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Deep Dive: Differentiated eBook Usage Between Collection Types Across Disciplines

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Biz of Acq — Deep Dive: Differentiated eBook Usage Between Collection Types Across Disciplines

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Introduction

Since the October 2011 inception of **Winthrop University's** eBook patron-driven acquisitions (PDA) program, the eBook program has matured and generated usage and expenditure data to a sufficient degree to spot trends between print and eBook preferences by discipline. Usage and expenditures for eBooks and hardcopy materials were analyzed through February 18, 2016. Published in a series of three *ATG* articles, this study examines usage and expenditure of eBooks and hardcopy materials: The first article (November 2016) described the study's setup, data strategies, and broad print and eBook usage and expenditure findings from year 2011/12 through 2014/15. The second article (December 2016-January 2017) showed expenditures and usage trends in more depth by discipline for print and eBooks from year 2011/12 through 2014/15, as well as preliminary usage data gleaned from our new integrated library system (ILS) through February 18, 2016. This third and final article is entirely focused on in-depth eBook assessment: This part of the study analyzes and visualizes cumulative and year-by-year usage data for each discipline, broken out across perpetually owned eBooks, PDA/DDA discovery titles, and eBook subscription titles. Lastly, this article offers insights for data-informed collection decisions, conclusions about all three articles' data, and considers implications for further research.

Outline of the Study

Following up on the previous two articles' presentation of four years of expenditure and usage data for print and eBooks both broadly and by discipline, this study examines discipline-specific eBook patterns and their differentiations across types of eBook collections. eBook expenditure and usage reports were obtained from the eBook aggregator for the fiscal years 2011/2012 through 2014/2015. **Expenditure data** include PDA and eBook firm order purchases, short-term-loan (STL) payments, eBook firm orders, and print book purchases broken out into 30 academic disciplines and professional fields. Because actual financial amounts could not be published, the study uses indexed values as a compromise for documenting trends and proportionality across formats and disciplines. **Usage data** include actual eBook usage broken out by perpetually owned titles, the PDA discovery pool, and the academic eBook subscription collection. The analysis reveals each discipline's relative eBook demand. Discipline-specific demand is further broken out to show differentiation in demand between the perpetually owned titles, the PDA discovery pool, and the academic eBook subscription collection.

eBook Expenditures, 2011-2015: Deep Dive by Discipline and Purchase Type

As stated in the prior two articles, actual expenditures could not be published and this article instead uses indexed values of expenditures to preserve the relative amounts between disciplines and eBook purchase types. The following chart depicts **eBook expenditures** over the four-year period examined in this study. It shows each area's percentage of total eBook expenditure year-to-year. The **top five eBook** purchasers are (1) Biology, (2) Education, (3) Political Science, (4) Psychology, and (5) Business.
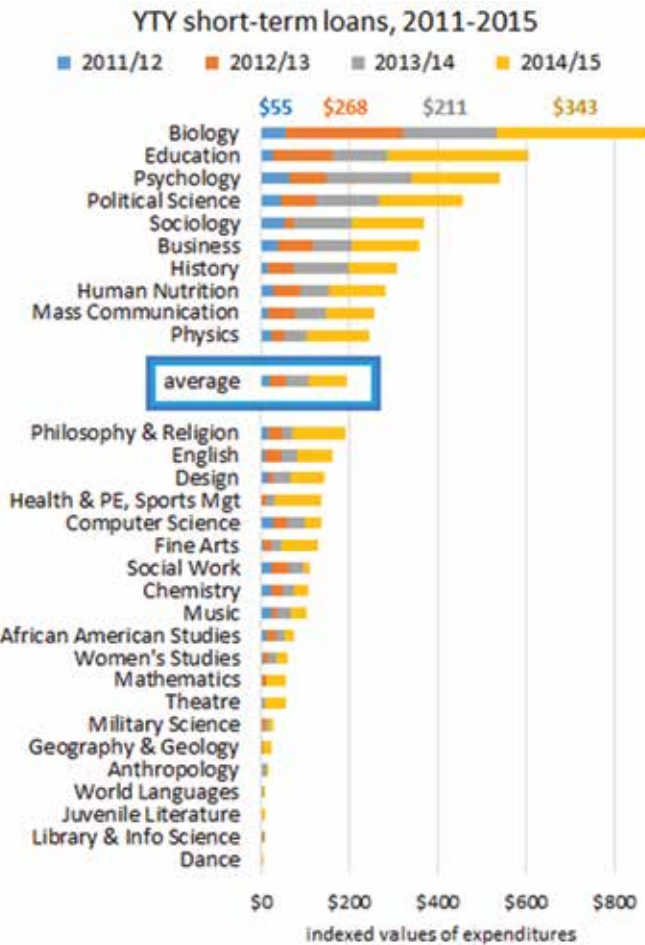

YTY ebook expenditures, 2011-2015
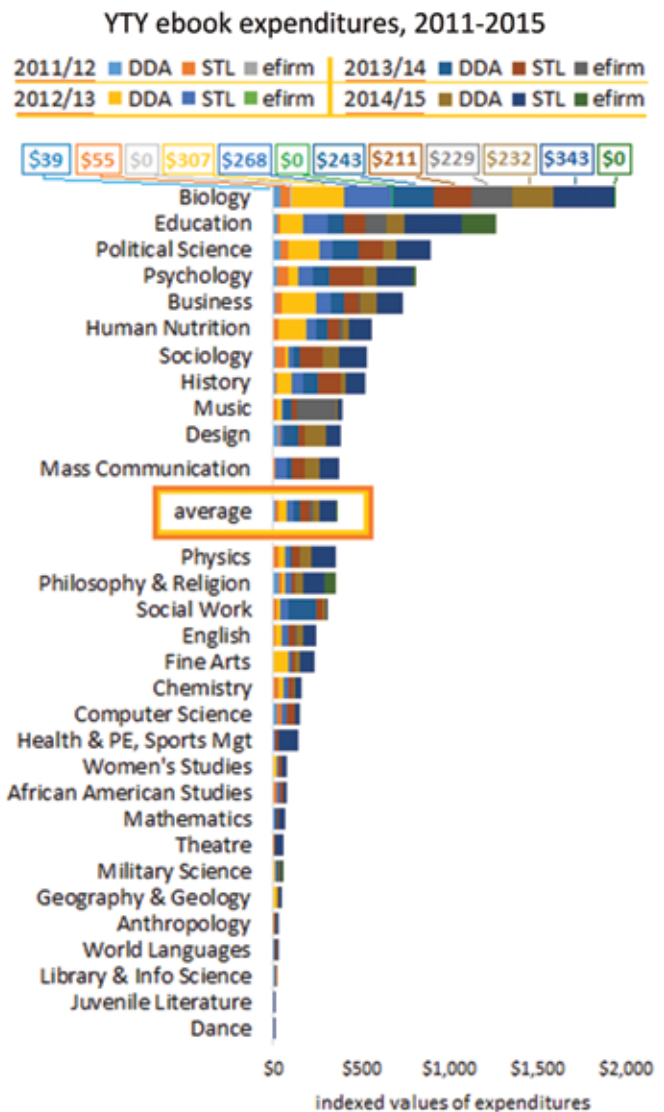
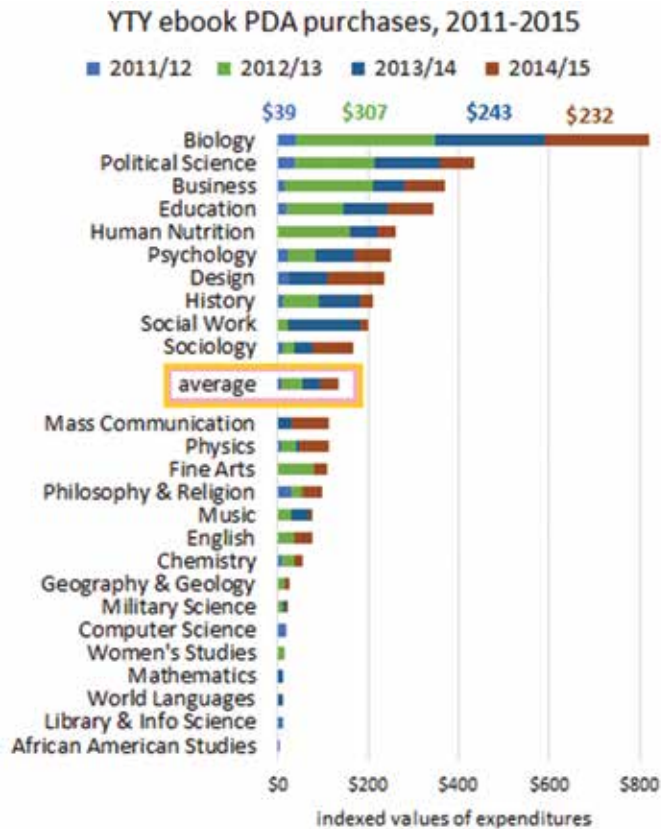## PDA Purchase, Efirm, and STL: Grazing vs. Commit-to-Buy

A detailed examination of each discipline's year-to-year payments for STL charges and PDA purchases reveals some differences between STL, PDA purchase, and efirm purchase preferences across the 30 disciplines. **STL** is often the first phase as short-term loans are activated when online use of a given eBook title crosses the threshold of duration or page numbers agreed-upon with the eBook vendor. **PDA purchase** is automatically triggered at the fourth such use of all titles after three prior short-term loans. **Efirm** is an outright firm-order purchase for eBook titles specifically selected.
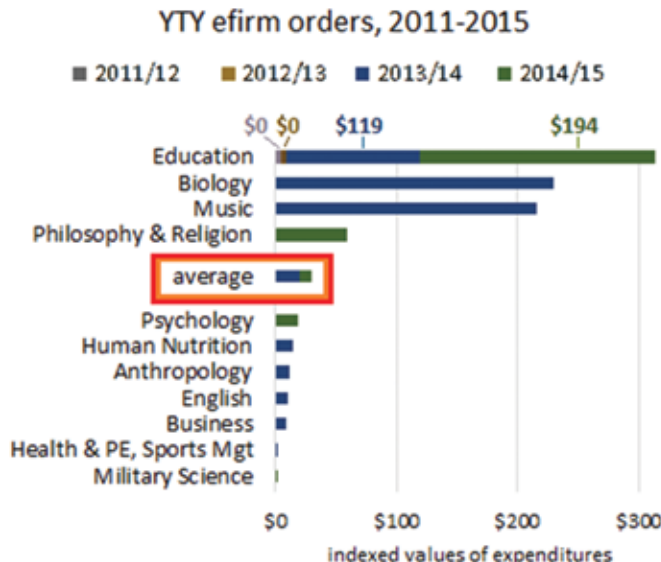
Who's Grazing? Short-term loans are spread across all disciplines over the studied four-year period. Biology's **STLs** outdistanced all other areas, towering over the next-highest STL borrower (Education) by 45%. The remaining areas among the top five are (3) Psychology, (4) Political Science, and (5) Sociology. While every discipline has generated STL charges from using the eBooks in the PDA pool, not everyone's STL grazing has turned into PDA buys: Anthropology, Dance, Health & Physical Education, Juvenile Literature, and Theatre have never invoked a single PDA purchase between 2011 and 2015. While occasional efirm orders have been placed for Anthropology and Health & PE, the remaining areas of Dance, Juvenile Literature, and Theatre have remained permanent grazers.

YTY short-term loans, 2011-2015

■ 2011/12   ■ 2012/13   ■ 2013/14   ■ 2014/15

$55 $268 $211 $343

indexed values of expenditures

Who's Buying? The first measure of a discipline's commitment to specific eBook titles is that of PDA purchases. Whose STLs are growing into PDA purchases? The top five **PDA purchasers** are (1) Biology (also the top STL borrower), (2) Political Science (4th-highest STL borrower), (3) Business (in 6th place among STL borrowers), (4) Education (2nd-highest STL borrower), and (5) Human Nutrition (8th-highest STL borrower). Psychology, the top 3rd STL borrower, ranks 6th among PDA purchasers; Sociology, in 5th place among STL borrowers, ranks 10th among PDA purchasers. As shown in the next chart on PDA purchases, PDA purchases across the disciplines did not occur in all years.

YTY ebook PDA purchases, 2011-2015

■ 2011/12   ■ 2012/13   ■ 2013/14   ■ 2014/15

$39 $307 $243 $232

indexed values of expenditures

The second commit-to-buy measure is **efirm** where a given title is requested for purchase to support specific course-related reading assignments. Efirm orders have been placed for 11 of the 30 disciplines over the 2011-2015 period. These are listed and ranked in descending order: (1) Education (2nd-ranked STL borrower and 4th-ranking PDA buyer), (2) Biology (top STL borrower *and* PDA buyer), (3) Music (10th among STL borrowers and 15th among PDA purchasers), (4) Philosophy & Religion (11th place in STL and 14th for PDA), (5) Psychology (3rd-highest STL borrower and 5th-highest PDA buyer), (6) Human Nutrition (ranked 8th for STL and 5th among PDA buyers), (7) Anthropology (26th-ranking STL borrower, no PDA), (8) English (12th in STL, 16th among PDA), (9) Business, (6th-highest for STL, 3rd place for PDA) (10) Health & PE (14th in STL, no PDA), and (11) Military Science (24th in STL, 19th in PDA).

YTY efirm orders, 2011-2015

■ 2011/12   ■ 2012/13   ■ 2013/14   ■ 2014/15

$0 $0 $119 $194

indexed values of expenditures

Determining disciplines most inclined toward eBook purchase: The **composite heat score** for **purchase inclination** was calculated by the equation of $x=(y1+y2+y3)*(z1+z2+z3)$, where x=composite heat score, y1=number of years with STL activity, y2=years with PDA activity, y3=years with efirm activity, z1=STL heat score, z2=PDA heat score, and z3=efirm feeder heat score. Each discipline's active years were calculated by the sum of years with STL, DDA, and efirm activity. Feeder heat scores for the expenditure types of STL, DDA, and efirm were calculated by subtracting actual rank in each expenditure type from the number 31. Rank 1 thus becomes heat score 30; zero activity during the four-year period was assigned rank 31 (thus a heat score of zero) in order to differentiate zero-activity disciplines from the lowest but above-zero-activity disciplines by multiplying the sum of each discipline's by the sum of their respective STL, DDA and efirm heat scores.

The strongest purchasers, as opposed to STL grazers, were (1) Education, (2) Biology), (3) Psychology, (4) Business, and (5) Human Nutrition.

heat score: concentration of cumulative PDA and efirm relative to STL, 2011-2015
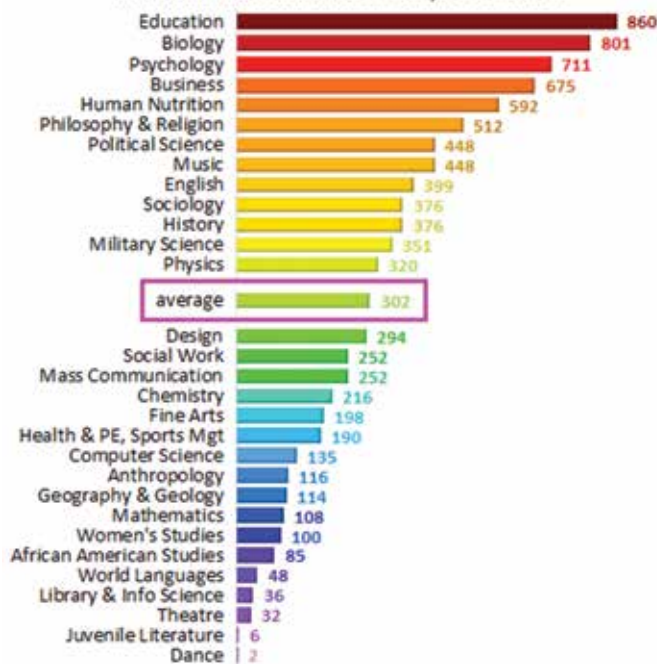
eBook Usage, 2011-2015: Deep Dive by Discipline and Purchase Type

The chart below shows year-to-year eBook usage by discipline and type of eBook collection purchase within each discipline. The top users of all eBooks were (1) Biology (also the top eBook purchaser), followed closely by (2) Business (in 5th place as eBook purchaser), (3) English (placed 15th among eBook purchasers), (4) Political Science (3rd -ranking eBook purchaser), and (5) Sociology (in 7th place among eBook purchasers).
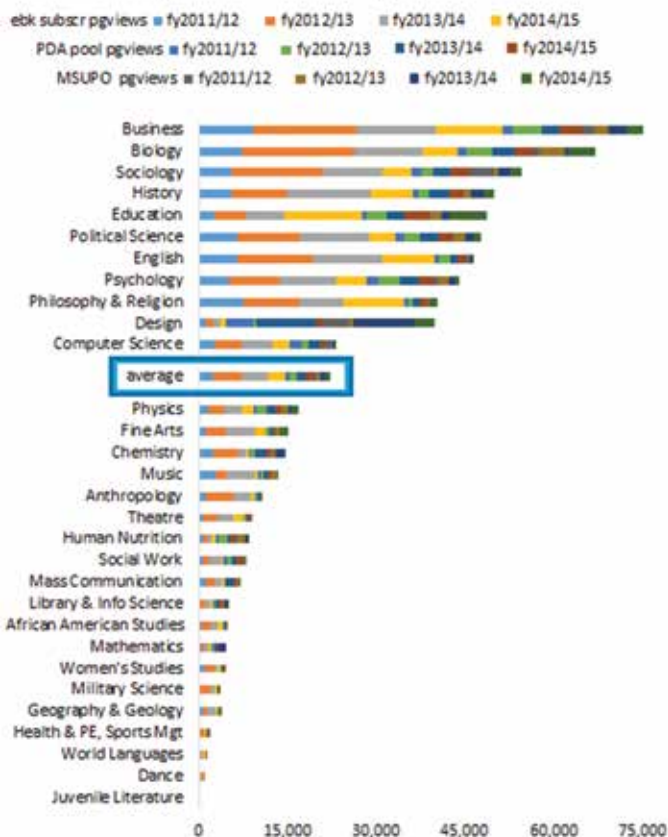

year-to-year ebook usage 2011-15
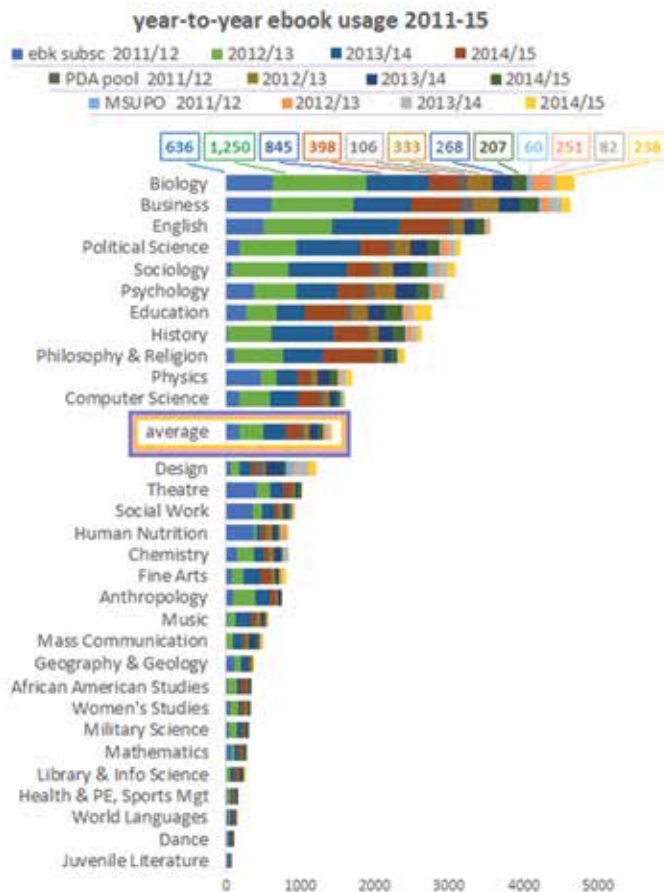
Intensity of Use: Pageviews by Discipline

Looking deeper than the surface measure of total eBook use, pageviews illuminate each discipline's intensity of use. The top five disciplines by **total pageviews encompassing all eBook types** from 2011 to 2015 are (1) Business (75,598 total pageviews), (2) Biology (66,916), (3) Sociology (54,451), (4) History (49,903), and (5) Education (48,732).

Pageviews: all ebook types, 2011-2015

ebk subscr pgviews ■ fy2011/12　■ fy2012/13　■ fy2013/14　■ fy2014/15
PDA pool pgviews ■ fy2011/12　■ fy2012/13　■ fy2013/14　■ fy2014/15
MSUPO pgviews ■ fy2011/12　■ fy2012/13　■ fy2013/14　■ fy2014/15

The top five **subscription eBook pageviews** occurred in (1) Business, (2) Biology, (3) English, (4) History, and (5) Sociology.

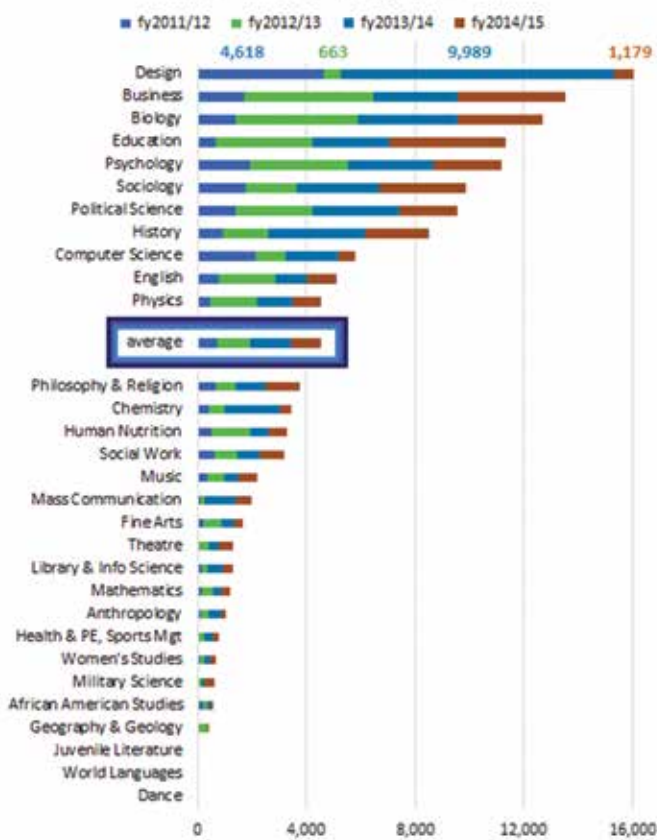## Pageviews subscr. ebooks, 2011-2015

■ fy2011/12　■ fy2012/13　■ fy2013/14　■ fy2014/15
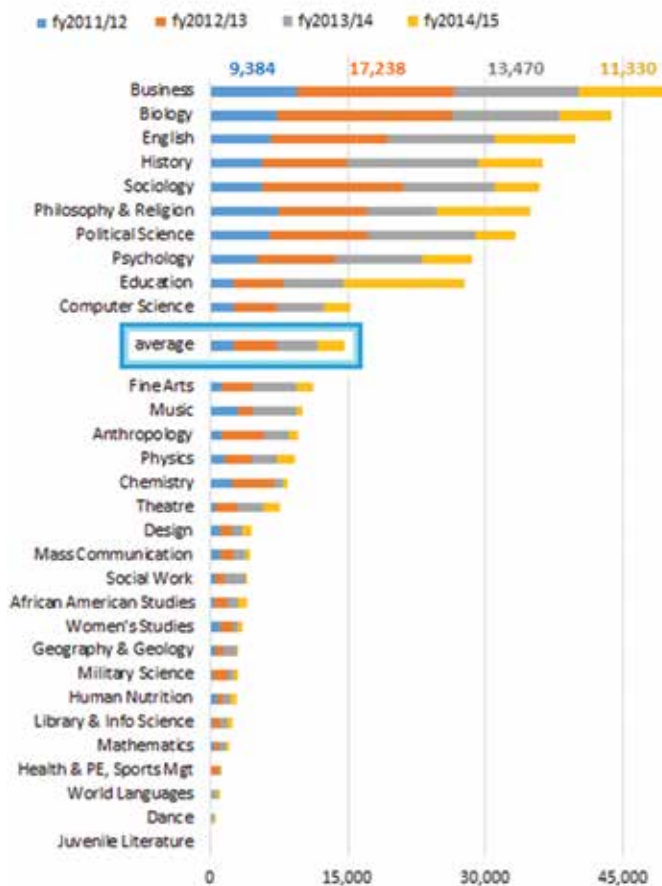
The top five **pageviews** in the **PDA pool** occurred in (1) Design, (2) Business, (3) Biology, (4) Education, and (5) Psychology.
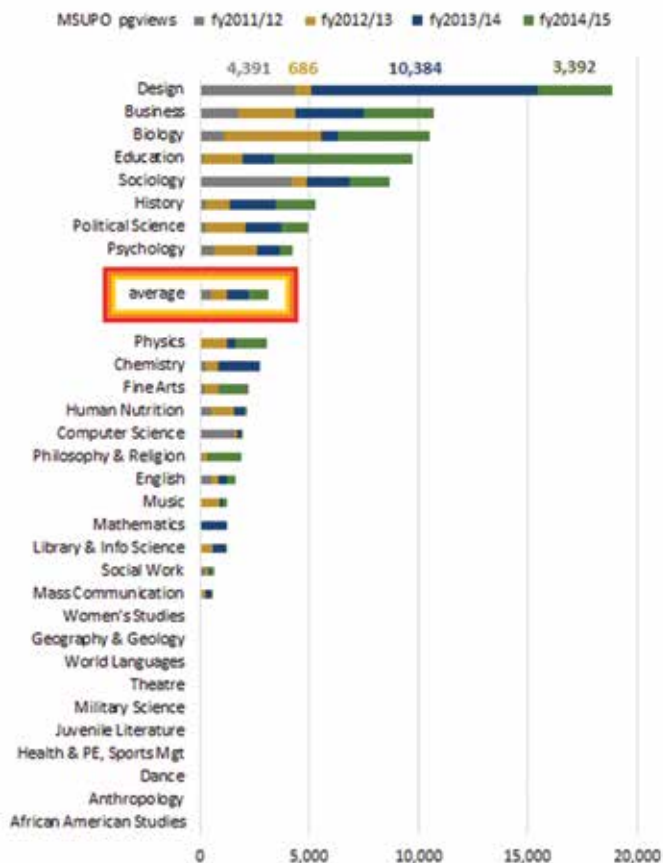
Pageviews: PDA pool, 2011-2015


Pageviews: owned ebooks, 2011-2015

The top five **pageviews** in the **perpetually owned eBooks** (shown as MSUPO, for multi/single-user perpetual ownership) are (1) Design, (2) Business, (3) Biology, (4) Education, and (5) Sociology. Ten areas revealed no pageviews at all in the small perpetually owned collection: African American Studies, Anthropology, Dance, Health & Physical Education / Sports Management, Juvenile Literature, Military Science, Theatre, and World Languages.

The Spiky World of Usage Depth: Pageviews per Title Used, by eBook Collection Type

The above section's pageviews are skewed by the large size of the eBook subscription collection compared to the smaller PDA pool and even smaller collection of perpetually owned eBooks. The chart below therefore showcases year-to-year pageviews per unique title used by each discipline during each year. The perpetually owned eBook titles (shown as MSUPO in the chart) were used in most depth, and the highest use of all occurred in Design during 2011/12 at 2,196 pageviews per unique title used and in 2013/14 at 2,596 pageviews per unique title used.
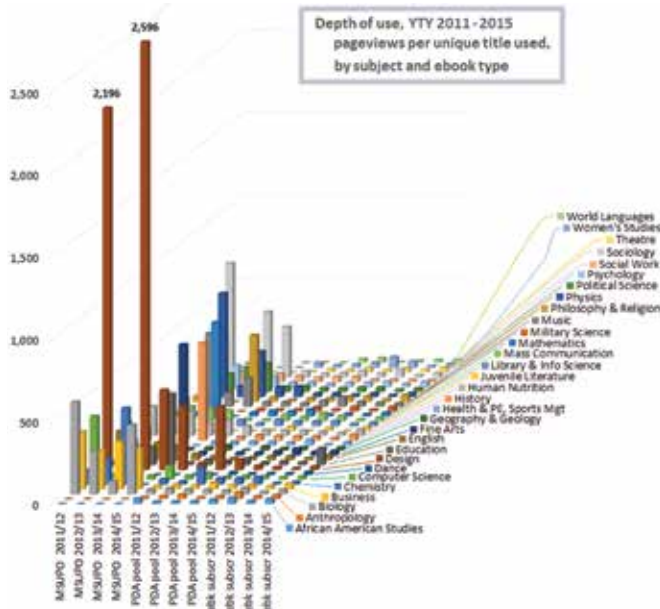
Toward Data-Informed Collection Decisions

Observations: In the four-year period from 2011/12 through 2014/15, print and eBook expenditures and usage evolved considerably. **Expenditures** are the highest for (1) Biology, (2) Education, (3) Political Science, (4) Psychology, and (5) Business. Conversely, the top five likeliest PDA or efirm-order purchasers are (1) Education, (2) Biology, (3) Psychology, (4) Business, and (5) Human Nutrition. **Usage varies:** The top five readers of *eBook titles overall* are (1) Biology, (2) Business, (3) English, (4) Political Science, and (5) Sociology. Actual intensity of use, as measured by pageviews, correlate with these programs' growing hybrid and online courses and graduate programs: The top page-viewers across *all eBook collections* are: (1) Business, (2) Biology, (3) Sociology, (4) History, and (5) Education. Conversely, the *PDA discovery pool's* top five page-viewers are (1) Design, (2) Business, (3) Biology, (4) Education, and (5) Psychology. In the *perpetually owned eBooks*, the most pageviews were observed in (1) Design, (2) Business, (3) Biology, (4) Education, and (5) Sociology.

Conclusions: Extensive and growing eBook usage varies between the subscription collection, PDA discovery pool, and perpetually owned titles. While the subscription collection's wide use across all topics reflects the broad range of eBooks contained therein, the PDA discovery and perpetually owned titles' heaviest usage by Design reflects that these PDA-centered collections supply the bulk of the technical coverage for building materials & codes, construction, computer graphics and design software. These titles also meet the needs of Design students with extensive studio obligations and graduate students who work. These areas' high usage rates in Business, Biology, Education, Sociology, History, and Psychology reflect an effective PDA profile delivering relevant titles which are used extensively and repeatedly by graduate students and working adults taking hybrid and online courses.

Implications for future research: These findings of all three parts of this study have raised both philosophical and practical implications. The data gleaned from this study inform individual work with academic departments' library liaisons by area, refining allocation formulas, and monitoring the effectiveness of the PDA eBook profile. Library decisions on selection, weeding, and retention by subject area are also supported by the print observations reported in this study's previous two articles. **Working with academic departments:** As hardcopy ordering has declined in several disciplines (as evidenced in this study's previous articles), department-specific tracking of each discipline's yearly usage and expenditure data and trends for print and eBooks will inform individual conversations with library liaisons and their in-library coun-terparts for future-oriented strategies. Further goals include ingesting student-enrollment numbers and calculating print and eBook usage per student and faculty FTE, to further refine understanding of each area's usage behaviors. Rationale: Nuanced campus data, including overall program-enrollment trajectories, enrollment by course delivery (in-class, hybrid, fully online) within each program, demographic data (traditional full-time vs. working adults living off-campus enrolled part-time or online students), undergraduate and graduate enrollments, are typically gathered by campus assessment or institutional research offices. Such enrollment data illuminate library-materials purchase and usage data by providing decision-making context for anticipating future demand and further rebalancing print and e-allocations accordingly. **Refining allocation formulas:** Tracking usage trends will be enlisted in calculating appropriate print and eBook allocations for each discipline, in a manner sensitive to the data-evidenced reliance on particular formats and year-to-year changes in discipline-specific usage and expenditure patterns. Together with student enrollment and faculty FTE, these trends will be incorporated in the mathematical model designed to guide allocations. Especially for libraries with fixed or declining materials budgets, understanding of usage trends can help inform decisions on discipline-specific focused injection of limited funds into formats best suited to meet the respective areas' needs. **Library selection, weeding, retention decisions:** The usage data and trends also support decisions on print selection, weeding, and retention. For example, areas with declining hardcopy use in tandem with rising eBook use could become candidates for withdrawal of obsolete or replacing damaged materials with eBook editions. Conversely, areas with continually high print use signify continued need for current selection as well as more generous retention paired with gentler weeding approaches. So far, Winthrop's approach has refrained from injecting format preferences in the collection management policy (beyond the general principle of best fit for each discipline), so as to continue to provide philosophical guidance flexible enough to adapt to evolving needs. **PDA profile monitoring:** While the data of high pageviews in the PDA pool and perpetually owned collections suggest a highly effective PDA profile, year-to-year trends will be observed and selections adjusted as needed in order to maximize continued relevance. In addition to continuing to gather user input and feedback, data tracking the trends for the extent, concentration, intensity, and depth of eBook usage will be monitored for growing and shifting usage as indicators for profile-revamping needs. **Deeper trends analysis:** These findings warrant further analysis of relationships between enrollment trends for traditional and online courses by discipline, usage and expenditure data as observed in this study, evolving publication prices by discipline, formats, and user licenses, and formally ascertained user preferences. Together these data and their interpretation will enrich libraries' efforts to anticipate user needs and meaningfully allocate funds in support of these evolving needs. 🌳