



Keeping an Ear to the Ground

Evaluating Recent Developments in Citation Manager Technology with User Feedback

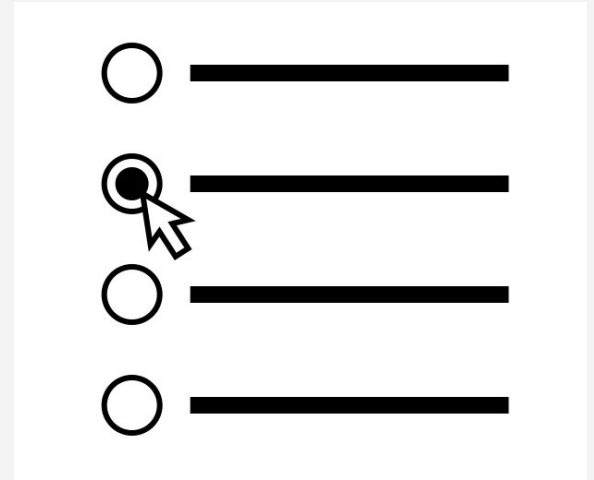
Carolyn Bishoff, Amy Claussen, Jody Kempf, & Megan Kocher
University of Minnesota Libraries

Poll - <http://z.umn.edu/cmpoll>

What citation managers do you support?

What citation manager do you recommend most?

Do you have an institutional subscription to a citation manager?



The setup: Where are we coming from?

- Large academic institution
- Currently support four citation managers at the Libraries
 - EndNote
 - Mendeley
 - RefWorks
 - Zotero
- Distributed expertise managed by a small group
- No recent overall comparison of citation managers
- Some data on users from some vendors



And then there was some big news from RefWorks...

... and very little follow-up.

Meanwhile, we ran into a Mendeley rep at a conference who tried to sell us on their institutional version.



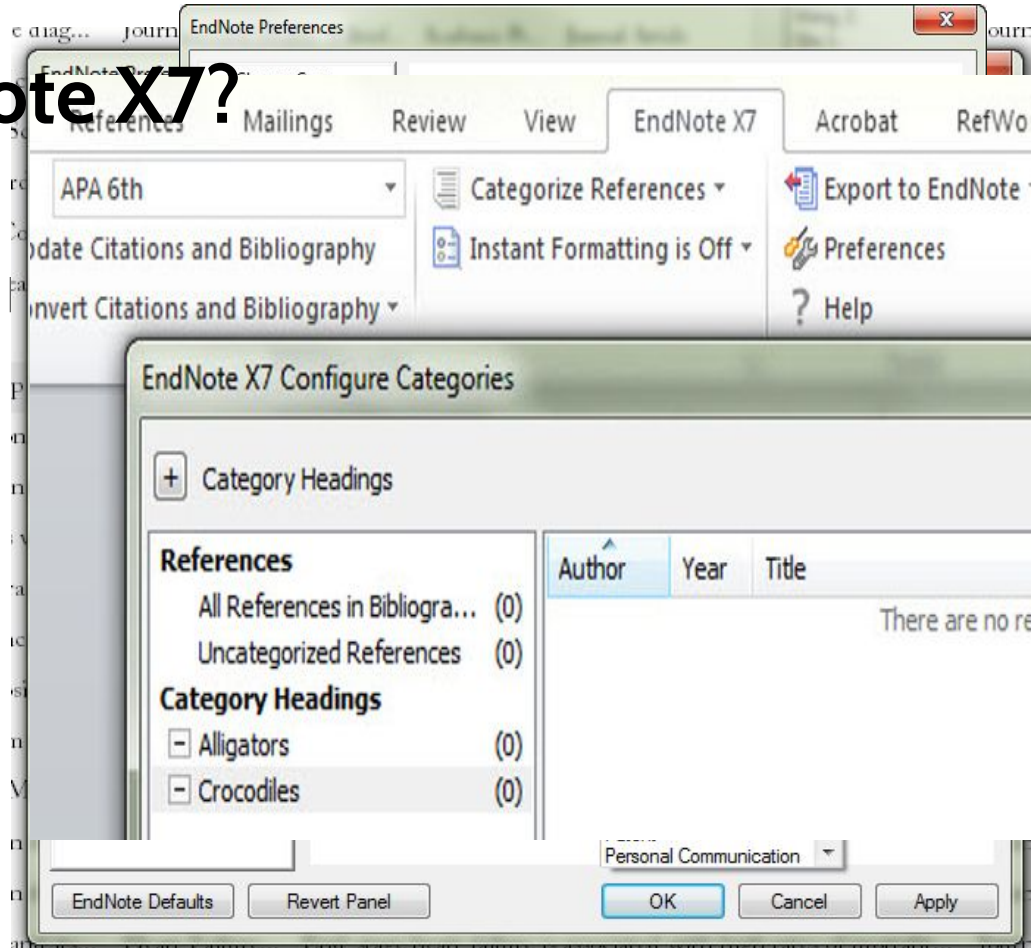
This seemed like as good a time as any to do a serious evaluation of what our users needed and where we were spending our money.

Roundup: What's New?



What's new with EndNote X7?

- New reference types such as interview, podcast, conference and press release
- Advanced PDF handling renames your pdf's during the import process based on your preferences.
- Install on 3 computers total per user. Use same product key to install endnote on both mac and windows (with standard single-user license)



What's new with Mendeley

- **Connect to other apps**

Shared logins and integration with [Overleaf](#), [Peerwith](#), [Scopus](#)

- **Now accepting research data**

Mendeley Data, a new repository connected to ScienceDirect and Cell

- **Enhanced user features**

Altmetrics (“Stats”), suggested articles (“Suggest”), prettier profiles

Mendeley integration is here! Import your Mendeley reference library into Overleaf



Welcome to Stats ^{Beta}

Stats helps you understand how your publications are being read, shared, and cited. This service is available to all published authors.

Suggest



Carolyn Bishoff ^{Edit}

Mendeley Advisor

MLS, BSc ^{Edit}

2

Publications

19

Reads

Librarian ^{Edit}

Physics, Astronomy, and Earth Sciences Librarian ^{Edit}

University of Minnesota Twin Cities ^{Edit}

Social Sciences ^{Edit}

Research Interests ^{Edit}

interdisciplinary research practices

academic uses of video games and technology

library user experience

About ^{Edit}

Academic librarian at the University of Minnesota Twin Cities. My research focuses on understanding two areas: 1) data management practices in the physical sciences and the implications for library data services, and 2) barriers to interdisciplinary research, studied from the perspective of faculty, researchers, and grad students who work on the academic applications of video games and gaming technology.

Followers (12)

Jessica Reeves

Mendeley

Following ✓

Jonathan Beyer

Mendeley

Follow

Rosemary Keane

Mendeley

Following ✓

Publications ⁺ Add

All (2)



Approaches to Data Sharing: An Analysis of NSF Data Management Plans from a Large Research University

Bishoff C, Johnson L

Journal of Librarianship and Scholarship Communication (2015)

^{Edit details} ^{Remove}

15 Reads

What's New With RefWorks?

The screenshot displays the ProQuest RefWorks interface. At the top, the header includes the ProQuest RefWorks logo, the user's affiliation (University of Minnesota Twin Cities), and the user's name (Megan Kocher). The left sidebar contains navigation options: All Documents, Recent, Sharing, Collections at University o..., citation managers (Zotero, Accuracy test), My Collections, and a search bar for 'cheesecake'. The main document list shows three items, with 'Cheesecake Versus Yogurt' selected. The right pane provides a detailed view of the selected article, including its title, a 'Read' button, a thumbnail of the journal cover, and citation information.

ProQuest RefWorks University of Minnesota Twin Cities Megan Kocher

All Documents Recent Sharing Share a collection Collections at University o... citation managers Zotero Accuracy test My Collections Add a collection 571 lit review 591 Lit Review 591 quiz 774prop1 774prop2 bacon blueberries cheese **cheesecake** Comps1 comps2 comps3 comps4 DE & Social Media

Select all **cheesecake** sorted by date added

- Cheesecake Versus Yogurt**
yogurt
Grefe, 2011 - 4 pages
- Changing healthcare as we do it: with evidence and cheesecake?
Chapman, 2012 - 2 pages
- Containment of a cheesecake-associated outbreak of salmonellosis in 3 different hospitals, detected by contin...
Poetter, Kunstmann, Peter, Mattner, 2014 - 2 pages

Journal Article

Cheesecake Versus Yogurt

[Read](#)

Eating Disorders
The Journal of Treatment & Prevention
Routledge

Cheesecake Versus Yogurt
Lynn S. Grefe

To cite this article: Lynn S. Grefe (2011) Cheesecake Versus Yogurt, *Eating Disorders*, 19(5), 457-459. DOI: 10.1080/10640264.2011.609105
To link to this article: <http://dx.doi.org/10.1080/10640264.2011.609105>

Tags
yogurt

Authors
Lynn S Grefe

Journal
Eating Disorders

Publish Date
October 1, 2011

Patent Number

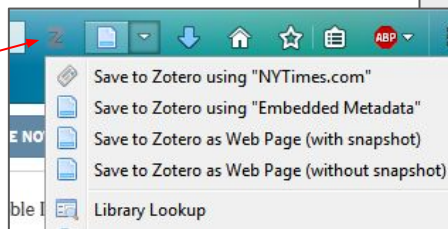
What's New With RefWorks?

- Flow = RefWorks
- Totally new interface
- PDF metadata extraction
- PDF annotation
- Google Docs add-on
- Groups for sharing citations and documents
- Write-N-Cite does not work with Word 2016 for Mac
- [More information -- FAQs, feature comparison](#)

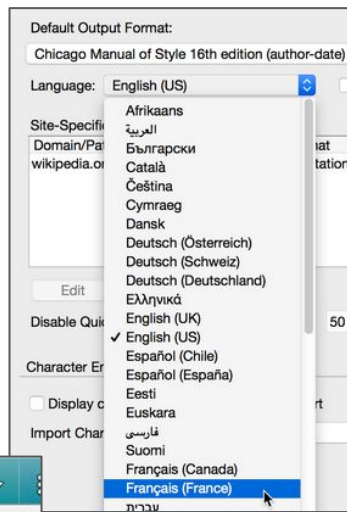
What's new with Zotero

- works well in a variety of different languages
- Save button has moved:

from the address bar



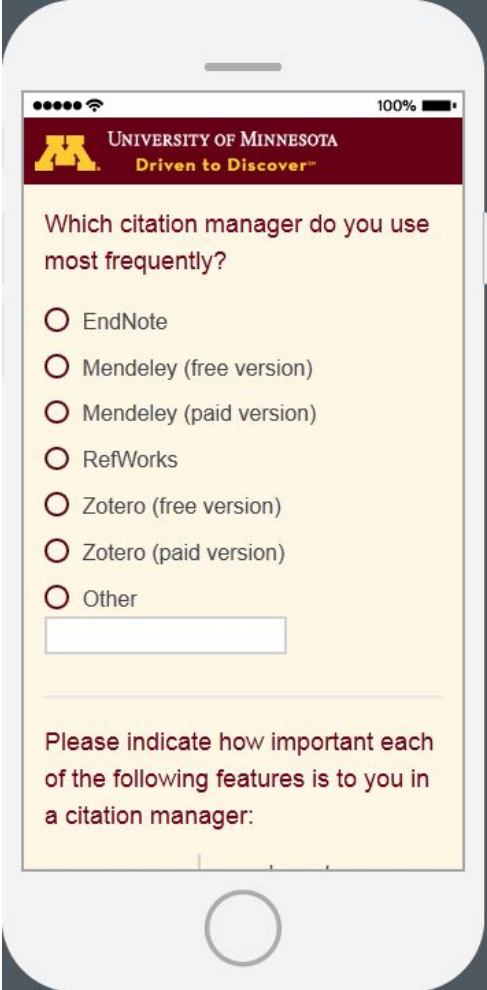
to the toolbar



The Survey

Faculty and graduate student survey

- Which citation manager do you use most frequently?
- Please indicate how **important** each of the following **features** is to you in a citation manager
- Have you ever reached or come close to reaching a **storage space limit** with your citation manager?
- Is there **anything we have not covered** in this survey that is very important to you in a citation manager?
- **Department and Status**



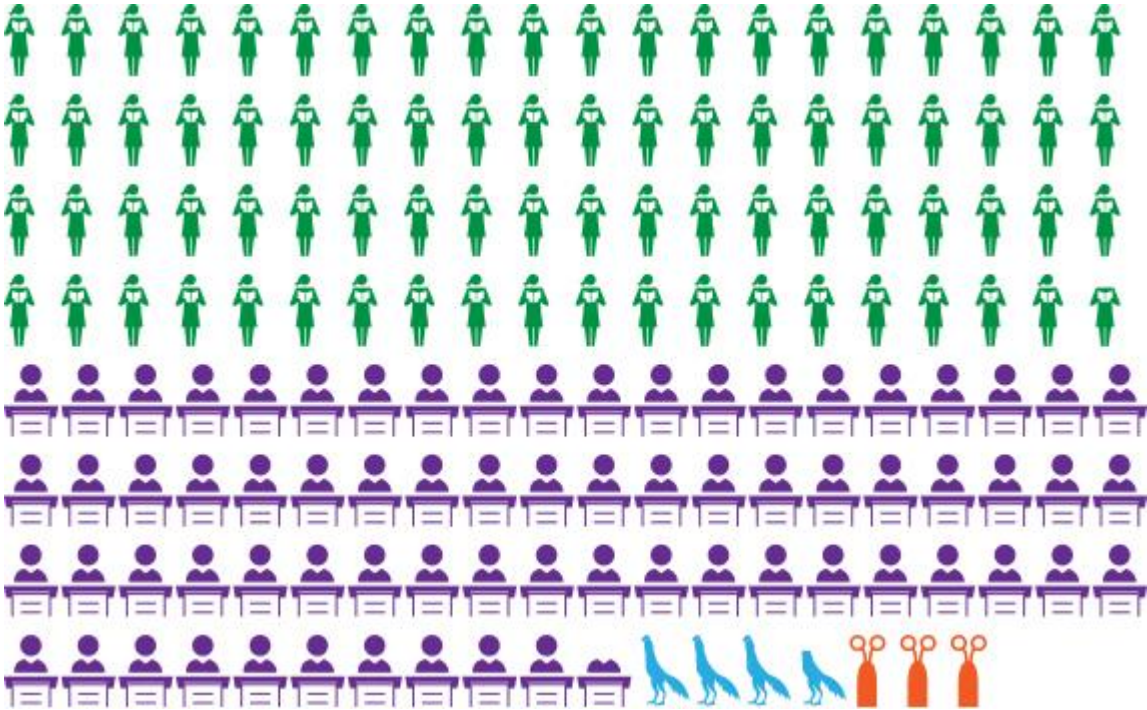
UNIVERSITY OF MINNESOTA
Driven to Discover™

Which citation manager do you use most frequently?

- EndNote
- Mendeley (free version)
- Mendeley (paid version)
- RefWorks
- Zotero (free version)
- Zotero (paid version)
- Other

Please indicate how important each of the following features is to you in a citation manager:

Response by Status (N=787)



Grad Students
399



Faculty
354

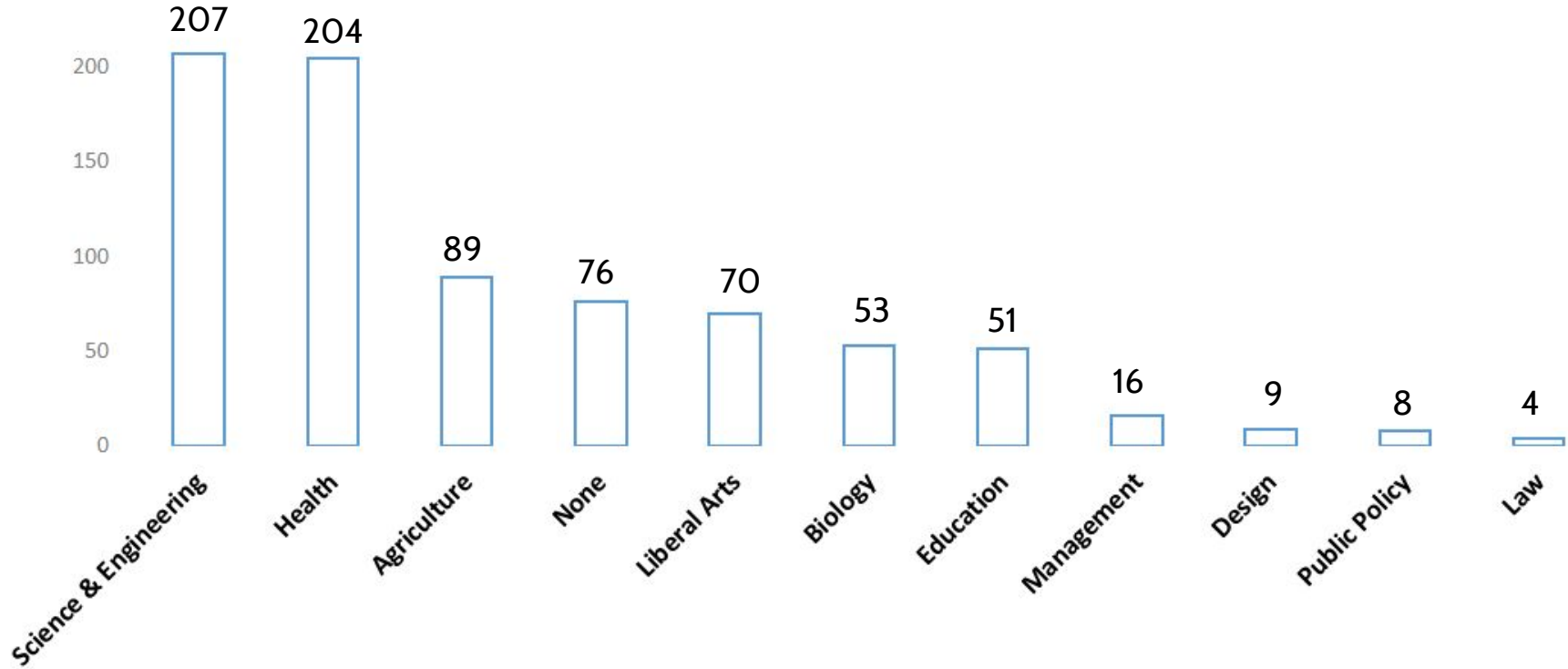


(blank)
19



Other
15

Response by College (N=787)



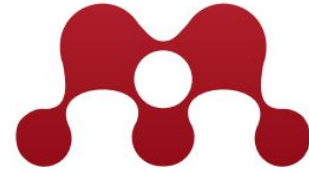
Citation Manager preferences

THOMSON REUTERS

ENDNOTE

53% of faculty respondents use EndNote

16% of graduate students use EndNote



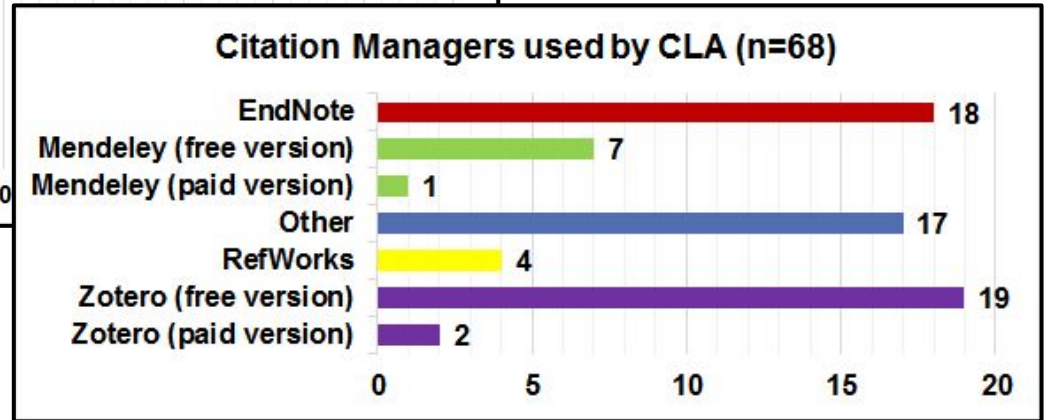
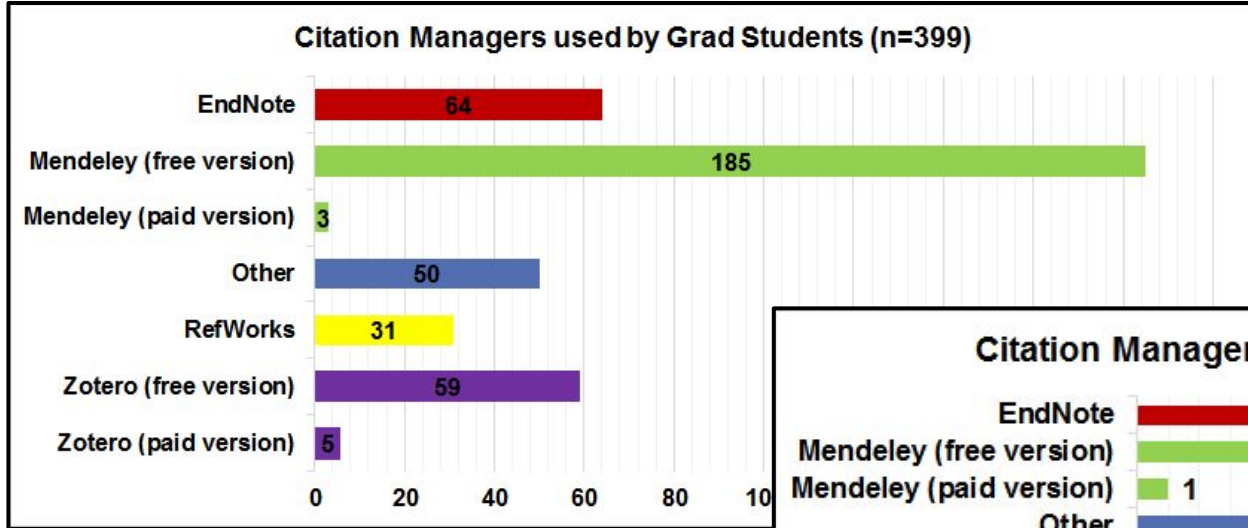
MENDELEY

9% of faculty use Mendeley

46% of grad students use

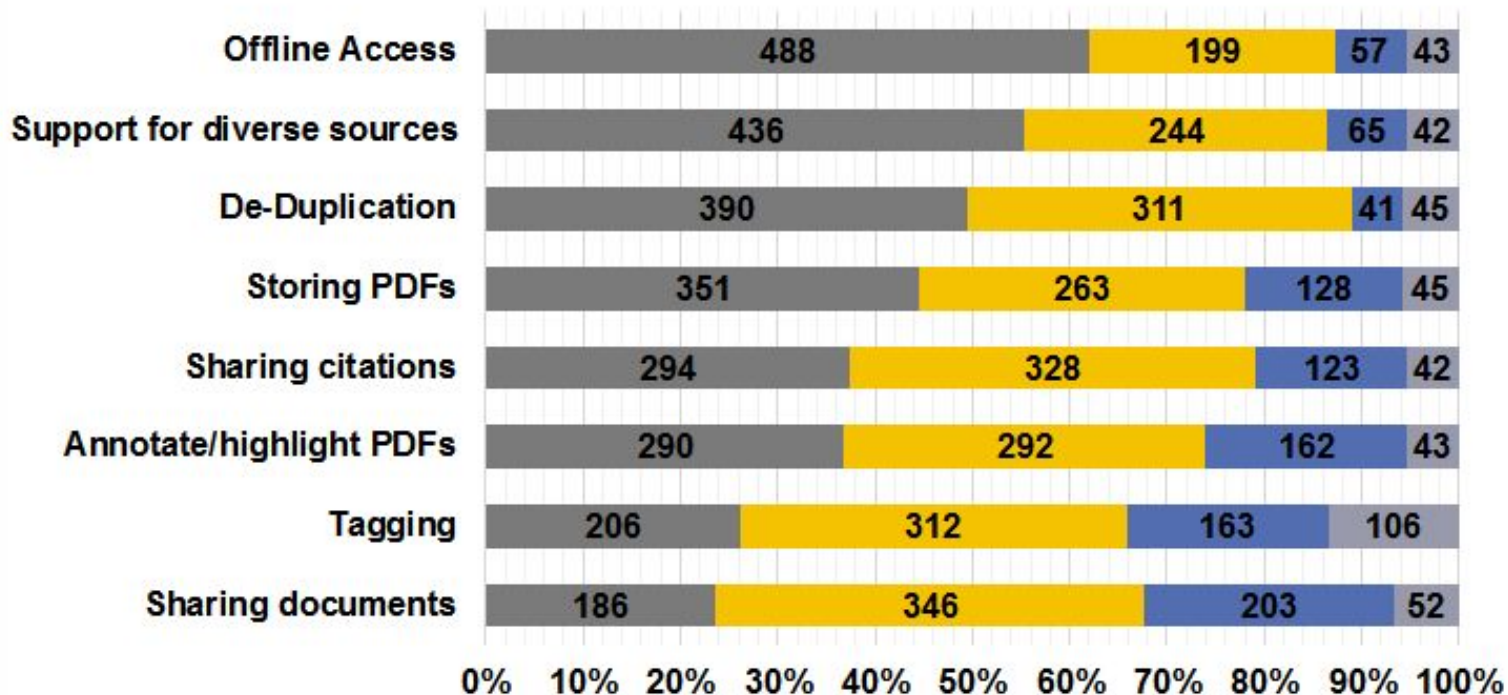
Mendeley

Subsets of users



Important Features (n=787)

■ Required ■ Would like to have ■ Don't need ■ Blank

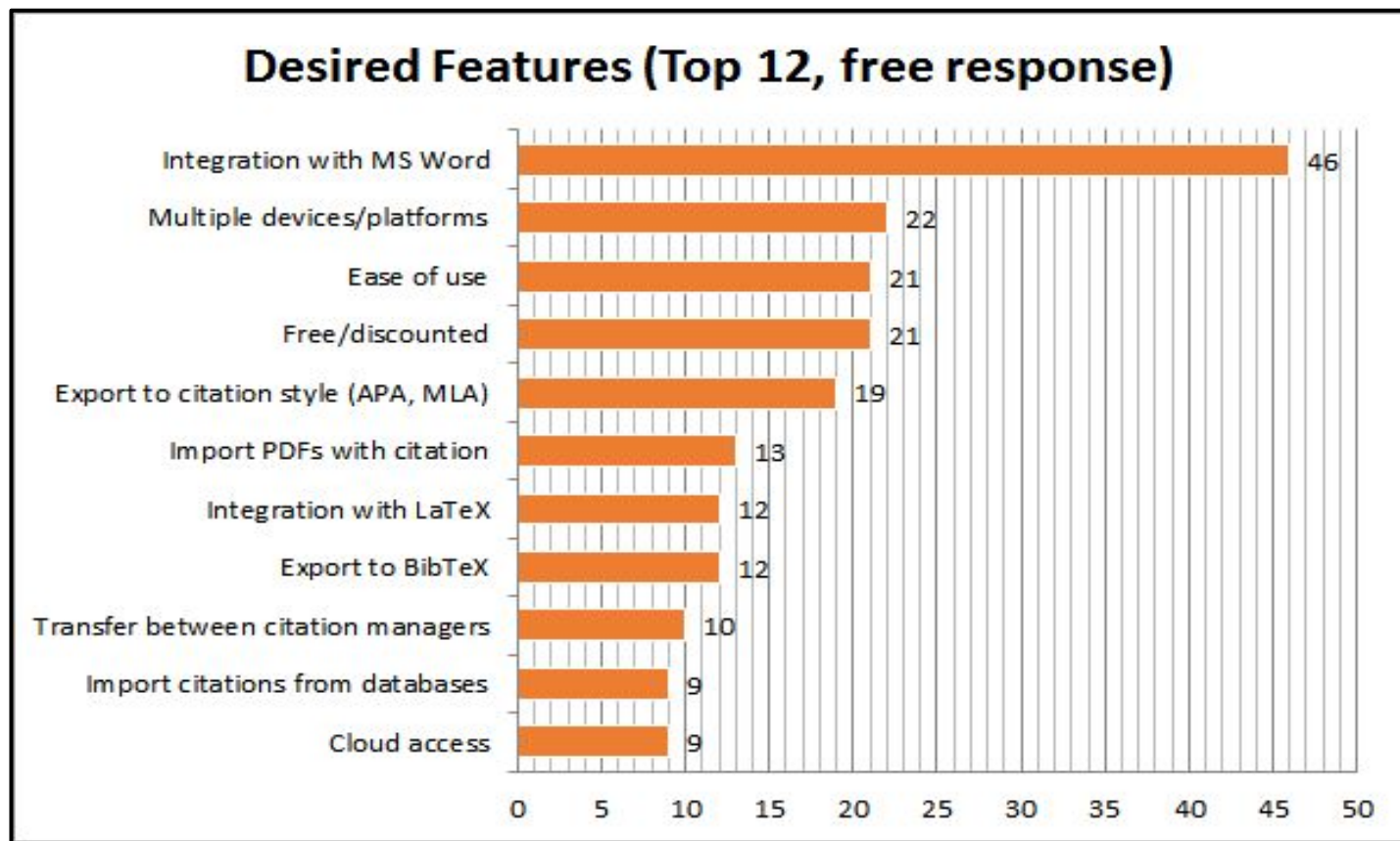


Most important features in a citation manager or what do our users want?

Top Five

- Offline access
- De-duplication of results
- Support for diverse sources
- Storing PDFs
- Sharing citations

What else?



Less than 10%

of responding faculty and graduate students use RefWorks

10%

of respondents want additional storage beyond currently available free storage

BibTeX

Papers

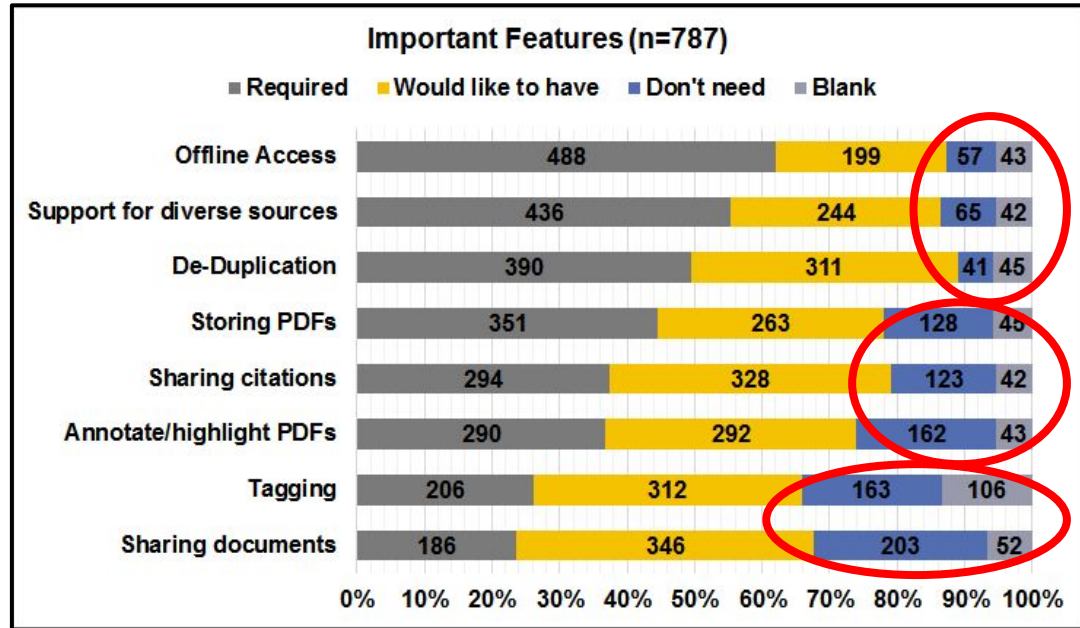
JabRef

are other commonly used citation managers

The Rubric

Applying the results

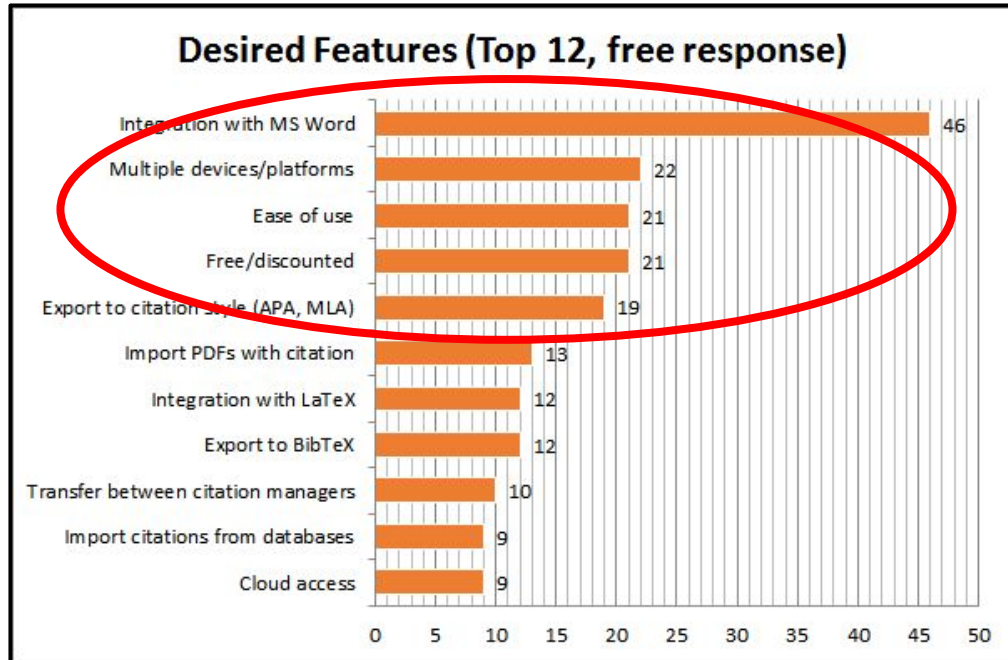
Features were weighted based on how they were ranked by survey respondents.



Core Criteria	Weight
Offline access	20%
Support for diverse sources	20%
De-duplication	20%
Storing PDFs	10%
Sharing citations	10%
Annotate/highlight PDFs	10%
Tagging	5%
Sharing documents	5%

Applying the results

Write-in features were also weighted based on number of responses.



Bonus Criteria	Weight
----------------	--------

Integration with MS Word	40%
--------------------------	-----

Available on multiple devices/platforms	15%
---	-----

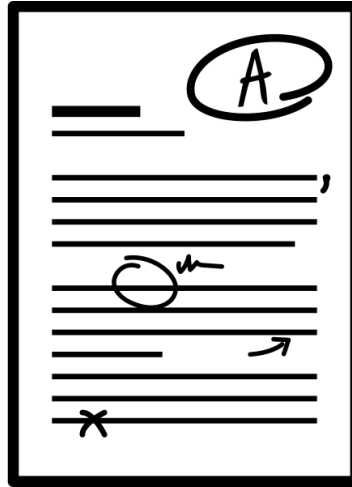
Ease of use	15%
-------------	-----

Free/discounted	15%
-----------------	-----

Export to specific citation styles	15%
------------------------------------	-----

Grading the citation managers

Grade (core criteria)	Point value
Perfect	Weight x 50pts
Great	Weight x 40pts
Adequate	Weight x 30pts
Poor	Weight x 20pts
The Worst	Weight x 10pts



Created by Lil Squid
from Noun Project

Grade (bonus criteria)	Point value
Perfect	Weight x 5pts
Great	Weight x 4pts
Adequate	Weight x 3pts
Poor	Weight x 2pts
The Worst	Weight x 1pt

Creating a rubric

Maximum possible points: 55 (50 + 5 bonus)

Citation managers are scored on a scale and receive points for each category

Available at z.umn.edu/cmrubric2016

Criteria (out of 50 points)	Perfect	Great	Adequate	Poor	The Worst
De-duplication	10	8	6	4	2
Offline access	10	8	6	4	2
Support for diverse sources	10	8	6	4	2
Sharing citations	5	4	3	2	1
Storing PDFs	5	4	3	2	1
Annotate PDFs	5	4	3	2	1
Tagging	2.5	2	1.5	1	0.5
Sharing documents	2.5	2	1.5	1	0.5
Bonus (out of 5 points)	Perfect	Great	Adequate	Poor	The Worst
Integration with MS Word	2	1.6	1.2	0.8	0.4
Available on multiple devices/platforms	0.75	0.6	0.45	0.3	0.15
Ease of use	0.75	0.6	0.45	0.3	0.15
Free/discounted	0.75	0.6	0.45	0.3	0.15
Export to specific citation styles	0.75	0.6	0.45	0.3	0.15

Testing the rubric

8 citation manager “experts” at the UMN rated them on all these criteria, based on a 1 (worst) - 5 (best) rating scale.

Ratings were applied to the rubric, and here are the averaged results:

MENDELEY (FREE)	B+	88%	48.6/55
ENDNOTE	B-	82%	45.4/55
ZOTERO	C+	78%	43.2/55
REFWORKS CLASSIC	C-	70%	38.7/55

Using the rubric

Rubric scores help explain why Mendeley and Endnote are popular among graduate research assistants and faculty. *They score well on features that are important to that population.*

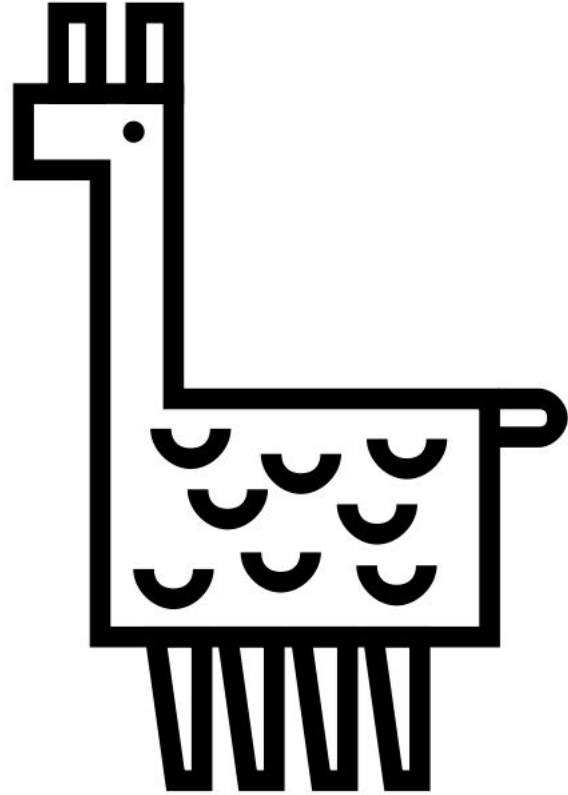
Information from the rubric scores can be combined with other data (cost, undergrad surveys, use cases) to evaluate long-term investments in each tool, such as:

- Renewing/purchasing subscriptions
- Instruction
- Guidance for librarians on citation managers to recommend to specific populations

Where do we go from here?

To do:

- Give liaisons college-level reports from user survey
- Talk more with vendor reps about our concerns
- Look at “off-label” uses of RefWorks to see if we could support those with other tools
- Engage with other audiences for our citation managers (e.g. librarians, undergraduate students) to find out what is important to them
- Weigh other, more slippery factors (e.g. customer support)
- *IF* we do decide to change our citation manager offerings, create a timeline and plan for migrating and assisting users.



Discussion

- Has anyone else done a similar survey?
- What features are most important to your users?
- What is your users' biggest problem with citation managers.
- Share your experiences with a citation manager in terms of customer support from the vendor (or lack of customer support) ;)

Resources

- [Weighted rubric](#)
- [Our survey results](#) (Data Repository for University of Minnesota)

Image Credits

I listen | Flickr - Photo Sharing! : taken from - <https://www.flickr.com/photos/meolog/14267000334/in/photolist-nJJ79o-8MhX5Z-9rZWaZ-atRj9b-ojjNab-3G34h-ARu8sz-oA4sw8-4qiMJ7-9Z8yoC-6Dsod4-5eT8b5-zmmyX-5ZkgUu-5o8gGC-LZdCG-dsQ3GS-g8WcsU-4FMSk-53FXF-fjyq-5Sdtb9-8cFwyE-byfccW-gdLiG6-pNkg3p-6iFiAu-6hiwfw-pjLoaw-8h75y3-djaFhx-kNQAJ-pg3xr-9UXMu1-cM9Rf-8MLkg-edo3g5-8zDat1-7CXm6D-7mQKe-vKjicG-b8W85B-r3gUWw-5cvQJy-iXV6dM-73k3j-9Yek6-7jUf6y-5Sdtc7-7dPywp/Author: Olaf Meyer> <https://creativecommons.org/licenses/by-nc-sa/2.0/>

Wonder Woman (Original and New 52 Versions) | Flickr - Photo Sharing! : taken from - https://www.flickr.com/photos/han_shot_first/16066856454/in/photolist-qtLQEs-qfDcmC-BNYB54-hyLDLu-BNRjGj-cytM13-poxVxa-bUxq7K-ph19Kf-e32NN6-rB7gbW-bso7F1-dCwxHw-48qc8x-4fy3ag-qEIQvm-rFaByk-pte9rD-r3xhBh-iCiaZi-oA5p44-dQVvM4-cbUDbG-cP6Vg5-rpPGJV-eGXVDG-qfkrUn-qx8oXd-8z9rd4-rDwrbb-7K8pVm-iNpH9k-7K5PFU-7K5PEu-7K1UaT-fGJMTp-Abm3vW-s3Qofs-71BuPw-BsbpEy-cp4c1Q-5ezMuN-4Nfuxi-dpzBqX-CerWPN-4UZvHK-4UZuRe-bWYtsY-fhxpxu-8bFf7wAuthor: Michael Li <https://creativecommons.org/licenses/by-nc/2.0/>

Reading by Gerald Wildmoser from the Noun Project

speech by Aneeqe Ahmed from the Noun Project

Monster by Paulo Sã Ferreira from the Noun Project

Llama by Gilda Martini from the Noun Project

Question by Remy Medard from the Noun Project

Multiple Choice by Aenne Brielmann from the Noun Project