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An Infographic Is Worth a Thousand Words: Using Data Visualization to Engage Faculty in Collection Strategies

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Abstract

Like the rest of us, faculty are less likely to read a table of data than to engage with a pictorial representation of the same information. Using words and visuals together has been proven to increase understanding and interest. This paper will describe recent efforts at Hamilton College to engage our stakeholders, especially faculty, in the assessment, analysis, and development of our library collections. Using graphs, charts, and other visual representations, we effectively presented our current state, acquisitions history, trends in checkouts and electronic hits, and budget allocation. Included here is a summary of the types of data chosen to present, as well as several modes of display. Also presented is the discussion process, starting with the library faculty committee, moving to the faculty department heads, and eventually meeting with individual departments. This progression resulted in conversations with engaged faculty about our collections and how they support the curriculum at our institution. Readers will find practical ideas on using graphic visual representations of their data to engage their stakeholders in the collection activities of their libraries.

I began my time at Hamilton College overseeing Access Services; two years later, when I took on the additional duties of Collection Strategies, I found it to be a natural and mutually beneficial arrangement. I had worked in the acquisitions department of another small liberal arts college library and was counting on that experience to help me in my new role. While that did give me insight into processes and procedures, I found that I had a lot to learn; I needed the big picture. So, I set out to discover where we were, where we had been, and where we hoped (and hope) to go. I did this by getting to know the collections: I studied acquisition trends; I determined the content by subject areas; I learned the age of the collection; I analyzed the use of the collections, circulation trends, and how the collections are acquired. Then I began to work more intensely with others to develop an intentional collection strategy for Hamilton College. As I mapped out this process which I hoped to follow, I realized that I was forming pictures in my mind; in fact, I eventually drew a “mind map” of the process. This activity showed that I understood more easily using pictures; perhaps others would also. I certainly wanted to engage the faculty in collections strategies without wasting their time.

Literature Review

Studies have shown that visual representation of data enhances understanding. I spent time in

perhaps the most iconic work in this field, Tufte’s *The Visual Display of Quantitative Information* (2001). I was reading the 2013, eighth printing, of the second edition. The number of printings demonstrates the lasting truths to his work, first published in 1983. Research by Russian authors Jannetta Ermolaeva, Irina Gerasimova, and Oksana Lapyhova (2014) show the effectiveness of using visualization in educational materials. Jane Krauss (2012), while speaking of K–12 students and the Common Core, asserted that infographics help students to make better sense of dynamic systems, relational data, and changes over time. This was exactly the type of information I was trying to relay to our faculty. Turck et. al. (2014) assert that the use of infographics can enable health care professionals to better understand clinical medical research. While the information I was trying to convey might not be as vital as medical research results, I was still aiming for maximum understanding.

The Process

Data Collection

My first activity was determining what type of data that I needed to present. What would be important for the faculty and other stakeholders to know in order to make informed decisions about collections? I decided that I needed to refine the types of data mentioned in the introduction—content, age, use of

the collection, and acquisition models. I assumed that what I needed to know to get the big picture would be the same things that the faculty would need to know. This information was gathered from a variety of sources—reports run from our ILS through Microsoft Access, budget reports, patron counts, and anecdotal examples.

Data Representation

Much thought was given about how best to present each type of information. Most of my data had been created in Access and was viewed in an Excel spreadsheet.

Therefore, I began by using Excel's excellent range of charts and graphs. I considered carefully each type of information and which category of chart or graph would best represent that data, using pie charts, bar charts, and line charts.

There were some varieties of statistics that didn't seem to lend themselves well to any of those forms, so I went to where everyone goes when they need to know something: Google. I conducted a Google image search of infographics and found a great number of good ideas concerning layout and types of pictures to display. I did look at some free and proprietary software such as Tableau, Canva, Piktochart, Venngage, and others. However, most of these could only make basic infographics easily. If one wanted a more complicated representation, there was a steep learning curve (and often a cost). Instead, I decided to take what I learned from these searches and create my own graphics using the tools in PowerPoint. For instance, in looking at how many books have circulated in each of the subject areas since 1989 and 2005 respectively, I used the idea of batteries and how "charged" they are. It was pretty simple to create a "battery" in PowerPoint using a series of rectangles and triangles.

Table 1. Selected physical acquisitions by year.

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Stacks	6906	5864	4476	5082	5008	5201	3932	3628	2858	3588
Browsing	19	16	9	27	116	204	382	359	242	213
DVDs/CDs	635	1345	1066	327	799	932	499	536	340	646
Reference	194	191	117	74	168	75	80	61	61	124

Figure 1. Three-year comparison of information sources.

To show how many books we had in certain subject areas and compare that to the circulation in those areas, I wanted to use stacks of books, but I could find no image that was freely available that really met my needs. Instead, I looked at several images of stacks of books and then used the drawing tools in PowerPoint to draw my own. This was somewhat time-consuming, but after I created one, I could use the same images over and over, rotating and recoloring as necessary.

Figure 2. Sample of circulation history “battery.”

The colors are important. In looking at other infographics, I found that there were great variations on color schemes, from a large amount of white space with one or two hues to a cacophony of color; however, most of them kept to four or less colors. I found four that I liked and made all my infographics a combination of these colors. I put my graphics on a two-sided 11 x 17 sheet, which became a booklet when folded.

Presentation Process

We are privileged to have a faculty committee on the Library and Information Technology Services (LITS). My director suggested that I first present to them. By nature of being on this committee, they were already engaged in library services and collections, so I had an invested audience. They asked some excellent questions that helped me to refine the information that I wanted to present. They suggested that I next present to a meeting of faculty department heads. I did so, trying to keep my presentation short, knowing that their time is limited. I gave them the infographic booklet with a general overview of the collections and indicated that I would like to meet eventually with each department separately to talk about collections.

The faculty in the Humanities Departments were our first target, as they were already heavy library users and supporters. I contacted several department heads and received responses from more than half of them. I set up a meeting with the liaison librarian

for that department. For these meetings, I not only showed them the general overview of the collection, but I also gave them some brief facts about the collections related to their individual department: Number of monographs, age of the collection, circulation trends, and serials subscriptions with the cost per use. Again, I used infographics to do so.

We had discussions about how faculty requested books for the library and for what purpose. Do they look for books simply to add to the general collection, or are they requesting books for a specific purpose for their curriculum? This gave us good insight as to their needs. It was also an opportunity to address any concerns they had about the library in general. We talked about such things as print versus electronic, the use of interlibrary loan services, borrowing books through our consortia, if the collections and the access met the needs of their teaching and learning, whether there are items in the library that shouldn't be in the collection, and the use of library space in general.

Figure 3. Physical checkouts by patron type.

Lessons Learned and Next Steps

I think the progression of getting buy-in from the faculty was successful. Going forward, I will be sure to include liaison librarians at even more steps along the way. I would also like to devise a way to get a higher participation level among departments.

After talking with several departments, I wrote up a general collection philosophy that seemed to echo what had been said in our discussions. One next step will be to bring this collection philosophy back to the faculty for further input and refining, to be sure we are adding to the collection strategically.

I would like to discover whether there are items that need to be deselected or moved offsite as appropriate. How do we arrange the collection and other elements in the libraries such as study areas, computers, and collaborative spaces? How can we use resource sharing to augment the collection as appropriate?

I am working to form a collection management committee that would consist of me, our acquisitions and serials librarian, one or more liaison librarians, and perhaps someone from Special Collections. In collaboration with liaison librarians, I would like to not only have an overall collection philosophy but also develop collection guidelines for each department. Cultivating a collection philosophy is an iterative process, with continual collaboration with liaison librarians, faculty, students, the committee on LITS, and other interested stakeholders.

Conclusion

It is important to engage faculty and other stakeholders in developing your library collections and programming. Communicating to them through the use of infographics may be one tool that can help you move in the right direction toward enhanced collaboration.

Figure 4. Sample department infographic.

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