



There's an App for That

Collaborative Citation Management: Citation Tools for Google Docs

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When it comes to citation management, identifying the right tool for the job has become an ever-evolving task. As an instruction librarian in the sciences, I have spent many a futile lesson teaching how to use a citation management tool only to find that the students quickly abandoned it if it did not readily address their specific needs. My institution is a mid-sized PhD granting university where research regularly occurs, but the primary focus is on undergraduate student education. Our students and researchers have expressed their desire for citation management software that is free, intuitive, and has their preferred citation styles. They also desire a tool that can go beyond formatting a bibliography to format citations directly from their word processors - this function often serves as the deciding factor among potential managers. Though many citation managers allow users to cite sources while writing their papers, not all managers work with all word processors. With the growing popularity of Google Docs as a collaborative tool among college students, the ability of a citation manager to integrate specifically with Docs has become a desired and necessary function. However, only a few tools are actually equipped for the job. Among them, Paperpile rises to the top with Zotero following closely behind.

Google Docs for collaboration in the classroom

Google Docs has become an integral tool for collaborative paper writing and is increasing in popularity at the college level. Because of its "share" function, students and researchers can use Docs to work collaboratively on documents in real-time, a useful feature for group work assignments and co-authored papers. One market analysis group surveyed 350 college students and found that while most students preferred Microsoft Word for individual work, 78 percent preferred Google Docs for group work ([Richman 2016](#)). Many institutions, including my own, have adopted the Google Suite campus wide. Google is moving into education at the primary and secondary levels as well. In the New York Times article "How Google Took Over the Classroom," author Natasha Singer makes the case that Google is guaranteeing future customers through its use of pre-college classroom technology ([Singer 2017](#)). As Google moves their technology into the classroom at an earlier stage, we can likely anticipate an increase in users fluent in Docs in the upcoming years. By supporting citation managers that integrate Google Docs, we can foster collaboration in our current users and be prepared to serve the technological fluency of our future users. When I informally poll my students during class, I find that about

one third currently prefer Google Docs to Microsoft Word for all of their documents. Well known citation managers like EndNote and Zotero have "write and cite" functions in Microsoft Word, but the same functionality has been harder to find for users working with Google Docs. Though it is a little extra labor, I now teach the Microsoft Word users citation management through EndNote Basic or Zotero, and show the Google Docs users Paperpile.

Citation management with Paperpile

According to Google's review metrics for add-ons, [Paperpile](#) is among the most popular and top ranked citation management tools available for integration with Google Docs. Created for scientific research by computational biologists ([About 2018](#)), Paperpile is a citation management app made up of a Google Docs add-on and a full web app with a Chrome extension. The add-on is freely available and can be used to locate, add, format, and reformat references in Google Docs. The full web app provides an advanced service for a fee that has full features similar to other mainstream citation managers, allowing users to add references from BibTex or RIS files, upload PDF files and directly import citation information from them, and create shared folders.

Integration with Google Docs

The free Paperpile add-on can be installed from a Google document using the "Add-ons" function on the menu bar. A sample image of Google Docs with the add-on can be found in Figure 1.

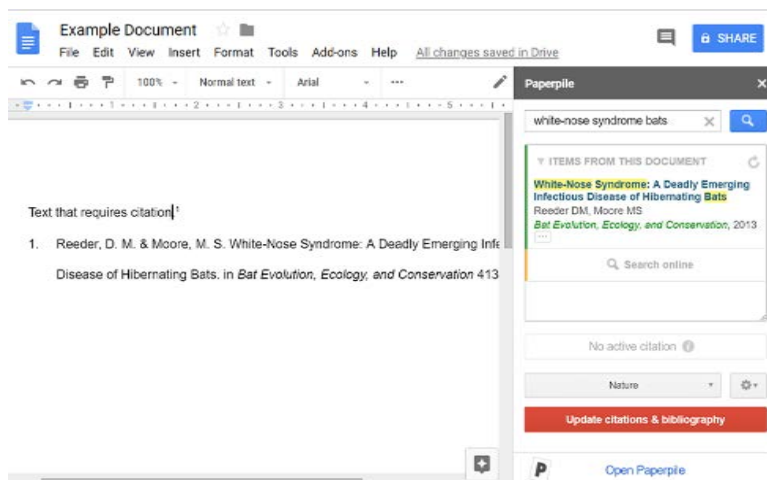


Figure 1. Screenshot of the Paperpile Google Docs add-on box featuring the ability to directly search the web for a source using keywords.

As with any add-on, it is important to carefully review the terms of service and privacy policy prior to installation, as installation of Paperpile will require permission to view a user's Google Docs in order to function. Once Paperpile is installed and opened, users can look up a citation directly from the Google Docs editor screen by: URL, keywords, authors' names, PubMed ID, DOI, or ISBN, or manually upload citations from the Paperpile website.

Citation Styles

Like Zotero, Paperpile uses Citation Style Language, an open-source repository of over 8000 citation styles including a large number of scholarly science journals ([CSL \(Citation Style Language\)](#)). Users can select a different citation style at any time and may easily reformat all of their citations in that style. Although the app provides a massive number of citation formats, users may wish to create their own specialized style. If a user would like a style not found in the CSL, Paperpile does not allow them to create one; however, CSL does have a "search by example" tool allowing users to find a similar or identical style to use.

Usability

With a built-in citation search box appearing directly on the Google Docs screen, the basic functions of Paperpile are more intuitive than Zotero or EndNote. However, making changes to citation information or manually entering a citation can be more difficult for a user to navigate. To manually enter a citation using the free version, a user must perform a search on the Paperpile add-on box (Figure 1). They will then find the cog icon with a drop down menu and be able to select "manage references," which will lead them to a website where they will be able to select "add references." Additionally, the add-on requires frequent use of the "update citations & bibliography" button to make the in-text citations work properly.

Cost

The Google Docs add-on is a free component of Paperpile. However, the app also provides an advanced service for a fee. The fee-based version has more functionality similar to that of EndNote or Zotero, allowing users to save PDF files directly to their drive, organize items in folders, and share reading lists. There is also a feature for annotating PDF files currently in the beta stage. The fee for the full service is \$35.88 per year (advertised as \$2.99/month) for academic users and a \$119.88 per year (advertised as \$9.99/month) for business users. Site licenses are available as well. Paperpile offers a 30-day free trial period of the fee-based features ([Pricing 2018](#)).

Limitations

The application does have its limitations. Unlike other citation managers, Paperpile does not integrate with Microsoft Word. It also has some usability issues that might scare off less technologically adept users. Although the most basic features of the add-on are intuitive, due to the issues discussed above, there is a steep learning curve for certain functions. Users, especially in the sciences, may also be concerned about giving the app permission to view their online activities, concerns which are valid given the confidential nature of some scientific research. In addition, the full application is only designed for Chrome, which may not be the preferred browser of the users.

Other Options

Other citation managers are starting to catch up. EasyBib provides a free Google Doc add-on, but provides only a bibliography generator and not an in-text citation editor. As recently as October 2018, Zotero also announced full integration with Google Docs ([Using Zotero with Google Docs](#)

2018). Users with a Zotero connector will automatically see a tab for "Zotero" appearing at the top of their Google Doc menu bar. With many researchers already registered as Zotero users and Zotero now offering functionality with both Microsoft Word and Google Docs, this may very well be a game-changer. However, as it goes with new developments, I suspect it may be a little while before all of the bugs are fully worked out--the application has yet to work properly on my personal Google Docs account, but I eagerly await the chance to test it out when it does.

Whichever tool a librarian may choose to support should be based on the needs of the users. With the growing use of Google Docs for collaboration, it is important to identify and support citation management tools such as Paperpile and Zotero to meet those needs.

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