

DROPBOX BRINGS COURSE MANAGEMENT BACK TO TEACHERS

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Abstract

Course management software (CMS) allows teachers to deliver content electronically and manage collaborative coursework, either blending with face-to-face interactions or as the core of an entirely virtual classroom environment. CMS often takes the form of an electronic storehouse of course materials with which students can interact, a virtual space where students can upload assignments and projects, or both. *Dropbox* software offers a nimble alternative to larger CMS products such as Blackboard along with greater autonomy for individual instructors. Teachers working in less-traditional settings may appreciate *Dropbox*'s mobility and flexibility, while shrinking budgets and less-reliable institutional support in general may add to the appeal of leaner software options.

1. *Dropbox* – description and general features

Dropbox is a multiuser file synchronization system that offers cloud storage. It enables multiple users to connect to a shared folder, download files, and update its contents in real time. Conceived as a solution for sharing very large files through an interface that is familiar to users (Ying, 2009), files are stored remotely (hence, cloud-based). Users access files through either the *Dropbox* website (<http://www.dropbox.com/home>) or a Windows or Macintosh computer, where the *Dropbox* storage space looks and behaves like a regular file folder.

Dropbox handles files the same way that Windows does—a directory is created, folders and files are added to that directory, and users can access files by navigating to the directory. Files are downloaded automatically to each user's computer hard drive and are updated in real

***Dropbox* Features at a Glance**

- Synchronizes files among different computers while storing them in a “cloud”
- 2GB free storage, with up to 18GB free storage available through referrals
- Automatic file backup can recover deleted or altered files for 30 days
- Synchronizes mobile devices as well as Windows and Macintosh machines in real time

time. Any Windows or Macintosh user can immediately navigate through *Dropbox* and access its contents.

The basic functions of *Dropbox*—file sharing, communication, and remote storage—are not unique to the program (Korchmaros and Gump, 2009), yet *Dropbox*'s simple functionality may make it uniquely attractive to teachers working under financial constraints or in non-traditional settings. Dedicated CMS systems such as *Blackboard* and *Moodle* are ubiquitous, but the cost of *Blackboard* can be prohibitive and CMS initiatives tend to be centralized, apart from the influence of instructors (Hanley, 2011). Besides the complications and learning curve of such feature-rich systems (Yohon, Zimmerman and Keeler, 2004), the design and inherent structure of such systems may “[offer] a very particular and circumscribed representation of teaching and learning” that limits how classes interact with electronic content in a “Web 2.0” environment (Hanley, 2011, p. 10). Figure 1 below shows the initial state of a *Blackboard* course, with various functions on the left navigation bar. Teacher-controlled functions appear below, in the area labeled “course management.” *Blackboard*'s most advantageous features are shown below—“My Announcements”, “What’s New”, and “My Calendar” ensure that students are aware of what’s going on in the course.

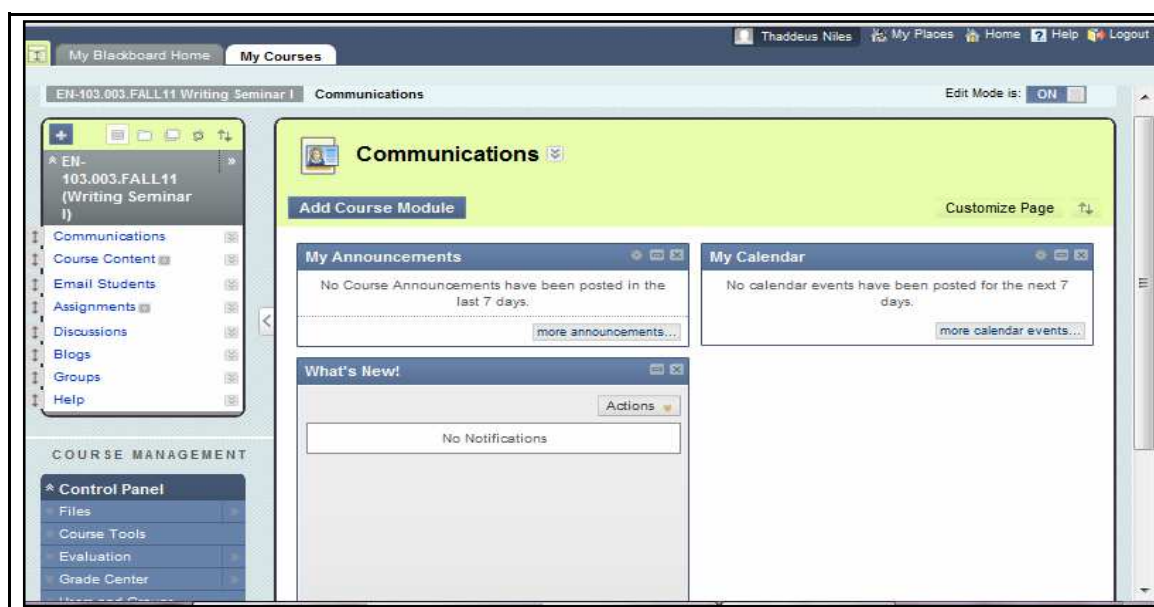


Figure 1 - Screenshot of Blackboard 9's start page. Notice how many options are present, creating a robust, but perhaps overly-complicated online environment.

In practical use, it is unclear whether “one size fits all” as a CMS-directed course experience intersects with student engagement and learning. Luckily, most CMS features are available in free, dedicated programs. For example, *Dropbox* has been quietly synchronizing with mobile devices for years, and the free grading tool *Engrade* (<http://www.engage.com/>) manages assignments and communications with a simple user interface. *Blackboard*’s assessment features are quite popular, but again, free websites like *Proprofs* (<http://www.proprofs.com/quiz-school/>) offer online assessments, grade analysis, and time restriction options.

Other features are merely aesthetic. *Blackboard* representatives are quick to point out that content can now be displayed “in-frame” in version 9.1, meaning that a *YouTube* video or online grammar exercise pop up in the same window as the link. Nevertheless, what is the difference between a new tab and a pop-up window? Lastly, *Blackboard* is clearly an organizational tool above all else, creating “modules” and “groups” that divide up course content and students. However, this type of organization is nothing new—indeed; most courses are uploaded to *Blackboard* from already-organized Windows or Mac folders. If there was an option to present course content in its “native” form (i.e. in the folder system in which it was created), why would that not be preferable? Or rather, at what point does the cost of sleek packaging become unreasonable? (For a comparison of features between *Blackboard* and *Dropbox*, see Table 2 below.)

More importantly, if expensive CMS like *Blackboard* is not available at one’s institution, its many features are inconsequential. If cost, ease-of-use, and the size of the CMS’s footprint are concerns, *Dropbox* may be more attractive.

Table 2 – Nearly all the major features of Blackboard 9.1 are available through free alternative programs, often without any major difference in user experience.

Major Feature – Blackboard 9.1	Workaround possible using <i>Dropbox</i> ?	Workaround preferable using another free program?
Assignments and Modules	Yes, through folders (modules are essentially folders)	
Assignable Student Groups	Yes, by using folders that organize	

	students into groups	
Discussion Areas	Yes, through uploading a document that can be edited by group members	Yes – free blogs like <i>Blogger</i> may be preferable to <i>Dropbox</i>
Automatically make content available (“unhide”)	Yes, but only by adding content over time (likely from a class master folder that’s already been organized by week or class session)	
Communication (Email and Announcements)	Yes, through uploading a document that contains a message, but traditional email is usually preferable	Yes – traditional email
Grades and Assessment	No	Yes – <i>Engrade.com</i> for grading and assessment, and <i>Proprofs.com</i> for online assessment
In-frame display of slideshows, images, YouTube videos, and other content	No, but all of these types of content can be added to <i>Dropbox</i>	
Customizable color scheme, banner, and other visual options	No	No

2. Using *Dropbox*

To begin using *Dropbox*, teachers must register at <https://www.dropbox.com/register> to create a free 2GB account on the *Dropbox* website. Free storage can be increased up to 18GB by inviting students to share the class folder (additional storage can be purchased). Downloading the *Dropbox* software (<https://www.dropbox.com/downloading?src=index>) creates a new system folder that synchronizes in real time with invited users. The shared folder could be a subfolder, allowing instructors to separate personal content or manage multiple classes. In Figure 2 below, only the folder “SKIDMORE SYNC” is shared with others (denoted by a small icon of faces on the shared folder). Additional subfolders can help organize content by week or unit, while student groups can set up their own folders for collaboration, communication, and study help. Any file that can go into a Windows or Macintosh folder can go into *Dropbox* for access in class.

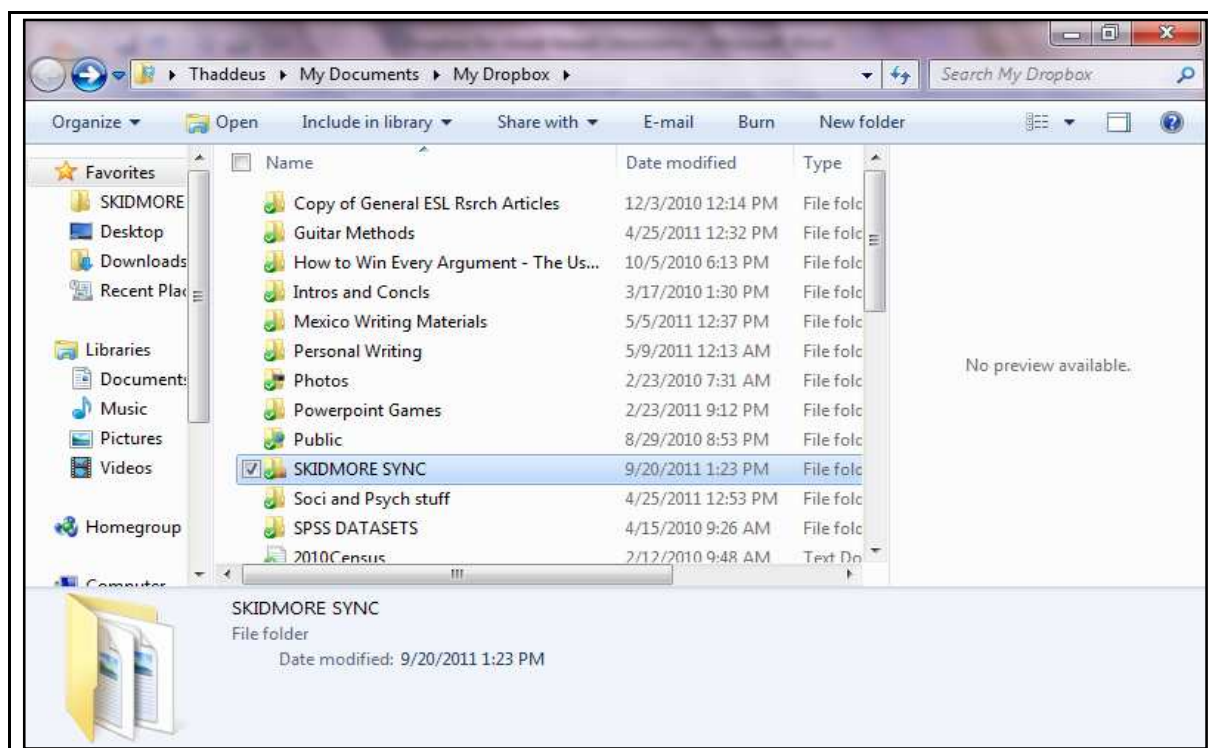


Figure 2 – *Dropbox's* simple interface is no different from a regular Windows or Macintosh folder.

Any data storage service should be secure and reliable. Teachers can limit access through the invitation feature. (Conversely, classes wishing to make content publicly available can do so through a “Public” folder that assigns a URL that makes any file available for download. Still, *Google Sites* (<http://www.sites.google.com/>) may be a better tool for presenting work online.) *Dropbox* also protects against disaster by saving all old versions of files for 30 days, preventing accidental data loss. Synchronizing files onto a local hard disk lets users access files during an internet failure or if the *Dropbox* website goes down.

Dropbox accounts are linked to an email address, so users can create multiple accounts by setting up a free email account for each course. After the course ends, all the content will remain archived at no cost. Because *Dropbox* exists as a regular file folder, content can be moved away from the shared folder for more-secure storage.

The *Dropbox* Wiki page (http://www.dropboxwiki.com/Tips_and_Tricks) includes additions and tricks for expanding the software's reach—for example, instructors can automatically retrieve Google Docs (http://www.dropboxwiki.com/Google_Docs_To_Dropbox) or synch with folders outside of *Dropbox* (http://www.dropboxwiki.com/Sync_Other_Folders). Teachers that

are more ambitious may collaborate with partner schools from around the globe (<http://www.connectallschools.org/node/132295>), although *Dropbox* works well as a purely local tool.

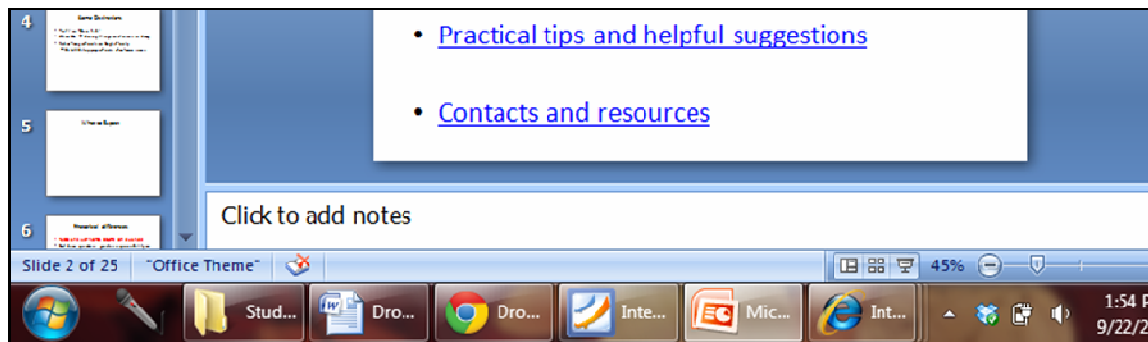


Figure 3 - After installation, *Dropbox* (appearing as a blue box in the lower-right corner) is fully integrated with the computer file system and can be opened quickly via the taskbar.

3. Control and security issues

Teachers working in non-traditional environments where institutional support is limited should consider this tool. Entire courses can be accessed wherever an Internet connection is available. Because *Dropbox* synchronizes as well as stores, teachers and students can work around slow Internet connections, *Dropbox* will work in the background during long download times, making tomorrow's video or photo slideshow available from a computer file rather than an Internet link. This feature sets *Dropbox* apart from most other file sharing systems, including *GoogleDocs*.

Dropbox lacks the jaw-dropping thoroughness of *Blackboard*, but *Dropbox's* (and *Blackboard's*) best feature is also its most basic: controlled, paperless communication. The author first used *Dropbox* when institutional constraints severely limited copy and supply budgets for instructors. Later on, *Dropbox* enabled media-enriched, collaborative writing projects and even transferred a multi-level writing curriculum to another country. For teachers dealing with rising costs and fluctuating institutional support, *Dropbox* provides a means of self-sufficiency.

Dropbox was in the news for a security breach in June 2011, when a faulty security upgrade made passwords "optional" for several hours (Kincaid, 2011). Users could log in by

simply entering a username. Earlier in 2011 there were already calls for *Dropbox* to undergo an independent security audit due to concerns about the company's security practices (Bott, 2011). While *Dropbox* claims to use "the same secure methods as banks," including an encrypted SSL communication channel, AES-256 bit encryption, and "technical access controls that prohibit employee access" ("How Secure is Dropbox?", 2011), some technology authors have doubts about the actual security measures in place. Miguel de Icaza, the Mexican programmer behind Linux GNOME and the software company Xamarin, writes, "[A]nyone that tried to look further came out empty handed. There really are no more details on what procedures *Dropbox* has in place or how they implement the crypto to prevent unauthorized access to your files. We all had to just take them at their word." (Icaza, 2011) Icaza also questions contradictory policies that state that while *Dropbox* employees do not have access to user data beyond file names and other metadata, a small number of *Dropbox* employees can indeed access user files under certain circumstances, such as a government investigation.

School administrators and researchers should take note of these criticisms and plan accordingly. For example, financial data and sensitive personal information should probably not be placed in *Dropbox*. Research data may also fall under this warning, especially if it includes identifying information about participants.

For most instructors, however, *Dropbox* can be considered reliable and safe due considering the nature of the data being stored. Furthermore, by placing files in multiple locations (in cloud storage and on connected computer hard drives), the likelihood of file loss even in the case of a malicious attack is lowered, and remember that *Dropbox* backs up files so that deleted items can be recovered for 30 days ("How do I undelete files," 2011). As always, teachers may want to double-check that any shared coursework abides by the "Fair Use" Section 107 of copyright law (<http://www.copyright.gov/fls/fl102.html>), and teachers are certainly discouraged from sharing copious amount of copywritten data with students or other teachers.

4. Other Alternatives

Other file synchronization options, such as *SpiderOak* (<https://spideroak.com/>), advertise increased security measures and may be preferable for those working with sensitive data. It offers the same 2GB free storage limit, but greater total free data storage and a faster accumulation of storage (1GB per referral, up to 50GB total free storage). *SpiderOak* is slightly

more complicated to set up, including the designation of devices which can be an issue for students. Beyond that, it appears quite similar to *Dropbox*.

GoogleDocs (<http://docs.google.com/>) is also already popular, but it cannot offer file synchronization to local hard drives. This may make *Dropbox* preferable for situations where Internet connections are unreliable. Furthermore, sharing settings must be set up for each document, and failing to do this will result in files being unavailable for other users.

As a final disclaimer, the author has exclusively used *Dropbox* for actual course management and therefore hesitates to endorse any other product as reliable in real-world situations. Whatever system is used, moving away from institutional CMS and towards individualized solutions seems to be a smart and economically prudent decision.

5. Conclusion

While *Dropbox* is not the only option available to educators, it may be an ideal option for low-budget contexts and for teachers who seek mobility, self-sufficiency, or collaboration inside the classroom and beyond. *Dropbox* offers specific functions with a simpler interface than all-in-one packages that can be limiting and cost-prohibitive, and most of the features of more expensive CMS options can be duplicated using *Dropbox*. The flexibility presented in a software program that integrates so smoothly with Windows and Macintosh invites creative instructors to find novel ways to take advantage of this free service.

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