psychology
Children and Youth Services Review	Elsevier	Education	Social Sciences
Social Science & Medicine	Elsevier	Health (social science)	Social Sciences
Violence Against Women	SAGE Publications	Gender Studies	Social Sciences
Gender & Society	SAGE Publications	Gender Studies	Social Sciences

The CRKN also publishes a Big Deal checklist, which outlines the many steps needed to conduct a cost benefit analysis and to break away from a package. The process is so lengthy and involved that they recommend a library start six to eight months in advance of the renewal deadline (Big Deal).

UFV's Big Deal Packages

I undertook my own investigations of seven of our big deal packages. Using the JR1 Counter reports for 2013/14 (Successful Full Text Article Requests) I looked at the various aspects of use.

Cost Per Use

The first calculation was for cost per use, which divides the subscription cost of the database by the number of full text views for a given year (see table 4).

Table 4

Cost Per Use for Seven Big Deal Packages 2013/14

Database	**Consortia**	**US FUNDS**	**CDN FUNDS @1.10**	**Number of Full Text Views**	**Cost per FT View**
Cambridge Journals Online	CRKN	$8,407.64	$9,248.40	2678	3.45
Oxford Journals Online	CRKN	$9,449.94	$10,394.93	2078	5.00
SAGE Premier Collection	CRKN	$37,135.00	$40,848.50	16959	2.41
Science Direct	CRKN	$73,600.00	$80,960.00	49244	1.64
Springerlink	CRKN	$50,209.78	$55,230.76	5399	10.23
Taylor & Francis	CRKN	$49,540.61	$54,494.67	11370	4.79
Wiley Online Library	CRKN	$47,580.88	$52,338.97	7905	6.62
Totals			$303,516.24	95633	3.17

Source: Big Deal Package Analysis Spreadsheet, Cost Per Use Tab

This analysis shows that our most expensive database, *ScienceDirect* is actually our most cost effective in terms of cost per use, costing $1.64 per full text article viewed. Our least cost effective database for journal articles viewed was *Springerlink*, at $10.23.

Size of Collection Compared to Use

I was also interested to see what percentage of the package was being used. I had read of a study that found an inverse relationship between the number of journal subscriptions and the number of titles that had use, and wanted to see if this held true for these collections of journals (Blecic "Measurement" 302). As shown in fig. 6 and 7, there is some validity to this, with our smaller collections in Sage, Oxford and Cambridge having the highest percentage of titles used.

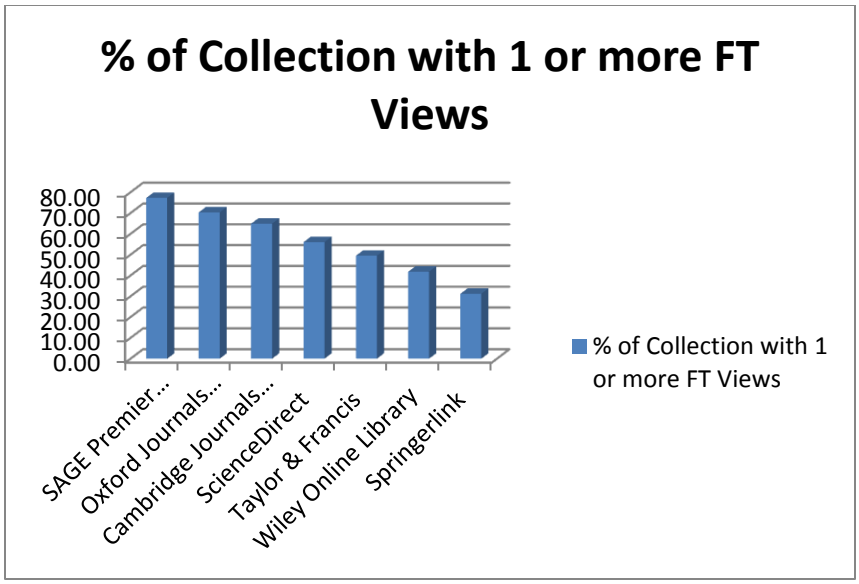

Fig. 6 Percentage of Collection with 1 or More FT Views

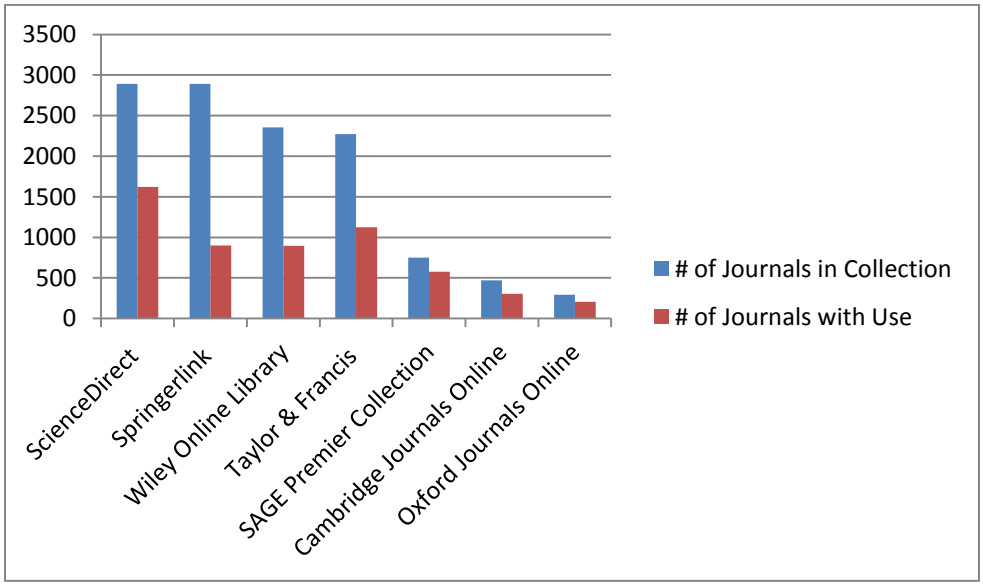

Fig. 7 Number of Journals in Collection Compared to Number of Journals with Use
Source: Big Deal Package Analysis Spreadsheet, 1+ FT Views Tab.

80/20 Rule

The library literature often references something called the 80/20 rule, first developed by Richard Trueswell in 1969, which proposes that 80 percent of the use comes from 20 percent of the collection (Blecic "Methods" 300). Although this is often applied to book collections, it can also be applied to journal use. I went through the JR1 reports and calculated what percentage of the collection accounted for 80 percent of the full text views. Our results ranged from 26% of the collection representing 80% of the journals viewed for *Oxford Journals Online*, to 10.52% for Springerlink, with our average coming in at

17.52% (see table 5). It would be interesting to calculate this in the future for our print book collection as well.

Table 5
80/20 Rule for Seven Big Deal Packages

80/20 Rule Estimate	Percentage	Number of Titles
Cambridge Journals Online	19.15	90
Oxford Journals Online	26.00	76
SAGE Premier Collection	22.19	166
ScienceDirect	14.01	405
Springerlink	10.52	304
Taylor & Francis	16.42	373
Wiley Online Library	14.27	336

Source: Big Deal Package Analysis Spreadsheet, 80-20 RuleTab.

In the article "Deal or No Deal?" the authors propose that librarians look at the journals which generate 80% of the usage, and calculate the cost to subscribe to them individually. This is a worthwhile idea, but time consuming, as pricing for multiple campus online access may require a title by title price quote and represents hundreds of titles in many cases (see table 5).

Threshold for Number of Full Text Views

Another way to compare collections and possibly identify subscriptions to order upon cancellation is to set a number for what would be considered significant enough use to warrant a new subscription. I tested this with the level of 20 full text views in a year (see table 6). If required, we could get price quotes for the highest used titles and compare this to the cost of subscribing to the entire package, realizing we would lose access to the "long tail" of other journals with usage.

Table 6
Number of Journals with 20 or more FT Views

Number of Journals with 20 or more FT Views	Number of Journals
Cambridge Journals Online	23
Oxford Journals Online	26
SAGE Premier Collection	213
ScienceDirect	536
Springerlink	50
Taylor & Francis	134
Wiley Online Library	103

Source: Big Deal Package Analysis Spreadsheet, 20+ FT Views Tab.

Bradford's Law of Scattering

A rule I was interested in testing was "Bradford's Rule of Scattering". "Bradford's law states that if a collection of journals is ranked according to the number of times each journal is used, three zones can

be differentiated in such a way that each zone will produce one third of the relevant uses while containing radically different numbers of titles." (Blecic "Methods" 300). The premise is that the first zone will contain a small number of highly used titles, the second zone will contain many moderately used titles, and the third zone will contain the largest number of titles with little or no use. When I looked at three of our big deal packages, this rule held true (see table 7).

Table 7
Bradford's Rule of Scattering

Bradford's Law of Scattering	Top 1/3 of Use	Middle 1/3 of Use	Bottom 1/3 of Use	No Use
Sage	26	82	471	160
ScienceDirect	56	185	1381	1274
Taylor & Francis	46	173	906	1147

Source: Big Deal Package Analysis Spreadsheet, Bradford's RuleTab.

This is really an expected finding, as usage reports typically show a long tail of hundreds of different journals with full text views. And journals in the middle band may still receive a significant number of views in a year, as shown in this small example from *ScienceDirect*, making it difficult to use this rule in cancellation decisions (see table 8).

Table 8
Small Sampling from the 185 Middle Use Journals in ScienceDirect.

Title	Publisher	ISSN	E-ISSN	FT Views
Consciousness and Cognition	Elsevier	1053-8100	1090-2376	162
Clinical Psychology Review	Elsevier	0272-7358		159
Biochemical and Biophysical Research Communications	Elsevier	0006-291X	1090-2104	158
Chemosphere	Elsevier	0045-6535		158
Journal of Applied Developmental Psychology	Elsevier	0193-3973		158
Research in Autism Spectrum Disorders	Elsevier	1750-9467		157
Physiology & Behavior	Elsevier	0031-9384		156
Appetite	Elsevier	0195-6663	1095-8304	154
Tetrahedron Letters	Elsevier	0040-4039		152
Preventive Medicine	Elsevier	0091-7435	1096-0260	151

Test Analysis: Springerlink

The big deal collection which seems to be rating the lowest on many of the measures I tried was *Springerlink*. I spent some time trying to analyze further the viability of cancelling this single package. To begin with, I looked at the list price of subscribing to the 50 journals which received 20 or more full text views in a year. The pricing came out to $165,552.00 CDN, compared to the package price of $55,230.76. However, the top journals fluctuate every year, so I then merged the top titles from 3 years of JR1 reports, which resulted in 73 different journals with 20+ uses. Another required step is to see what other access we might have to these same journals. We in fact have several of the journals in various EBSCO databases however they have 12 month embargos on viewing the current content. Also, relying on aggregator access is problematic, as a publisher may withdraw completely at any time. For the remaining titles not provided in EBSCO databases, it would cost $47,588.20 to replace them. If you add to this a very conservative cost of $5.00 per article to replace 50% of the remaining articles on interlibrary loan, there are no cost savings at all (see table 9).

Table 9
Replacement costs for Top Used Springerlink Journals

Cost to subscribe to journals with no overlap and 20 or more FT Views ($43,262 US)	$47,588.20
Estimate to replace 50% of unfilled ft views with ILL	
3155 / 2 = 1578 articles x $5.00 per ILL	$7,890.00
Total Cost	**$55,478.20**
Cost of Springer Subscription	$55,230.76

Source: Springerlink JR1 Spreadsheet

Complicating this entire scenario is the fact that UFV Library has purchased several years of full text e-books, which reside on a merged journal and book Springerlink platform. The BR2 Counter Report (book report for successful section downloads) adds a further 13,080 uses to the 5399 journal views, raising the usage statistics for this database to 18,479. Dropping the journal content might in a way orphan this investment in e-books that we have been making.

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Big Deal Package Analysis
Springerlink JR1 Spreadsheet

Section 3: E-Books and Demand Driven Acquisition

The UFV Library now has almost an equal number of print and electronic books, with the number of e-books expected to continue to rise is coming years. Are we on the right track? I looked at the trends occurring in the larger world of higher education and academic libraries, including the growth of online learning, the popularity of mobile learning, the decline of print collections and the increase in e-book purchasing. In this section I will also examine methods of assessment for e-books, and discuss demand driven acquisition.

Trends in Online Learning

There are a number of indicators that point to the continued growth and expansion of online as being the future direction of research and teaching. The number of enrollments and percentage of students taking fully online courses has continued to increase. "According to a study by the Babson Survey Research Group published at the beginning of 2013, more than 6.7 million students, or 32% of total higher education enrollment in the United States, took at least one online course in Fall 2011 — an increase of more than half a million students from the prior year." (Johnson 18).

In the report *Online College Students 2014: Comprehensive Data on Demands and Preferences*, the authors noted students are reporting a high level of satisfaction with online learning, with 90% rating the online environment as the same or better than classroom instruction (Clinefetter 11).

The *NMC Horizon Report: 2014 Higher Education edition* "examines emerging technologies likely to have a huge impact over the coming five years in education around the globe." (Johnson 3). They identified the "Integration of Online, Hybrid and Collaborative Learning" as a key trend. Traditional face-to-face courses are being supplemented and redesigned as hybrid, blended or flipped classrooms, with essential components such as recorded lectures, videos, animations, readings, curated links, quizzes, polls, discussions, and online collaboration being delivered online (10). In Canada, 76% of students have taken a course that blends online and face-to-face components (Dahlstrom, "ECAR Study" 15). As well, "the majority of students across all regions and Carnegie classes report that they both *prefer* and *learn most* in blended learning environments…" (15).

UFV was an early adopter of online learning, and our developments continue. According to UFV's *Strategic Enrollment Management Plan*, "The number of students reporting taking an online class has also increased; domestic student participation has increased some 50% over the last 5 years while international participation has roughly tripled." (18). In *UFV Online in 2017: Five Year Strategic Plan*, the identified goal was to increase the number of online courses at UFV, until such time as all courses have an online equivalent (Burton 1). In *Students and Community: An Update to the UFV Education Plan 2012* a number of departments indicated their plans to increase their online and hybrid offerings, with the Teaching and Learning Center committed to facilitate this (Davis).

With this growing component of the curriculum and assignments being directed to online delivery, library resources need to be a part of the content being curated and recommended. The content we

purchase and license will ideally be available to online students, so that their educational experience is at a par with the face to face classes. E-books will play an important role in providing resources for on-line courses.

Trends in Mobile Learning

Mobile devices will become increasingly integrated into the academic setting. According to an ECAR study, the average number of Internet-capable devices per person on college and university campuses is expected to continue growing to 3.6 in 2014. (Dahlstrom, "The Consumerization" 9). The *ECAR Study of Undergraduate Students and Information Technology, 2013* reports that student device ownership continues to grow. 81% of students in Canada own a smartphone, and "tablets grew the most in terms of academic use compared with all other devices asked about in this year's survey." (Dahlstrom, "ECAR Study" 25). Students would like to use smartphones and tablets more in the classroom, for note taking, calendars, polling, quizzes, recording their instructors, and Google searches, among other activities (29). According to the report, "Students are ready to use their mobile devices more for academics, and they look to institutions and instructors for opportunities and encouragement to do so." (22). "Students specifically noted wanting more mobile connectivity, mobile-friendly apps, and mobile-friendly websites." (31). They also want to have "anytime, anywhere access to course materials…" (22).

As much as possible, library services and collections should be planned in the future to be device neutral and mobile friendly. One of the ACRL's top trends for 2014 is for device neutral digital services (ACRL 295).The library's website, Libguides, catalogue, research database and journals lists gateways, discovery service, help guides and tutorials, streaming video collections, e-books, online journals, assessments and quizzes need to function smoothly on tablets and smartphones. Acquisitions of online e-books need to take into consideration their suitability on a mobile device.

Trends in Print Book Collections

Articles on the future of library collections agree that the era of ordering large print collections of items "just in case" they are needed is over. At one time it was important to order new scholarly books shortly after they were published, or they would become unavailable or out-of-print. Now there is a flourishing used books market, facilitated by companies such as AbeBooks and Alibris, and options to purchase e-books or print-on-demand (Levine-Clark 426). Print purchasing is on the decline. As reported by Levine-Clark, "As a percentage of overall materials budgets at university libraries within the Association of Research Libraries, for example, the median amount spend on monographs annually has decreased steadily from 41.4 percent in 1986 to 17.7 percent in 2011." (428). He also predicts that print collections will be downsized, often through collaborative projects with other libraries (433). Lewis describes a historical transition from the Paper Library to the Automated Library, to the Electronic Library, "where both bibliographic tools and documents are digital" (160). The Paper Library has high costs for the dispensing function, and many items were purchased that had little use. He recommends libraries "deconstruct legacy print collections", reducing the size of existing collections, starting with print journals and government documents and "…radically slow(ing) the growth of print collections." (168).

Large numbers of libraries are undergoing individual and consortia weeding projects. Conference presentations and journal articles abound on libraries reducing their print footprint in order to repurpose library space for other activities, such as computer labs, multi-media centers, meeting and collaborative spaces, study spaces, and more. Libraries are evaluating holdings in terms of age, circulation, uniqueness, condition, availability, and value and undertaking large scale projects of discarding, moving collections into off- site storage and moving titles into regional safe repositories. The Royal Society of Canada's report on the future of libraries includes a recommendation that Canadian research libraries "establish … three to five regional preservation/storage facilities as last copy repositories" (Demers 99), and the report even includes some basic weeding criteria (103). In western Canada, our regional COPPUL Consortia is also pursuing a shared print repository project.

The future library collection may emphasize access over ownership. With the advent of huge digital repositories, such as Google Books, and Hathitrust, and the development of regional shared print repositories, libraries have new options for providing access. "Instead of being material that is either owned or leased by the library, the collection will be anything that the library can reasonably expect to deliver to students and faculty." (Levine-Clark 435). Dempsey et al. discuss the concept that the local library collection has grown to include what can be discovered and provided from the global collection (397).

Anderson's article on future-proofing the library recommends that we "redirect staff time away from the acquisition and management of printed materials to the acquisition and management of online resources." (563). He goes on to say "Every moment of staff time we invest in acquiring and caring for ineffective information tools like printed journal issues and reference books is a moment that is not being invested in the provision of other materials that will serve our patrons far better. With increasingly rare exceptions, buying printed materials for a research library collection is like drilling more holes in the hull of a sinking boat." (564). As he feels that the OPAC is becoming less important and less used as a discovery tool, he also recommends spending less time on editing and perfecting MARC records. Instead we should accept vendor supplied records with few changes and remove fields that offer little value and take up too much of a cataloguer's time (565).

The *Ithaka S+R US Library Survey 2013*, which surveyed 499 academic library directors in the U.S., states "… the large majority believes that building local print collections has declined in importance." (Housewright et al. 7). Library budgets are declining in terms of allocation for print monographs, and are predicted to continue to do so (44, fig. 25). When asked where library directors would invest more funds, if available, print book acquisition was far down on the list (Long and Schonfeld 28). When asked to identify functional priorities for their library, "purchasing print books to build research collections" was a high priority for less than 30% of respondents and over 60% of Baccalaureate institutions strongly agreed with the statement that "building our local print collections is much less important than it was five years ago." (39).

Books still are important to faculty. In the Ithaka Faculty survey, "…about two-thirds of respondents indicated that scholarly monographs or edited volumes published by an academic publisher were also very important" to their research (Housewright et al. 14-15) and a "significant share" assign either entire

books or book chapters as readings (19). Monographs rated significantly higher for faculty in the Humanities disciplines than for the Sciences.

Are faculty, students and library directors ready for a print free library? Both faculty and library directors do not envision a five year horizon where e-books completely replace a library's collection of print books. (Housewright et al. 34; Long and Schonfeld 45). As well, 43% of libraries surveyed have not deaccessioned any print books as a result of having e-book access (46). The Royal Society Canada's report states that "paperless libraries or archives are as mythic as the paperless office" and that "academic libraries…will continue to care for hybrid (paper and digital) collections, both those dating from the past (legacy) and new acquisitions" (Demers 93).

The indications seem to be that there is still an attachment to legacy print collections, although the numbers of print acquisitions will decline and the size of print monograph collections will continue to decrease. However, given the continued importance of scholarly monographs to faculty, a balance must found when planning budget priorities, complicated by the diverse value placed on books by different disciplines (Housewright et al. 14).

Trends in E-Book Collections

E-book purchasing has become a growing component of library budgets, with a prediction that it will continue to grow (Long and Schonfeld 44). Acquisitions are being purchased as individual selections, in subject collections, as subscription services (such as ebrary's Academic Complete) and using the increasing widespread Demand (or Patron) Driven acquisitions model. The reasons are multiple. E-books allow for the online, anytime, anywhere access that students are asking for. They can greatly expand the subject coverage in previously weak collection areas. Costs per title in package deals may be attractively low, and cataloguing can be done quickly in a batch mode. No shelf space is required, and often multiple users can share a title. More and more content is becoming available in digital format and purchasing systems are smoothing out, with vendors such as Ingram-Coutts, YBP, EBSCO and Proquest offering sophisticated ordering platforms and a variety of purchasing models. Collections can be built quickly, and librarians save time by selecting discipline or publisher packages, or relying on Demand Driven Acquisition, rather than title-by-title selection (Ferris and Buck 141). And finally, e-books support the trends toward increased online and mobile learning.

According to Michael Levine-Clark, libraries are gradually moving to a preferred e-book format over print (428). One example is the St. Edwards' University in Austin, Texas, which now purchases all new books as multiple user e-books, unless print is specially requested (Ferris and Buck 140). David Lewis is predicting a coming transformation of library collecting, with the print book being replaced by digital formats, and all our traditional processes having to adjust in response (159-160).

Collection numbers for e-books are growing rapidly, as shown by the rapid growth from 2011-12 and 2013-14 for CPSLD Libraries (see table 1 and fig.1).

Table 1
Electronic Monographs in CPSLD (B.C. Post-Secondary) Libraries

CPSLD	Electronic Monographs 2011-12	Electronic Monographs 2013-14
BCIT	33,139	34,172
CAM	32,944	28,583
CAPU	13,358	166,330
CNC	8,243	9,811
COTR	1,469	92,328
DOUG	4,919	20,210
ECUAD	18,804	853
JI	1,388	121,020
KPU	36,155	160,380
LC	58,355	70,874
NI	106,289	134,290
NL	16,650	148,469
NW	1,743	2,005
OC	47,749	64,027
QUC	123,000	180,420
RR	130141	263,379
SEL	6,115	12,338
SFU	810,437	1,035,573
TRU	53,215	138,464
TWU	122,406	181,767
UBC	943,945	1,843,028
UFV	138,502	173,019
UNBC	95,493	133,708
UVIC	510,124	749,352
VCC	1,606	164,139
VIU	299,412	613,912
Total	3,615,601	6,542,451

Source: CPSLD Annual Statistics 2011-12; CPSLD Annual Statistics 2013-14

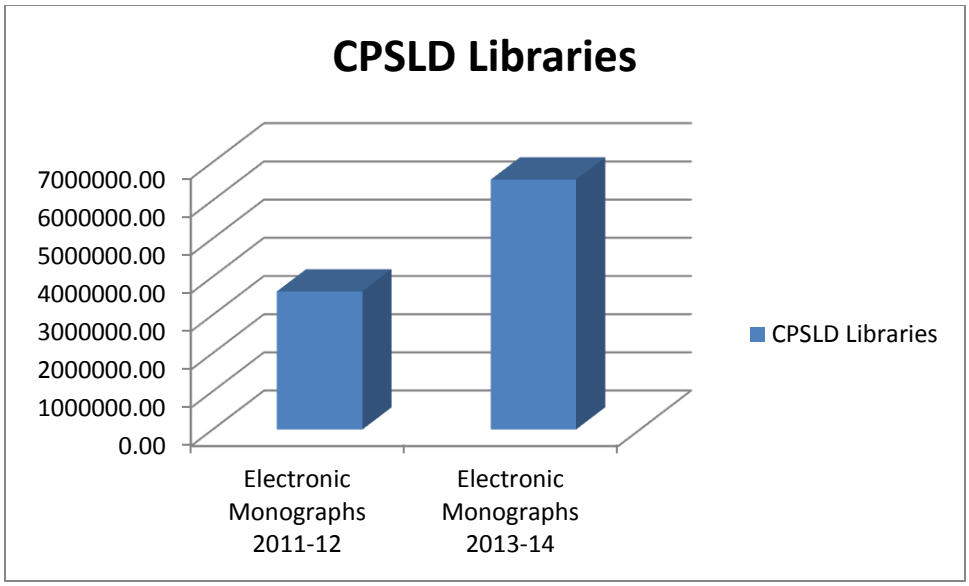

Fig. 1 Growth in Electronic Monograph Collections
Source: CPSLD Statistics for Electronic Monographs Spreadsheet.

Adoption has been facilitated by the growth of more convenient e-reading devices, although ease of downloading is an area that still needs improvement (Dahlstrom, "ECAR Study" 14). The Pew Internet Research Project 2014 report on e-reading devices finds that e-book readership and device ownership has grown between September 2013 and January 2014. Overall, 50% of Americans now have a dedicated handheld device–either a tablet computer like an iPad, or an e-reader such as a Kindle or Nook for reading e-content. That figure has grown from 43% of adults who had either of those devices in September (Zickuhr and Rainie 2). According to Lewis, "In May 2011, Amazon sold more e-books than print books." (164).

Are the e-books being used? The ECAR Undergraduate study reports that 74% of students have used e-books in at least one course (Dahlstom, "ECAR Study" 13). The *Ithaka S+R US Faculty Survey 2012* discovered that "Scholars are engaging with scholarly monographs in digital format, as 70% of faculty respondents indicated that they have "often" or "occasionally" used scholarly monographs in electronic in the past six months…" (Housewright et al. 31). "In addition, a majority of respondents strongly agreed with the statement that "electronic versions of scholarly monographs play a very important role in my research and teaching." (31).

Assessment of E-Book Collections

There are number of questions that UFV Library needs to consider. What is the optimal size of an e-book collection? Can it get too big? How well are our e-books being used, and on which platforms? How can they be compared across platforms given the different methods of reporting statistics? What subject areas are in demand? How does the relative size of our e-book collection compare to the monograph collection, and how does this compare to other libraries?

Usage Statistics

As with print and journal collections, e-book collections can be assessed by (virtual) circulation counts, or usage statistics. Although simple on the surface, it is in fact difficult to collect and compare these statistics. Unlike a library's circulation system, where every print book check-out is counted in one place, every different e-book vendor hosts their own unique administrative interface and the number is constantly growing. The statistics gathered may vary between vendors and also change over time. In 2012, EBSCO reported "user sessions", ebrary reported "page views", and Sage, Springer and Gale reported "section requests". It was difficult to compare these products without a common denominator to use, and at best allows us to track the usage trends within one platform year to year.

COUNTER reports are an attempt to encourage vendors to provide a standard set of reports, including Book Report 1 Number of Successful Title Requests (BR1), Book Report 2 Number of Successful Section Requests (BR2), and Book Report 3 Turnaways (BR3). However, I have discovered that this is still problematic. Vendors who segregate their book content by chapter, such as Sage, Springer and EBSCO use a book chapter as the unit to count "section requests" in the BR2 report. Ebrary defines a BR2 as the sum of the number of pages viewed, copies made, pages printed, instances of PDF downloads and instances of full document downloads. Myilibrary considers the section request unit to be a "page".

Therefore, EBSCO reports our section requests for 2013/14 as 7050, while ebrary reports a figure of 240,173, making this an incomparable statistic. One common denominator *may* be the number of unique titles viewed, but this could be a misleading statistic to report to stakeholders, as it only measures how many different titles were used, but not how many times each. As stated by Lamothe, "reporting an access per book regardless of how many pages have been viewed can … suppress real usage." (41). We may need to create a series of comparisons, grouping vendors who use the same units of measurement (Grigg 129).

One useful report is the Counter Book Report 3, or book turnaway report. Many publishers are now integrating book content with their journal articles, or mix unpurchased with purchased books onto the same platform. A type of evidence based collection development can be done by examining the top titles on these reports and ordering them for the collection. It can also be used to convert single use titles to multiple use titles, based on turnaway demand. I would like to implement a semi-annual collection of these reports, where available, to help inform our purchasing.

E-book vendors also offer a wide variety of non-COUNTER reports, allowing librarians to analyze usage by subject area, by number of user sessions, by number of unique items viewed, by titles viewed and more. As ebrary is a multi-disciplinary collection, it is a good candidate to examine by subject area. Based on their Category Summary Report, the subject areas of most interest are social science, history, political science, business and economics, medical, psychology, and literary criticism (see table 2).

Table 2
Ebrary Use by Subject

SUBJECT	PAGE VIEWS 2013/14
SOCIAL SCIENCE	39344

HISTORY	28973
POLITICAL SCIENCE	16240
BUSINESS & ECONOMICS	14585
MEDICAL	13505
PSYCHOLOGY	11607
LITERARY CRITICISM	11068
LANGUAGE ARTS & DISCIPLINES	10291
SCIENCE	10246
LAW	8516
EDUCATION	7030
TECHNOLOGY & ENGINEERING	7018
RELIGION	6169
BIOGRAPHY & AUTOBIOGRAPHY	5969
PHILOSOPHY	5318
PERFORMING ARTS	5070
ART	4183
COMPUTERS	3401
FAMILY & RELATIONSHIPS	2379
HEALTH & FITNESS	2090
LITERARY COLLECTIONS	1577
NATURE	1565
REFERENCE	1555
MATHEMATICS	1337
DESIGN	887
DRAMA	771
ARCHITECTURE	664
POETRY	546
SPORTS & RECREATION	546
MUSIC	505

This can be analyzed further by sorting at the level of sub-category. Once again, the social sciences, history, and business and economics are top subject areas (see table 3). These types of statistics can be useful in deciding on future purchases of subject specific collections, or selecting which vendor would fit a future DDA project. For instance, we may want to add a social sciences subject collection, or set up a DDA program with a vendor strong in the social sciences, such as Sage or Taylor and Francis.

Table 3
Ebrary Use by Top Subject Sub-Category

CATEGORY	SUB-CATEGORY	PAGE VIEWS
LAW	Jurisprudence	4,468
LANGUAGE ARTS & DISCIPLINES	Library & Information Science / General	4,318
SOCIAL SCIENCE	Criminology	4,078
BUSINESS & ECONOMICS	Development / Sustainable Development	3,723
SOCIAL SCIENCE	Gender Studies	3,702
POLITICAL SCIENCE	History & Theory	3,459
HISTORY	Canada / General	3,334
HISTORY	Asia / Japan	3,235
HISTORY	Europe / Great Britain	2,940
SOCIAL SCIENCE	General	2,931
SOCIAL SCIENCE	Sociology / General	2,889
LITERARY CRITICISM	European / English, Irish, Scottish, Welsh	2,793
POLITICAL SCIENCE	General	2,718
SOCIAL SCIENCE	Ethnic Studies / Native American Studies	2,655
SOCIAL SCIENCE	Sociology / Marriage & Family	2,616
SOCIAL SCIENCE	Women's Studies	2,519
HISTORY	General	2,517
MEDICAL	Neurology	2,352
SOCIAL SCIENCE	Popular Culture	2,250
POLITICAL SCIENCE	International Relations / General	2,204
TECHNOLOGY & ENGINEERING	Agriculture / Forestry	2,122
SCIENCE	General	2,013

Source: Ebrary Category Summary Report Spreadsheet

Other investigations can be conducted on our e-book collections, such as the ratio of the number of full text views compared to the size of the collection, which would help indicate relative use. This is of course complicated by the inconsistent definition of a section request, and the difficulty in determining a collection size count for a specific (retrospective) time period. As a very rough idea, I tried this with myilibrary and ebrary, both of which use "pages" as the section view unit (see table 4).

Table 4
Ratio of Views to Collection Size

Platform	Section Views	Title Count	Ratio
myilibrary	46458	19878	2.337157
ebrary	240173	124607	1.927444

E-Book and Print Book Collection Sizes

How does the UFV Library's e-book collection size compare to the print monograph collection size? Using CSPLD statistics, I calculate that e-monographs have gone from 44.56% to 49.11% of our total monograph collection (see table 5).

Table 5
E-Monographs as Percentage of Total Monograph Collection, UFV Library

	Monographs	E-Monographs	Total Count	% as e-monographs
UFV 2011/12	172,301	138502	310803	44.56
UFV 2013/14	179,282	173019	352301	49.11

As a comparison, in the same time period the average for all CPSLD libraries increased from 29.03% to 46.85% (see fig. 2).

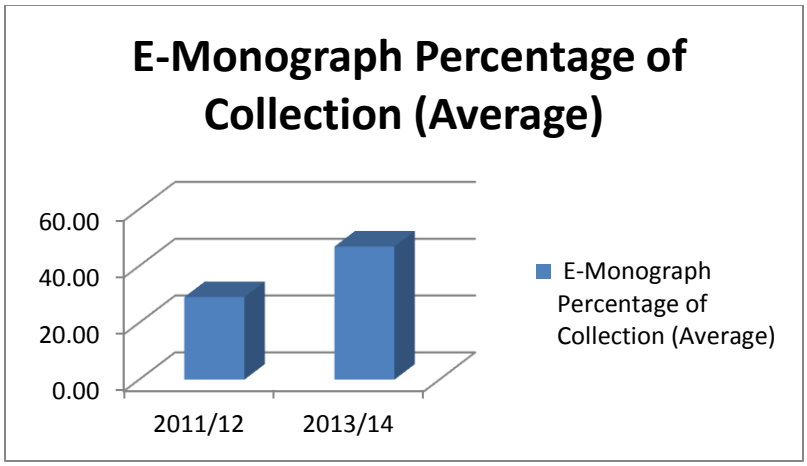

Fig. 2 E-Monograph Percentage of Collection (Average) for CPSLD Libraries
Source: CPSLD Statistics for Electronic Monographs Spreadsheet

There are remarkable differences between CSPLD libraries (see table 6). One possible explanation is that libraries are using differing methods of counting and reporting the data, although definitions and instructions exist. These numbers most likely reflect different philosophies of collecting. For example, Emily Carr University uses highly visual material related to the fine arts, and these types of items may not be suitable in an electronic format. Institutions with a high ratio of distance or online courses, such as Royal Roads, have a high percentage of electronic books. It also seems to be a method of building a collection very quickly, so that institutions with small print collections, such as College of the Rockies, the Justice Institute, and North Island College show very high percentages, while institutions starting with a large print collection such as UBC and SFU are below 30%. UFV is slightly above the average of 46.85%, with 49.11% of the monograph being e-monographs.

Table 6
E-Monograph Percentage of Monograph Collection for CPSLD Libraries

CPSLD	Monographs	E-Monographs 2013/14	Total Count	% of E-Monographs
BCIT	115930	34172	150102	22.77
CAM	50628	28583	79211	36.08
CAPU	106405	166330	272735	60.99
CNC	148074	9811	157885	6.21
COTR	39306	92328	131634	70.14
DOUG	157812	20210	178022	11.35
ECUAD	36063	853	36916	2.31
JI	20362	121020	141382	85.60
KPU	205383	160380	365763	43.85
LC	79673	70874	150547	47.08
NI	31832	134290	166122	80.84
NL	22988	148469	171457	86.59
NW	50099	2005	52104	3.85

OC	144574	64027	208601	30.69
QUC	12622	180420	193042	93.46
RR	45941	263379	309320	85.15
SEL	57871	12338	70209	17.57
SFU	2446112	1035573	3481685	29.74
TRU	219790	138464	358254	38.65
TWU	223710	181767	405477	44.83
UBC	4583395	1843028	6426423	28.68
UFV	179282	173019	352301	49.11
UNBC	449713	133708	583421	22.92
UVIC	1755239	749352	2504591	29.92
VCC	52533	164139	216672	75.75
VIU	300841	613912	914753	67.11
Average				**46.85**

What is the optimum size for an e-book collection? Obviously, libraries have a different opinion on this, as shown above. One study by Alain Lamothe of Laurentian University tried to correlate the size of an e-book collection with the amount of usage. Not surprisingly, as the library's e-book collection size increased, so did the views (as defined by either opening or downloading a page or a chapter.) However, they did experience a drop off of usage in the last year of the study, despite adding more e-books. The author speculated this "may be an indication that a critical mass of e-books had been achieved and any further large increases in collection size may be a needless expenditure." (55). He recommends "continued monitoring of both collection size and usage levels" as more years of data would be required to confirm a trend. (55). Undertaking a project like this at UFV would be very interesting, although difficult given the wide variety of e-book platforms and methods of counting usage.

Demand Driven Acquisition

Demand Driven Acquisition Models offer the promise of matching the collection spending to demonstrated needs or wants, with many librarians living in fear of wasting dollars on collections that go unused. DDA plans are in line with the philosophy of "just in case", rather than "just in time", with items being acquired at the point of need. Levine-Clark predicts that the preferred mode of acquisition will be DDA for monographs, articles and any other material types (434). David Lewis recommends that libraries move from item-by-item purchasing to purchase-on-demand and subscription models, where "every purchase is based on a certain need." (170). There are many attractive advantages, including ordering in subject areas that may have been overlooked in faculty or librarian selection, increasing discoverability and access to a large pool of current academic titles, immediate provision of content, no costs incurred for open stacks storage or circulation of items, 24/7 access from anywhere, and allowing multiple simultaneous users. Many libraries are switching their traditional print approval plans to DDA plans, or entering agreements with providers such as EBL, EBSCO and JSTOR. For example, at Western University in Ontario, the library committed $100,000 to a DDA program in 2012-13, using Ingram-Coutts and the myilibrary platform (Fyfe 174). The St. Edward's Library now has 256,000 e-books, of

which 20% are owned, the rest being DDA titles (Ferris 140). There are many more examples in the literature over the past five years.

In general terms, libraries set up a profile based on publication date, publisher, academic level, price and subject area, which guides the universe of titles downloaded into the catalogue. Purchase triggers are set, ranging from the first click to several clicks before a title is purchased, and titles may be purchased with single or multiple user licenses. With the increasing costs of short term loans (STL's) as a percentage of the book cost, using too many STL's becomes counter-productive, with the costs mounting to much more than an early purchase would have cost.

Librarians are interested in assessing their DDA projects, and collect data on the number of titles loaded, loaned and purchased, the subsequent number of uses for purchased titles, the average cost of a purchase, the average cost of a loan, the number of titles not used after a certain time period, title usage by subject discipline, usage compared to print circulation and more (Fyfe; Carrico and Shelton).

There are challenges of course with these programs. Cataloguing and acquisition procedures and policies need to be established. DDA catalogue records may need to be de-duplicated against already purchased or licensed e-book collections. Exit plans need to be figured out. Librarians are concerned about the wisdom of letting patrons guide the library's purchases, rather than having a collection developed systematically by subject bibliographers. Sens and Fonseca warn that librarians "could fall into the trap of allowing a PDA agreement to (re)create the OPAC as a shopping tool for patrons, and by extension a marketplace for publishers." (359).

Where will the money come from to fund these programs? Publishers have recently begun raising their short term loan charges, with some publishers increasing costs from 10% of the purchase price to upwards of 50%. The cost of a DDA title, which combines short term loan charges as well as the e-book purchase pricing, may be several times higher than the cost of purchasing the same title in print, although higher costs are typical of most e-books purchased in a library setting. Interestingly though, the average cost of a book purchased in UFV Library's EBL pilot project is currently $82.57, below the average cost of $87.59 for books purchased from departmental and library general funds in 2013/14. Details on our EBL pilot project are included in a later report section.

DDA: Future Directions

What are our future options for DDA? In the short term, we are investing an additional $10,000 into the EBL program, which should allow the program to continue until the end of the Winter 2014 semester. The amount of work required to research and set up a program is not insignificant, so staying the course with one vendor has advantages. Every new e-book platform involves setting up acquisitions and cataloguing workflows, learning new administrative procedures, gathering more statistics, and a presenting a potentially new interface to students and faculty.

That being said, there are other models and options available to consider. Books at JSTOR offers a DDA program with over 30,000 academic books from over 65 university presses, learned societies and public policy publishers, including University of Toronto and McGill-Queen's Press (Sierra). The disciplines are a good match for our known areas of demand, including history, language and literature, sociology and

business. The books are integrated into the JSTOR journal platform, already a popular and respected database amongst our users, and are fully keyword searchable. Content is broken down to the chapter level, with a stable URL for each chapter and can be downloaded as PDF files which do not expire. Free MARC records are provided and interlibrary loan of chapters are allowed for MUPO titles.

The terms of the JSTOR DDA program are favorable. There are no "short-term loans" or associated charges for this. Purchases are triggered when six chapter views or four chapter downloads have taken place, until then the usage is free. This is much more generous than our EBL triggers. Once purchased, we have perpetual access and the books are free of digital rights management. There is no need to set up and use Adobe Digital Editions. The average book price is $43, with multiple user (MUPO) titles costing an average of 1.5 times that of single user titles. They offer to tailor a profile based on patterns of demand in shown by journal search and book turnaway reports. JSTOR requires a minimum deposit of $5000 to join the program, and this may be a worthy option if there are unexpended library funds this March.

JSTOR also offers title by title and subject collections purchasing options, with a discounted pricing schedule related to the number of JSTOR journal collections we have. The subject collections may be worth investigating further, such as the History subject collection.

The publisher Wiley offers another type of DDA plan which they term "Evidence Based Collection Management", and I attended a webinar on this topic on Dec. 2, 2014. In this model, libraries are assessed an upfront minimum commitment fee, based on FTE's. For example, a library may deposit $45,000 with Wiley, after which access is enabled for the 15,000 books in the Wiley Online Library (not including reference books.) After the access period is over, libraries use the evidence gathered in the usage reports to decide on which titles to purchase with their deposited funds. Unlike a traditional DDA program, no automatic purchases are triggered. Titles are all MUPO licenses, with perpetual access rights and no digital rights management restrictions and are priced at the regular list price.

Although I am very interested in the theory behind the model, we would have to closely examine the subject content of the titles to see how well they fit the needs at UFV. If the book content is strong in the health sciences, psychology and social sciences, they could potentially be well used, based on our journal usage reports. However, content in engineering, math, statistics, and physics may be unnecessary. This type of plan may also be available from other publishers with a better fit for our high demand areas.

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Section 4: Analyzing our Demand Driven Acquisition EBL Pilot Project

In the summer of 2014, we entered into a Demand Driven Acquisition (DDA) Pilot project, with EBL as the chosen vendor. Our account profile was created, with selected publishers, subject exclusions, price limits, loan periods, purchase triggers, purchase models and more established. Cataloguing procedures were put into place for uploading new DDA records into the catalogue, de-duping records against ebrary holdings, removing withdrawn titles, and modifying catalogue records upon purchase. We currently have 33,087 EBL catalogue records in SIRSI.

UFV Account Settings

When a book has been printed, downloaded or viewed for more than 5 minutes, a short-term loan (STL) is triggered. Our STL period is set at 1 day. UFV purchases titles on the third STL. The cost of a STL varies between publishers, ranging from 5% to 50% of the purchase price. Our profile has set a maximum price limit on unmediated STL's at $45.

EBL Books included in our catalogue have been limited to a maximum purchase list price of $140.00. When buying a book, the final cost includes the cost of the initial STL's, as well as the purchase price.

EBL offers a Non-Linear Lending model. Once a book is purchased, we are given unlimited simultaneous users, up to 325 loan instances in a year. If we exceed 325 loan instances, we must either purchase a 2nd copy or have access suppressed until the next year begins. For purchased books, a loan instance is triggered when a patron views the book for longer than 10 minutes.

Summary of Current Pilot Project (as of January 9, 2015)

Initial Deposit: $15000 US
Expenditures to date: $14,344.93 US
Approximate spend rate: $3500 per month

Usage Summary

Since our pilot project began in the fall 2014 semester, 1222 titles have been discovered and used by 795 unique library patrons. Uses include titles which are browsed for less than the time it takes to trigger a short-term loan (STL).

Total Titles Used:	1222
Total STLs and Loans:	726
Total Unique Users:	795
Total Downloads:	233
Total Unique Users (Downloads):	68
Total DDA Uses:	2037
Total STL:	607
Total Unique Users (DDA Usage):	778

Expenditure Summary

Our expenditures have been spent on a combination of 605 short-term loans and 53 auto-purchases. The average cost of a STL is $16.48. A short-term loan acts in a way as a replacement for an interlibrary loan request, with immediate rather than delayed delivery. To analyze cost effectiveness we would have to compare this to the total cost of each Interlibrary Loan we bring in, including staffing costs, which is not available at this time.

The average cost of a purchase is $82.57. Interestingly, according to the UFV Library Technical Services Annual Statistics, the average cost of an item purchased from Departmental and Library General funds in 2013/14 was $87.59.

Total Number of Owned Titles:	53
Expenditure (USD) to Date:	
Total Cost of Autopurchases x 53:	$4,376.45
Average Cost of Autopurchases x 53:	$82.57
Total Cost of STLs x 605:	$9,968.48
Average Cost of STLs x 605:	$16.48
Total Expenditure:	$14,344.93

Owned Titles

All of the purchased titles have been used subsequent to their purchase, which is a significant finding. Owned titles have been used 235 times already, by 94 different users. The average number of loans per title after purchase is 2.24 times in four months.

Total Owned Titles:	53
Total Owned Uses:	235
Total Owned Loans:	119
Total Unique Users (Owned Usage):	94
Total Unused Autopurchased Titles (Since Purchase):	0 / 53

The cost per use on our highly used purchased titles is low, ranging from $1.92 to $7.34 per use, so far. Cost per use should continue to drop once these titles have been in the collection longer.

Top 5 Most Used Titles	Uses	Cost	Cost/Use
Librarian's Guide to Online Searching	50	$96.00	$1.92
Introduction to Technical Services : Eighth Edition	45	$105.00	$2.33
Consciousness, Second Edition An Introduction : An Introduction	24	$93.00	$3.88
Principles Of Developmental Psychology : An Introduction	22	$112.50	$5.11
Politics and Vision : Continuity and Innovation in Western Political Thought	16	$117.44	$7.34

Not surprisingly, the highest used titles seem to be textbooks, possibly even required texts for a course. These were not included intentionally, and were a coincidental finding by students using our catalogue. It does show the demand for these types of resources. Circulation reports of our print holdings often show our top used titles to be textbook type items. Libraries differ in the their philosophy on collecting course textbooks, with some intentionally purchasing books on required reading lists, and others declining to purchase them under most circumstances.

Publishers

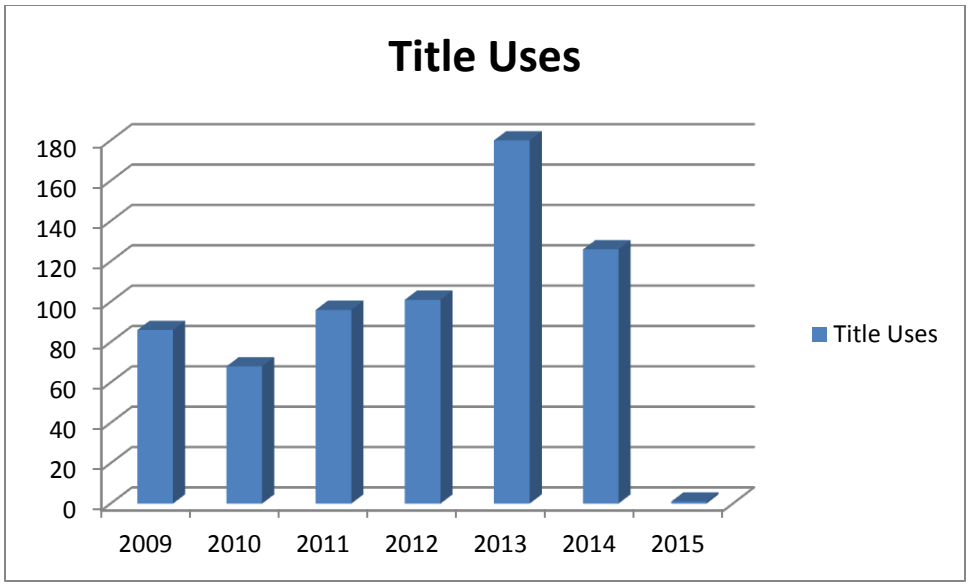
A total of 48 different academic publishers and university presses were used for either STL's or Auto-Purchases.

Top Publishers Used in STL's and Auto-Purchases

Publisher	STL's or Auto-Purchases
Taylor and Francis	98
Palgrave Macmillan	85
Cambridge University Press	55
ABC-CLIO	54
Oxford University Press	53
Princeton University Press	38
Rowman & Littlefield Publishers	36
Ashgate Publishing Ltd	28
SAGE Publications	23
McFarland & Company, Inc., Publishers	16
Duke University Press	15
University of Chicago Press	15
Columbia University Press	13
Guilford Publications	11
PublicAffairs	10

Publication Dates for Books with Short Term Loans and Auto-Purchases

One advantage of the DDA collection is that it offers students and faculty access to a large pool of recently published book titles, without the delay of having to select, order, catalogue and shelf the items first. In our 4 month pilot, users borrowed or purchased 408 titles with a publication date of 2012 or later.



Subject Areas

The EBL expenditure report includes broad categorization by subject. It was somewhat imperfect and missing subject tags for a number of titles, so I added these. The majority of titles used for short-term loans or auto-purchases are in the category of Social Sciences, followed by History, Business and Education.

Category	STL's or Auto-Purchases by Subject
Social Science (incl SW, Crim)	150
History	125
Business / Management	42
Education	41
Literature	40
Library Science	39
Medicine	37
Psychology	34
Law	26
Political Science	25
Philosophy	17
Fine Arts	14
Science	10
Health	9
Language / Linguistics	8
Sport & Recreation	8
Military Science	7
Religion	7
Nursing	3
Computer Science / IT	2

Museums	2
Architecture	1
Mathematics	1
Pharmacy	1

Analysis

For book-reliant disciplines like History, this type of DDA program seems to be well adopted. It may go some ways to providing a solution to the insatiable demand for more books on the wide array of topics that history students choose to write about. Rather than trying to guess at titles to purchase "just in case", we are able to provide immediate access to titles "just in time."

It is interesting how few titles were used in the sciences. They are a number of possible reasons for this, and further analysis would be needed to determine this.

- The maximum list price limit of $140 likely eliminated many expensive science titles from inclusion into our upload
  and/or
- Science students are not using the library catalogue to discover books, or not using books to the extent used in other disciplines

The topics of the books used are wide ranging, including books on workplace bullying, Byzantium, play-based learning, ADHD, First Nations schooling, police use of force, people with disabilities, abortion, game addiction, slavery, the Crusades, climate change, acting, contemporary art, Nazi Germany, American Sign Language, Chinese literature, Coleridge, Kipling, Yeats, Darwin, divorce, fairy tales, street gangs, and developmental psychology to name a few. Many of the topics are surprising and would have been hard for ordering librarians to predict, such as the Queen of Sheba, rural Russia, Puerto Rico, cotton, Hoplite warfare, Burma, Hiroshima Mon Amour, Zhuangzi, Bourdieu in Algeria, graffiti in antiquity, Sicilian folk tales, or the "global pigeon". The books selected do seem to be, for the most part, suitable for an academic library, due to the screening of publishers, subjects and keywords done in setting up our profile. Some titles fit the category of textbooks, but the vast majority do not. Further refinement can be made to the profile to make changes if required.

At the heart of any discussion on the value of a DDA program is the somewhat personal philosophy that librarians have on access versus ownership. Librarians have a differing level of comfort on using funds to provide access to titles at the point of need, rather than to purchase and own the content outright. Costs for providing short-term loans need to be compared to the realistic costs of interlibrary loan. A further analysis I would like to conduct is to calculate the cost per use for print books catalogued and circulated in a given year, by aggregating the cost of all items (eligible to circulate) purchased and dividing by the number of circulations of those items. This would provide a useful comparison for our current short-term loan cost of $16.48 per use.

Section 5: Analyzing the Library's Collection Budget

In order to effectively plan for the future of the library's collection budget, including the electronic resources budget, I felt it was important to analyze a number of aspects. I looked at how our overall budget has been increasing or decreasing over time, and compared this to the institutional budget and to the trends in other academic libraries. I also examined how our overall budget is divided between operating and collections, and compared this to other CPSLD libraries. Further analysis was done of the changing distribution of the collections budget over the past five years, focusing on the main categories of allocation such as serials, electronic resources and departmental allocations. I looked at the distribution of spending on physical versus electronic items over time, and lastly analyzed spending by type of material.

UFV Library Budget Compared to Institutional Budget

The UFV Library budget is comprised of a fund transfer from UFV's main budget, revenue from library fines, donations and other transfers in. The budget is separated into different accounts, with the operating budget paying for expenses such as salaries and the collections budget paying for journals, books, and more. Therefore, the collections budget is dependent on the total amount of budget we receive, and the relative portion dedicated to it.

I analyzed how the UFV Library's overall budget has grown using budget data from 2008/09 and 2013/14, and comparing this to the growth of the total UFV budget. The total UFV budget figures were taken from the CPSLD Annual Statistics for those years, available to view at http://cpsld.ca/home/statistics. As shown below, the UFV Library budget has not grown in proportion to the overall increase in the UFV budget, with the Library budget increasing by 15.84% and the overall institutional budget increasing by 44.86% (see table 1, table 2, and fig. 1).

Table 1

Library Budget Compared to UFV Budget 2008/09 and 2013/14

Budget	2008/09 Budget	2013/14 Budget
Library Budget	$2,576,159.86	$2,984,148.00
UFV Budget	$79,586,223.00	$115,287,946.00

Table 2

Percentage Increase to Library Budget Compared to Percentage Increase in UFV Budget

Fiscal Cycles	% Increase Library Budget	% Increase UFV Budget
2008/09 - 2013/15	15.84	44.86

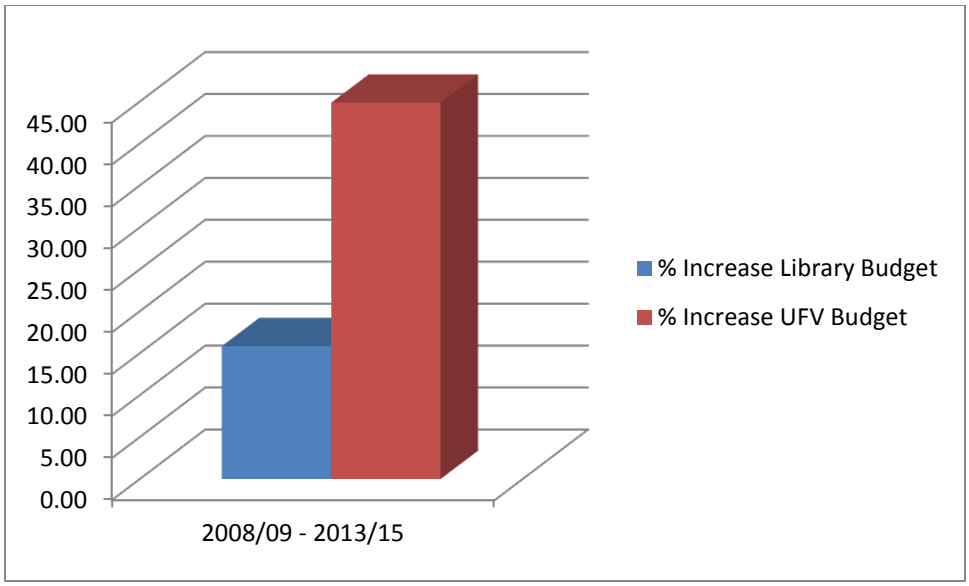


Fig.1 Percentage Increase to Library Budget Compared to Percentage Increase in UFV Budget

Source for Table 1, Table 2, Fig. 1: Library Acquisitions Budget Compared to UFV Budget spreadsheet, UFV Budget Compared tab.

Is this pattern unique at UFV? To analyze this, I looked for other comparative statistics. The CPSLD Annual Statistics provide a calculation for "Library Expenditures as % of Institutional Budget". I used figures for 2008/09 and 2013/14 for BC post-secondary institutions. An overall pattern of decline is evident, with only a few exceptions.

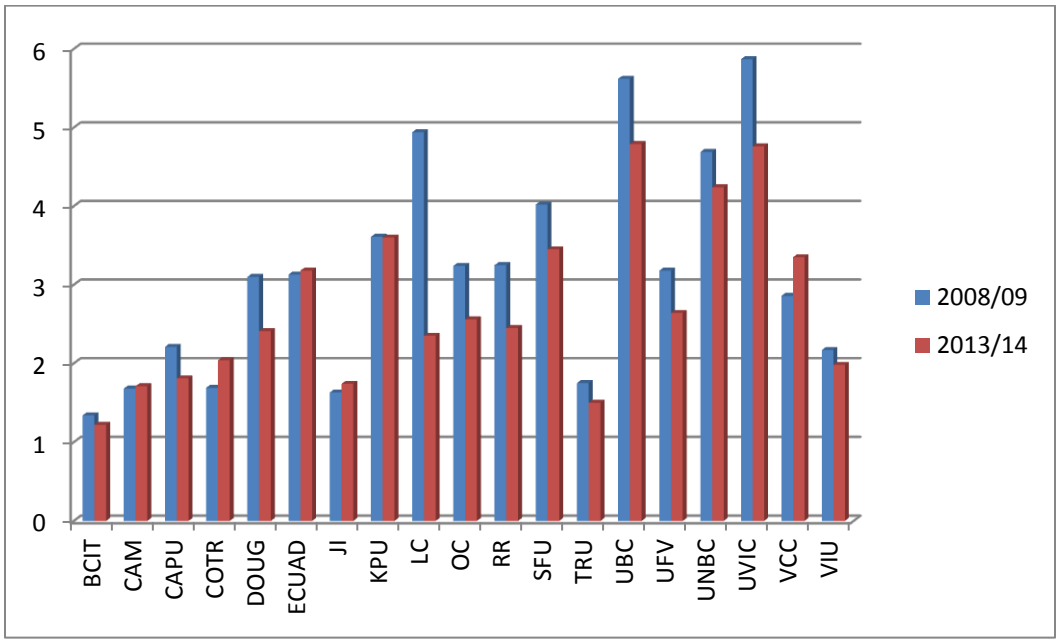


Fig. 2 Library Expenditures as % of Institutional Budget

Note: Some of the smallest institutions have been removed from the chart for readability.

Source: CPSLD Annual Statistics 2008-09; CPSLD Annual Statistics 2013-14.
See also Library Acquisitions Budget Compared to UFV Budget spreadsheet, CPSLD tab.

A very similar trend shows in the Association of Research Libraries (ARL) statistics for Library Expenditure as % of Total University Expenditure (see Fig. 3)(Association of Research Libraries). Therefore, this trend is happening in academic institutions across North America. I felt it was beyond the scope of this report to investigate all the factors behind this.

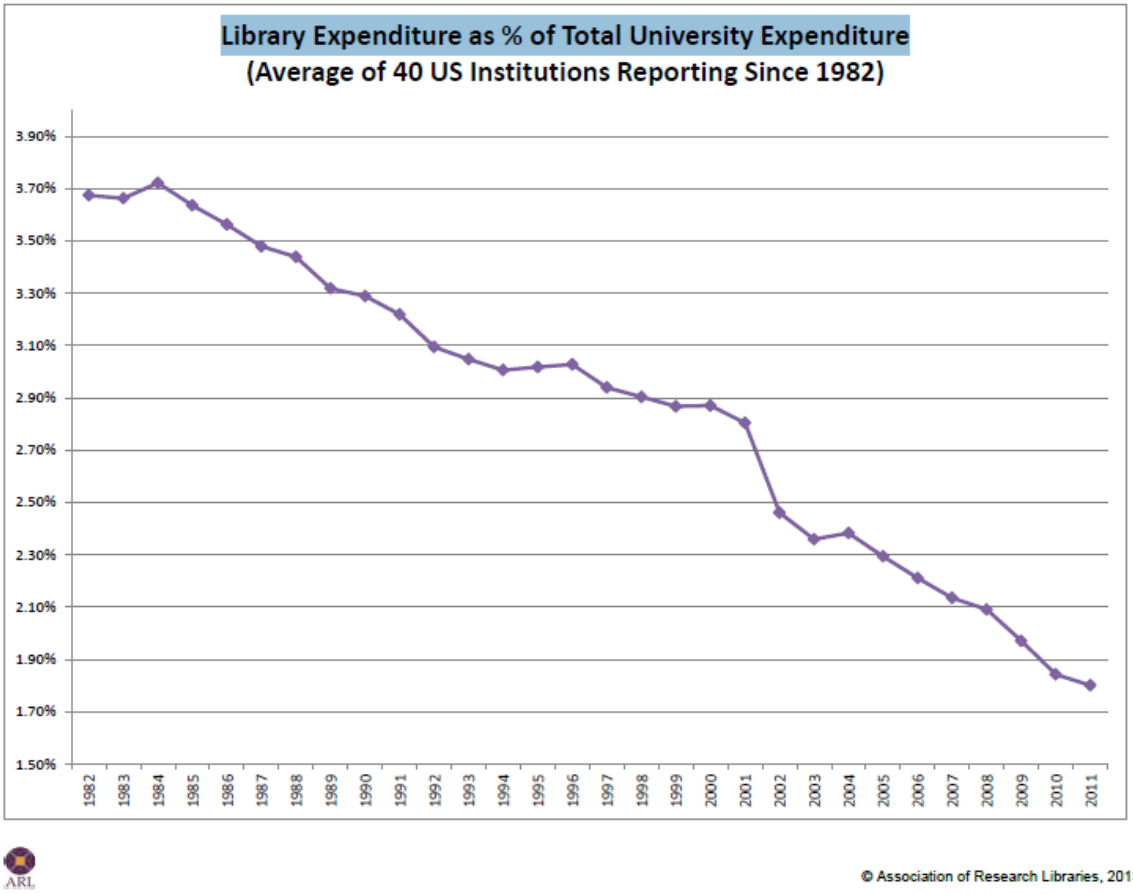


Fig. 3 Library Expenditures as % of Total University Expenditure
Source: Association of Research Libraries website <http://www.arl.org/storage/documents/eg_2.pdf>

Has our decline been better or worse than the other special purpose universities in B.C.? I extracted the five universities from the CPSLD statistics reports and compared them to UFV.

Table 3
Library Expenditures as % of Institutional Budget, B.C. Special Purpose Universities

Special Purpose	2008/09	2013/14
CAPU	2.21	1.81

ECUAD	3.13	3.18
KPU	3.61	3.6
UFV	3.18	2.64
VIU	2.17	1.98

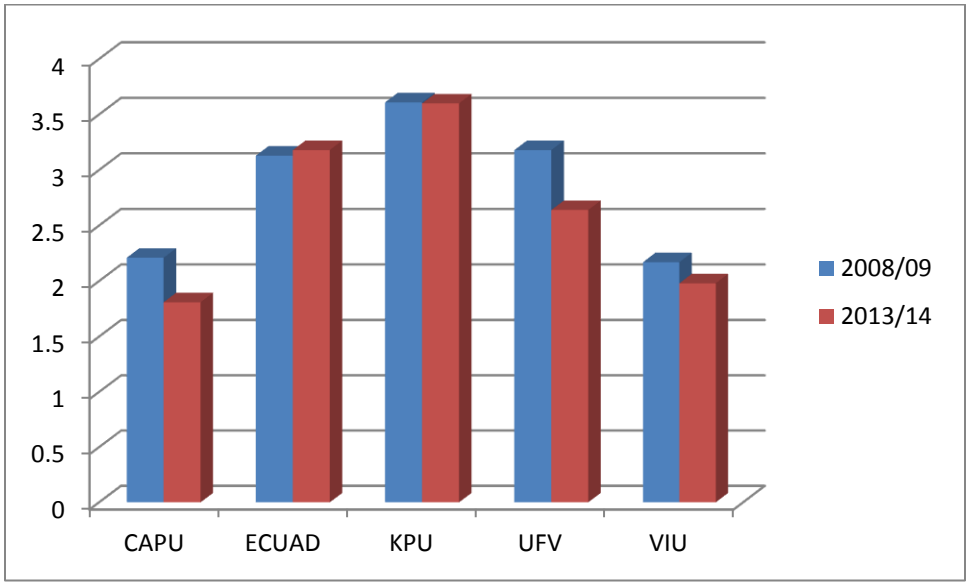


Fig. 4 Library Expenditures as % of Institutional Budget, B.C. Special Purpose Universities
Source: Library Acquisitions Budget Compared to UFV Budget spreadsheet, CPSLD tab.

Our overall decline is higher, but in 2013/14 UFV had the same percentage of the institutional budget as the average for the five special purpose universities (see table 3, fig. 4 and table 4).

Table 4
Average % of Institutional Budget, B.C. Special Purpose Universities

	Average 2008/09	Average 2013/14	Decline
Special Purpose	2.8600	2.6420	-0.2180
UFV	3.1800	2.6400	-0.5400

Source: Library Acquisitions Budget Compared to UFV Budget spreadsheet, CPSLD tab.

UFV Library Collections Budget

The UFV Library Collections Budget is established every year as a portion of the overall UFV Library budget. This total is then subdivided annually into major categories of expenditures, such as Serials (for direct orders of journals, magazines, newspapers in all formats), Electronic Resources (includes online indexes, full-text databases, electronic journal publishers' packages, e-books, digitized primary resources), Reference and Reference Online (for encyclopedias, dictionaries, etc.), Departmental Allocation funds, and more.

Growth of the Library's Collection Budget

How has our library's collection budget grown in recent years? There have been gains and losses; in 2014/15 we are below the budget we had in 2011/12 (see table 5 and fig.5).

Table 5
Total Library Collections Budget 2008/09 – 2013/14

Fiscal Cycle	Total Library Collections Budget
2008/09	$930,505.00
2009/10	$1,014,882.00
2010/11	$1,039,682.00
2011/12	$1,119,721.00
2012/13	$1,115,921.00
2013/14	$1,051,180.00
2014/15	$1,095,380.00

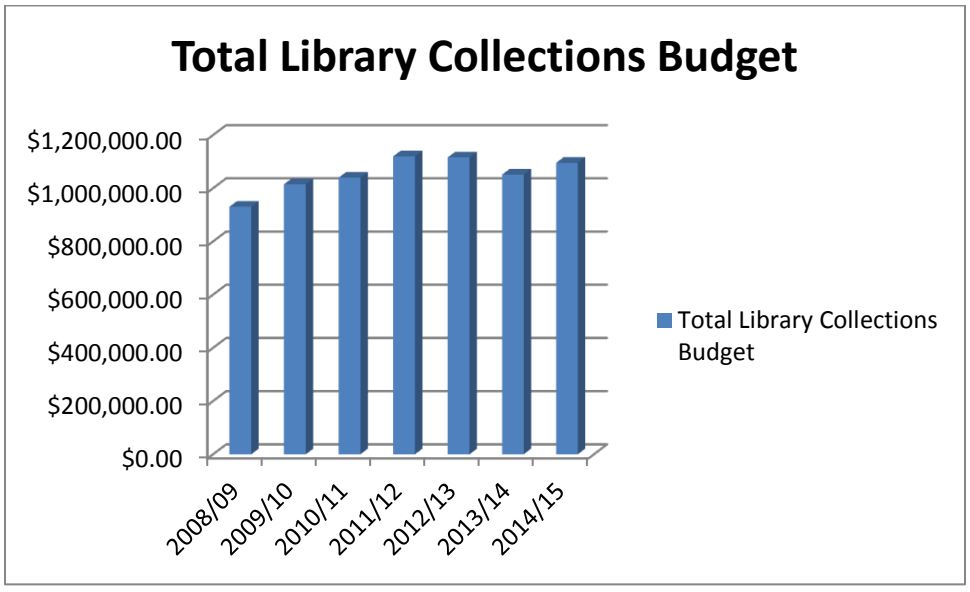


Fig. 5 Total Library Collections Budget 2008/09 – 2013/14

The Library has a certain amount of control over dividing the overall budget into operating and collections budgets. It is interesting to see how the UFV Library compares to other B.C. libraries. The *CPSLD Statistics: 2003 – 2012* provide figures on "Collection Expenditures as % of Library Expenditures." (8). I compared UFV to a variety of institutions, including other special purpose universities and universities in the province. In general, we have maintained a fairly consistent division of spending between operating and collections, understandable in that the majority of operating costs come from full-time salaries. UFV also behaves more like the bigger universities than the colleges, in placing a higher relative importance on building the collection (see fig. 6).

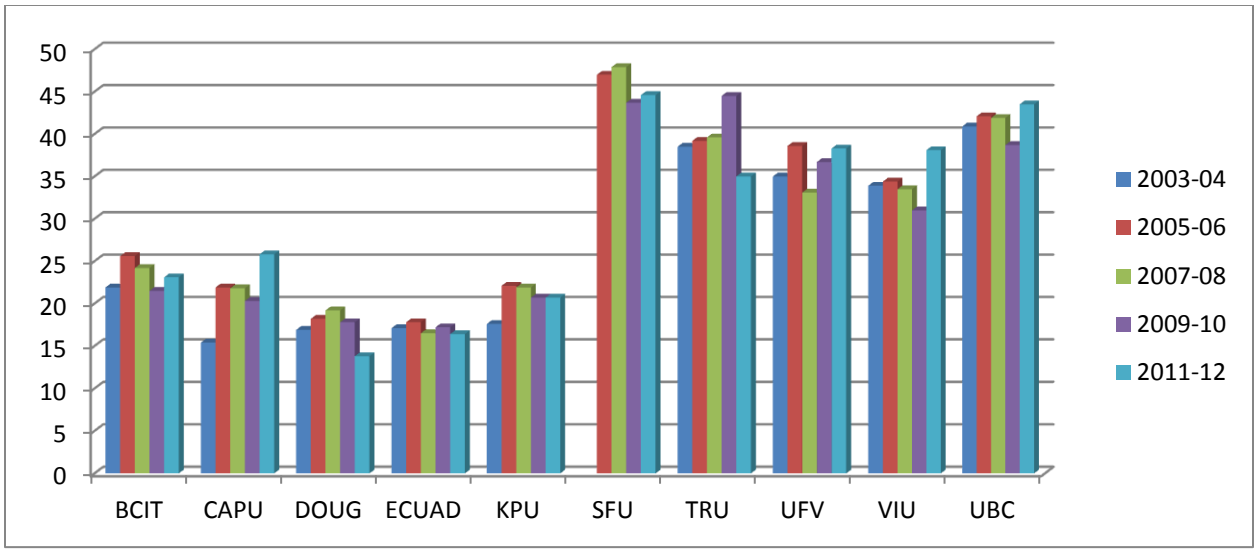


Fig. 6 Collection Expenditures as % of Library Expenditures
Source: *CPSLD Statistics: 2003-2012*
See Library Acquisitions Budget Spreadsheet Compared to UFV Budget Spreadsheet, CPSLD tab.

How does this compare to a wider group of libraries? According to the *Library Budget Predictions for 2014* report by the Publishers Communication Group (PCG), the average breakdown of library expenditure was salaries (44.7%), operating expenses (11.8%), binding (0.4%), and materials (43%). The information was based on 2011 ARL data from 126 libraries (see fig. 7).

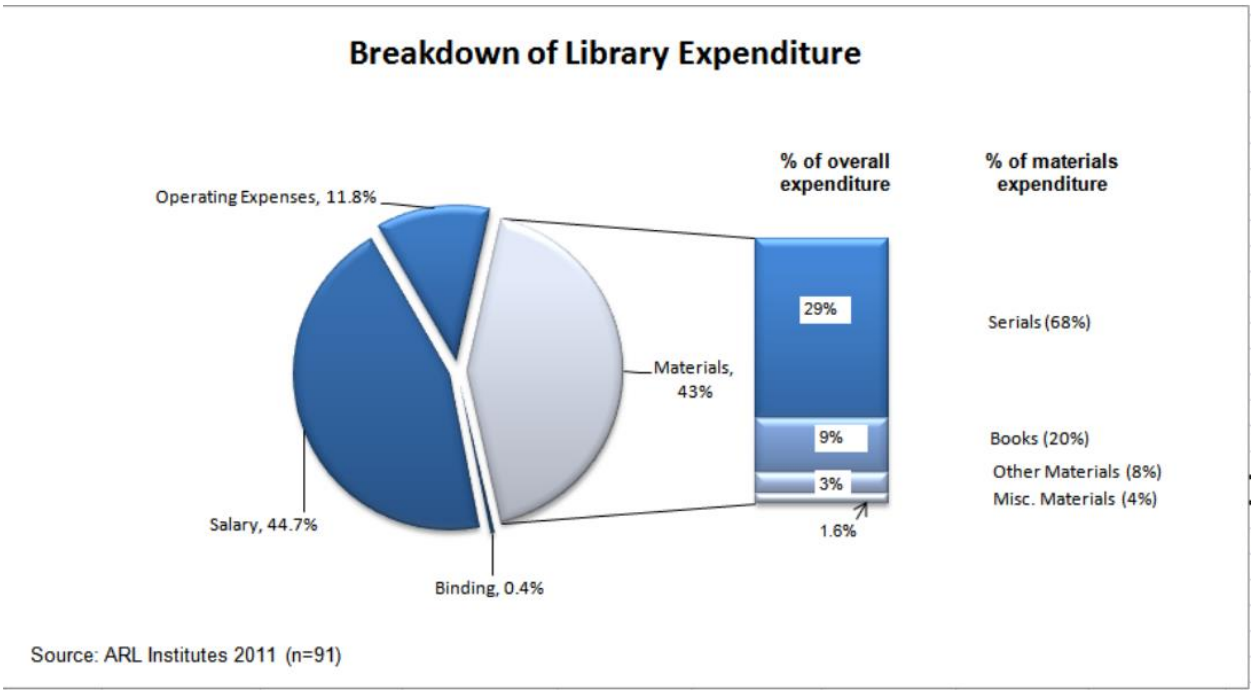


Fig.7 Breakdown of Library Expenditure, ARL Libraries.
Source: Publishers Communication Group. *Library Budget Predictions for 2014* (7).

This ARL figure of 43% of the budget being expended on materials is high compared to BC academic libraries. UFV had a percentage of 36.06% in 2013/14 (see table 6). I feel UFV needs to maintain a ratio in the range of 35 – 38% in order to provide an adequate collection for our undergraduate and graduate level courses, and to be keeping with our university cohort group.

Table 6
Collection as Percentage of Library Expenditures 2013/14

Institution	Collection as % of Library Expenditures 2013/14
SFU	38.47
TRU	28.28
UFV	36.06
UVIC	47.31
UBC	39.17
VIU	38.50

Source: Library Acquisitions Budget Spreadsheet Compared to UFV Budget Spreadsheet, Collection Expend % tab.

Spending Power

As previously stated, our UFV Library Collections budget in 2014/15 is less than it was in 2011/12. The effect of this budget cut is compounded by the inflationary costs of library materials. Looking at the major categories of serials, books, and electronic resources, I calculate that costs have gone up by an average of 9.8% in two years (see table 7). Therefore, our spending power has decreased, and without a budget increase we are not able to purchase or license as many items each year.

Table 7
Average Percentage Price Increase for Serials, Books and Databases

Major categories	2011-12	2013-14	Price increas	% Price Increase	Average % Increas
Average price paid for Serials (Direct)	$262.72	$295.70	$32.98	12.55	9.80
YBP Approval Titles Average List Price Books	$83.59	$90.33	$6.74	8.06	
Database Price Increase Estimated	$452,955.05	$492,797.01	$39,841.96	8.80	

Source: Buying Power 2011 to 2013_14 Spreadsheet

A further significant blow in 2015 will be the drop in the Canadian dollar relative to U.S. dollar, as the majority of library invoices are paid in U.S. funds.

Discussion

It is unlikely that a windfall increase in the UFV Library's Collection Budget is going to occur, given the widespread trends shown elsewhere. According to the PCG report, North American libraries are predicting an overall budget change of -0.5 % in 2014 (Publishers Communication Group 4). As shown in the ARL and CPSLD statistics, the percentage of institutional budgets going to libraries is dropping in most institutions. UFV is being given a percentage in line with the other special purpose universities, which is not to say that it is adequate, just the reality of the situation. We are already directing a relatively high percentage of the overall budget to collections, in keeping with other larger libraries, and

any changes to this internally would have to come from staff reductions. We likely missed our best opportunity for a significant rise in our budget in the 2009/10 fiscal year, after we became a special purpose university (see fig. 8).

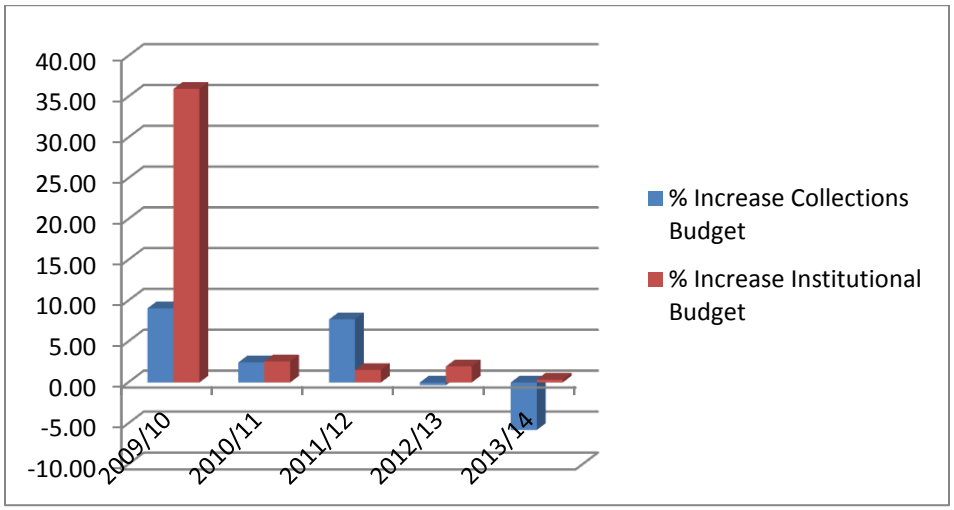


Fig. 8 Increase in Collections Budget Compared to UFV Institutional Budget 2009/10 to 2013/14.
Source: Library Acquisitions Budget Spreadsheet Compared to UFV Budget Spreadsheet, UFV Budget Compared tab.

In the absence of budget increases and with material prices rising, we will need to make careful decisions on how to best allocate the collections budget that we have.

Allocating the Collections Budget

Changes in Allocation of Funds over Time

As has been the case in other libraries, our pattern of Collections spending has been changing significantly over the past several years (see fig.9). I will discuss the major categories below.

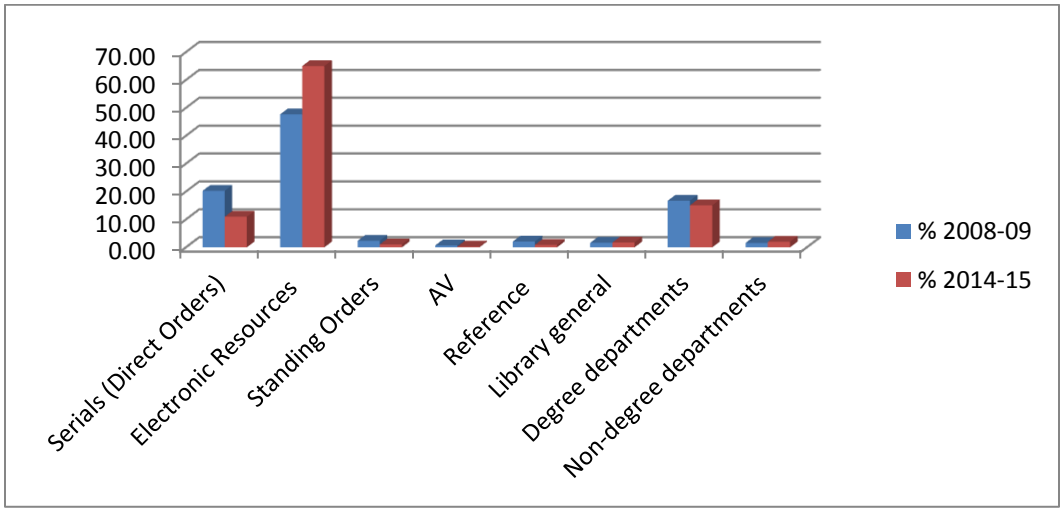


Fig. 9 Collections Budget Spending by Major Category
Source: Library Acquisitions Budget Analysis Spreadsheet, 200809 & 201415 Tab

Serials (Direct Orders) Allocation over Time

At the end of the 1990's, our print serial subscriptions were highly important to our library collections, with approximately 1470 direct subscriptions being received. We had far fewer online journals, and print circulation was strong. Our number of direct subscriptions has been greatly reduced to approximately 400 titles, with hundreds of subscriptions migrating to an online format (see fig. 10, fig. 11). Those items which we continue to receive in print often show lackluster circulation statistics, with a few exceptions such as *The Economist*.

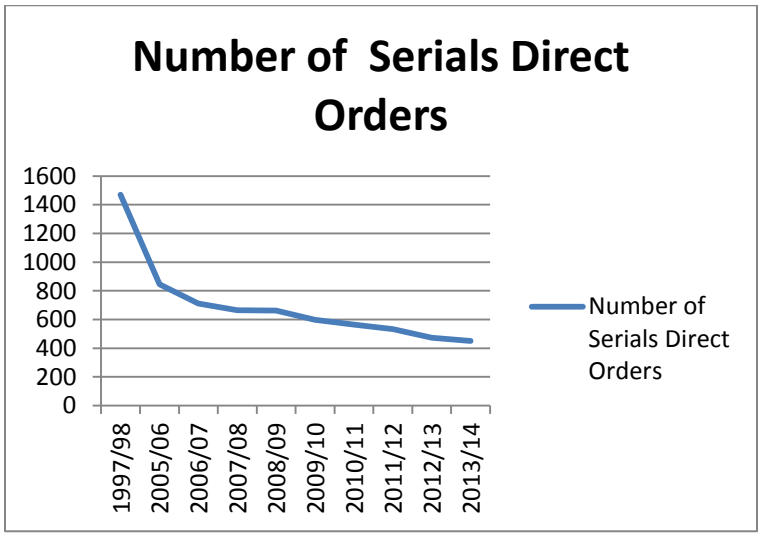


Fig. 10 Number of Serials Direct Orders Over Time

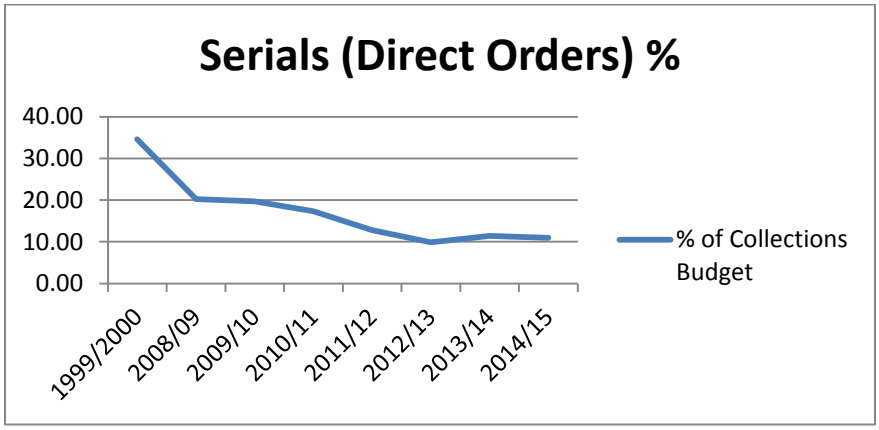


Fig. 11 Percentage of Collections Budget Allocated to Serials (Direct Orders) Over Time
Source: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet, Over Time Tab

The trend towards cancellation of print serials is common throughout academic libraries (Long and Schonfeld 7). Figure 12 below shows the "Physical Periodicals expenditures as a % of Library Expenditures" for CPSLD libraries, between 2003/04 and 2011/12. The declining trend is seen in almost all libraries. It would be reasonable to conclude that our reduction of print serials will continue as more titles become available in an online format.

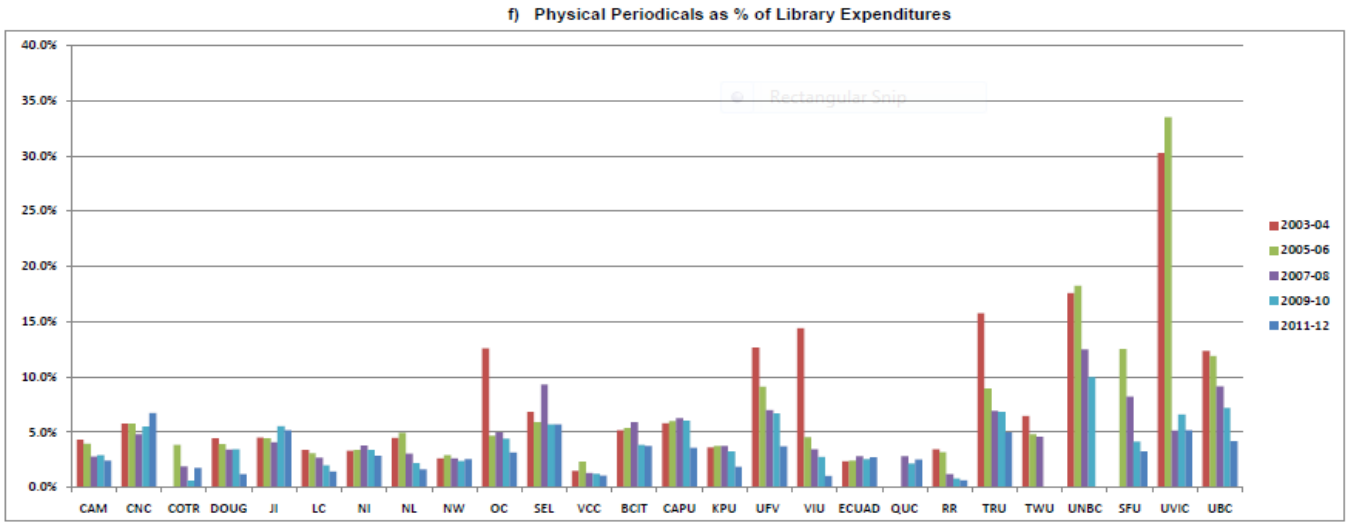


Fig. 12 Physical Periodicals as % of Library Expenditures
Source: *CPSLD Statistics: 2003 – 2012* (9)

Electronic Resources Allocation over Time

Our spending on Electronic Resources, including online indexes, journal packages, and e-books has taken an enormous jump since the end of the 1990's. The allocation has gone from 10% to 65% of the collections budget (see fig. 13). This huge increase is understandable with the migration of all types of content from physical materials to a web-based format, and is in keeping with the growing importance of online learning, mobile platforms, and demand for convenient, anytime, anywhere access to resources (Johnson).

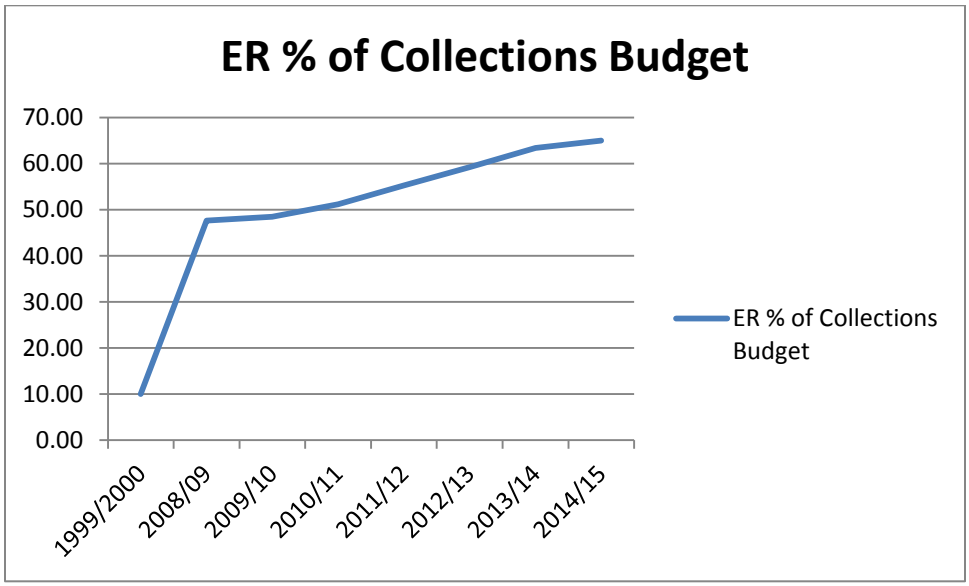


Fig. 13 Electronic Resources Allocation as Percentage of Collections Budget
Source: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet, Over Time tab.

This pattern can be seen in the *CPSLD Statistics: 2003 – 2012* report, with Electronic Services as % of Library Expenditures growing rapidly in most B.C. post-secondary libraries (see fig. 14).

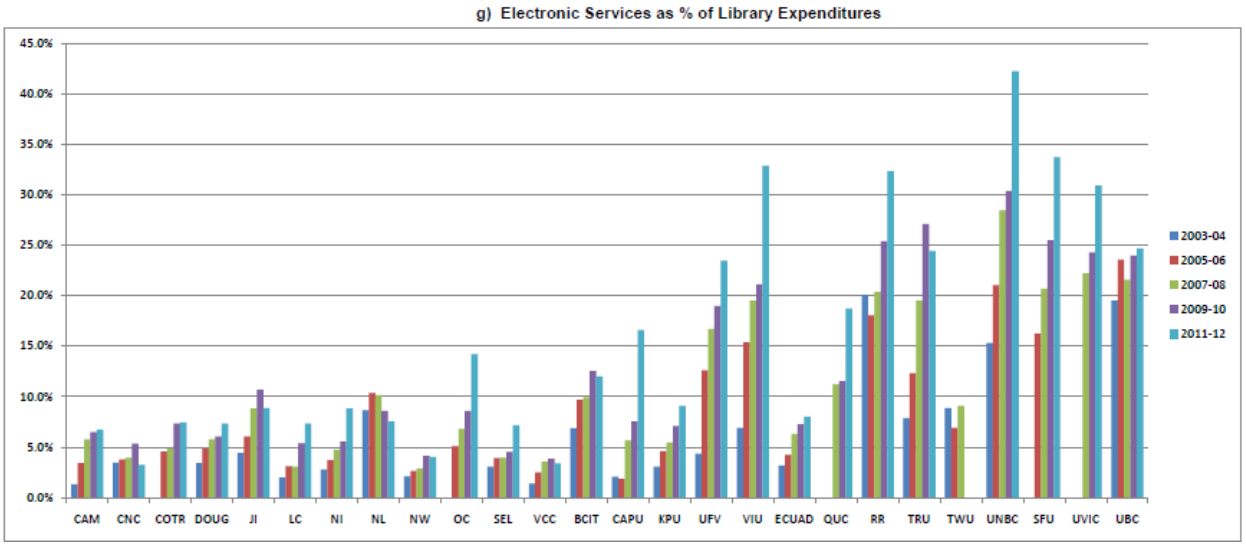


Fig. 14 Electronic Services as % of Library Expenditures
Source: *CPSLD Statistics: 2003 – 2012*

Reference and Reference Online Allocation over Time

The use and importance of reference books has declined in libraries over the past decade, with libraries downsizing their print reference collections dramatically. The internet has replaced the need for many dictionaries, directories, encyclopaedias, and handbooks. Our reference spending has decreased from 4% in 1999/2000 to .88% of the budget, and has shifted more to purchasing or licensing online reference tools, such as the *B.C. Building Code* (see fig. 15).

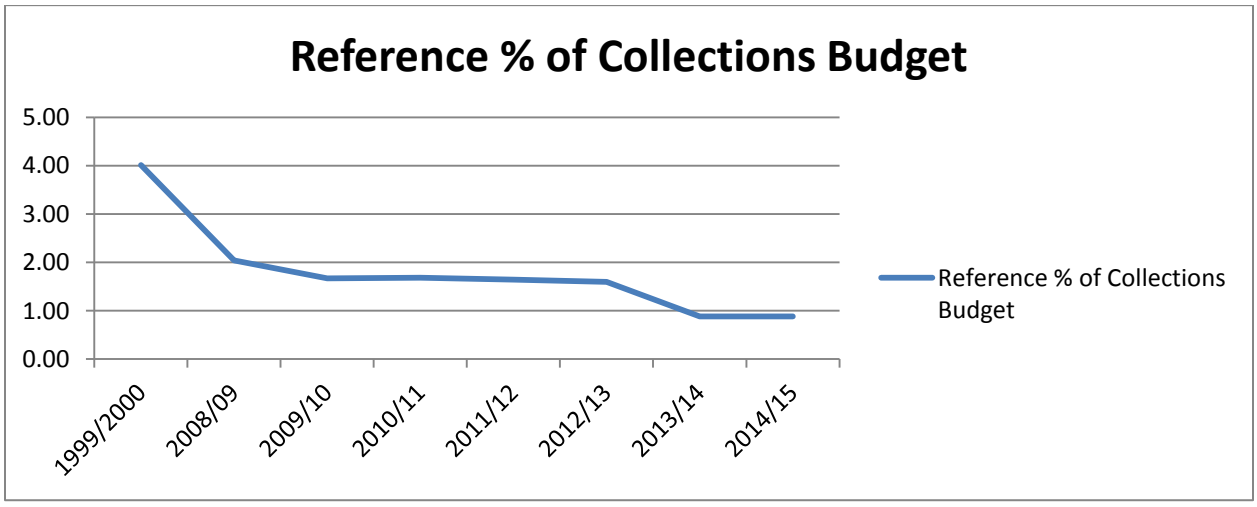


Fig. 15 Reference Allocation as Percentage of Collections Budget
Source: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet, Over Time tab.

Library General Allocation over Time

The Library General fund is used by the library to purchase new books from Canadian academic publishers, fill in gaps in the collection, and purchase in subject areas of demand. As it is a discretionary fund not used for ongoing commitments, it has flexed up and down in different budget years (see fig. 16).

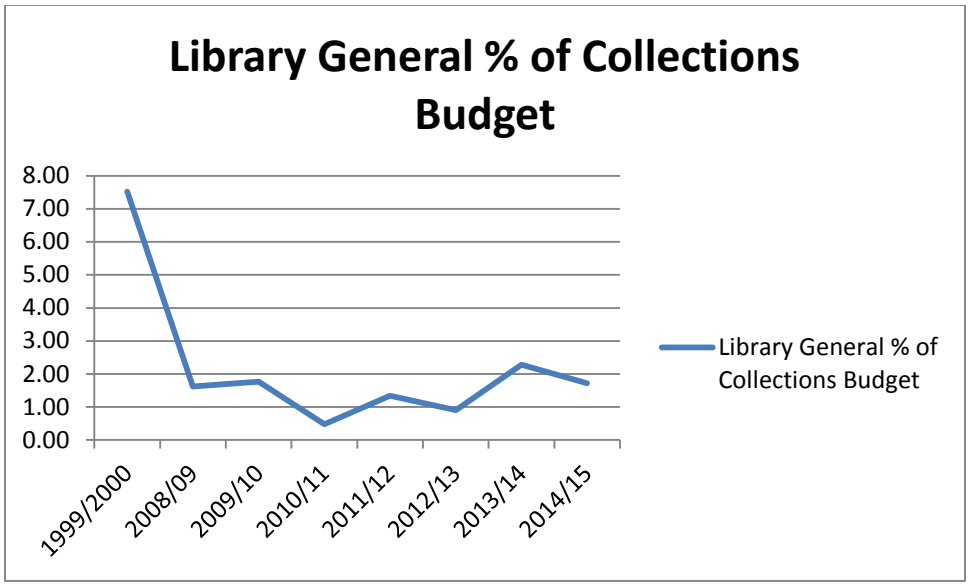


Fig. 16 Library General as Percentage of Collections Budget Over Time
Sosurce: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet, Over Time tab.

Departmental Allocations over Time

The dollar amount of money allocated to degree and non-degree departments has been relatively stable over the past several years (see table 8 and fig. 17). We have attempted to keep a relatively stable level of funding designated for one-time purchases of books and dvd's by faculty members, as decreases in departmental allocations are often meet with consternation by academic departments. However, the increased number of programs and courses, and the rising cost of books cause this fund to be spread more thinly, with the ability to purchase less. Other demands, such as the contractual obligations for electronic resources have absorbed increases in the budget.

Table 8
Departmental Allocation Amounts over Time

Dept. Allocations (Degree and Non)	Departmental Allocation Amount
1999/2000	$155,000.00
2008/09	$170,311.00
2009/10	$181,100.00
2010/11	$190,000.00
2011/12	$202,000.00
2012/13	$199,500.00
2013/14	$196,000.00
2014/15	$187,000.00

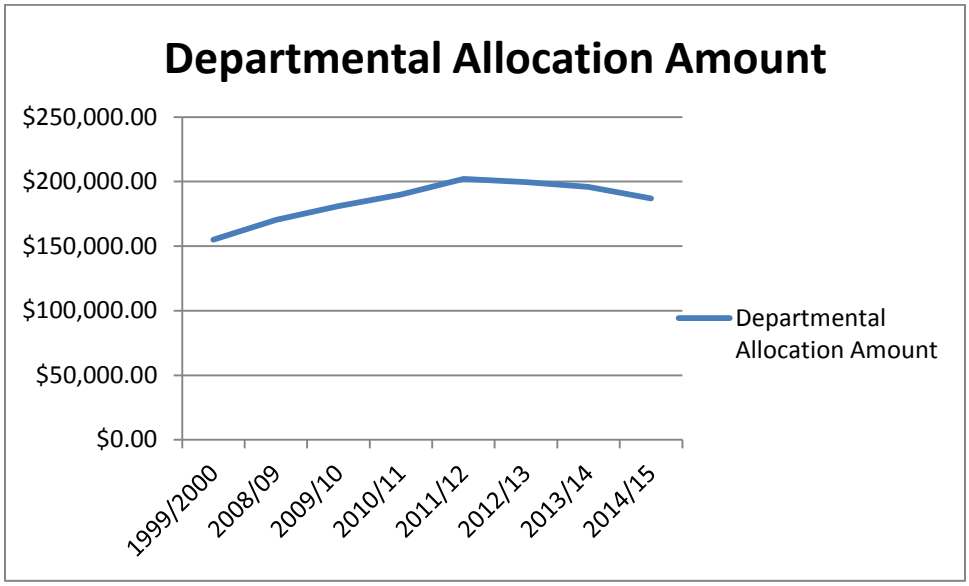


Fig. 17 Departmental Allocation Amounts Over Time
Source: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet, Over Time tab.

Physical vs Electronic Item Spending

I was interested to see how our spending for physical items (books, DVD's, print journals, print reference books) compares to spending for electronic items (databases, e-books, online journals, streaming video, online reference collections) and how this has changed over time.

The change over the past 15 years, from 1999/2000 to 2014/15 is dramatic. The percentage of the collections budget being spent on electronic resources has shifted from 10.03% in 1999/2000, when we had a small selection of online databases, to 70.26% in 2014/15 (see table 9 and fig. 18). When comparing the actual amount of money allocated, the amount directed towards physical items is not vastly different between these periods, with $359,000.00 allocated in 1999/2000 and $307,130.00 allocated in 2014/15 (see table 10 and fig. 19). This shows that most growth in our budget has gone towards electronic resources.

Table 9 Percentage of Collections Budget Spent on Physical vs Electronic Items, 1999/2000 to 2014/15

Percentage of Budget	1999/2000	2014/15
Physical Items	89.97	28.14
Electronic Items	10.03	70.26

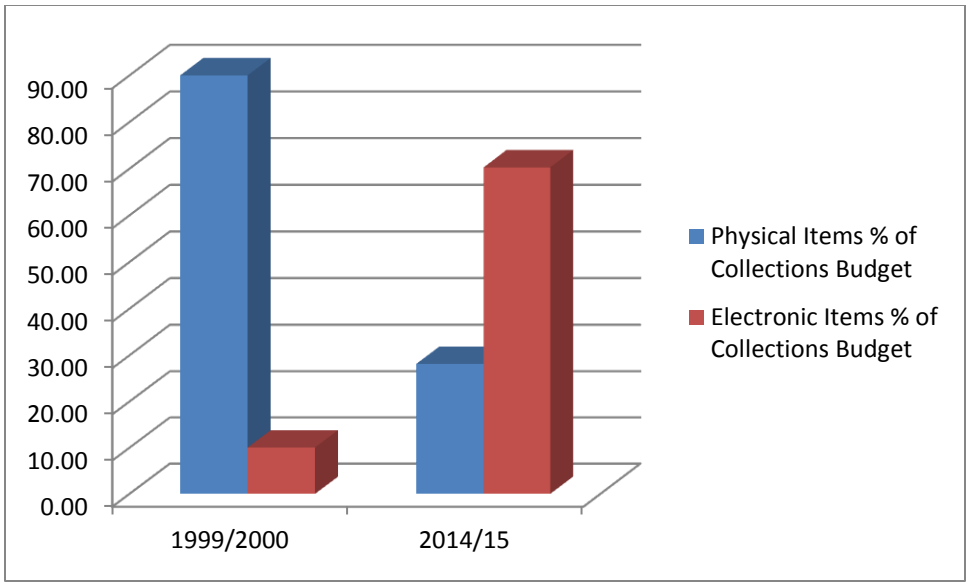


Fig. 18 Percentage of Collections Budget Spent on Physical vs Electronic Items, 1999/2000 to 2014/15

Table 10
Amount Allocated for Physical vs. Electronic Items 1999/2000 to 2014/15

Amount Allocated Within Collections Budget	1999/00 Amount	2014/15 Amount
Physical Items	$359,000.00	$307,130.00
Electronic Items	$40,000.00	$770,600.00

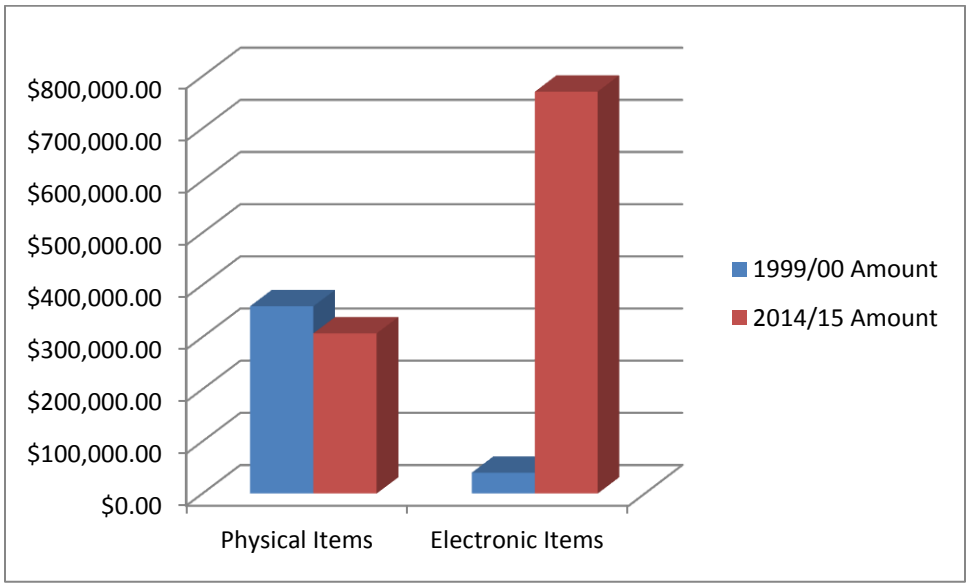


Fig. 19 Amount Allocated for Physical vs. Electronic Items 1999/2000 to 2014/15
Source: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet, Physical vs Electronic tab.

I also looked at the shorter time frame of 2008/09 to 2014/15. In this relatively short six year time span, the amount allocated for electronic items of all types has risen from $490,464.00 to $770,600.00 (see table 11).

Table 11
Amount Allocated for Physical vs. Electronic Items 2008/09 to 2014/15

Amount Allocated Within Collections Budget	2008/09 Amount	2014/15 Amount
Physical Items	431103.00	307130.00
Electronic Items	490464.00	770600.00

Source: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet, Physical vs Electronic Tab.

Discussion

What is the optimal split between physical and electronic resources? The majority of the electronic items being funded are ongoing subscriptions or contractual obligations, selected to support our wide variety of courses and programs and integrated into our courses by faculty. They provide the online journal content for which there seems to be an insatiable demand, as well as electronic books, streaming videos, indexing and abstracting databases, statistical resources, and online reference collections that students and faculty can access anytime, anywhere. Is it possible to maintain a reasonable allocation to support print book acquisitions and is there a need to do so given dropping print circulation and the widespread trends towards reduced print acquisition? These are all questions which the Library Management Team needs to consider.

Spending by Type of Material

Using the 2013/14 Library Acquisitions Budget, I examined how much money we are spending by type of material acquired. For instance, how much are we spending on books, both print and electronic? The results show that we are spending 62% of our budget on print and electronic journals, 24% on books, and 14% on all other types combined (see table 12 and fig. 20).

Table 12
Spending by Type of Material 2013/14

2013/14 Spending by Type	Amount
Journals	$656,855.29
Books	$255,328.56
Utilities	$45,053.31
Indexes only	$31,035.46
Audio-Visual	$26,521.11
Miscellaneous	$21,000.00
Reports	$20,753.41
Statistics	$4,625.44
Image Collection	$3,501.00

- Utilities includes Ebsco Discovery Service, Refworks, Worldcat
- Miscellaneous includes GST, Printing and Binding
- Reports includes Hoovers Company Profiles, and Passport GMID

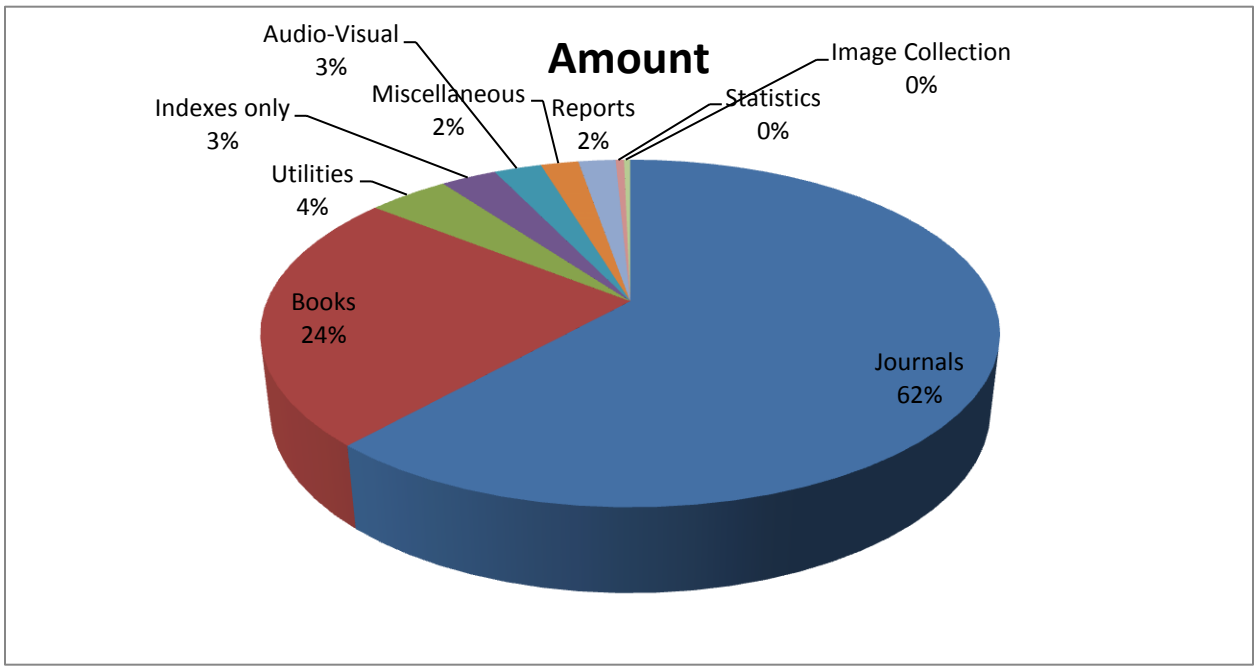


Fig. 20 Spending by Type of Material 2013/14
Source: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet, By Type Tab.

Much of this journal spending is now coming from the Electronic Resources (ER) budget (which includes Reference Online in the analysis below). By far the largest percentage is spent on providing full text journal content, with 75.48% of the ER budget going towards Index + FT and Full Text Journal packages (see table 13 and fig.21).

Table 13 Spending by Type of Material, Electronic Resources Budget 2013/14

Format	Total Spent	Percentage of ER
E-Books	$37,249.99	5.24
Image	$3,501.00	0.49
Index	$31,035.46	4.36
Index + FT	$147,109.35	20.68
Journals	$389,745.93	54.80
Reference	$12,186.56	1.71
Reports	$20,753.41	2.92
Statistics	$4,625.44	0.65
Utility	$45,053.31	6.33
Video	$19,963.11	2.81
	$711,223.56	100.00

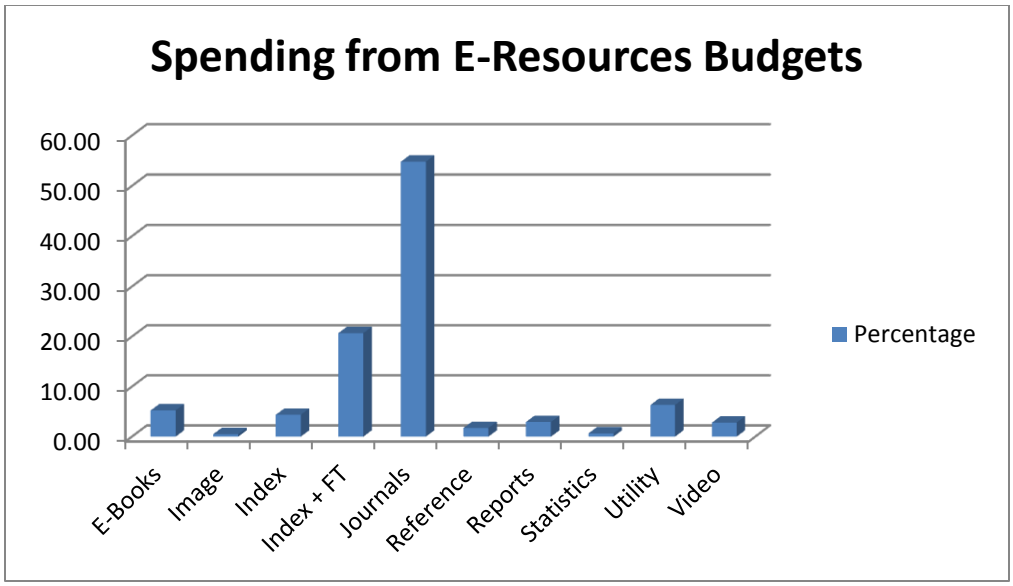


Fig. 21 Spending by Type of Material, Electronic Resources Budget 2013/14
Source: More details are available in the ER Budget By Category spreadsheet , By Format Tab

How does this compare to other libraries? The ARL statistics for Monograph and Serials Costs in ARL Libraries, 1986 – 2011 show an almost flat line of 10% growth for monograph purchases, with a steep growth of 402% in serials expenditures (see fig. 22).

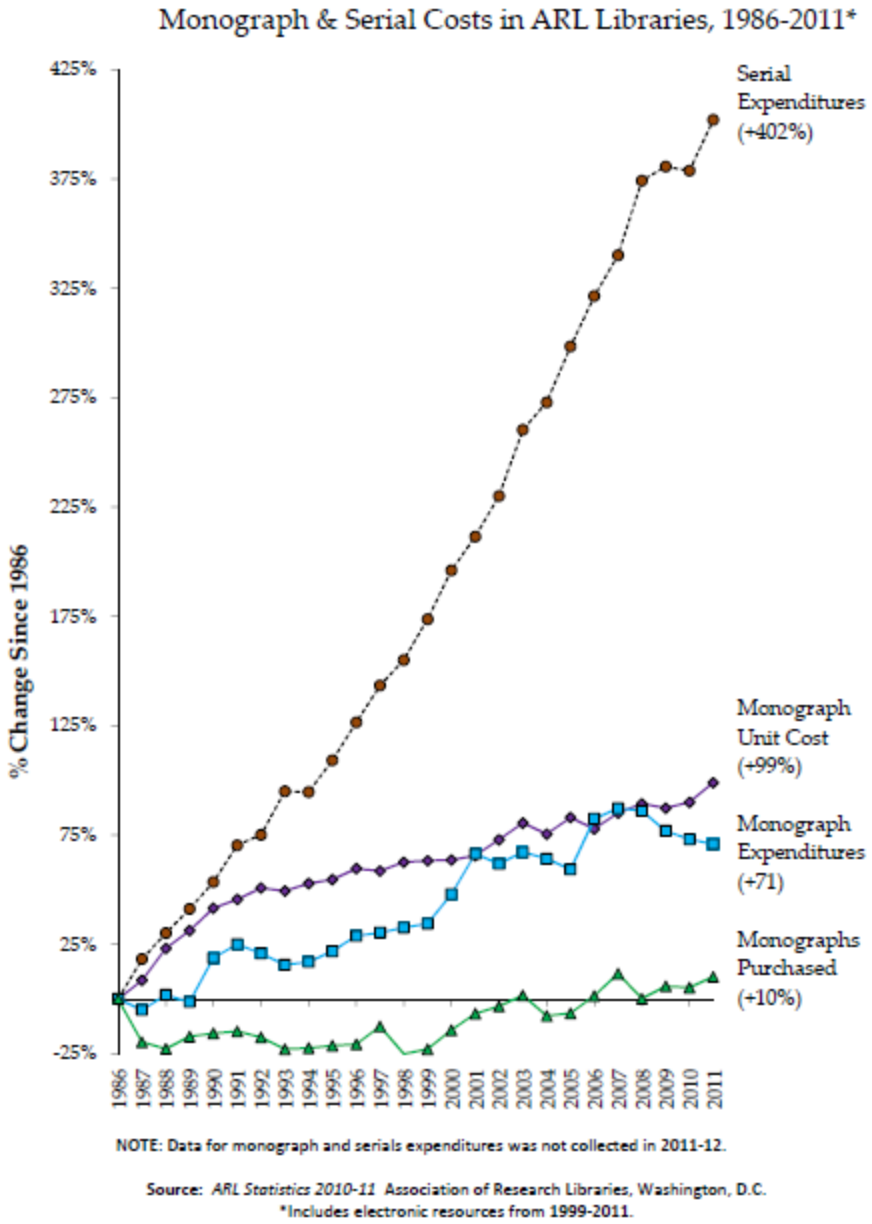


Fig. 22 Monograph & Serials Costs in ARL Libraries, 1986 – 2011.
Source: Association of Research Libraries <http://www.arl.org/storage/documents/monograph-serial-costs.pdf>

Furthermore, the Publisher Communication Group report shows an average breakdown of the collections budget to be very similar to UFV's breakdown, with 68% of the average ARL Library budget being spent on serials and 20% on books (see table 14 and fig.23).

Table 14
Materials Expenditure Comparison of ARL Libraries to UFV

Materials Expenditure	ARL Libraries 2011	UFV 2013/14

Serials (Journals)	68%	62%
Books	20%	24%
Other materials	12%	14%

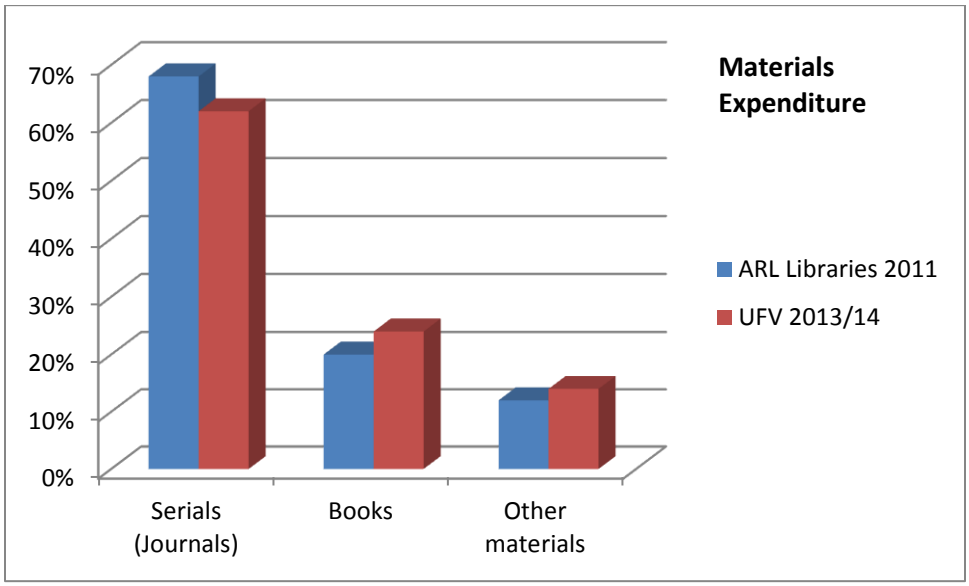


Fig. 23 Materials Expenditure Comparison of ARL Libraries to UFV
Source: Publishers Communication Group. *Library Budget Predictions for 2014* (7).
See also Library Acquisitions Budget Compared to UFV Budget Spreadsheet, Collection Expend % Tab

Discussion

The percentage of the library's collection budget which is being spent on serials seems to be reasonable and is in line with a significant group of academic libraries. This is in keeping with the importance of scholarly journals to the academic community, as stated in the Ithaka Faculty Report (Housewright 14), and the high priority library directors place on online or electronic journals (Long and Schonfeld 28.) It also reflects the shifting of budget from print journals to online journals, with hundreds of print journals being cancelled or "migrated" to an online format. I feel it is important that UFV maintain its spending levels on journals, in order to provide this valuable asset to students and faculty.

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Spreadsheets Referenced

Library Acquisitions Budget Compared to UFV Budget spreadsheet
Buying Power 2011 to 2013_14 Spreadsheet
Library Acquisitions Budget Analysis Spreadsheet
ER Budget By Category Spreadsheet

Section 6: Collections Budget Allocation Analyzed by Faculty

In order to effectively plan the future of our collections budget, it is important to understand how our collections budget is being allocated by faculty. This was a complex task, and involved categorizing our electronic resource spending, serials spending, and departmental allocations by faculty. I decided that attempting to subdivide this further by specific department is too difficult, given the cross-disciplinary nature of so many journals. I also compared the results to the relative size of the faculties by FTE count.

Electronic Resource Spending By Faculty

Electronic resources (ER) include e-book packages, indexes, full text journal packages, streaming video, statistical resources and online reference sources, purchased from the ER and REF Online budgets.

How are these ER expenditures distributed across the faculties at UFV? In order to calculate this, a lengthy process was required.

1. All ER resources were first tagged with the most appropriate department. For example, the Royal Society of Chemistry database was tagged as a Chemistry resource.
2. The departments were grouped into faculties.
3. A number of resources with interdisciplinary content were tagged as "MULTI." This accounted for over $414,000 of the budget and needed to be broken down further.
4. In order to do this, I analyzed the journal content of seven "big deal" journal packages from the MULTI category. This was a time consuming process. In some cases, subject categorization was included in the entitlement title lists provided by CRKN. I then tagged these lists by faculty. In other cases, I had to add my own subject and faculty tags. Finding a subject breakdown for ScienceDirect was particularly challenging, as their technical support department, website and Canadian sales representative were all unable to provide me with anything useful. In the end, I found a title list in Ebsco's Holding Management tool which had subject tags for 1859 titles out of over 2200. I tagged this list by faculty, and used the percentage breakdown as an approximation of the distribution.
   Given the number of titles to categorize, I had to work fairly quickly in assigning my tags. As a result, the lists are only going to be approximate and a judgement call. (For example, many journals cross over between sociology and social work, or science and the health sciences.) Generally, I assigned titles related to medicine as HEALTH. One thing to note is that titles of interest to agriculture are often tagged by their publishers as science journals.
5. Geography costs were split evenly between ARTS and SCIENCE.
6. For each of the seven packages I calculated the percentage and share of cost that would be assigned to each faculty. An example is below in table 1:

Table 1
Taylor & Francis Journals Divided Into Subject Categories

Faculty	Taylor & Francis (CRKN Title List Subject categories)	Percentage	Share of Cost

ARTS	800	45.66	$24,883.41
HEALTH	49	2.80	$1,524.11
PROF	442	25.23	$13,748.08
SCIENCE	461	26.31	$14,339.07
Total Journals	1752	100.00	$54,494.67

Source: ER Budget By Category spreadsheet, Subject Breakdown Multis Tab. Details on the other big deal packages are on this spreadsheet.

7. The share of costs for each package was added to the totals spent for each faculty. This work reduced the amount in the MULTI category to $82,632.01. An example of the combined expenditures for SCIENCE is below in table 2:

Table 2
Combined ER Expenditures for Faculty of SCIENCE

Index	SCIENCE	Math	MathSciNet	CRKN	$500.23	$560.26
Index	SCIENCE	Biology, Chemistr	Nature Online	COPPUL	$3,900.00	$4,368.00
Journals	SCIENCE	CIS	ACM Digital Library	ELN	$3,508.00	$3,928.96
Journals	SCIENCE	Physics	CRKN SCOAP3	CRKN	$169.54	$189.88
Journals	SCIENCE	Chemistry	Royal Society of Chemistry	CRKN	$3,955.79	$4,430.48
Journals	SCIENCE		NRC Research Press	CRKN	$14,146.00	$14,146.00
Reference	SCIENCE		Access Science	ELN	$2,367.55	$2,651.66
Reference	SCIENCE	Chemistry	Merck Index (Royal Society of Chemistry)	CRKN	$2,033.40	$2,033.40
Video	SCIENCE	Biology	JoVE (Science Education 1. General lab te	Direct	$1,591.20	$1,782.14
Journals	SCIENCE	Chemistry	American Chemical Society (ACS) Legacy	CRKN	$576.12	$645.25
Journals	SCIENCE	Chemistry	American Chemical Society (ACS), Web E	CRKN	$12,025.04	$13,468.04
Journals	SCIENCE	Geography	Geoscience World Millenium Collection	COPPUL	$5,700.02	$6,384.02
Index	SCIENCE	Geography	GeoRef	COPPUL	$1,600.00	$1,792.00
					Subtotal	**$56,380.10**
Journals	SCIENCE %		Cambridge Journals Online	CRKN		$2,648.48
Journals	SCIENCE %		Oxford Journals Online	CRKN		$2,873.68
Journals	SCIENCE %		JSTOR Arts & Sciences I - VIII, Life Scienc	CRKN		$3,235.99
Journals	SCIENCE %		SAGE Premier Collection	CRKN		$2,777.20
Journals	SCIENCE %		ScienceDirect	CRKN		$44,682.10
Journals	SCIENCE %		Springerlink	CRKN		$21,757.57
Journals	SCIENCE %		Taylor & Francis	CRKN		$14,339.07
Journals	SCIENCE %		Wiley Online Library	CRKN		$17,015.86
					Total SCIENCE	**$165,710.05**

Source: ER Budget By Category spreadsheet, By Faculty Including Multis Tab. Details on the other faculties are on this spreadsheet.

8. The Faculty of Access and Continuing Education was too multi-disciplinary to include in this process. For example, Adult Basic Education offers courses in Biology, Chemistry, CIS, English, First Nations Studies and more.

After the work was completed as outlined above, I was able to compare Electronic Resources spending by Faculty (see table 3 and fig.1). The highest amount of total ER spending is in ARTS, followed by SCIENCE and HEALTH.

Table 3
ER Expenditures by Faculty

Faculty	ER Budget
APPLIED *	$ 1,782.78
ARTS	$ 201,037.24
HEALTH	$ 116,611.92
MULTI-DISCIPLINARY	$ 82,632.01
PROF	$ 88,159.55
SCIENCE	$ 165,710.05
UTILITIES	$ 45,053.31

Source: ER Budget By Category spreadsheet, E-Resource Spending by Faculty Tab.
* Many titles that could be of interest to Agriculture or Trades are categorized as SCIENCE

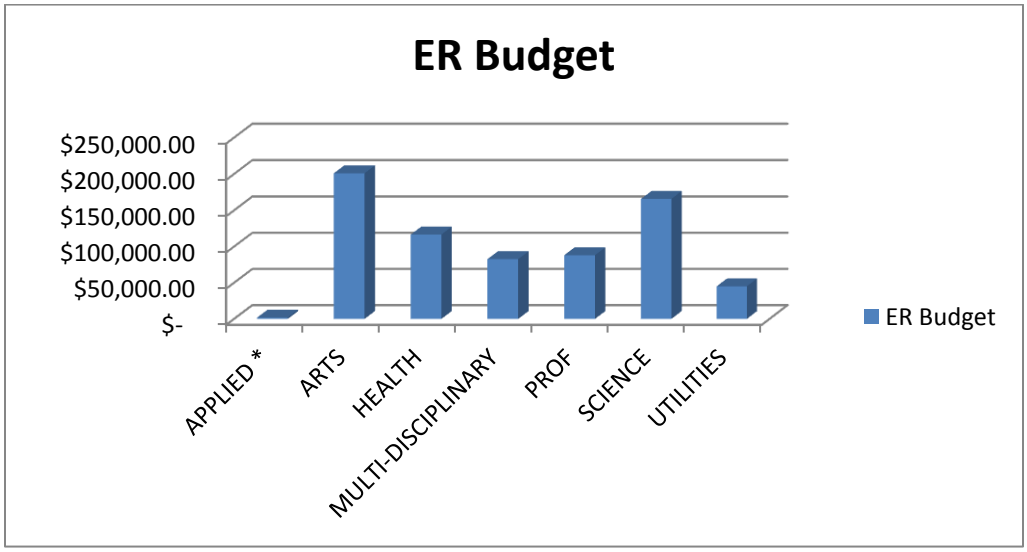

Fig. 1 ER Expenditures by Faculty
Source: ER Budget by Category spreadsheet, E-Resource Spending by Faculty Tab.

Is this distribution in line with the relative size of these Faculties? In order to determine this, I looked at the FTE distribution by department, as provided in the *Factbook 2013-14* (Office of Institutional Research 20), and then calculated ER spending per FTE (see table 4, fig. 2 and fig. 3).

Table 4
ER Spending by Faculty FTE

Faculty	FTE	ER Budget Spending	Spending per FTE
ACCESS	892	$0.00	$0.00
APPLIED	678	$1,782.78	$2.63
ARTS	2988	$201,037.24	$67.28
HEALTH	695	$116,611.92	$167.79

PROF	1349	$88,159.55	$65.35
SCIENCE	1468	$165,710.05	$112.88
	8070		

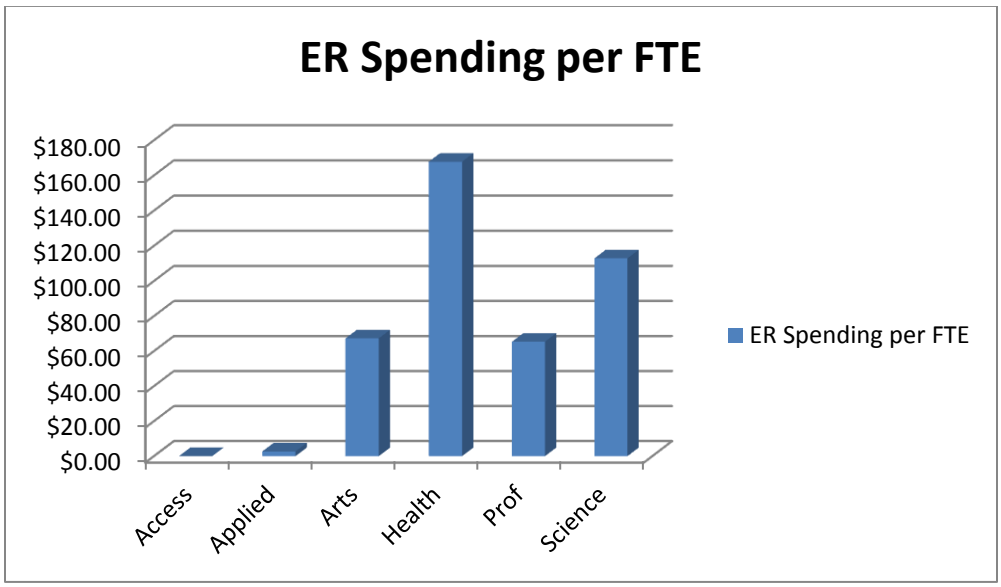

Fig. 2 ER Spending by Faculty FTE

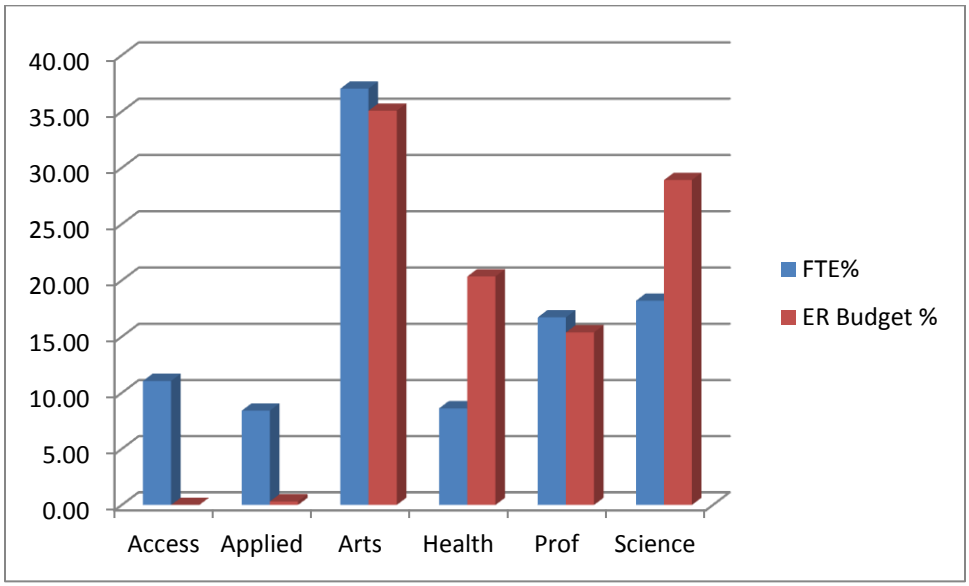

Fig. 3 ER Spending as Percentage compared to FTE Percentage
Source: ER Budget by Category 2014-15 Spreadsheet, E-Resource Spending by Faculty Tab.

Using the FTE count as a factor to compare Faculties, it is very interesting to note that the highest spending is for HEALTH, followed by SCIENCE. Of course, topics related to health and to wellness are often of interest as essay topics in the Arts and Social Sciences as well, so this material will have a broader appeal.

Departmental Allocations by Faculty

The UFV Library allocated $196,000 in 2013/14 to degree and non-degree departments to be spent on one-time purchases. I grouped together all degree and non-degree departments by faculty and compared their allocations (see table 5 and fig. 4).

Table 5
Allocation by Faculty, including Degree and Non-Degree Programs

Faculty	Allocation	Percentage
ACCESS	$7,040.00	3.59
APPLIED	$3,740.00	1.91
ARTS	$118,455.23	60.44
HEALTH	$13,149.47	6.71
PROF	$31,567.82	16.11
SCIENCE	$22,047.47	11.25
	$196,000.00	100.00

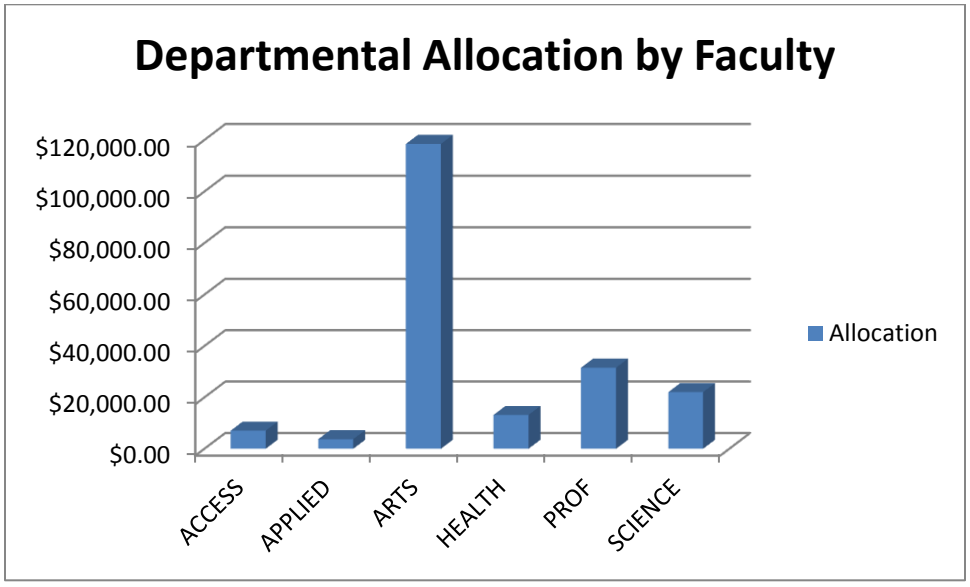

Fig. 4 Allocation by Faculty, including Degree and Non-Degree Programs
Source: 2013_2014 Degree Allocation ANALYZED spreadsheet, Faculty Allocation and FTE Tab.

Is this distribution equitable compared to the size of the faculties? Again, I compared faculty FTE counts with the departmental allocations grouped by faculty (see table 6 and fig. 5).

Table 6
Percentage of Allocation by Faculty Compared to Percentage of FTE

Faculty	FTE%	Dept. Alloc%

Access	11.05	3.59
Applied	8.40	1.91
Arts	37.03	60.44
Health	8.61	6.71
Prof	16.72	16.11
Science	18.19	11.25
	100.00	100.00

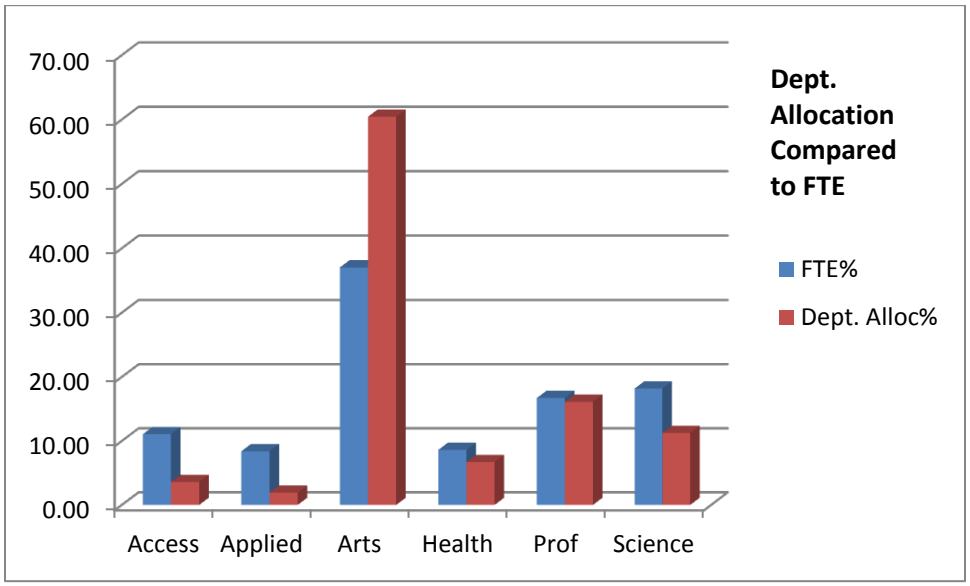

Fig. 5 Percentage of Allocation by Faculty Compared to Percentage of FTE
Source: 2013_2014 Degree Allocation ANALYZED spreadsheet, Faculty Allocation and FTE Tab.

What conclusions can be made from this? First, we may be allocating too little to ACCESS and APPLIED Faculties compared to the number of students in these programs. Are we allocating too much to the ARTS Faculty? ARTS students and faculty do tend to be our heaviest library book users. The circulation count rankings show the top departments are all in the ARTS (see table 7).

Table 7
Circulation by Top Departments

Dept	Circulation
HIST	0.17211
ENG	0.12902
SCMS (SOC)	0.08163
PSYCH	0.07796
CRIM	0.07294
VIS ARTS	0.05956
THEATRE	0.05164

Source: 2013_2014 Degree Allocation ANALYZED spreadsheet, Analysis Tab.

Similarily, the rankings for Interlibrary Loan requests show mostly ARTS Faculties in the top grouping (see table 8).

Table 8
ILL Requests by Top Departments

Dept	ILL
HIST	0.42415
ENG	0.21053
THEATRE	0.06810
SCMS (SOC)	0.06191
PHIL	0.04025
CYC/ECE	0.04025
CRIM	0.02786
GEOG	0.02786
PSYCH	0.02477
POLI-SCI	0.02477
VIS ARTS	0.01238

Source: 2013_2014 Degree Allocation ANALYZED spreadsheet, Analysis Tab.

Furthermore, according to the Ithaka Faculty Survey, Humanities scholars are more interested in and reliant on books than the social sciences and sciences faculty (see fig. 6).

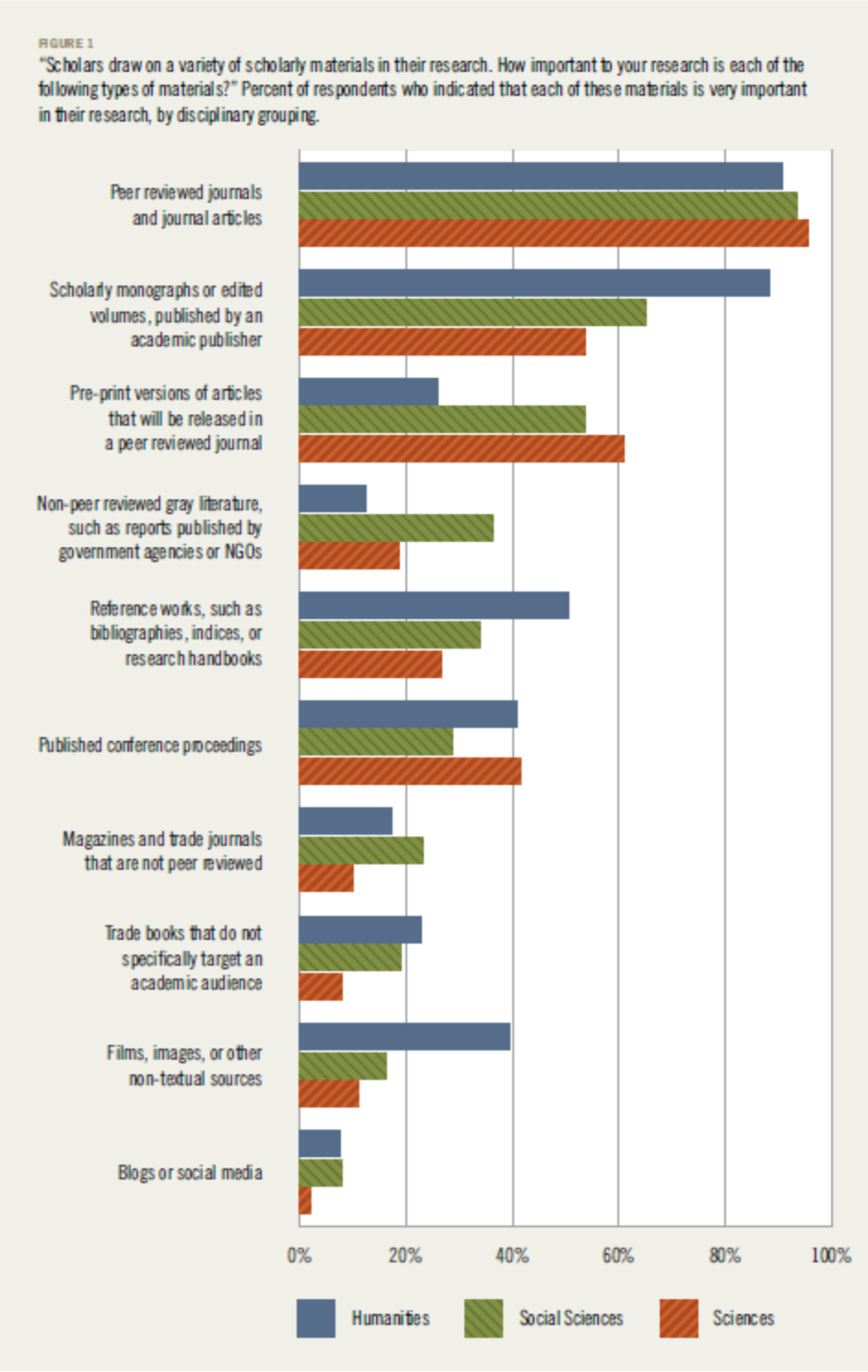

Fig. 6 Importance to Research of Different Types of Materials
Source: Ithaka S+R US Faculty Survey 2012 (15). <
http://www.sr.ithaka.org/sites/default/files/reports/Ithaka_SR_US_Faculty_Survey_2012_FINAL.pdf>

Serials Budget Spending by Faculty

A third major component of the UFV Collections Budget is the Serials Budget. This is spent on direct orders for print and online journals, magazines and newspapers, and does not include journal packages in the ER budget. In order to more fully analyze our spending by faculty, I analyzed our direct subscriptions by subject area. The majority of our serials are ordered through EBSCO, and we have assigned a HEGIS code to each title to designate a subject category. As usual, the process of creating a workable list was not straightforward, as some journals had compound codes which assigned journals to multiple faculties. Also, pricing information in the EBSCOnet report was often incomplete, or bundled with memberships or packages of titles. I added the titles we order directly from publishers, such as the Vancouver Sun. The full details are in the Serial Budget Orders Categorized by Faculty spreadsheet.

We order our standing orders through EBSCO, but I had to exclude these titles from analysis as annual pricing is dependent on the number and frequency of titles or loose leaf updates issued in a year, and therefore not included in any EBSCOnet reports. As the total spend is only around $20,000, this is not a significant factor anyway.

The ARTS Faculty had the highest amount of spending from the serials budget, followed by SCIENCE. Again, very little is being directed towards the APPLIED Faculty (see table 9).

Table 9
Serials Budget by Faculty

Faculty	Serials Budget	Budget %
Access	$0.00	0.00
Applied	$413.30	0.40
Arts	$43,853.67	42.37
Health	$13,805.09	13.34
Prof	$15,815.27	15.28
Science	$29,620.36	28.62
	$103,507.69	100.00

Source: Serial Budget Orders Categorized by Faculty, Analysis Tab

I also calculated this spending based on FTE count for each Faculty. In this analysis, spending was highest for SCIENCE and HEALTH (see table 10 and fig. 7).

Table 10
Serials Budget per Faculty FTE

Faculty	FTE	Serials Budget	Per FTE
Access	892	$0.00	$0.00
Applied	678	$413.30	$0.61
Arts	2988	$43,853.67	$14.68
Health	695	$13,805.09	$19.86
Prof	1349	$15,815.27	$11.72

Science	1468	$29,620.36	$20.18
	8070		

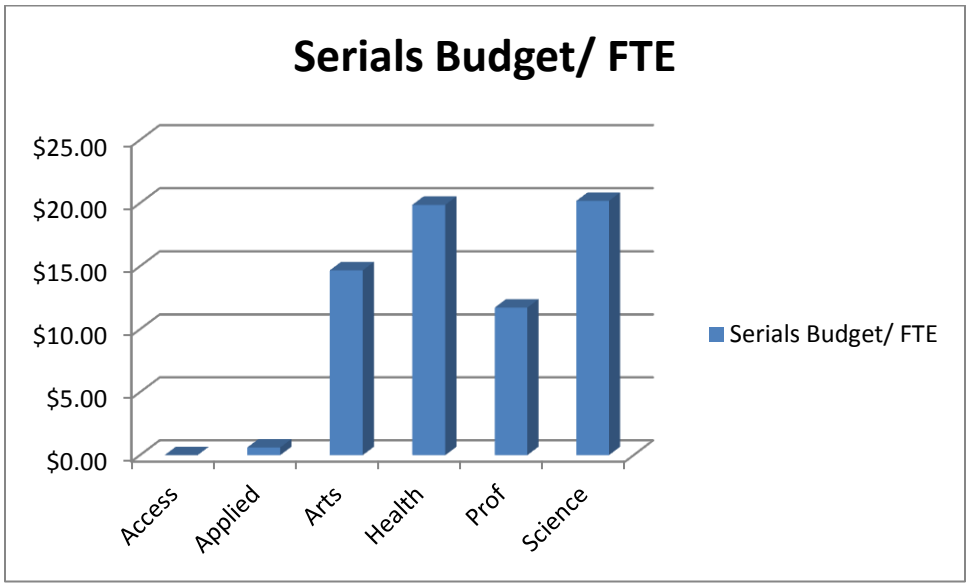

Fig. 7 Serials Budget Per Faculty FTE
Source: Serial Budget Orders Categorized by Faculty, Analysis Tab

Lastly, I compared percentage of FTE to percentage of serials budget (see fig. 8)

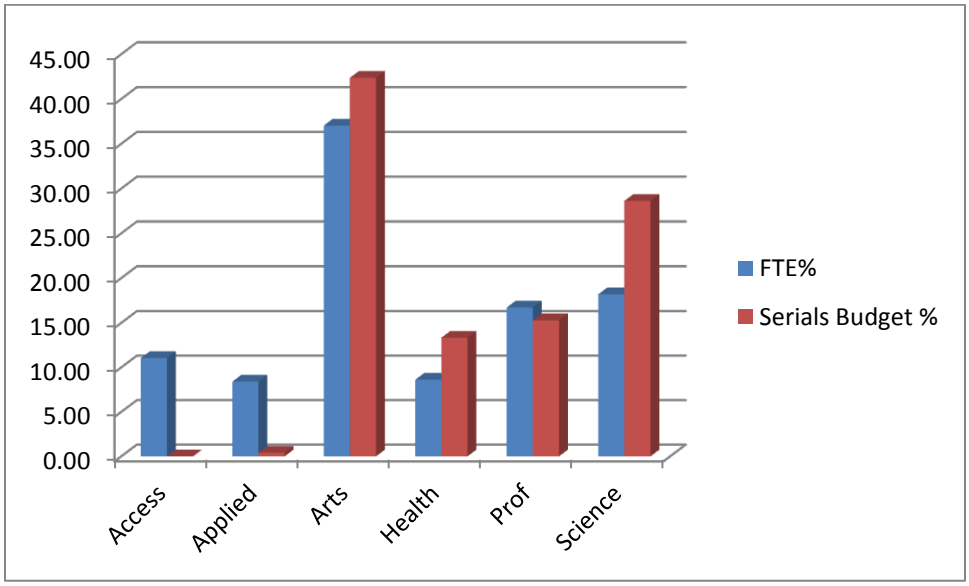

Fig. 8 Percentage of FTE Compared to Percentage of Serials Budget, by Faculty

It is not surprising that the FTE spending is higher for SCIENCE and HEALTH faculties. Average serials prices vary greatly between disciplines, with one study reporting the journals in Chemistry having an average price calculated as $2,219.00 US, Health Science as $796.16 US, and Sociology as $159.50

(Tillery 3). Therefore, a library can buy far fewer science journals for their money than they can journals in the humanities or social sciences.

Total Spending Analyzed

After I had calculated costs for Electronic Resources spending, Departmental Allocations, and Serials Budget spending, I was able to combine these into a fuller spending picture for each Faculty. The largest percentage of the total budget is spent on ARTS, followed by SCIENCE and HEALTH (see table 11 and fig. 9).

Table 11
Total Spending By Faculty

Faculty	Dept. Allocation	ER Budget Spending	Serials Budget Spending	Total	% of Total
ACCESS	$7,040.00	$0.00	$0.00	$7,040.00	0.81
APPLIED	$3,740.00	$1,782.78	$413.30	$5,936.08	0.68
ARTS	$118,455.23	$201,037.24	$43,853.67	$363,346.14	41.63
HEALTH	$13,149.47	$116,611.92	$13,805.09	$143,566.48	16.45
PROF	$31,567.82	$88,159.55	$15,815.27	$135,542.64	15.53
SCIENCE	$22,047.47	$165,710.05	$29,620.36	$217,377.88	24.91
				$872,809.23	100.00

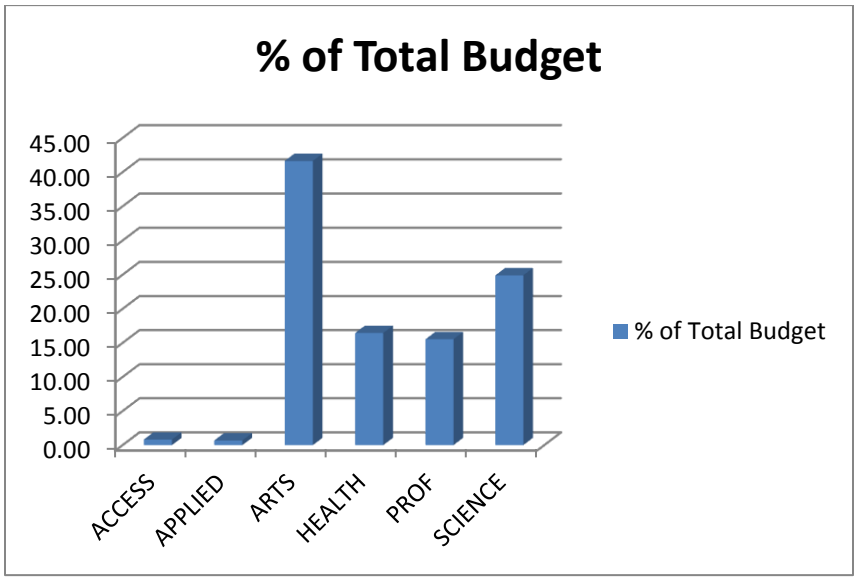

Fig. 9 Percentage of Total Budget by Faculty
Source: Total Spending % Compared to FTE % spreadsheet

The spending for ARTS is much higher as a total percentage of the budget, but again, how does this compare to the size of the faculties? (see table 12 and fig. 10).

Table 12
Percentage of Total Spending Compared to Percentage of FTE, by Faculty

Faculty	FTE%	Total Spending %
Access	11.05	0.81
Applied	8.40	0.68
Arts	37.03	41.63
Health	8.61	16.45
Prof	16.72	15.53
Science	18.19	24.91
	100.00	100.00

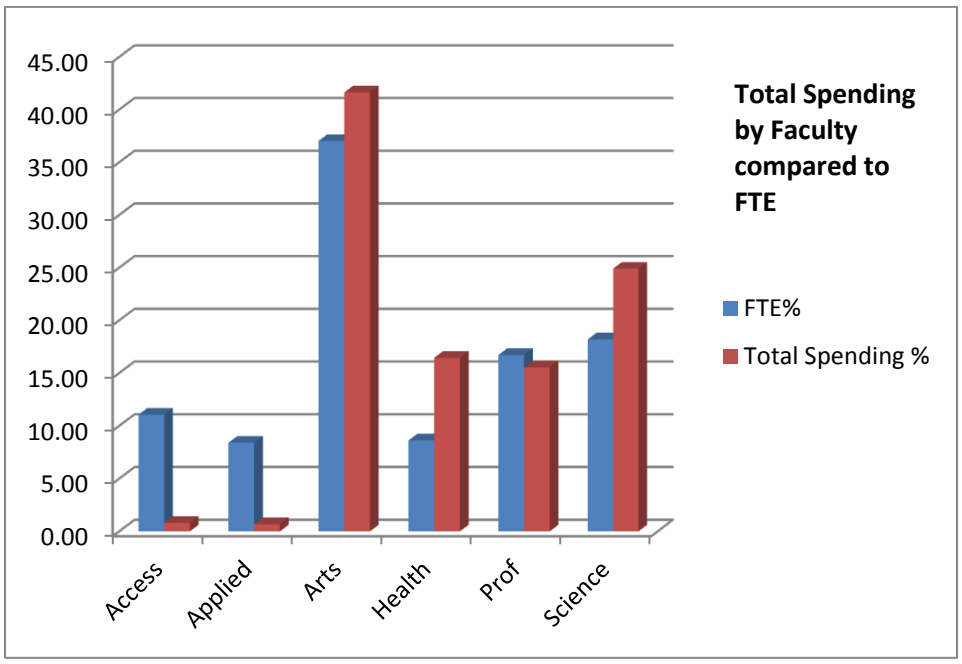

Fig. 10 Percentage of Total Spending Compared to Percentage of FTE, by Faculty
Source: Total Spending % Compared to FTE % spreadsheet

Spending in highest in the ARTS Faculty, but is a fairly close match to the size, with 41% of the spending for 37% of the FTE. Professional Studies is also a close match, with 16.7% of the FTE and 15.5% of the spending. The biggest negative differential (calculated by subtracting FTE percentage from total spending percentage) is for ACCESS, and highest positive differential is for HEALTH (see table 13 and fig. 11).

Table 13
Difference Between Total Spending % and FTE %

Faculty	FTE%	Total Spending %	Differential
Access	11.05	0.81	-10.25

Applied	8.40	0.68	-7.72
Arts	37.03	41.63	4.60
Health	8.61	16.45	7.84
Prof	16.72	15.53	-1.19
Science	18.19	24.91	6.71
	100.00	100.00	0.00

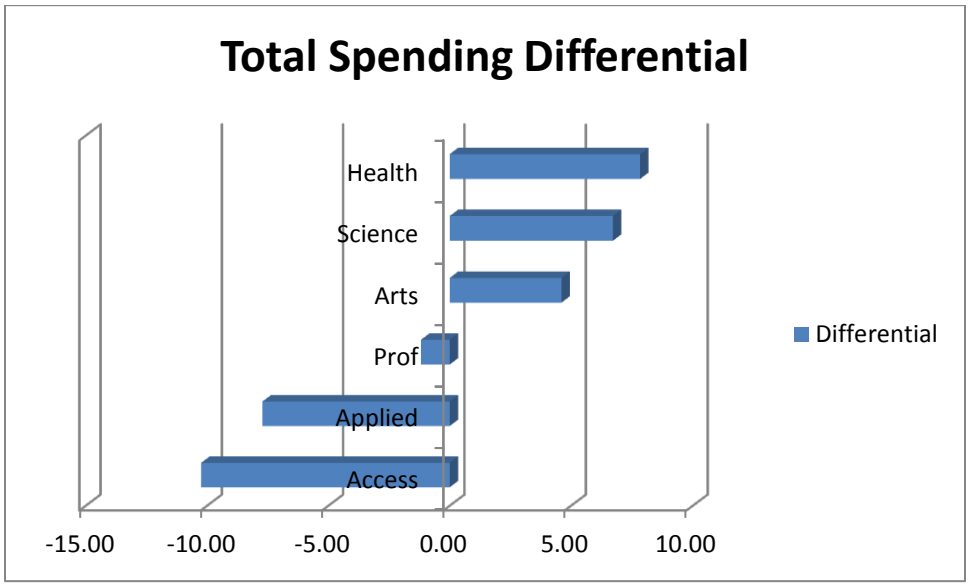

Fig. 11 Difference Between Total Spending % and FTE %.
Source: Total Spending % Compared to FTE % spreadsheet

Conclusions

1. We are spending very little in all Library Collection budget areas to support the Faculty of Access and Continuing Education. This includes the purchase of books, audio-visual resources, magazines, journals, and electronic resources. There has been an ongoing assumption that these students do not use or need library resources, being generally textbook based courses. I feel discussions need to be held with faculty members in this area to determine if we are underserving their students.

2. We are only spending 0.68% or $5936.08 of our total budget to support the Faculty of Applied and Technical Studies. This figure must be tempered with the fact that many good agriculture and veterinary science journals reside in our big journal packages, and have usually been categorized as SCIENCE resources. Still, we have very few direct subscriptions or targeted electronic resources for Agriculture or Trades programs. Our print holdings in these areas are becoming dated, and the budget to replenish the holdings is limited.

   As reported in the latest update to the UFV Education Plan, because of the *B.C. Skills for Jobs Blueprint*, the Ministry of Advanced Education is targeting an additional $6.6 million for trades seats

(Davis 203). Could Trades students benefit from online code books, standards, manuals, video collections, or other resources?

The University of the Fraser Valley Strategic Enrolment Management Plan 2014-2019 identifies areas of program focus, including "Agriculture and the Environmentally Responsible Development of the Fraser Valley" (30). A new Agriculture Centre of Excellence has just been completed on the Chilliwack campus, with a new barn and greenhouse. A new Bachelor of Agriculture degree has been proposed, as well as $2 million to fund "Enhanced programming and applied research programs with a focus on automation equipment, business productivity and growth, and sustainable production practices." (*Agriculture Center of Excellence* 3.) Will any of this money be directed to the library to pay for research databases, monographs, scientific journals or other materials related to Agriculture? Discussions need to be held with senior administrators to determine this. Any money directed to this Faculty will have to be taken from another Faculty, unless our budget is increased.

3. Spending in Health Sciences is high compared to the number of enrolled students in these program areas. The departmental allocations for books and audio-visual materials are actually relatively low compared to FTE, and keeping this collection up to date has been a challenge. The largest imbalance occurs in the ER Budget, with a spending of $167.79 per FTE compared to $67.27 per FTE in ARTS.

   Part of this is due to large number of health and medicine related journals in our big deal packages, such as Elsevier, Springer and Wiley. Looking at more detail from the Elsevier Usage report shows that 206 different health related journals had 20 or more full-text views, for a total of 16,452 full-text views. This represents 38.62% of the usage of the journals with 20 or more views. (For details, see ScienceDirect JR1 spreadsheet.) This demand is coming from both inside and outside the cohort of Health Sciences students, as students in programs such as English, Communications, Social Work and Sociology write research essays on health related topics such as smoking, obesity, drug abuse, and mental illness.

   We also have a number of specialized health sciences databases, such as the e-HLbc bundle. The cost per use data for the specialized Health Sciences databases is impressive, with an average cost per full text view (or record view) being $0.79 (see table 14).

   Table 14
   Cost Per View for e-HLBC Databases

Database or Database Package	Cost Per FT or Record View
Alt HealthWatch Package	$1.34
e-HLbc Package	$0.21
SPORTDiscus with Full Text	$0.30
e-CPS (Page Views)	$1.33
Average	$0.79

Source: Health Sciences Databases spreadsheet.

The usage shown for these health sciences related databases would make them hard candidates to cut. At best, we may decide not to add any more health databases for the foreseeable future. One area to watch is the e-HLbc package, as the majority of the usage is coming from the EBSCO resources, rather than the OVID resources. If OVID were to increase their pricing significantly, we may have to investigate pricing for the EBSCO products separately.

Lastly, another area of program focus identified in the *University of the Fraser Valley Strategic Enrolment Management Plan 2014-2019* is "Health and Wellness" (30). Therefore, it would be difficult to reduce our spending in this area.

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Spreadsheets Referenced

ER Budget By Category spreadsheet

2013_2014 Degree Allocation ANALYZED spreadsheet

Serial Budget Orders Categorized by Faculty spreadsheet

Total Spending % Compared to FTE % spreadsheet

ScienceDirect JR1 spreadsheet

Health Sciences Databases spreadsheet

Section 7: Allocation Formulas

UFV Library Methodology

Every year we set aside a portion of the UFV Library Collection Budget for degree and non-degree departments to spend on one-time purchases, which could include print books, e-books, and audio-visual materials. Preparing the departmental allocation takes several days (or weeks) effort, and it is still not considered a perfect solution. LAC members have complained that some departments don't have enough money to spend, while others are struggling to spend their allocations. Finding a different solution is challenging.

In 2014/15, $187,000 or 17.07% of the budget was directed to departmental allocations for degree and non-degree programs (see table 1). Up to this point, we have not divided the other funds by department, due to the complexity of this. As observed by Lyons and Blosser, this is fairly common: "a notable characteristic of most allocation formulas and processes is that they are applicable to only a portion of the libraries' collection budgets." (295). Many electronic resources are part of "big deal" packages with multiple year commitments, and are very multi-disciplinary in their content. Reference, Reference Online, Fines Revenue, Standing orders and Library General orders are selected by librarians, and used for materials in all subject areas. Our serials budget for direct orders is steadily being reduced, with many journals migrating to online packages from publishers or aggregators.

Table 1
Allocation of UFV Collections Budget by Major Categories

2014/15	Percentage
Serials (Direct Orders)	10.96
Electronic Resources **	65.00
Standing Orders	1.00
Printing & Binding	0.07
Government publications	0.00
AV	0.27
GST/HST	1.46
Reference Online	0.42
Reference	0.46
Library General	1.72
Fines/Replacement Fund	1.52
Degree departments	15.06
Non-degree departments	2.01
New faculty fund	0.00
Interdisciplinary Courses	0.05

Source: Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet

The process has developed over time into a weighted multiple variable methodology which takes into account the following:

1. Course rating for library book use (done through a faculty survey) – 100% weighted
2. Enrollment figures by program (supplied by Institutional Research) – 100% weighted
3. Interlibrary Loan Requests for books (supplied by ILL staff) – 50% weighted
4. Circulation counts for books(based on LC classification, taken from SIRSI Director's Station for previous year) – 100% weighted
5. An adjustment formula which takes 10% of the total allocation to each department and redistributes this in reverse to the programs with the lowest allocation (see table 2).

The information is put into a spreadsheet, with formulas that calculate the relative percentage of the budget to assign to each degree department (see table 2). For non-degree departments, a smaller amount is distributed without use of the formula. After the allocation amounts are calculated, the departmental allocation spreadsheets are presented to the Library Advisory Committee for review and comment, and then each department is informed of its allocation.

Table 2
Snapshot of UFV Library Degree Department Allocation spreadsheet, 2014-15

A	B	C	D	E	F	G	H	I	J	K	L	M
Dept	**Course**	**Enrolled**	**ILL 100%**	**ILL (50%)**	**Circulation**	**b + c + e + f**	**g/total g**	**h x 90%**	**1/i**	**j/total j**	**alloc of**	**Total Allocation**
	(rating)						**(all factors)**	**(90% total alloc)**	**(adjust. formula)**	**(adjust. formula/2)**	**10%**	**i+ l**
ADED	0.03603	**0.00531**	0.00000	**0.00**	0.00523	0.05	0.01	2083.66	0.0005	0.07	$1,194.46	$3,278.11

Looking at each factor separately shows that some departments are overcompensated and others are under compensated for each factor. For example, History does well for its allocation compared to enrollment, but does the worst compared to its ILL and circulation counts. Business does the best for its allocation compared to ILL and circulation counts, but the worst compared to enrollment. Details are available in the 2013_2014 Degree Allocation ANALYZED spreadsheet, Analysis Tab, with one example shown in table 3 below.

Table 3
Circulation Compared to Allocation, Sorted High to Low

Dept	**Circulation %**	**Allocation %**	**Circulation vs Allocation**
BUS	0.030	0.061	0.032
MATH	0.008	0.025	0.018
CYC/ECE	0.007	0.024	0.017
GEOG	0.017	0.033	0.016
CIS-COMP	0.008	0.024	0.016
CMNS	0.007	0.022	0.014
ADED	0.005	0.019	0.014
PHYSICS	0.007	0.019	0.012

ECON	0.011	0.019	0.008
MOD-LANG	0.014	0.022	0.008
CHEM	0.011	0.019	0.008
KPE	0.022	0.028	0.006
FD	0.013	0.018	0.005
POLI-SCI	0.023	0.028	0.004
BIOL	0.021	0.023	0.002
SocWork	0.035	0.033	-0.003
NURS	0.032	0.026	-0.006
PHIL	0.035	0.028	-0.007
SCMS (SOC)	0.082	0.074	-0.007
VIS ARTS	0.060	0.047	-0.013
THEATRE	0.052	0.036	-0.016
CRIM	0.073	0.056	-0.017
TEP	0.048	0.023	-0.026
PSYCH	0.078	0.052	-0.026
ENG	0.129	0.102	-0.027
HIST	0.172	0.139	-0.033

Source: 2013_2014 Degree Allocation ANALYZED spreadsheet, Analysis Tab.

What conclusion can be drawn from this? My thoughts are that each factor paints an incomplete and very different picture from the others. It would be difficult to simplify the process by using one factor only.

Unlike many libraries where collections or subject liaison librarians do all the ordering, UFV Library allows significant faculty input in selecting books and audio-visual materials, and faculty take quite a bit of ownership over these funds. In a broad sense, we are using a form of patron driven acquisitions based on faculty needs. Benefits are that instructors with an intimate knowledge of their course content, subject matter, and assignments can select materials for use by their students. Disadvantages are that faculty may select material that is obscure and connected to their own personal research interests, or conversely, try to order classroom sets of textbooks. The collection development policy is useful to have in these cases. The amount of ordering may also be uneven, with keen faculty ordering heavily in their own niche areas, while other topic areas are missed. In some departments, faculty are too busy to order enough to spend their allocation, while in other departments, there are a surplus of orders received every year.

Practices in Other Libraries

I conducted a literature review to find out what types of allocation formulas and practices are being used and recommended by other academic libraries. All libraries need to allocate their funds in some way, either using a formula or based on historical practice. As reported by Canepi, one survey of 357 libraries found about 40% of libraries used an allocation formula (13). There are positive and negative views on using an allocation formula. Advantages are that the process is open, transparent, quantifiable,

equally applied, and based on reproducible indicators of demand. The process can be adjusted to account for new variables, new programs, or other institutional changes. Critics of formulas feel they don't work well for interdisciplinary courses, don't always address institutional or collection priorities, and that some variables may not have a strong theoretical basis (Kaay and Zimmerman 94).

A wide variety of variables are being collected and used in different libraries, including faculty salaries, faculty count, student enrollment, number of majors, number of courses offered, interlibrary loan counts, graduate versus undergraduate programs, thesis output, faculty research, honours students, historical precedence, opinion of subject librarians, institutional priorities, cost of materials, volume of publishing in a field, and circulation counts. Libraries are choosing to include a unique combination of these variables, and are also choosing how to weight them. For example, at the Hofstra University's Axinn Library, they use a weighted multiple-variable method using FTE faculty (15%), number of students enrolled (15%), the most recent 3 years of circulation statistics (25%) and book cost (15%). (Catalano and Caniano 203). Libraries often experiment with different methodologies and weightings, testing the results to see what fits. The process may take years and it is seems difficult to make significant alterations from past historical practices (207). At the Axinn Library, "Librarians in the Reference and Collection Development Department were hesitant to adopt a model that would deviate far from current allocation already in place."(209). After several years, they only redistributed a small sum of $10,000 between departments. Other libraries have adopted extremely time consuming processes. The Comprehensive Allocation Process (CAP) at Northwestern University (NUL) would take more time than our small collections and acquisitions department could reasonably handle. In one step of the process, they measure all types of library support for a collection, requiring subject analysis and cost sharing breakdown of all of their e-book packages, journal and database packages, approval plans, and allocations (Lyons and Blosser 302). Because the UFV Library does not incorporate LC classification for our e-book catalogue records, or include electronic journal holdings with subject assignments into the catalogue, this type of analysis would be extremely difficult. Any variables adopted for use at UFV would need to be easy to obtain, consistently available, meaningful to our librarians, acceptable to our faculty, transparent, justifiable and not too time consuming to gather and analyze.

An interesting meta-analysis was conducted by Kitti Canepi, in which she analyzed the common elements found in allocation formulas, and identified correlations between elements. She found that the most included variables were enrollment/number of students, cost/price of materials, use/circulation, and number of faculty (17). In her conclusion, she states "If the past is any predictor of the future, then inclusion of the four most frequently employed formula elements identified here is highly recommended for local fund allocation formula development. This does not necessarily imply, however, that one need *only* include these elements." (21).

Cost of items is not a factor that we have incorporated into our allocation formula. According to Canepi, "The reason most often given for the importance of including this factor was that material prices vary widely between disciplines; the same dollars would not buy as many medical books, for example, as English literature commentaries…"(19). She goes on state "A number of authors considered it fundamental, only differing in how that information should be calculated." (19) Costs may be calculated in a number of ways. Our SIRSI acquisitions system provides an average price paid for materials ordered

from a departmental fund in a given fiscal cycle. The weakness of this approach is that multiple formats may be ordered from this fund, including expensive DVD's or e-books, which will skew the average prices higher than for print monographs. It also may be misleading in a year when money is spent on a limited number of very expensive items, as had happened in some cases. An alternative source of book pricing information is the annual "U.S. College Book Price Information" feature in Choice, appearing in the April issue. In 2014 this compiled pricing for 6,658 academic books reviewed in Choice, omitting titles over $500.00. The study provides average book prices by discipline, such as Chemistry, Psychology or Art and Architecture, and could be useful for us. Another source is the "North American Academic Books Index", compiled from data from Ingram Content Group and YBP Library Services (Tafuri 410). The index includes all hardcover, trade and paperback books included in approval plans with these vendors, and published in the United States and Canada, creating a database of over 120,000 titles in 2011. A quick comparison of the two price indexes show some significant differences in prices, such as an average price of a Chemistry book being given as $214.45 in one index and $96.06 given in another. Book pricing may also be obtained from the large book vendor, YBP Library Services, who prepare annual cost analysis reports based on the books in their approval program, both for university presses and trade publishers. In this report, a Chemistry book cost was given as $204.00 (YBP Library Services). If we are to incorporate book prices into a revised allocation formula, the librarians will need to collectively decide on the best sources or combination of sources to use.

At the University of Windsor, The Leddy Library has chosen to use a percentage-based formula based on five factors: undergraduate student, graduate student and faculty population, use of the collection, and book price (Kaay and Zimmerman 97). They are taking their book price information from their acquisitions system, using "the median price paid within the last 5 years, to be calculated on a rolling basis going forward. Median price was selected to offset any anomalies introduced by the occasional purchase of very expensive or (more often) very inexpensive items." (95) I need to investigate if a median price could be calculated without time consuming staff work needed.

Another variable we have not included in our formula is faculty population. Faculty are important customers of the library, and in some libraries this variable is given a heavy weighting (Catalano 195). I was able to find out that Shelley Engen in the UFV Human Resources department is able to do a snapshot of permanent faculty counts by department, upon request.

In the past few years, I introduced the use of circulation counts into our allocation formula, as a way to measure demand in different disciplines. We have assigned call numbers to the various academic departments, and gather circulation statistics from SIRSI's Director's Station. For example, circulation of books in the HV6000 call number range is included in the Criminology department count. This is problematic where programs overlap, such as English and Theatre in the P call number range, and this shortcoming is noted by other libraries (Kaay and Zimmerman 95). Some libraries are instead using the "number of circulation counts per title purchased by a fund." (95) Although it would be very interesting to study the circulation statistics for items purchased from departmental funds, at UFV we are limited by the reporting capabilities of our SIRSI system, and manually counting these circulations is very time consuming. I hope that this functionality is available when we migrate to the Blue Cloud Analytics product from SIRSI.

Not all libraries include circulation counts. “Whether low rates of circulation in a particular subject indicate low demand or a weak collection is not clear.” (Lyons and Blosser 300). Circulation statistics may also miss in-library use, counts for items which has been discarded, or be inflated by items placed on course reserve (Blake 461). They also do not take into consideration the relative use compared to the size of the collection. If we continue to use circulation counts, UFV should consider using average circulation over a longer time period, such as the past 3 to 5 years, rather than just the past year.

In one interesting presentation from the Acquisition Institute Conference at Timberline Lodge, the library dropped their previously used measures of demand (student credit hours, number of enrollments, declared majors and faculty FTE) and instituted a variant on circulation counts. They calculated “Bonn’s Use Factor”, which is the percentage of circulations divided by the percentage of holdings (Shirkey and Barricella). For example, if the subject “psychology” represents 30% of the circulation, but 15% of the holdings, the Bonn’s Use Factor is calculated to be 2. This would indicate the collection is relatively overused. This library looked at items purchased in the previous four fiscal years, and sorted them by LC call number. Then they found the number of times these items circulated since acquisition. It was a very manual process, taking about 60 hours to complete this step. (Again, the new Blue Cloud Analytics product may be useful for this type of analysis in the future.) They then incorporated information on average book prices, added the factors together, and came up with an allocation amount.

I attempted a variation on this method, employing Bonn’s Use Factor averaged over three years, for all books in a call number range (rather than newly purchased books). I took average prices from YBP’s New Titles report, as this was an easy and accessible place to obtain pricing by call number (YPB Library Services). The results were quite a departure from our current allocation amounts, probably because of the weight given to the average cost of a book and no account being taken of the FTE or enrollments in a program (see table 3). For example, the formula proposes we spend more on V (Naval Sciences) where we offer virtually no courses, than we do on P (Language and Literature). The amount theoretically allocated for all of H (Business, Economics, Criminology, Social Work, SCMS) was only $8,769.92, compared to our current amount of $42,330.43 for these areas combined. For these reasons, I would not propose we adopt this methodology.

Table 3
Allocation Method based on “Adding a Use Factor Measure to a Materials Allocation Plan for Books” (Shirkey and Barricella).

LC	Bonn's Use	% Average Cost	Sum	% of overall allocation	Dollar Amount
A - Total	0.514	4.957	5.472	0.045	$7,853.37
B - Total	0.850	5.253	6.103	0.050	$8,759.80
C - Total	1.215	5.992	7.207	0.059	$10,343.57
D - Total	1.084	4.233	5.317	0.044	$7,631.47
E - Total	1.359	3.193	4.552	0.038	$6,533.33
F - Total	0.956	2.407	3.363	0.028	$4,826.52

G - Total	1.059	4.198	5.257	0.043	$7,545.26
H - Total	0.743	5.367	6.110	0.050	$8,769.92
J - Total	0.713	5.427	6.139	0.051	$8,811.76
K - Total	0.619	6.872	7.491	0.062	$10,751.76
L - Total	0.860	4.757	5.617	0.046	$8,062.54
M - Total	1.363	3.638	5.000	0.041	$7,176.75
N - Total	1.129	3.405	4.534	0.037	$6,507.55
P - Total	1.177	3.061	4.238	0.035	$6,083.10
Q - Total	1.143	6.702	7.845	0.065	$11,259.76
S - Total	0.801	4.966	5.767	0.048	$8,277.08
T - Total	1.094	6.520	7.614	0.063	$10,927.63
U - Total	1.168	3.990	5.158	0.043	$7,402.95
V - Total	0.887	3.804	4.691	0.039	$6,732.62
W - Total	1.353	6.374	7.726	0.064	$11,089.45
Z - Total	1.143	4.887	6.029	0.050	$8,653.80
	21.231	100.000	121.231	1.000	174000

Source: Allocation Formula spreadsheet.

I was interested to see how few libraries in Canepi's study are using Interlibrary loan counts in their allocation formulas. In theory, the fact that students need to order books on interlibrary loan for their courses indicates a collection demand exists. Some libraries have rejected it, "Although it informs subject specialists of the resources in demand, it does not necessarily indicate the under-funding or over-funding of a subject area". (Lyons 300-301). We should consider whether or not to continue including this variable, and at least should average the demand over 3 to 5 years, rather than just the past year.

UFV Library prepares a course rating survey, which asks the faculty library liaison to rate each course on a scale of 1 to 3 regarding how intensively the course relies on library books. The survey is time consuming to prepare, response rate is low, and calculating the overall factor to assign departments is cumbersome. I am interested in finding an alternative method to calculate this demand. Some possibilities are to gather data on majors, graduate programs, the number of courses, the number of courses at 1st and 2nd year versus 3rd and 4th year, or to have the liaison librarians complete ratings based on course outlines. This type of information is available from the UFV Calendar website.

In summary, a variety of allocation approaches exist in libraries. Many libraries, such as Simon Fraser University and Capilano University, are basing most of their allocations on historical practice, using the same relative division of funds year after year (Gallilee; Hall). For these libraries, one challenge is how to incorporate new programs or collection needs. For libraries using an allocations formula, a wide variety of variables have been adopted and weighted, depending on what information is readily available at that institution, staffing resources available, beliefs on the theoretical soundness of different measures, and applicability to that institution. Many libraries report that only incremental changes can be made, as large shifts are met with alarm, and often formulas are tweaked to return a result that librarians are comfortable with or line with previous practice. (Kaay and Zimmerman 95-96; Catalano

and Caniano 210; Dinkins 121). At UFV, we need to take a careful look at the variables we currently employ, and consider incorporating factors such as cost of items, faculty FTE, majors or number of courses. All librarians should be included in the process, as well as consultation with our Library Advisory Committee. We may also want to discuss the relative roles of faculty and liaison librarians in the ordering process.

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Library Acquisitions Budget Analysis 2008 to 2015 spreadsheet

Allocation Formula spreadsheet

Section 8: EBSCO Discovery Service and EBSCOhost Reports

As one of my project goals was to investigate the capabilities of our current reporting systems, I investigated the types of reports that can be generated from EBSCOadmin regarding our EBSCO Discovery Service (EDS) and EBSCOhost databases. I wanted to learn about reports other than the standard COUNTER JR1 reports that I usually gather. To prepare for this, I attended two online webinars, "EDS: Revisiting Your Discovery Tool" on Sept. 24th, and "Gathering Statistics" on Sept. 26, 2014.

Browser and Device Report

The Browser and Device report enables us to analyze the platforms, devices and operating systems that UFV students and faculty are using to access EBSCO products. The information can inform us on what types of technical and interface support we may need to provide in person, by phone, in our help guides and Libguides.

I ran this report for the April 2013 to March 2014 time period, for the EBSCO Discovery Service product. During this time period, the vast majority of sessions came in from non-mobile devices (see table 1 and fig. 1). This statistic is interestingly low, given that *The ECAR Study of Undergraduate Students and Information Technology, 2013* estimates that 81% of Canadian students own a smartphone (Dahlstrom et al. 25). A possible conclusion is that students are using their smartphones for many purposes, but not often for searching our EDS. This may be partly due to the UFV Library's homepage and UFV website not being very mobile-friendly.

Table 1
EDS Sessions on Mobile and Not Mobile Devices

April 2013 – March 2014	Number of EDS Sessions
Mobile Device	2728
Not Mobile Device	234432

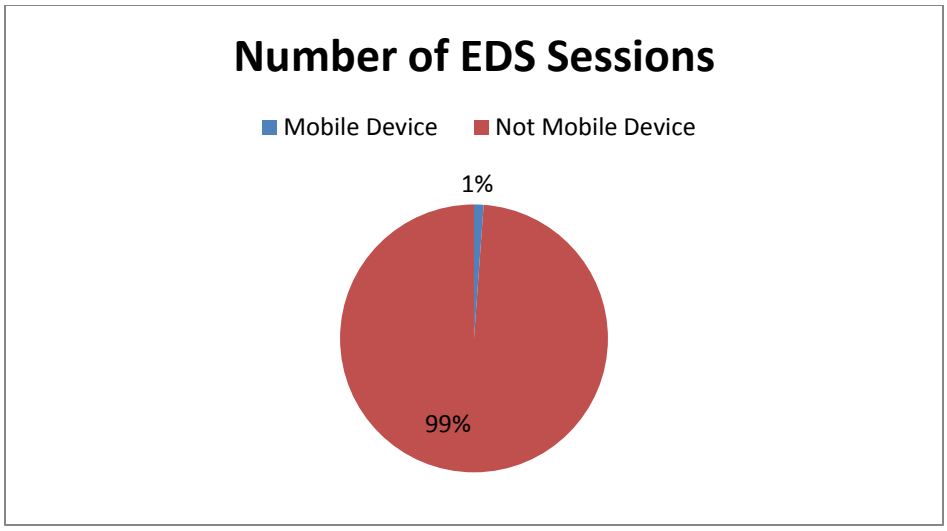


Fig. 1 EDS Sessions on Mobile and Not Mobile Devices
Source: Browser and Device Report 2013-2014 Spreadsheet, Analysis Tab

I wanted to investigate if the number of mobile sessions is on the increase, so I compared the statistics for EDS session for January to October 2013 and January to October 2014. There is a very small percentage increase in the number of mobile sessions.

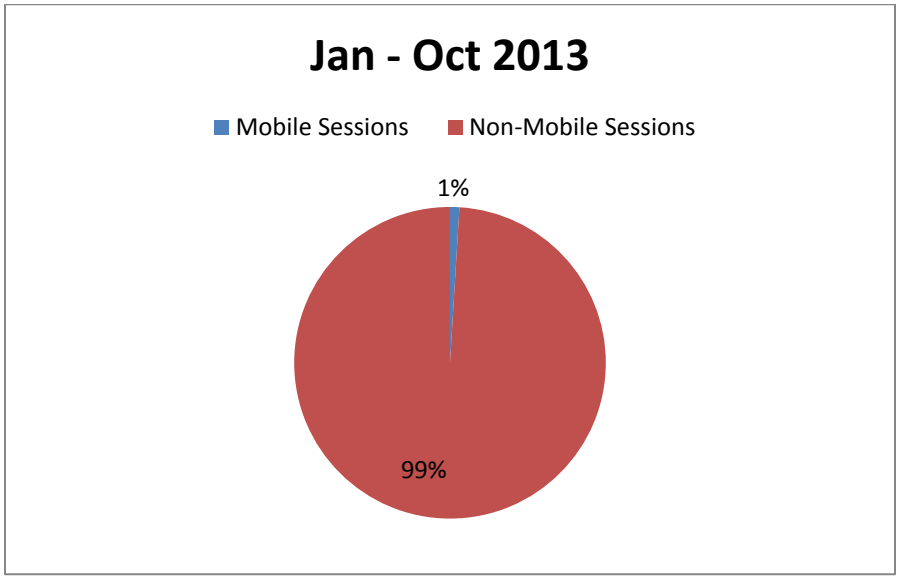


Fig. 2 Mobile and Non-Mobile EDS Sessions 2013

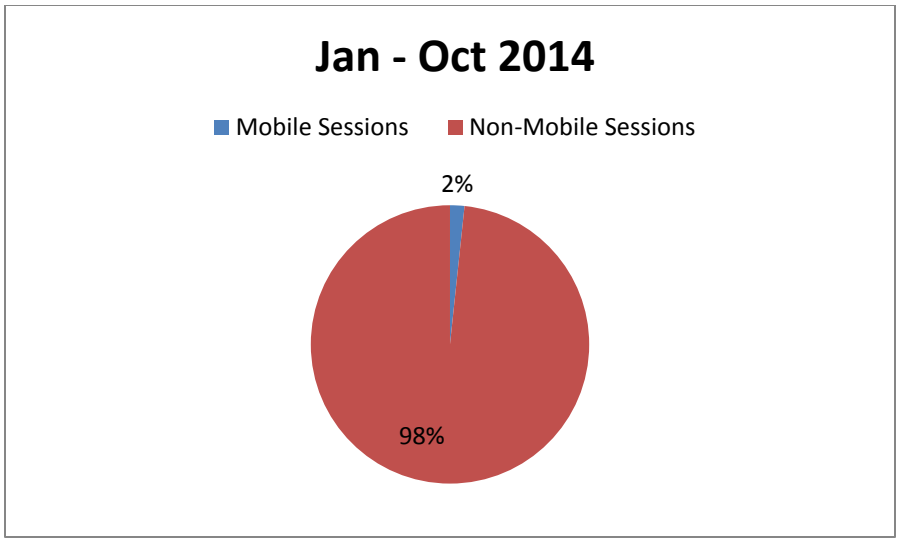


Fig. 3 Mobile and Non-Mobile EDS Sessions 2014
Source: Browser and Device Report 2013-2014 Spreadsheet, Analysis Tab

The Browser and Interface report shows which mobile devices are being used. At UFV, there is almost an even split between iOS and Android devices (see table 2).

Table 2

Mobile Device Platform for EDS Sessions

April 2013 – March 2014	Mobile Device Platform
Android	987
Blackberry	92
iOS	1033
Windows	354
Unknown/Misc.	11

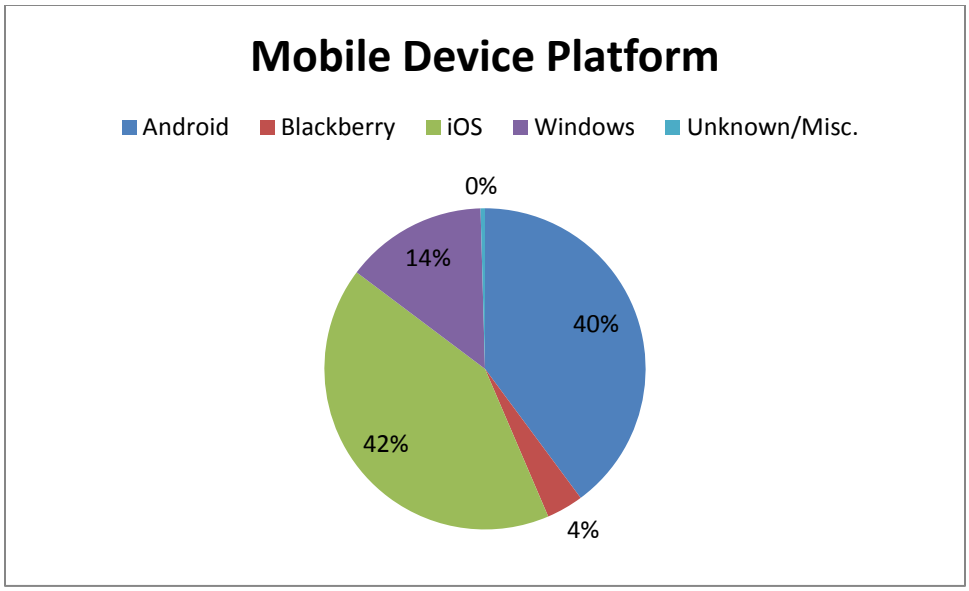


Fig. 4 Mobile Device Platform for EDS Sessions
Source: Browser and Device Report 2013-2014, Analysis Tab

What types of operating systems and platforms are being used by the non-mobile clients? While the majority are using a Windows platform, a significant number of sessions (60415) were on a Macintosh platform. This may be something for our IT department to consider in terms of technical support (see table 3 and fig. 5).

Table 3
Desktop OS/Platform for EDS Sessions

April 2013 – March 2014	Desktop OS/Platform
Linux	450
Macintosh	60415
Windows	173308
N/A	259

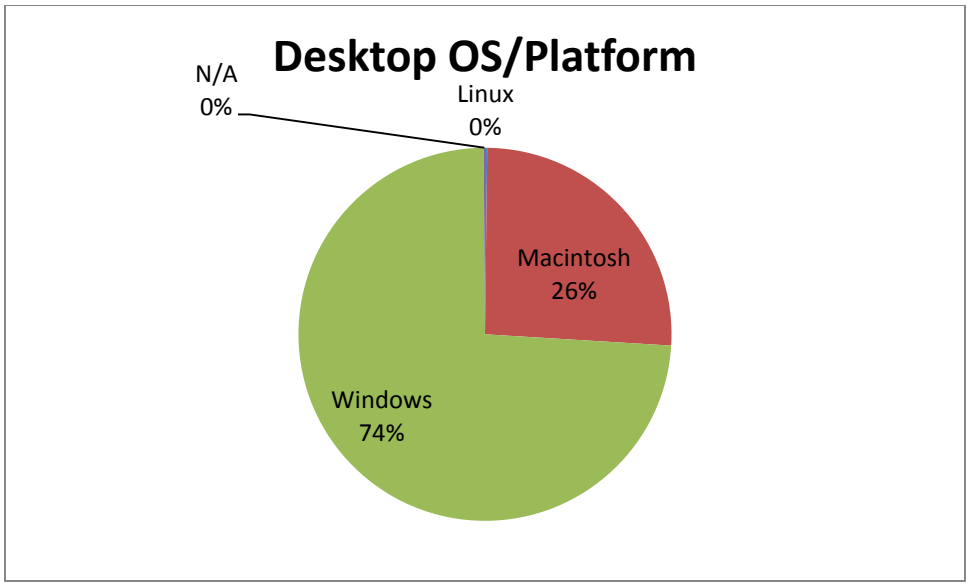


Fig. 5 Desktop OS/Platform for EDS Sessions
Source: Browser and Device Report 2013-2014, Analysis Tab

Another analysis that can be done with this report is to look at the Browsers being used. This report was surprising to me, in that the most popular browser was Safari (see table 4 and fig. 6). We will need to test our existing and future products in Safari, and consider how our webpages display in this browser. There were also many varieties of browsers being used (21), and many versions of each browser, such as IE 6, 7, 8, 9, and 10. This reinforces the need for our licensed database and e-book products to be as browser neutral as possible.

Table 4
Browser Sessions for EDS

April 2013 – March 2014	**Browser Sessions**
Android	622
Blackberry	92
Chrome	340
Firefox/Mozilla	53645
Internet Explorer	51964
Safari	129793

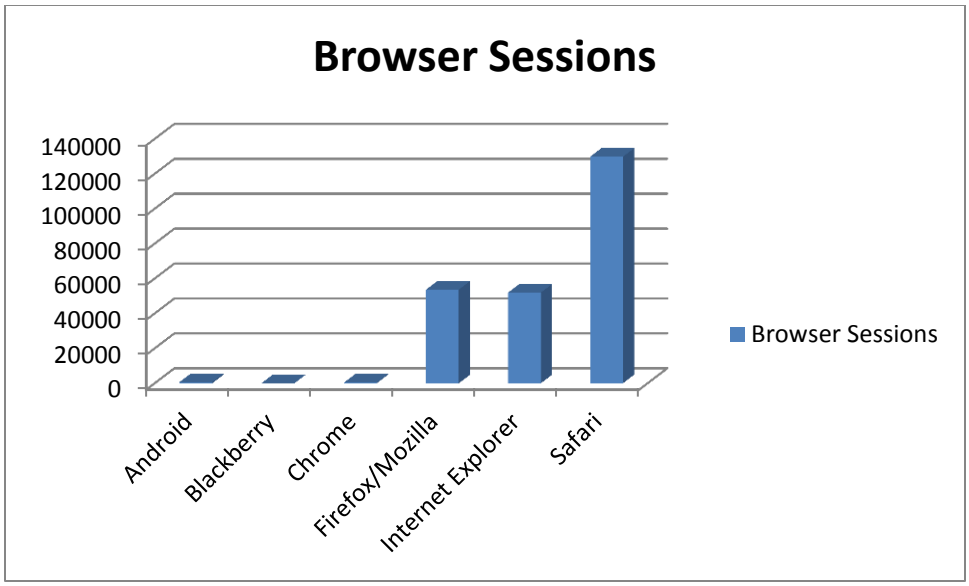


Fig. 6 Browser Sessions for EDS
Source: Browser and Device Report 2013-2014, Analysis Tab

Interface Report

The Interface report allows us to analyze the sessions, searches and full text views by interface. I was interested in comparing the use of our traditional EBSCOhost platform, which includes our individual databases such as Academic Search Premier, Business Source Complete and SPORTDiscus with Full Text, with the use of our EBSCO Discovery Service. I was also interested to see how the relative use has changed since the introduction of the EDS.

The EDS was introduced in the spring of 2012, with the use being slow over the first summer. By the Fall 2012 semester, the EDS search box was located prominently on our library's homepage, and the usage started to climb and surpass the EBSCOhost platform .

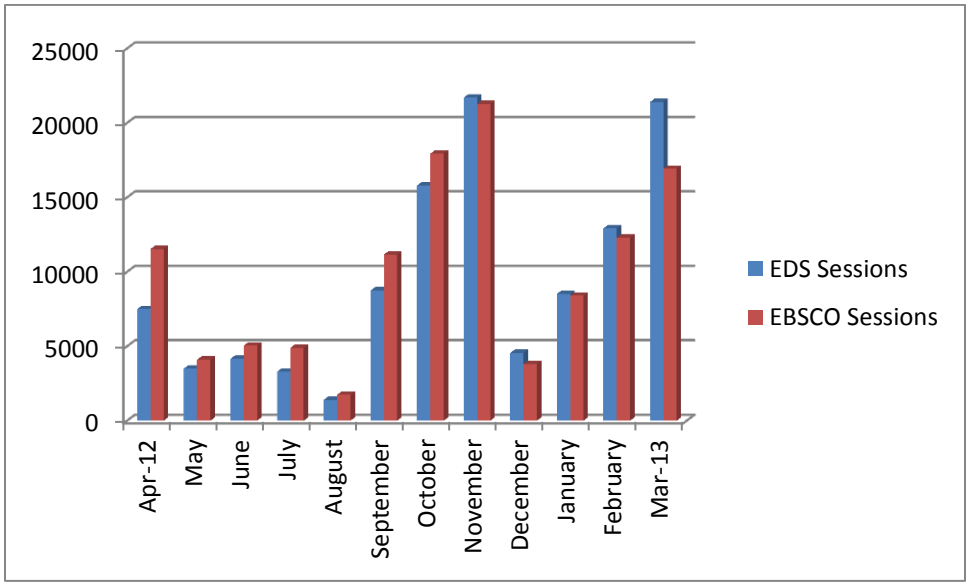


Fig. 7 EBSCO and EDS Sessions 2012-13
Source: Interface Report EDS and EBSCOhost Spreadsheet, Sessions Tab.

This trend has continued, with the EDS now clearly the preferred search interface (see fig. 8, 9 and 10).

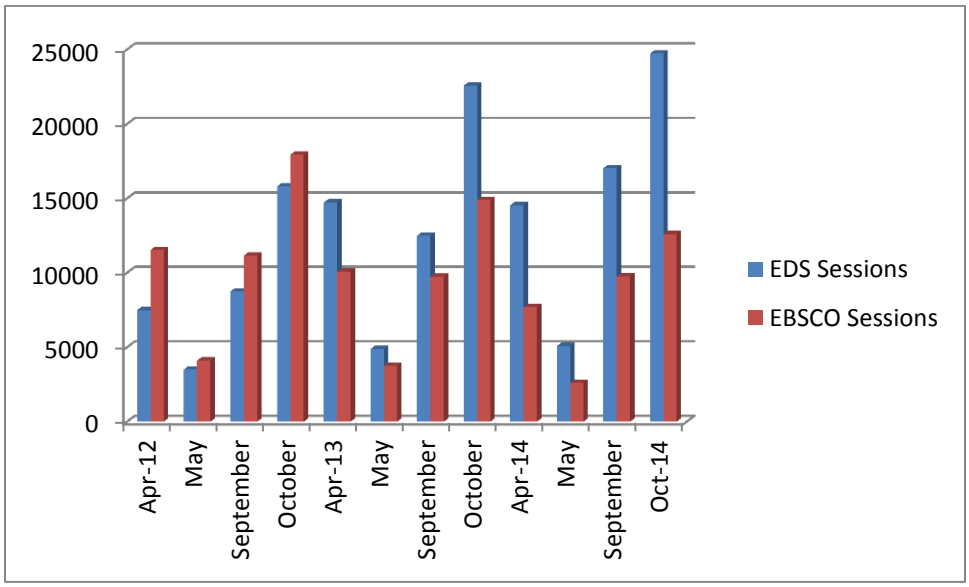


Fig. 8 EDS Sessions Compared to EBSCO Sessions April 2012 to Oct. 2014

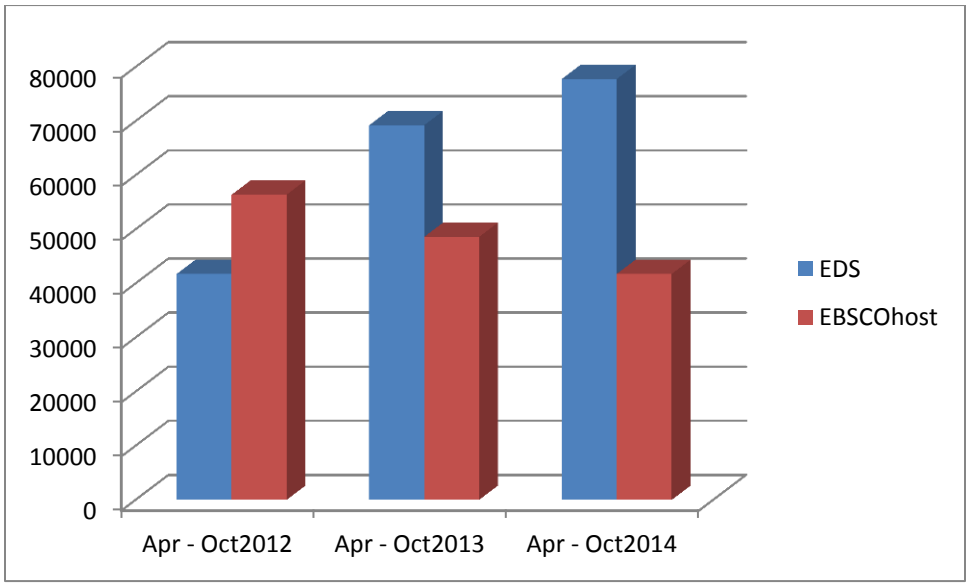


Fig.9 EDS Sessions Compared to EBSCO Sessions April 2012 to Oct. 2014, version 2.

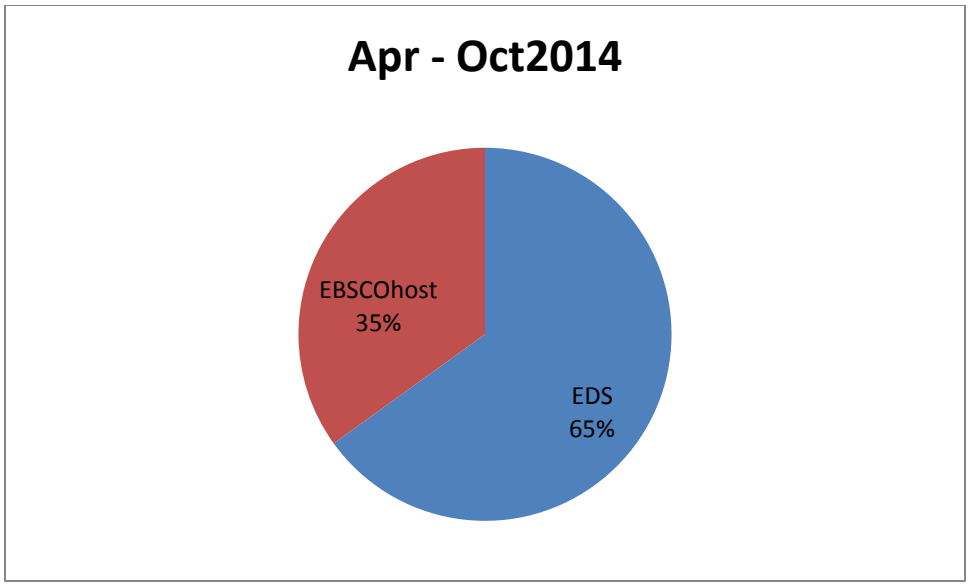


Fig. 10 EDS Sessions Compared to EBSCO Sessions, April – Oct. 2014
Source: Interface Report EDS and EBSCOhost Spreadsheet, Sessions Tab.

Librarians need to be aware of this, and consider incorporating EDS instruction into their teaching sessions if they are not already doing so. There are many search techniques that can be taught to students to improve their success in using the EDS, including an understanding of what is being searched, how to increase relevancy of results, use of limiters, and more.

The Interface Report also details the number of searches being conducted. However, search statistics are quite meaningless now. Search numbers are cumulated across every database in the EDS profile. For example, if we have activated 50 databases in the EDS, a single search query counts as 50 searches. For this reason, the number of sessions, number of abstracts viewed, number of full text views, and number of custom links clicked are the most meaningful points of analysis. Custom Links are links to sources of full text outside of EBSCO, such as the CUFTS/GODOT link resolver, and direct links to full text at *JSTOR, ScienceDirect, arXiv, DOAJ* and more. A strong point of the EDS is how it incorporates indexing, metadata and full text links to numerous licensed and open access information providers. The EDS surpassed the EBSCOhost interface in all of these measures from April 2013 – March 2014 (see fig. 11).

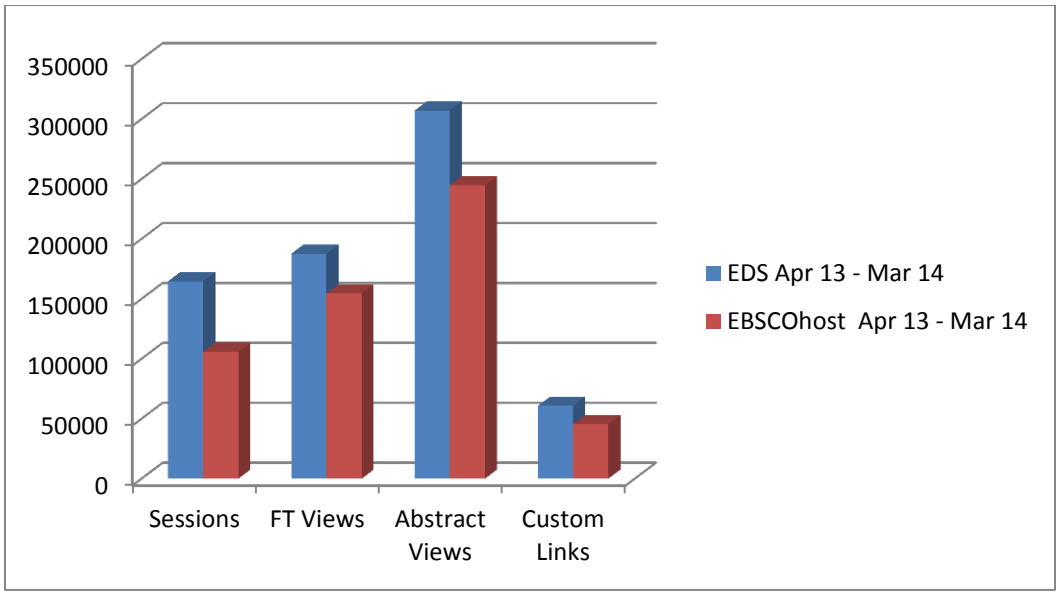


Fig. 11 Sessions, FT Views, Abstracts Views and Custom Links for EDS and EBSCO compared, 2013/2014.
Source: Interface Report EDS and EBSCOhost Spreadsheet, Multiple Comparison 201314 Tab.

Another analysis I conducted was to compare the number of full text articles viewed per search session in both the EDS and EBSCOhost platforms. I was interested to see that the EBSCOhost searches resulted in more full text being viewed on a per session basis, and this has remained the case over 3 years (see fig. 12).

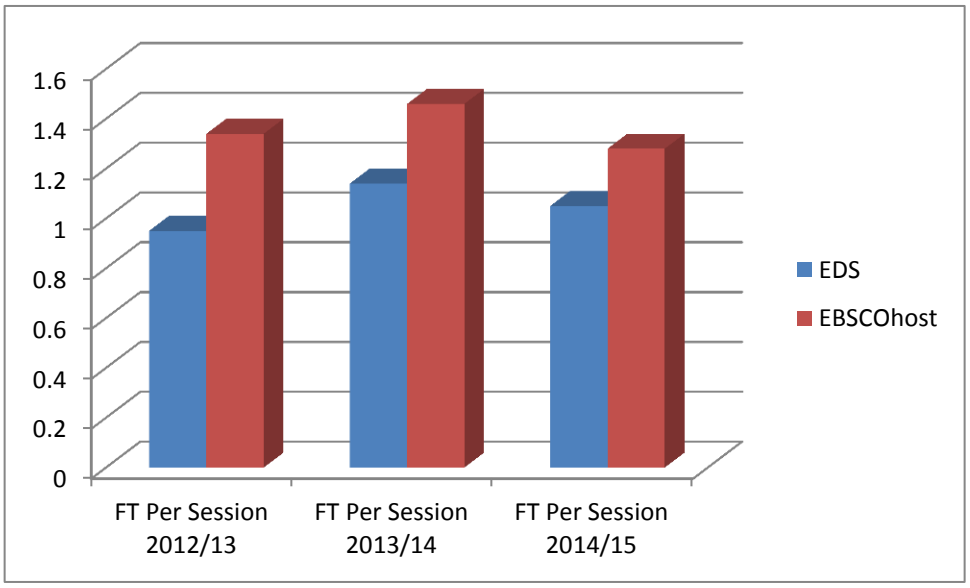


Fig. 12 Full Text Viewed Per Session, EDS Compared to EBSCO
Source: Interface Report EDS and EBSCOhost Spreadsheet, FT Per Session Tab.

However, this data needed to be further explored, as the full text views refer to articles retrieved from EBSCO databases. Another significant source of full text comes from the Custom Links. Again, the

EBSCOhost interface shows a certain kind of efficiency, with slightly more custom links being clicked per search session (fig. 13). One possible explanation is that when research is conducted in a subject targeted database, such as Business Source Complete, the search results are more relevant. Also, with the number of sessions greatly increasing for the EDS, the ratio per session may go down.

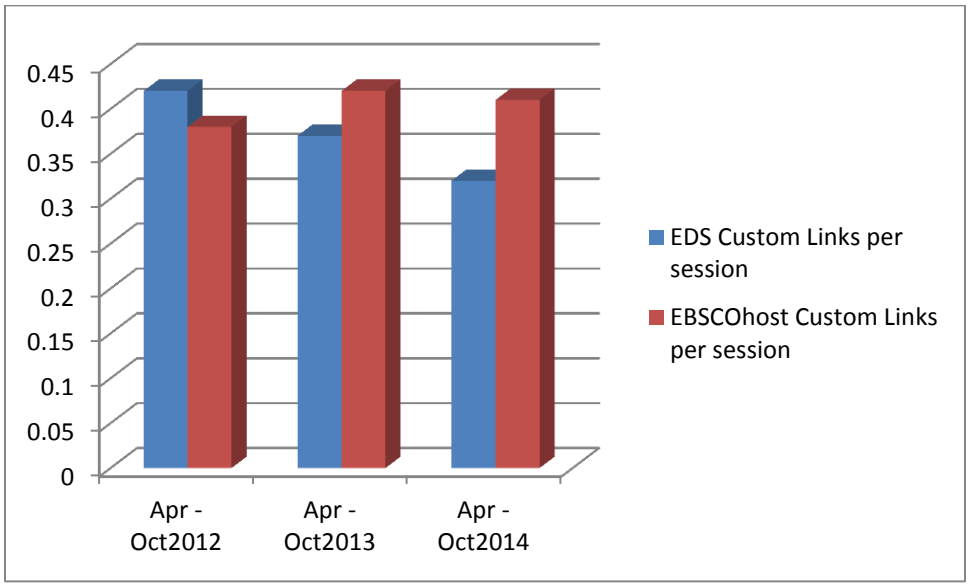


Fig. 14 Custom Link Clicks Per Session, EDS and EBSCO Compared
Source: Interface Report EDS and EBSCOhost Spreadsheet, Custom Links Tab.

Database 1 Report

The Database (DB1) report displays the total searches, result clicks and record views by month and database. Total record views gives a measure of how often users looked at citations from each database. This statistic helps us compare databases which provide full text (for example, LISTA with Full Text) with databases which only provide abstracting and indexing (for example, Philosopher's Index.)

The following table shows our most popular databases for April 2013 – March 2014.

Table 5
DB1 Report Sorted by Top Record Views 2013/2014

Database	User Activity	Reporting Period Total
Academic Search Premier	Record Views	129963
Business Source Complete	Record Views	53537
PsycINFO	Record Views	37950
CINAHL with Full Text	Record Views	29437
SPORTDiscus with Full Text	Record Views	27814
UFV Library Catalogue	Record Views	23321
SocINDEX with Full Text	Record Views	22448
MEDLINE with Full Text	Record Views	20173

Criminal Justice Abstracts with Full Text	Record Views	19261
PsycARTICLES	Record Views	12854
Publisher Provided Full Text Searching File	Record Views	11435
Humanities Source	Record Views	10853
ERIC	Record Views	10738
ScienceDirect	Record Views	10522
MLA International Bibliography	Record Views	10178
America: History and Life with Full Text	Record Views	7285
Library, Information Science & Technology Abstracts with Full Text	Record Views	7202
Historical Abstracts with Full Text	Record Views	7161
Art Full Text (H.W. Wilson)	Record Views	4749
Communication & Mass Media Complete	Record Views	4670
Science Citation Index	Record Views	4634
Social Sciences Abstracts (H.W. Wilson)	Record Views	4566
Regional Business News	Record Views	3922
Biological & Agricultural Index Plus (H.W. Wilson)	Record Views	3629
eBook Collection (EBSCOhost)	Record Views	3413
MAS Ultra – School Edition	Record Views	3132
Social Sciences Citation Index	Record Views	3119
Discovery eBooks	Record Views	2580
Social Work Abstracts	Record Views	2225
National Criminal Justice Reference Service Abstracts	Record Views	1992
Arts & Humanities Citation Index	Record Views	1892
Humanities Abstracts (H.W. Wilson)	Record Views	1839
Health Source: Nursing/Academic Edition	Record Views	1821
OAIster	Record Views	1690
Alt HealthWatch	Record Views	1295
GeoRef	Record Views	1232
Health Source – Consumer Edition	Record Views	1219
ARTstor Digital Library	Record Views	1084
Philosopher's Index	Record Views	1076
Teacher Reference Center	Record Views	1047

Source: EBSCO Databases DB1 Report Spreadsheet

Most of the top databases are resources which we pay an annual license for. The listing helps us to prioritize which EBSCO databases we would keep and which we would cut if budget cuts forced us to.

Does the EDS point our users to other sources of our full text? The goal of the EDS is to enable users to discover content from our EBSCO databases, our library catalogue, our content from other vendors such as Proquest, Gale and Elsevier, as well as open access resources. How well used are the various free, open-access resources activated in the EDS? With a few exceptions, such as OAIster and HathiTrust, there are few record views for the other databases from April 2013 – March 2014 (see table 6).

HathiTrust was deactivated as an EDS resource in our profile in 2014, due to the large number of results with no available full text, and it may be worth checking into it again. This finding overall seems to indicate that many of these minor, specialized resources are contributing little to the EDS search results that our users are interested in.

Table 6
DB1 Report, Open –Access Resources 2013/14

Database	User Activity	Reporting Period Total
OAIster	Record Views	1690
HathiTrust	Record Views	967
Directory of Open Access Journals	Record Views	191
arXiv	Record Views	135
SwePub	Record Views	126
British Library EthOS	Record Views	117
USPTO Patent Grants	Record Views	63
OAPEN Library	Record Views	54
USPTO Patent Applications	Record Views	47
CogPrints	Record Views	42
Archive of European Integration	Record Views	38
Persée	Record Views	35
Minority Health Archive	Record Views	29
BioOne Online Journals	Record Views	24
Public Information Online	Record Views	19
Energy Citations Database	Record Views	18
Newswires	Record Views	17
SSOAR – Social Science Open Access Repository	Record Views	14
Digital Access to Scholarship at Harvard (DASH)	Record Views	10
Aphasiology Archive	Record Views	8
Primary Search	Record Views	6
PhilSci Archive	Record Views	5
Columbia Encyclopedia	Record Views	3
LUNA Commons	Record Views	2
AHFS Consumer Medication Information	Record Views	1

Source: EBSCO Databases DB1 Report Spreadsheet

I also grouped together the record views for the external resources which we license, including the UFV Library Catalogue. The most record views are to the UFV Library Catalogue, so we can be confident that a reasonable amount of traffic is being directed towards finding our library's print books, e-books, and other library held resources. (A future comparison could be done for the number of catalogue searches that start directly in SIRSI.) The next top resource is the "Publisher Provided Full Text Searching File",

which includes indexing and metadata from publishers such as Wiley, Taylor & Francis and Springer (see table 7).

Table 7
DB1 Report – External Licensed Resources 2013/2014

Database	User Activity	Reporting Period Total
UFV Library Catalogue	Record Views	23321
Publisher Provided Full Text Searching File	Record Views	11435
ScienceDirect	Record Views	10522
Science Citation Index	Record Views	4634
Social Sciences Citation Index	Record Views	3119
Arts & Humanities Citation Index	Record Views	1892
ARTstor Digital Library	Record Views	1084
Gale Virtual Reference Library	Record Views	935
Oxford Reference	Record Views	830
JSTOR Arts & Sciences II	Record Views	574
JSTOR Arts & Sciences I	Record Views	320
JSTOR Arts & Sciences VI	Record Views	313
Hoover's Company Profiles	Record Views	235
JSTOR Arts & Sciences III	Record Views	225
JSTOR Arts & Sciences VII	Record Views	182
Alexander Street Press	Record Views	159
JSTOR Arts & Sciences V	Record Views	144
JSTOR Arts & Sciences IV	Record Views	142
JSTOR Arts & Sciences VIII	Record Views	125
AccessScience	Record Views	87

Source: EBSCO Databases DB1 Report Spreadsheet

Database Usage Report

A different report, called the Database Usage report (available in Standard reports, as opposed to Counter Reports Section in EBSCOadmin) provides information on sessions, turnaways, searches, full text views (HTML, PDF and Total), abstract views and more. It indicates our top sources for full text from EBSCO. The top databases are no surprise, but of note is the relatively strong usage of *Humanities Source* and *SocIndex with Full Text*, both recently added due to special bundled pricing. As in many other measures, high areas of interest include business, psychology, kinesiology, nursing, medicine, criminology, library science, the social sciences, art, and history (see table 8).

Table 8
Database Report Total Full Text Views

Database	Total FT Views April 2013 - March 2014
Academic Search Premier	111711
Business Source Complete	46725
PsycARTICLES	29835
SPORTDiscus with Full Text	24927
SocINDEX with Full Text	21479
CINAHL with Full Text	21214
MEDLINE with Full Text	17428
Criminal Justice Abstracts with Full Text	14167
Humanities Source	13964
Library, Information Science & Technology Abstracts with Full Text	6275
Communication & Mass Media Complete	5273
Regional Business News	5063
MAS Ultra - School Edition	4771
Art Full Text (H.W. Wilson)	4691
America: History and Life with Full Text	4532
Historical Abstracts with Full Text	4397
eBook Collection (EBSCOhost)	2767
Biomedical Reference Collection: Comprehensive	1980
Social Sciences Full Text (H.W. Wilson)	1771
Health Source - Consumer Edition	1648

Source: Database Usage Report Spreadsheet

Works Cited

Dahlstrom, Eden, J.D. Walker, and Charles Dziuban. *ECAR Study of Undergraduate Students and Information Technology, 2013*. Louisville, CO: EDUCAUSE Center for Analysis and Research, 2013. Web. 1 Oct. 2014. <https://net.educause.edu/ir/library/pdf/ERS1302/ERS1302.pdf>

Kieley, Kathy. "EDS: Gathering Statistics." EBSCO. 26 Sept. 2014 Webinar.

Kieley, Kathy. "EDS: Revisiting Your Discovery Tool." EBSCO. 24 Sept. 2014 Webinar.

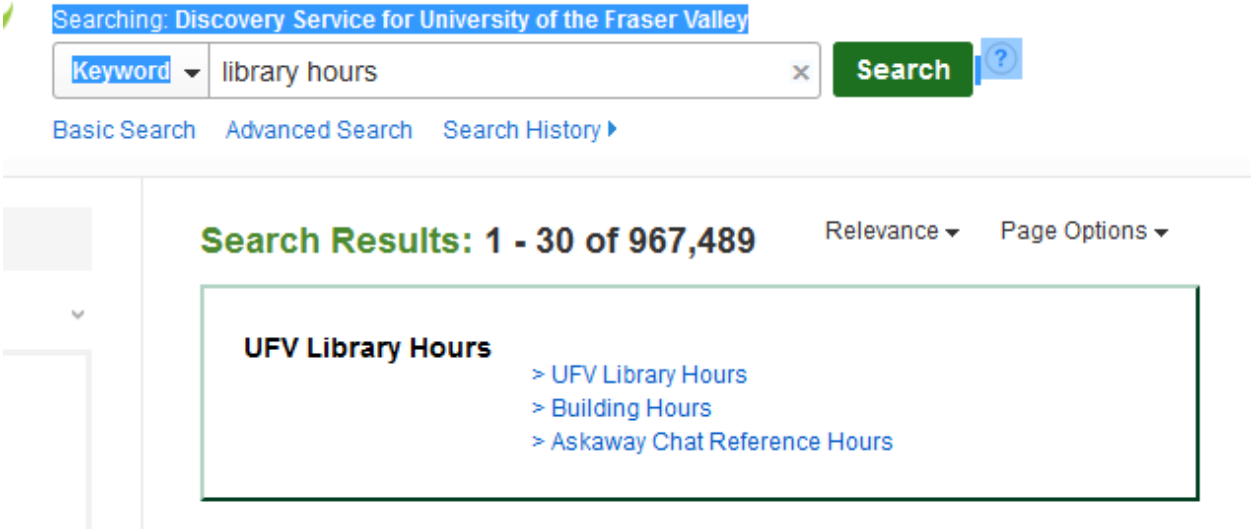
Spreadsheets Referenced

Browser and Device Report 2013-2014 Spreadsheet
Interface Report EDS and EBSCOhost 2014 Spreadsheet
EBSCO Databases DB1 Report Spreadsheet
Database Usage Report Spreadsheet

Section 9: EBSCO Discovery Service Administration

The EBSCO Discovery Service (EDS) is now the primary method that students use to search our electronic resources, and its optimal functioning is vital to both user satisfaction and maximized use of our electronic resources. One goal of my educational leave was to learn more about the administration of our EDS and correct any issues that I encountered. During my leave I worked on the following items:

1. I joined the EDS Listserv and monitored concerns and issues from the EDS community of librarians.
2. I attended a number of informative webinars.
    a. EDS: Revisiting Your Discovery Tool (September 24, 2014).
    b. EDS: Gathering Statistics (September 26, 2014)
    c. Full Text Finder and Holding and Link Management: Integrated Workflows to Manage and Promote Your Holdings (October 2, 2014)
    d. Full Text Finder: The New Publication Discovery Experience (October 7, 2014)
3. I instituted Placards for Library Hours and Library Locations. For example, if a student types "library hours" in the EDS search box, an informational placard will appear at the head of the search results.



4. I resolved problems related to our links to full text.
    a. Removed the "Where Can I Get This (Book Chapters)" link that was appearing on all search results, including for journal articles. The link now appears for items without ISSN numbers, such as book chapters in MLA Bibliography.
    b. Instituted a self-managed custom link to retrieve articles from ScienceDirect. This link appears on the result screen, and is more encompassing than the EDS provided link,

which was missing from many ScienceDirect articles.

c. Added the proxy prefix to the custom links so that students in guest access mode would have an opportunity to authenticate. Previously, the links were going directly to the publisher's website, and access was being denied.
d. Removed custom link to "Order from SIRC Express", which was not working.
e. Tested all journals activated in UFV Online Journals list in CUFTS to verify that they are being searched in the EDS. Removed redundant titles. Corrected a problem with *Cell* by adding it to the custom local collection file for *ScienceDirect* (in EBSCO Admin.)
f. Resolved a problem with the JSTOR Link to Full Text, which was going to the publishers' sites, rather than JSTOR.
g. Current issues of *Nature* were not being discovered by the EDS, when limited to "Available in Library Collection". Created a custom local collection and a custom link to retrieve articles directly from the result list.

5. Increased the number of search results appearing on the first page of results. Studies have shown that students often go no farther than one page of results.
6. I added an Altmetric Widget to the detailed results page.

Scroll to end of record to view the following:

7. I removed the local UFV Print Journal collection, and the UFV Print Journals only limiter. This was a legacy list of print journal holdings, which had not been updated in a number of years. This list had a use years ago before the implementation of a link resolver, but it is no longer required.
8. During my leave EBSCO staff migrated UFV to the new Publication Finder system, which includes a knowledge base of our journal holdings and a link resolver called Full Text Finder. In order for this system to work properly and not cause problems for our users, I undertook to populate our holdings information and troubleshoot the issues resulting from the migration.

Section 10 Topic: Bibliometrics

Bibliometrics is defined in the Oxford English Dictionary as "The branch of library science concerned with the application of mathematical and statistical analysis to bibliography; the statistical analysis of books, articles, or other publications." (bibliometrics, OED Online). As bibliometrics is an important aspect of collection assessment I examined different types of bibliometrics used to measure the importance of research, journals and specific journal articles.

Journal Citation Reports (JCR)

A standard method of gauging the importance of a specific journal is to count the number of times it has been cited by the authors of other journal articles. Thompson Reuters publishes an annual report called *Journal Citation Reports* (JCR), which provides an Impact Factor for journals. According to Thompson Reuters' JCR training video, "the Impact Factor measures the average impact of an article published in a given journal" (Thompson Reuters). To prepare the analysis JCR staff collect all the citation information from all the journals in the JCR database in a specific year (for example, 2012.) Next they count all the citations in 2012 to articles published in a given journal in the previous two years (for example, 2011 and 2010). They then divide the citation count by the total number of articles published in that journal in 2010 and 2011. The following is an example provided by Thompson Reuters.

Behavioral and Brain Sciences

Citations in 2012 to	Items published in 2011=110
	Items published in 2010=280
	Sum= 390 (Citations to recent items)
Total # of articles	Published in 2011: 12
	Published in 2010: 9
	Sum= 21 (Number of recent items)
Impact Factor	390/21 = 18.571

The reason that the impact factor is limited to the previous two years of articles is that the Total Citation Count is biased towards journals with a deep back file. Impact Factors are only one measure of a journal's value, but are still widely used. There are a few notes of caution. What is considered a high score in one discipline may be different than another discipline. Also language, format, and publication schedule may influence impact scores (Thompson Reuters). *Journal Citation Reports* can be used to identify important journals, although some titles may be highly used but infrequently cited, such as *The Economist* (Blecic 297). Also, there have been several studies looking to identify correlations between a high JCR score and high library use, and the relationship is weak (Blecic 301).

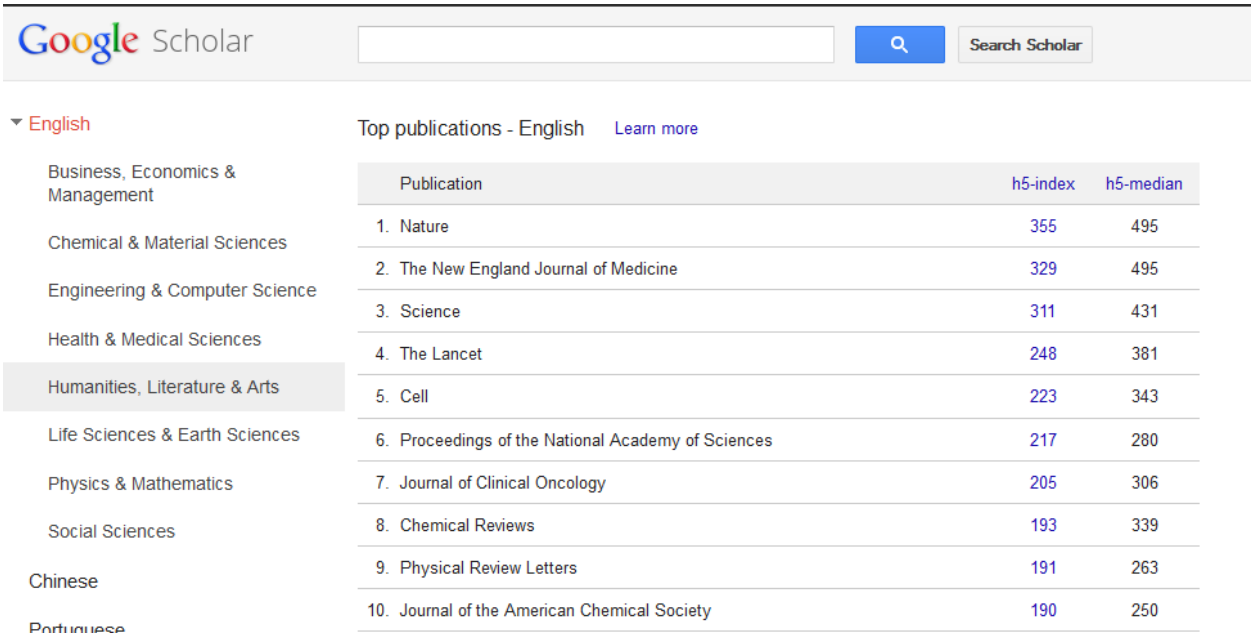
Libraries use JCR scores in their decision making for ordering, retaining, or cancelling journal subscriptions, for evaluating database packages, and for assessing the value of their collections. Librarians at the University of Guelph were concerned about the low score on LibQual+ question IC-8 ("Print and or electronic journal collections I require for my work") and decided to analyze how well their library provided access to prominent journals, as defined by high *Journal Citation Report* ratings. (Gale 1). They limited their study to certain disciplines in the sciences, such as Math, Chemistry and Physics. The authors downloaded the JCR title lists for all subjects related to each discipline, merged and de-duped the lists, sorted them by total number of citations, and then selected the top 200 to examine. They looked at whether Guelph provided the journal in print, online, or through ILL. The study showed that despite faculty dissatisfaction with the collection, the library in fact provided a very high level of access online or in print in all disciplines studied (94% in Engineering, 88% in Chemistry, etc.) and that access had improved between 2003 and 2008. They also examined how well Guelph provided access to the journals that represented the majority of citation counts (for example, they provided access to 99% of the top 100 cited Chemistry journals.) A further analysis was done on whether they were providing the back file content to the top journals in each discipline. As they could not explain faculty dissatisfaction with journal holdings based on the large number of titles they actually did provide, the authors' concluded with the following:

> An analysis of journal holdings, such as the one described in this article, could be an excellent starting point for discussions with faculty and graduate students to explore their satisfaction with the access to the scholarly journal literature provided by the Library, including related issues like web site design, system response time, open access publishing, and so on. (Gale 19).

Journal Citation Reports is available in a Science and a Social Sciences edition, and requires a paid subscription, which the UFV Library does not currently have. Lack of access to this tool hampers our ability to assess our journal collection holdings.

Google Scholar Journal Metrics

Google provides a free tool that is another way to assess the relative importance of a scholarly journal. The metrics rank journals overall, and within subject disciplines, by providing an h5-index rating. "h5-index is the h-index for articles published in the last 5 complete years. It is the largest number h such that h articles published in 2009-2013 have at least h citations each." (Google Scholar Metrics). For example, a journal with an h5-index score of 355 has 355 papers that have been cited 355 or more times each.



Publication	h5-index	h5-median
1. Nature	355	495
2. The New England Journal of Medicine	329	495
3. Science	311	431
4. The Lancet	248	381
5. Cell	223	343
6. Proceedings of the National Academy of Sciences	217	280
7. Journal of Clinical Oncology	205	306
8. Chemical Reviews	193	339
9. Physical Review Letters	191	263
10. Journal of the American Chemical Society	190	250

Fig. 1. "Top Publications – English." Google, Inc. (2014). Web. 23 Oct. 2014.

Google Scholar Metrics provides a quick, free tool to identify key journals in a subject discipline. As shown in Figure 1, it also produces a list of the top publications in English overall. These lists can be compared against the UFV Library holdings during program reviews and subscription renewals.

Web of Science

Thompson Reuters has long been in the business of analyzing citations, with Science Citation Index celebrating its 50th anniversary in 2014. Today this product is available online as the Web of Science. UFV Library had a subscription until 2013, when impending budget cuts prompted the difficult decision to cancel this database. Web of Science provides backwards and forwards citation mapping in a highly visual display, as well as Times Cited Counts, and links to citing and cited articles.

Fig. 2. "Calculation of Molecular Volumes and Volumes of Activation Using Molecular Dynamics Simulations Citation". Web of Science Database. (2012). Web. 23 Oct. 2014.

Web of Science allows the creation of Citation Reports by author or funding organization.

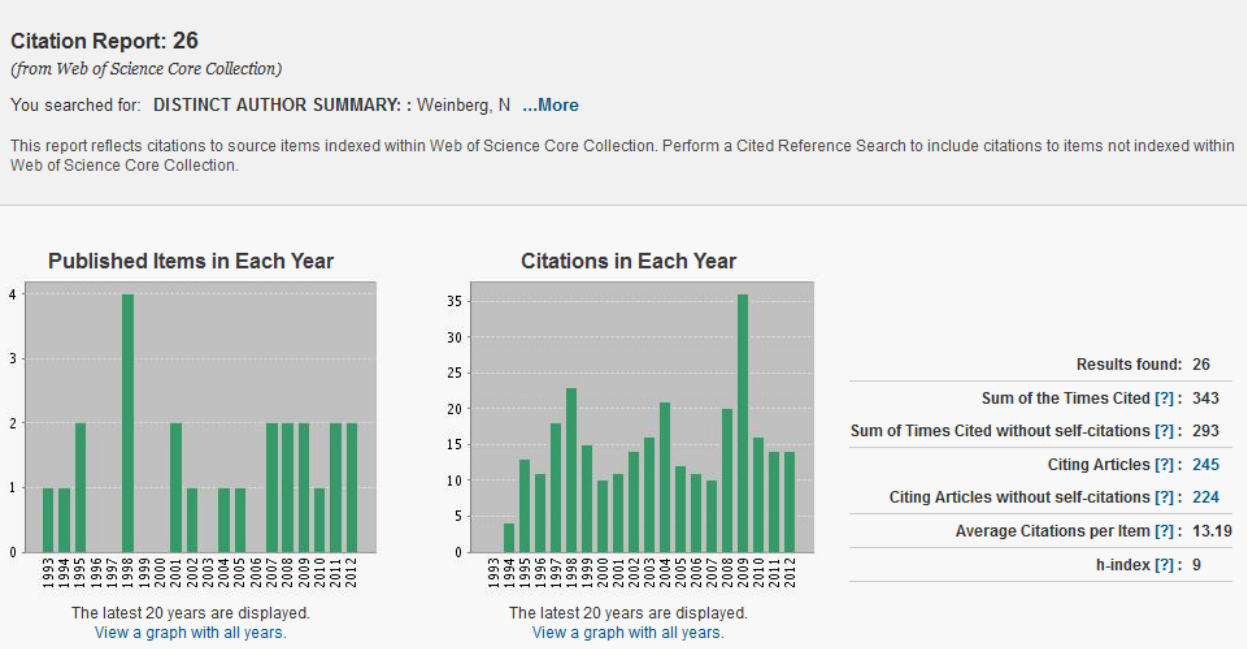


Fig. 3. "Citation Report for author Weinberg, N." Web of Science Database. (2012). Web. 23 Oct. 2014.

The report also assigns an h-index score to faculty members. This score was first developed by J.E. Hirsch in 2005 and is used as a relative measure of a faculty member's impact in their discipline. Disadvantages are that it favors researchers with a lengthy publishing history, as well as not reflecting if a researcher is continuing to be active in their field. (Bornmann 831). Nevertheless, it is still considered a useful quantitative measure.

Thompson Reuters also analyzes the most highly cited researchers, and produces a searchable list at http://highlycited.com/ . This freely available website lists over three thousand researchers who rank in the top 1% most cited for their subject field and year of publication.

Overall, the features in Web of Science can be valuable for faculty authors looking to see the reach and impact of their research, seeking grant funding, building a portfolio for tenure, identifying future collaborators, and more.

Other indexing sources, such as Google Scholar, EBSCOhost and ScienceDirect have also started providing citation counts and links to citing articles, although without the value added tools to analyze the results. Figure 4 shows how Google Scholar includes the citation count for an article by Dr. Noham Weinberg.

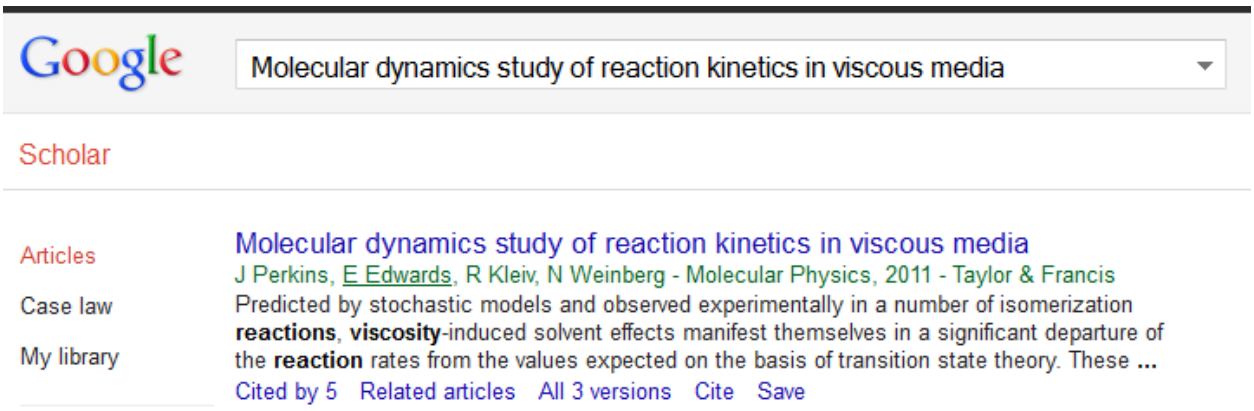


Fig. 4. "Molecular dynamics study of reaction kinetics in viscous media citation." Google, Inc. (2014). Web. 23 Oct. 2014.

Eigenfactor

The Eigenfactor website is a valuable free resource which provides an Eigenfactor Score, an Article Influence Score and a Cost Effectiveness score for journals. It is searchable by journal title, ISSN, publisher, ISI subject category and Eigenfactor subject category and includes journals in the sciences and social sciences.

The Eigenfactor methodology shares similarities with the JCR method, but uses a 5 year time span to analyze citing patterns. Full details on the algorithms used are available at http://www.eigenfactor.org/methods.pdf .

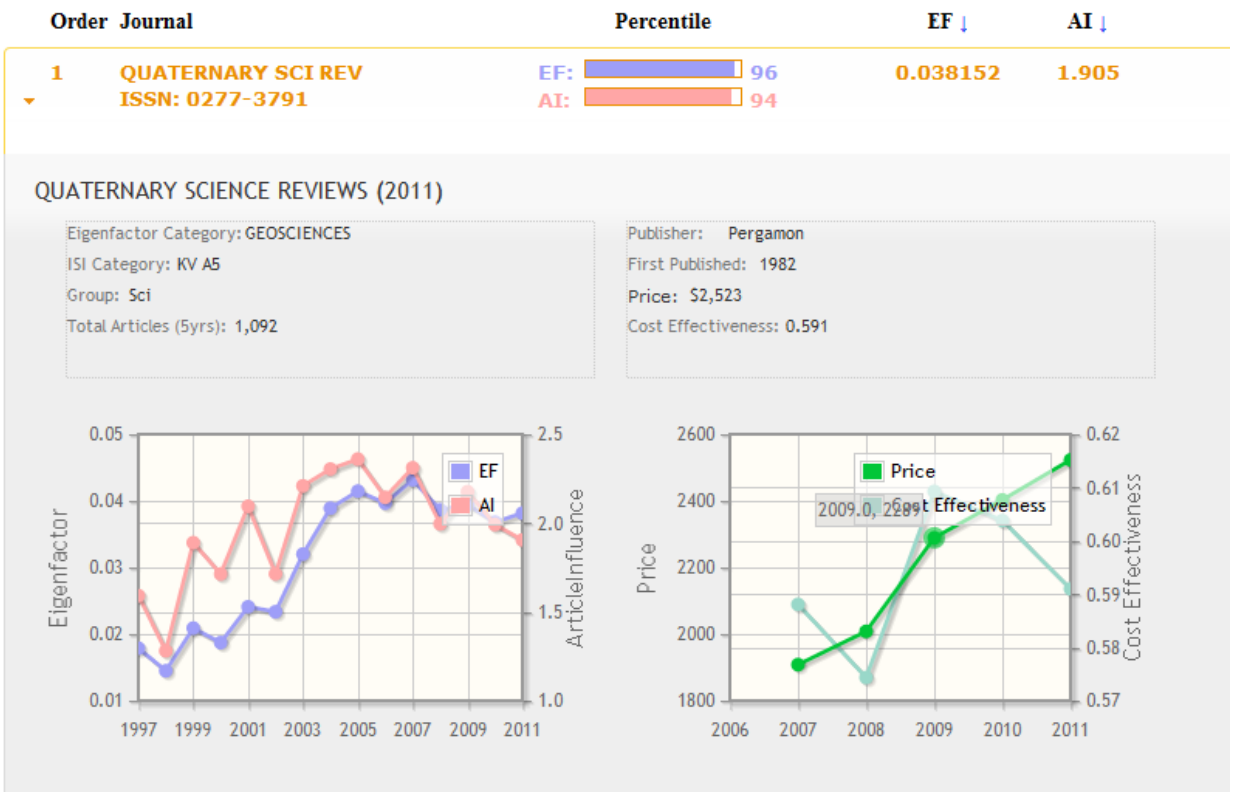


Fig. 5. "Quaternary Science Reviews (2011) ranking." Eigenfactor.org. (2014). Web. 23 Oct. 2014.

The Eigenfactor website can be used to evaluate the percentile ranking of a journal (Figure 5), as well as to create a list of the most important and influential scholarly journals in a discipline. UFV Librarians can use this information in program reviews, to assess our holdings in a subject area, and to identify important journals in a discipline. Cost effectiveness data would need to be used carefully, because list pricing and consortia package pricing may bear little resemblance.

The creators of Eigenfactor are also very interested in studying the interrelationship between subject disciplines and have created visual mapping tools to illustrate these interconnections. Figure 6 shows the far reaching influence of the journal *Science* across multiple disciplines. This visualization may be of interest to students and could be used in library instructional sessions.

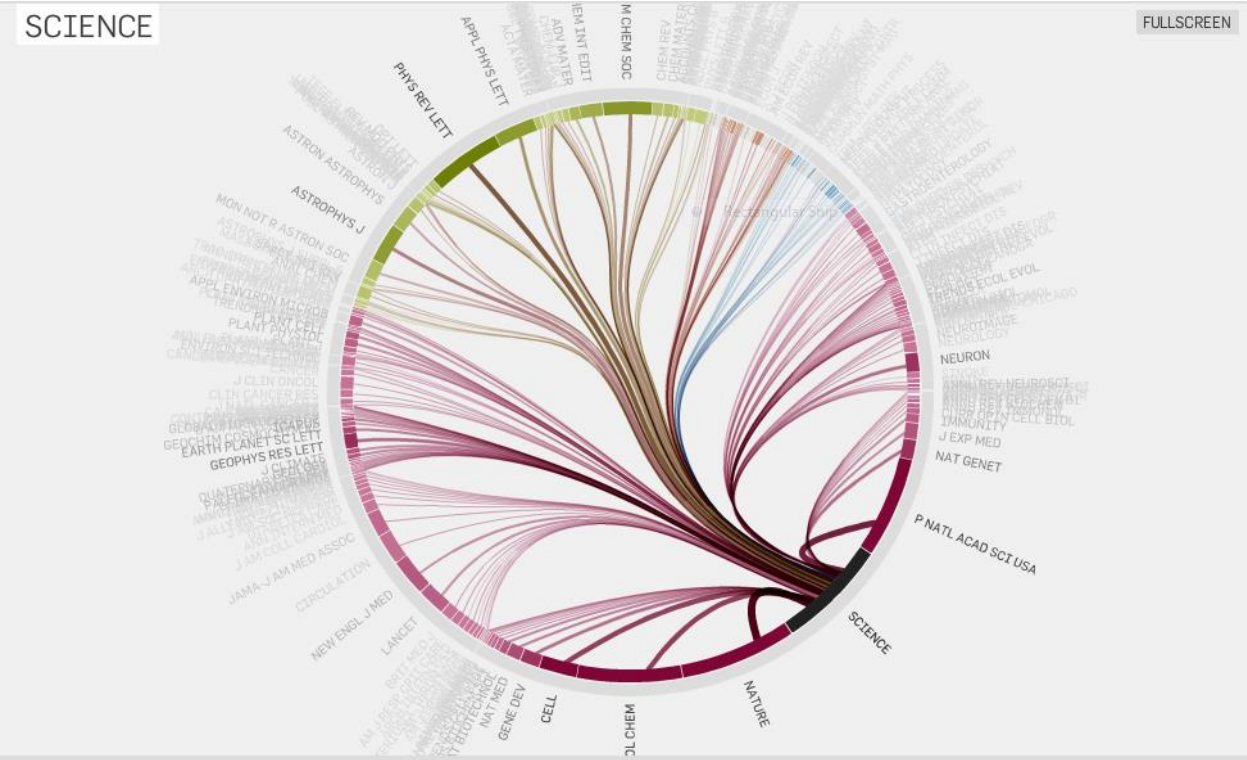
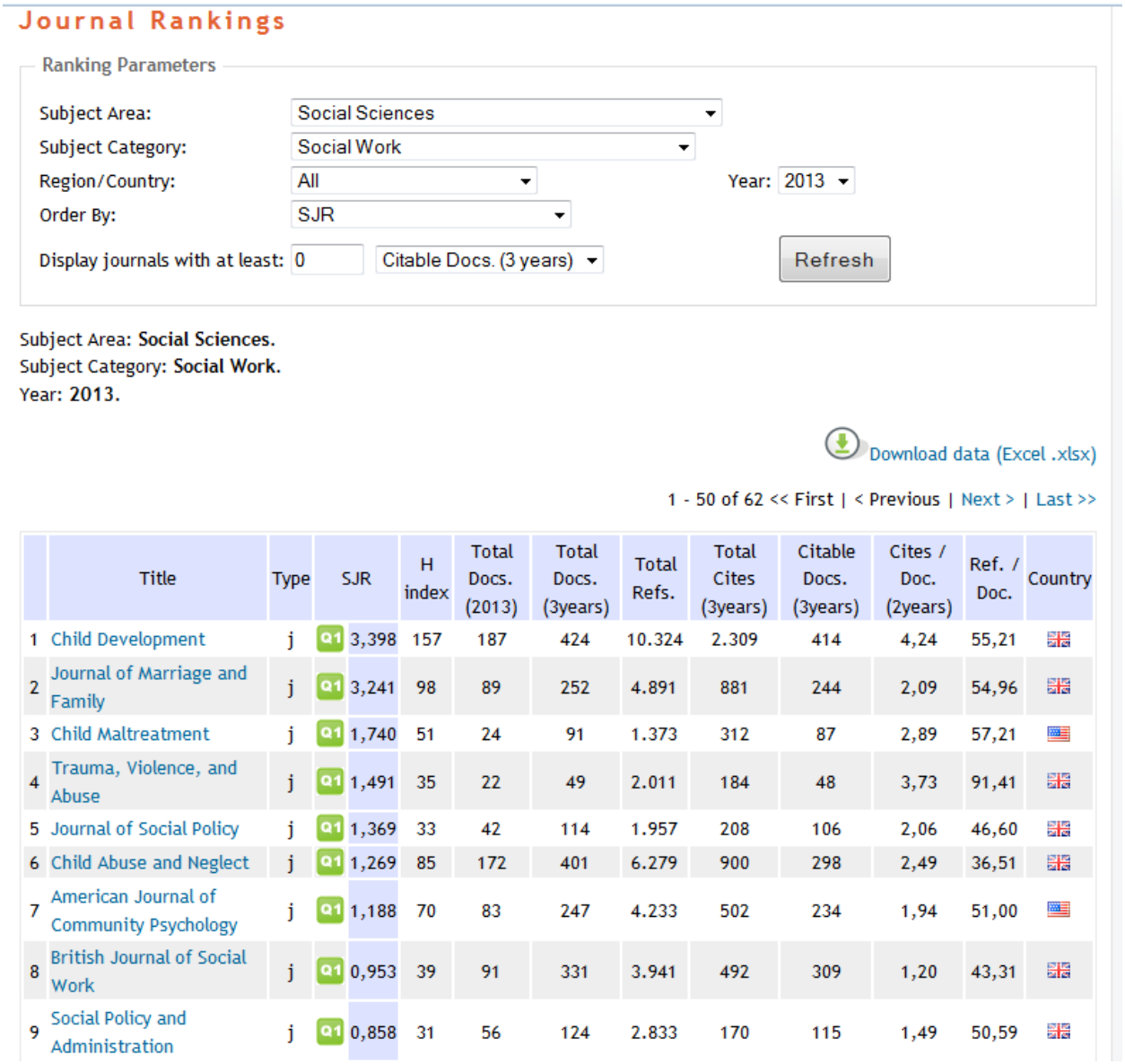


Fig. 6. "Science Journal Citation Pattern." Well-Formed. Eigenfactor.Org. (2014). Web. 23 Oct. 2014.

SCImago Journal & Country Rank

Another free alternative to *Journal Citation Reports* is the SCImago Journal Rank (SJR), produced using data from Elsevier's *Scopus* database. SJR includes journals in the sciences and social sciences, and can be searched by journal title or browsed by discipline. Users can compare a custom list of journals. A number of indicators are provided, including the SJR indicator, H index, Cites per Document, and Self-Citations, and journal lists can be sorted by various indicators. The SJR indicator is a complicated formula which weights the citations based on the importance or prestige of the journal doing the citing.

Another interesting feature of the SCImago website is the ability to rank the research output of countries, and to see which subject areas are most represented in that country's publications.



Journal Rankings

Ranking Parameters

Subject Area: Social Sciences
Subject Category: Social Work
Region/Country: All
Year: 2013
Order By: SJR
Display journals with at least: 0 Citable Docs. (3 years)
Refresh

Subject Area: **Social Sciences.**
Subject Category: **Social Work.**
Year: **2013.**

Download data (Excel .xlsx)

1 - 50 of 62 << First | < Previous | Next > | Last >>

	Title	Type	SJR	H index	Total Docs. (2013)	Total Docs. (3years)	Total Refs.	Total Cites (3years)	Citable Docs. (3years)	Cites / Doc. (2years)	Ref. / Doc.	Country
1	Child Development	j	Q1 3,398	157	187	424	10.324	2.309	414	4,24	55,21	
2	Journal of Marriage and Family	j	Q1 3,241	98	89	252	4.891	881	244	2,09	54,96	
3	Child Maltreatment	j	Q1 1,740	51	24	91	1.373	312	87	2,89	57,21	
4	Trauma, Violence, and Abuse	j	Q1 1,491	35	22	49	2.011	184	48	3,73	91,41	
5	Journal of Social Policy	j	Q1 1,369	33	42	114	1.957	208	106	2,06	46,60	
6	Child Abuse and Neglect	j	Q1 1,269	85	172	401	6.279	900	298	2,49	36,51	
7	American Journal of Community Psychology	j	Q1 1,188	70	83	247	4.233	502	234	1,94	51,00	
8	British Journal of Social Work	j	Q1 0,953	39	91	331	3.941	492	309	1,20	43,31	
9	Social Policy and Administration	j	Q1 0,858	31	56	124	2.833	170	115	1,49	50,59	

Fig. 7. “Journal Rankings Social Work.” SCImago Journal and Country Rank website. (2014). Web. 18 Dec. 2014.

Altmetrics

ACRL identifies altmetrics as one of the top trends in academic libraries (ACRL 298 – 299). Offered as an alternative to traditional impact factors and citation counts, altmetrics look at the attention an article is generating on the web. As stated by Levine-Clark, these tools “can be used to measure research strengths and weaknesses at the institutional and departmental level, are increasingly important to determine potential collaborators …, to help understand the overall strengths and weaknesses of research at an institution, and to identify funding opportunities.” (430). Academics are also beginning to include altmetrics in their tenure packages as a way to demonstrate the online impact of their research

(Howard). A number of products are providing variations of this service, including Plum Analytics, Altmetric, and Impactstory.

According to the Altmetric Webinar of October 22, 2014, Altmetric tracks attention to scholarly articles and to published datasets in resources like Figshare and Dryad. They monitor 1300 selected professional news outlets, and aim for a global, multi-lingual coverage. They also track public posts on social media, such as Twitter, Facebook and Google+ (not including "likes.") They monitor 8000 selected blogs, policy documents from NGO's and government organizations, and reference managers such as Mendeley and CiteULike. Altmetric tracks the geographical distribution of coverage, reader disciplines, and professional status, with more weight being placed on scholars and scientists over the general public. Scores are given in context, comparing other articles in the same journal or of a similar age. All mentions can be tracked back to their source. Altmetric started data tracking in 2011, but will include an older article if it has been mentioned after 2011. Therefore this tool will have limited value to assess the importance of articles published in previous decades.

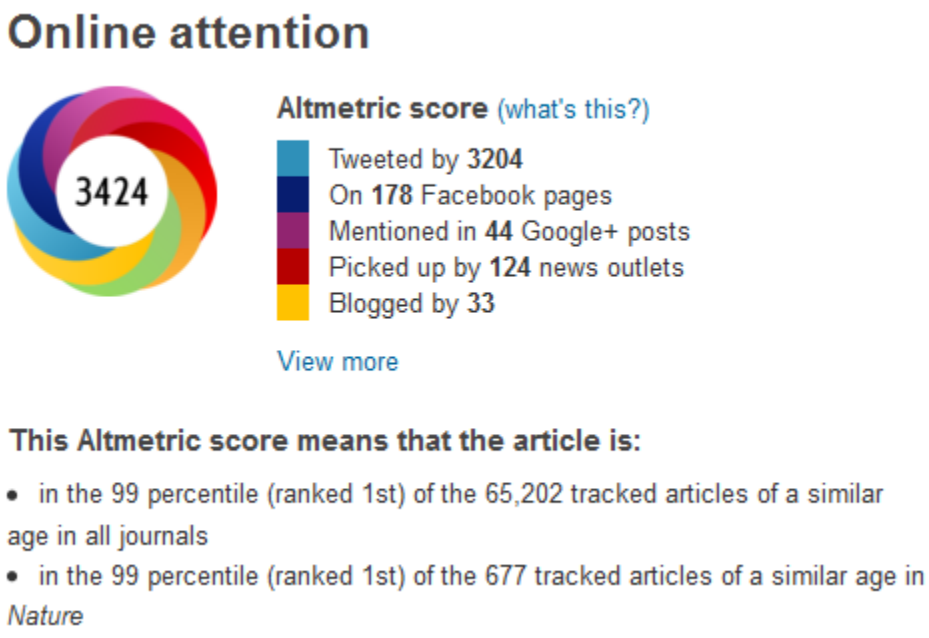


Fig. 8. "Altmetric score for *Nature* article "Artificial sweeteners induce glucose intolerance by altering the gut microbiota."" Nature.com Database. (2014). Web. 23 Oct. 2014. <doi:10.1038/nature13793>

As shown in Figure 7, many publishers are integrating Altmetric badges into their journal citations, as a way of demonstrating the impact of articles from their journals. I have added an Altmetric widget to our EBSCO Discovery Service, so that Altmetric scores will display at the end of an article citation. Altmetric also offers a free bookmarklet tool that can be added to the bookmark toolbar in Firefox. Once the tool is installed, you can visit a paper on the web, click on the tool, and view the article's metric if available. The bookmarklet can be downloaded at http://www.altmetric.com/bookmarklet.php. The Altmetric score is an interesting tool that UFV students, faculty and librarians can use to determine the relative

impact and importance of a particular article. It would be beneficial for the UFV Library to alert these constituents to the availability and use of the metric.

Altmetric for Institutions provides an institution specific view of the impact of faculty research. Set up is required, with faculty names, departmental affiliations, and article DOI's or Pubmed ID's provided. These articles are then tracked by Altmetric, with many possible report outputs including by top article, by author, by department. Institutional Repository badge embeds are quite popular. Pricing is according to research output, based on the number of articles published in a three year average.

Altmetric Explorer is available for librarians to set up a free account, at http://www.altmetric.com/login.php . Users can view the latest trending articles, or search for articles by keyword, journal, publisher, funding source and more (see Figure 9). This could be an alternative method of finding impactful research on a given topic, evaluating journals or publishers, or assisting faculty to determine their scores. However, I searched for a number of UFV faculty authors in Altmetric Explorer, but found few hits. For this reason, I believe it is still too early for UFV to implement a product such as Altmetric for Institutions. This product will become more relevant as our research outputs increases, and after we have implemented an institutional repository.

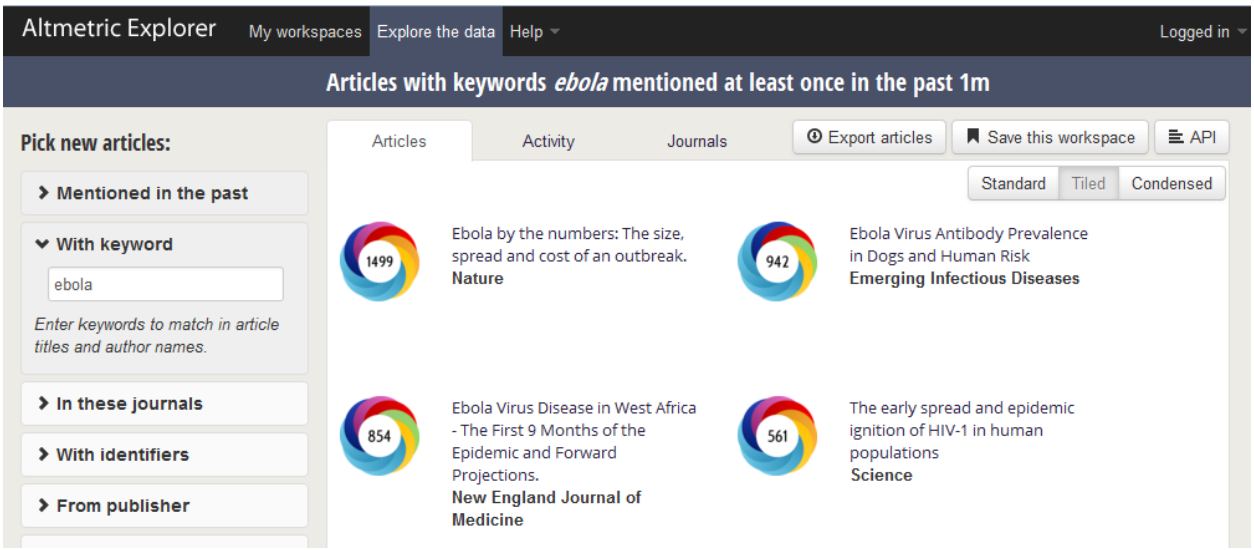


Fig.9. "Articles with keywords ebola mentioned at least once in the past 1m". Altmetric Explorer. (2014). Web. 23 Oct. 2014.

ImpactStory

ImpactStory allows a faculty member to build an electronic profile or CV, with links to their publications, datasets, slide decks, software products, webpages and more (ImpactStory). Their works are displayed with impact measures, such as the number of citations as counted in Scopus, number of saves to Mendeley, number of Delicious bookmarks, number of Twitter impressions, number of views in sources such as PLOS or Figshare, number of GitHub stars or recommendations, and number of ImpactStory views. Cumulated key metrics for all their output is also presented. An ImpactStory widget may be embedded in a faculty website to display live altmetrics (Howard).

The importance and impact of specific journals, of specific journals articles, of specific researchers, and specific research centres may all be measured using the tools I have described. Bibliometrics and altmetrics are important for faculty seeking to demonstrate their place in the scholarly community, and the library should play a role in providing these tools and educating faculty on their use. Journal impact factors, citation counts, h-5 index scores, article influence scores, and more can be used to identify the key journals in a subject discipline, to evaluate how well the UFV Library collection is providing access to these journals, and to guide journal retention, renewal and cancellation decisions.

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Section 11: Web-Based Tools

It is challenging to stay current with the number of web-based tools and products available for students, staff and faculty. During my educational leave, I spent time learning about unfamiliar products and sites discussed in books and articles I was reading. I have no ambitions to learn about all of them, as the number is daunting.

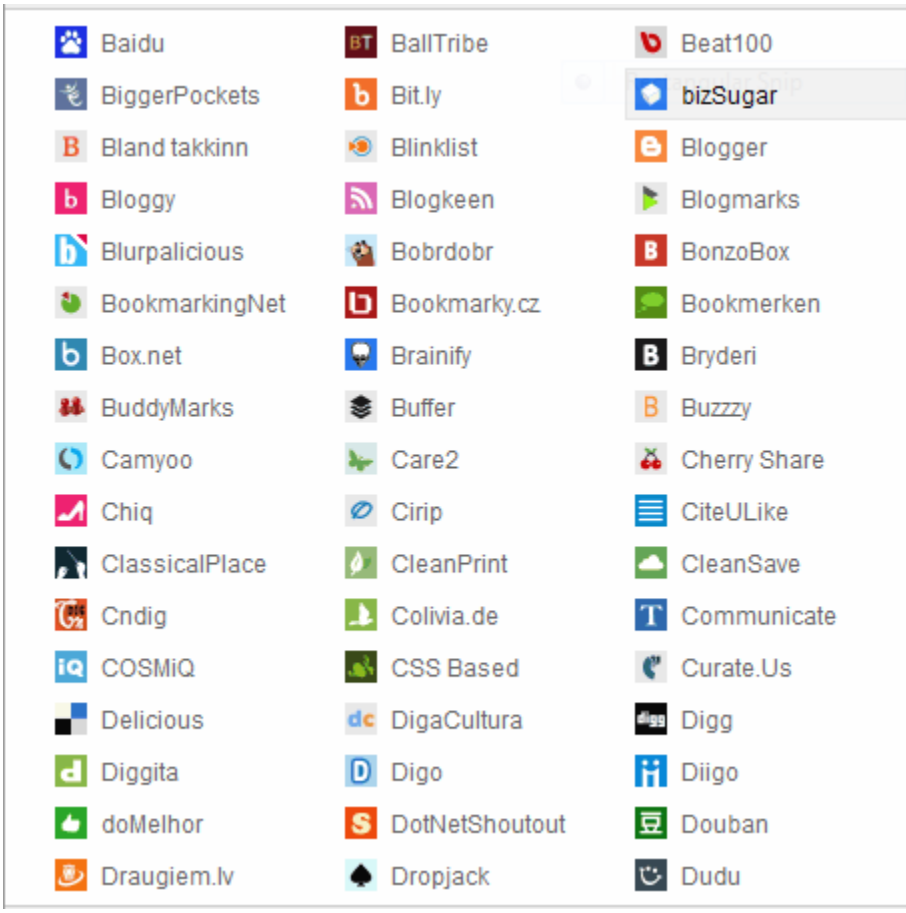

Fig. 1. Some of the "Share" options listed in EBSCOhost databases.

I am interested in what tools fit into the research workflow, including storing and organizing citations, uploading files, annotating documents and websites, sharing content, collaborating, finding scholars in a similar field, searching for content, demonstrating impact, and creating bibliographies. The library has played a minimal role in providing, licensing, promoting, and training the UFV community on the use of these types of tools. However, it is important that we stay relevant by understanding how our faculty are using these sites, increasing our own digital literacy and incorporating this type of content into our instructional programs.

Citation Managers

Mendeley http://www.mendeley.com

Mendeley is a powerful reference manager tool with many uses for an academic researcher. You start by creating an account and downloading a free Mendeley desktop tool. Mendeley combines a place to upload and save PDF files, create folders of references, annotate and make notes on PDF documents, and subject tag entries. You can retrieve full references from the Mendeley website. You can download a free tool for Word called Mendeley Cite-O-Matic which allows you to insert in-text citations and create bibliographies from your saved references. Mendeley includes a very large database of searchable references (papers) which have been saved by other members, enabling subject searching in a fairly advanced search interface (limiting by date range, type of source, keyword, discipline, etc.) You can limit the search results to Open Access articles only. The references provide links to retrieve the full content, including a configurable "Find This Paper At" tool. UFV searchers can add a link to our GODOT open URL resolver, to link to references available at UFV.
http://proxy.ufv.ca:2048/login?url=http://godot.lib.sfu.ca:7331/godot/hold_tab.cgi

Mendeley also acts as a social network for academics. Researchers can create a detailed profile, including their publications and a C.V. You can join and follow groups in your subject areas. I am following a Library Assessment group, and find it interesting to review the articles listed by other members of the group.

CiteULike http://www.citeulike.org

CiteULike shares many similarities to Mendeley, being a free service for collecting and organizing scholarly papers and citations.

Data and File Sharing

Figshare http://figshare.com

Figshare is a cloud based platform for private and public storage and sharing of data. The data is often associated with research projects at academic institutions, or may be part of a published article from an academic publisher such as Taylor & Francis. Users can search by keyword to find resources on a topic, and may retrieve tables, graphics, graphs, appendices, and even full text articles.

Dryad http://datadryad.org/

Dryad is another cloud based data repository that stores data associated with specific publications, such as Springerlink journal articles. "Overview: Dryad's mission is to make the data underlying scholarly publications discoverable, accessible, understandable, freely reusable, and citable for all users."

SlideShare http://www.slideshare.net

SlideShare is a cloud platform that allows users to store and share visual content, such as power point presentations, videos, infographics, and PDF files. The content ranges from popular ("how to make an ice cream sundae") to academic ("automatic construction of nanotechnology ontology standards"). The site could be useful for librarians, students and faculty who wish to create and share presentations, get ideas on how to visually present information, or for self-education.

Collaboration

Diigo http://diigo.com

Users can create a free account to store web links, uploaded documents, pictures, etc. Documents can be annotated and highlighted. Saved websites can also be highlighted and retrievable notes added to the page. Diigo works effectively as a collaboration tool for group projects, with members able to add resources to the group collection and comment on each other's additions.

GitHub http://github.com

GitHub is a collection of repositories of programming code, allowing collaboration and development of open source software or private projects.

Publishing

PeerJ http://peerj.com

PeerJ is notable new website which publishes two open-access journals, PeerJ and PeerJ PrePrints, with a subject focus on biology, medicine and health sciences. The founders aim to provide an affordable option for researchers to publish and disseminate their research, in a credible, peer-reviewed source. Pricing plans start as low as $99 US for a basic plan. PeerJ is indexed by a number of sites, including Pubmed and will soon be added to Web of Science.

Researcher Impact

ImpactStory http://impactstory.org

ImpactStory allows a faculty member to build an electronic profile or CV, with links to their publications, datasets, slide decks, software products, webpages and more. Their works are displayed with impact measures, such as the number of citations as counted in Scopus, number of saves to Mendeley, number of Delicious bookmarks, number of Twitter impressions, number of views in sources such as PLOS or Figshare, number of GitHub stars or recommendations, and number of ImpactStory views. Cumulated key metrics for all their output is also presented.

ORCID – Open Researcher and Contributor ID http://orcid.org

Authors/researchers may register for their own unique researcher ID number. This facilitates finding the research output of an author across different systems, if an author changes their name, etc.

"ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized." "Include your ORCID identifier on your Webpage, when you submit publications, apply for grants, and in any research workflow to ensure you get credit for your work." (ORCID website)

Journal Article Services

DeepDyve http://www.deepdyve.com/

DeepDyve is a service where an individual can pay $40 a month for access to scholarly journal articles from major publishers like Wiley. Users are allowed to read the articles online, but not print or download them. If you want to print/download, you are directed back to the publisher's site to purchase the article. Publisher's websites are now displaying a "rent this" icon, with a link back to DeepDyve.

Reprints Desk http://www2.reprintsdesk.com/Default.aspx

Reprint Desk provides an "Article Galaxy" database of 52 million journal articles from academic publishers such as Wiley, Elsevier, or Springer, with a focus on science, technology, engineering and medicine. Users can search by keyword, titles or author subject across multiple platforms. Results are de-duplicated and ranked, and many limiters are available. There is an available bookmarklet that integrates into Pubmed. Orders can be placed for single articles or bulk copies, and the price includes a service charge and copyright fee. A sample charge is $37.00. Some libraries are using this as a document delivery service in place of interlibrary loan.

Popular Content

There are a profusion of fun, interesting, and highly used sites for viewing curated content and contributing personal videos, photos, comments, blogs, and more. These sites may be well used by students for entertainment, sharing, and keeping up with current events and celebrity news. Although there may be possible academic uses, from my preliminary reviews, I would not be promoting them as academic research sources. Sites that I tried include Tumblr, Stumbleupon, Digg, Freebase, Instagram and Pinterest.

Conclusion

During my leave I engaged in a number of activities. I conducted a literature review of books, conference papers and journal articles on the topics of collection development, collection assessment, e-books, demand driven acquisition, trends in higher education, weeding, allocation formulas, serials, big deal journal packages and altmetrics. Although I read a large number of sources, this literature is extensive and constantly growing, and each topic area worthy of an entire project on its own. I attended a number of informative webinars from a variety of sources, attended meetings and networked with other collection librarians. I learned about new methods of collection assessment and tested them using our own data, and researched available tools and products.

There are a number of decisions which we need to make, based on our vision of the collection needed to support our students and faculty. Is our budget correctly weighted between operating and collections expenditures? What importance do print books have in our collection and how significantly should we reduce our expenditures in this area? What percentage of our budget should go towards e-books and demand driven acquisition? If faced with continued budget shortfalls, can we safely extricate ourselves from a big deal package? How can we revise our allocation formula? Is our spending by faculty out of balance and how should it be adjusted? The information I have gathered over the course of my leave should provide a valuable starting place for these discussions with the Library Management Team.

The time spent learning about the theoretical background of evidence based collection assessment, new products, new methodologies and new ideas has been very valuable to me. It has allowed me to reflect on a number of future goals and projects that I would like to undertake, including adding subject level details to our collecting development policy, improving the policies and procedures for gathering assessment data, revising our program review processes, standardizing and documenting our weeding methodology and conducting a weeding project, doing further analysis on our e-book collection usage by vendor, revising our allocations to support priority programs such as Agriculture, investigating what Science students and faculty use for research materials, investigating a peer comparison tool such as OCLC's Collection Evaluation, and revamping our e-book cataloguing to include call number information.

Further outcomes from this leave will involve opportunities for presentations and training to diverse groups, such as the Library Management Team, library staff, Library Advisory Committee, and faculty.