

UBIQUITOUS, FREE, AND EFFICIENT ONLINE COLLABORATION TOOLS FOR TEACHING AND LEARNING

Jace HARGIS, Ph.D.
Assistant Provost for Faculty Development
University of the Pacific
Stockton, California, USA

S. Michelle WILCOX, EdD
Dean of Business and Computer Education
St. Johns River Community College
5001 St. Johns Avenue
Palatka, Florida, USA

ABSTRACT

This article provides an overview of free, online tools that make collaboration effective, efficient, and engaging. Each tool is available world-wide wherever there is access to the internet. These tools help create a more collaborative environment because they allow for voice, video, text, simultaneous editing, and immediate feedback. The tools presented are easy to use, user friendly, and have online support available if needed. Methods for using the tools are suggested, and examples of how they have been used by the authors are discussed. Professional presentations, instructional activities, meetings, and preparing manuscripts or other collaborative documents can all be developed in collaborative online meetings using Skype, Google tools including Talk, Chat, Calendar, Docs, and Notebooks, and Second Life. These may also be used to enhance education in distance learning or on campus classes. The features, functionality, and intuitive ease of use promote collaborative efforts, increasing the effective and efficient use of time while decreasing costs. Hyperlinks are provided for tools so users can determine technology specifications, download necessary files, learn more about their capabilities, and locate help or support information.

Keywords: Collaboration; online; Web 2.0; active learning; Skype; second Life.

INTRODUCTION

Ideally, colleagues would like to efficiently review journal manuscripts, collaborate on a grant, develop a presentation for a conference, or share ideas for online learning, class activities, or authentic assessments. Emailing documents back and forth, making changes using review tools that show every editing mark, and making phone calls will allow these things to occur, although they are cumbersome and lack version control. Exchanging several messages could require significant time before understanding occurs, and it would likely be over the course of a few hours or days rather than a matter of minutes. There are effective, yet expensive solutions, such as Elluminate Live, WebEx, or NetMeeting, but now, there are also resources available that are intuitive, efficient, easy to use, and free. Adequate technology is required, and most computers now are well-equipped to handle these new, dynamic online collaborative environments.

Often referred to as Web 2.0 are a variety of new ways in which the web is used for networking, whether for work or socializing, learning or enlightening. Blurring the lines between formal learning and socializing, the tools that make it possible to learn and work collaboratively also make it possible to socialize collaboratively. This article will share a

variety of such tools that can be used to increase productivity, enhance learning, and save two of our most valuable resources: time and money.

AJAX is no longer the powder used to clean the kitchen counters. Today's active learners refer to Asynchronous JavaScripts and XML as AJAX. It allows scripts to run in the background, increasing the interactivity of web pages and web applications (Garrett, 2005). Some of these include Google tools such as notebook, documents, and spreadsheets; combined with powerful tools such as Skype and virtual worlds (Second Life, There, MTV, etc. - and one of the new approaches is to develop scripts to develop virtual worlds, which is what Open Croquet provides), which allow for voice and video, online collaboration becomes powerful, and perhaps more productive, than many face to face meetings. These tools allow collaborators to focus on the objectives at hand; research new topics immediately, record notes together, and as discussed here, become more productive and efficient. All the while, colleagues can be talking, typing, and watching one another, taking multi-tasking to a new level. Higher education students do this as a matter of course, having spent time utilizing social networks such as Facebook and MySpace to share everything from pictures and videos/podcasts to homework, music, and their innermost thoughts.

A LITTLE HISTORY

Collaboration is a social structure in which two or more people interact with each other and, in some circumstances, some types of interaction occur that have a positive effect (Dillenbourg, et. al., 1996). McKeachie, Pintrich, Lin, and Smith (1986), among others, have found data which supports when people work collaboratively in small groups, they learn more; they retain it more and they are more satisfied with the experience. Generalizing the power of collaborative learning to an online environment would provide even more of the advantages that enable collaborative learning to be successful. The ability to discuss problems, share ideas, reflect and review is all possible online, either synchronously or asynchronously with an added bonus of efficiency.

This supports Vygotsky's (1986) theoretical concept that social interaction increases the level of development through a dialectical process with teachers and peers. Learning then, from a Vygotskian perspective, can be enhanced through interaction and collaboration. Given the lack of face to face interaction in an online class, it follows that engaging students in collaborative efforts in online classes may increase student learning.

To get started with online collaboration for work, some technology and computer skills are necessary. A computer with sufficient RAM, built-in or webcam, and the obvious, high-speed internet access, are needed for high quality collaborative experiences. There are no downloads for most Google tools, but a Gmail account must be set up; this takes less than five minutes and provides virtually unlimited storage for email, documents, and other items created using Google tools.

Google's servers are so secure and connected that if the server were to burst into flames, the user would never notice the switch to the backup server and would be able to continue working uninterrupted (Google, 2008a).

No hard disk space is needed on the user's computer, so there is no risk to the user of losing what has been created using Google tools. Both Skype and virtual worlds such as Second Life and There require a software download and installation before use, and take a little time to set up. Google, Skype, and Second Life have easy to locate support for (Frequently Asked Questions) FAQ's and general questions if assistance is needed. Computer specifications are available on product websites, and should be reviewed prior to installation, particularly for those integrating both graphics and voice.

Users should have an understanding of how to download and install files from the internet, and either the knowledge of their system specifications, or someone who can assist

them. Users should also have knowledge of the menu structures and, perhaps most importantly, simply the ability to read and follow directions. This may sound trite; however, these products are so intuitive and so functional it is easy to overlook the obvious or to realize just how much is possible, especially because they are *free*.

The companies behind the products being presented have interests in providing quality services to internet users. According to a 2005 press release, "Skype's mission is to make communicating through the Internet natural and easy to do." The company Google has a stated mission to, "organize the world's information and make it universally accessible and useful" (Google, 2008b).

The name is a twist on the word googol, a term defined as the number one with 100 zeros after it. There is not a known group of anything this size, but is meant to describe the vast amount of information available on the web that Google wants to organize (2008b). The mission of Linden Research, Inc. (2008), developer of Second Life, is to, "connect us all to an online world that advances the human condition." They are working to create a world where the capabilities of people who use Second Life in such a way that it, "affects and transforms them in a positive way." Linden Research, Inc. is more commonly referred to as Linden Lab.

Each of these tools is accessible wherever an internet connection is available in the world. Both Skype and Second Life require downloads, while few of the Google tools require downloads. The graphic interface of Second Life and video capabilities of Skype demand more from a computer system than the Google tools.

WHAT WE HOPE TO SHARE

- Free and functional online collaboration tools (Skype, iGoogle, Google Talk/Chat, Google Documents/Notebooks, Second Life);
- Several distinct methods of using these tools for educational purposes as well as other methods tangent to educational activities such as service, committees, collaboration with professional associations, etc;
- Other free resources for social networking and productivity that may also have use for online collaboration; and
- Hyperlinks to resources (Appendix).

Free Online Collaboration Tools

Skype, founded in 2003, is a communication tool available in 28 languages and most countries in the world. This software, a free download, allows users call from computer to computer and computer to land line or mobile device utilizing the internet, and most recently from mobile to mobile device (Skype Limited, 2008).

Features of Skype include the ability to make voice calls, video calls, and conference calls (with video), and transfer files, send instant messages or chat, and Short Message Service (SMS) text messages. Skype logs calls and chats, providing a record of your collaboration efforts, and is accessible anywhere in the world. When logged in, users can search for other Skype users and see if those in their contacts are online. Skype is also secure, providing encryption of all communications and engaging anti-virus software to protect the communications. In most cases, no changes are needed to firewall settings (Skype Limited, 2008).

The Google tools are all available on what is referred to as the Google classic home page, from which the standard menu items are available: Web, Images, Maps, News, Shopping, and Mail; and a click on a link that reads "MORE", followed by "EVEN MORE" leads to an abundance of free resources and tools. To use any Google tools other than searching, users must first set up a Gmail account, a short. There are several unique features about Gmail. Users theoretically never have to delete messages and have virtually unlimited storage space, and to date, the authors have never received unwanted junk mail in their Inboxes,

as Gmail automatically directs this type of mail into a SPAM box. Additionally, once email has been sent by a Gmail user to a given address, it will pop up as a possibility when next sending an email. The fact that users can only view email sorted by most recent date, whether in the Inbox or Sent box, is a small inconvenience given that *no* time is needed for handling spam email. There is a search feature that enables a quick find of a particular email, and users can also use labels as another method of grouping emails. Although initially known for its powerful search engine, Gmail became very popular when the company realized that more than internal company employees were using it and. Next, Googlers (employees at Google) realized that personalized homepages would provide a way to personalize searches and better serve users. This philosophy instigated the iGoogle organizational homepage.

iGoogle is a place where people can place all of their tools, such as Gmail, news, bookmarks, podcasts, wikis, blogs, and other social networking tools. iGoogle allows users to create what Google calls a personal homepage with easy access to the other free tools. Users can select a theme and "Add Stuff" to their iGoogle homepages with a few clicks, and immediately enhance their time spent online. The items added to an iGoogle page are considered gadgets, much like those available for desktops. Gadgets range from Google tools such as Documents, Notebooks, and Talk, to other items such as inspirational quotes, countdown clocks, games, a virtual aquarium, or even a language translator!

The iGoogle feature has enabled Google to narrow and personalize search results based on the user's search history, location and preferences, while providing users a functional and efficient way to access and use information.

Google Chat is a function available from within Gmail. Users simply click on the name of a contact and immediately send an instant message in a "pop-out" chat box. Google Talk requires a quick download and set up is seamless. This tool allows the use of voice and text for chat purposes, and even allows users to send and receive voice mail.

One great feature of this communication tool is the ability to send messages even when the other user is not online. Files are also easily exchanged through Google Talk. This tool also allows *every* chat to be saved in Gmail Chats. These tools make it possible for users interact and share information with sophistication and simplicity.

The Google Calendar feature allows users to create innumerable calendars that can be shared, enabling groups of users to add to the same shared calendar. Calendars can be kept private or made public. Google calendars can be exported as iCals and then imported into other calendar programs, or other calendars can be exported to a Google calendar. Fortunately, the help files for Google are extensive and directions are easy to follow. Alerts for appointments can be sent via SMS messages to their cell phones or as email messages. Dates can be added to a calendar directly from an email message. The downsides to Google Calendar are the inability to print more than one month at a time, and imported calendars do not necessarily import all features correctly with regard to events that repeat.

Two other powerful online collaboration tools from Google are Documents (Docs) and Notebooks. From Gmail, users can reach Docs from the menu on the email page; from all other Google pages, Docs can be reached by selecting "more" and clicking on "Documents". For instant access, Google Docs can easily be added to a user's iGoogle homepage. Google Docs includes: documents, spreadsheets, presentations and the ability to organize them using folders. Each document can be printed and will first be turned into a PDF document. Docs can be downloaded as a PDF, Word, HTML, RTF, Text or Open Office document and then saved. Google Docs allows creation and editing from around the world, as long as internet access is available. One of the most important features of Docs with respect to collaborative efforts is the ability to share documents with others, and to have a history of every revision. Users who share documents can work on the same

document at the same time, and review the changes in real time. Google Notebook requires installation of the Google Toolbar for efficient use. This tool allows users to clip literally anything seen on the screen in a web browser, and with a routine right-click, send the selected text, email, link, image, etc., directly to a Notebook. Each Notebook can have unlimited sections, which are added with each new item sent to the same Notebook. If something has been clipped and sent to a notebook, upon return to the document, the information that was clipped will be highlighted, providing the user with a significant reminder and reducing redundancy and amount of time needed for review. Users should create a Notebook before beginning a new search, items are sent to the most recently used notebook. Items sent to the wrong Notebook can easily be moved with two clicks.

Second Life (SL) is a three dimensional, avatar-based virtual world built entirely by the members of its society. Because there is the ability to mimic real life in this virtual world, including chatting, developing friendships and working relationships, setting up a home, purchasing land, traveling, etc., there may be some confusion in one's perspective of SL. Initially, this may seem like a game; however, viewing it through the lens of an educator, it is easy to see many possibilities for interactive, engaged learning. Setting up a free account is easy to do; it requires the selection of a username and a 35 MB download and installation. Users must now enter valid credit card information to verify age, but will not be charged for membership. Once logged in, the user need only choose an avatar and begin participating in a Second Life, starting on Welcome Island. On this island, new members learn how to function in SL. Members can interact with each other, teleport to virtually anywhere, and even create objects. No purchases are necessary to fully engage and experience SL; however, users can purchase nearly anything imaginable. To find places of interest, a simple search using a keyword will usually result in a long list of possible islands to explore. There are places with larger than life molecules, genetics, and other science concepts, art galleries, historical societies, math tutoring, English as a Second Language, and even a replica of the Sistine Chapel!

This is all made possible through open source code and scripting. This environment is truly collaborative, open-ended, and dynamic, which is the type of environment needed to enhance teaching and maximize learning. This highly contextualized, constructivist environment enables most people to gain understanding as they engage in SL exploration.

Possibilities

There are many methods to use these tools for educational (and tangentially-educational) purposes. In the creation of this manuscript, Skype, Gmail, Google Notebook/Docs, Google Chat and Second Life were used on a weekly basis. Other conditions in which these tools were used include: taking live meeting minutes that could be read on screen and edited in real time; having a faculty meeting without *any* paper; and helping a middle school student review and edit a draft of a paper in the absence of having someone at home who could assist. The ability to share websites, notes, ideas, and resources dynamically, nearly quickly as they are thought of or come across on the internet enables collaborators, colleagues, or friends to review and explore them simultaneously. This saves valuable time and increases the efficiency in making decisions. These tools were also used to present a workshop, with presenters 3000 miles apart. Another use with implications for education at all levels is the ability to use Skype to have guest lecturers, share live demonstrations, and host online seminars, with the ability to literally hire experts from around the world to present without requiring travel and related expenses, while allowing for interaction between the participants and presenters. These free tools can also be used to engage online students in collaborative group activities using video and voice, to have students give presentations, and to hold online office hours.

The recent faculty meeting where neither faculty nor the administrator leading the meeting used a single sheet of paper to facilitate and complete the agenda was heralded as the best meeting ever held. All needed documents were created in or imported as Google Docs or presentations and projected on the wall. All materials were in a Google Docs folder

and numbered in the order they would be presented. Because the internet or network can be unreliable, all Docs were downloaded as PDF's and stored on a thumb drive prior to the meeting. This served two purposes: there was a backup for use if the network was not available; and, all Docs were ready to be placed in a shared folder on the institution's network for faculty to access afterwards. If the institution used Gmail for their email services, there would have been no need for saving documents in a shared file using institutional resources, and faculty would have been able to access all documents at any time. The faculty meeting was efficient and members were optimistic about using such tools. In summary, agenda items were highlighted and discussed; the calendar dates for the coming year were reviewed and set; notes were made on the agenda with the approved dates; and that document was made available for all to review at any time in the future - all before the meeting ended.

CONNECTIONS AND THE FUTURE

What makes these ubiquitous, online environments effective (and suiTable - free) is their ability to provide rich, authentic experiences and their ease of use. Connections are relatively instant, feedback is almost immediate, and rapid productivity is observed.

As I write this section, my co-author is writing about her recent experience with these tools in the "Possibilities" section above; and, as we complete our writings, we will review one another's sections.

Hence, productive, instant, and built-in real time quality assurance. Connections are also made between work and leisure, as we skew the lines between our online social networking environments, and teaching and learning tools.

These remarkable tools *encourage* connecting internal and external people, possibly those even in the same building. Many campuses are known for their silo philosophies with respect to their various departments. These tools can help connect the silos, the people and ideas in them, to allow for curricular integration, interdepartmental meetings, and collegiality.

The tools can assist with connecting teaching and scholarship by providing an efficient collaboration mechanism to share methods and strategies, action research and even quantitative research in how we learn (SoTL). Finally, and potentially most powerfully, the tools can help connect teachers with their colleagues, department chairs, and other administrative resources in further quality, just-in-time faculty development.

So, the natural question now is, given all of these new, easy-to-use, free online tools, will Microsoft and other major software application companies begin to offer free, web-based applications, or will the free applications begin charging?

BIODATA and CONTACT ADDRESSES of AUTHORS



Dr. Jace HARGIS is currently an Assistant Provost for Faculty Development, and the Director of the Center for Teaching and Learning, as well as an Associate Professor at the University of the Pacific. Previously, Dr. Hargis was Director of the Office of Faculty Enhancement at the University of North Florida (UNF) and has taught science and technology courses in the College of Education and Human Services at UNF. Dr. Hargis has also taught online at San Diego State University, as well as chaired the UNF Distance Learning Committee. He began his career as a secondary educator.

Jace HARGIS, Ph.D.
Assistant Provost for Faculty Development

Associate Professor
University of the Pacific 3601 Pacific Avenue
Stockton, CA 95211, USA
Phone: 209.946.2409, Fax 209.946.3211 (fax)
SL: Pocho Revolution
URL: <http://www.jhargis.com>
Email: jhargis@pacific.edu

Dr. Michelle WILCOX is currently the Dean of Business and Computer Education at St. Johns River Community College. Dr. Wilcox has been an educator for 25 years, with experience teaching at the K-12 and postsecondary levels, and prior administrative experience as a middle school dean, high school assistant principal, and director of a tri-county consortium. Her background includes teaching learning disabled and emotionally handicapped students, curriculum development and grant writing/management. Dr. Wilcox was trained at NASA as a network administrator and has been involved in learning, teaching and using instructional technology since 1983.

S. Michelle Wilcox, Ed. D.
Dean of Business and Computer Education
St. Johns River Community College
5001 St. Johns Avenue
Palatka, FL 32177, USA.
Phone: 386.312.4603, FAX: 386.312.4028
SL: Athena Kline
URL: <http://www.smichellewilcox.com>
Email: wilcoxedu@gmail.com

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Resources and Hyperlinks

Hyperlinks are provided in the Appendix for the resources that have been presented. Additional information is provided for other resources that may be of interest, but were not included in this article.

Appendix List of Free Resources and Hyperlinks

Resource	Description	Hyperlink
Del.icio.us	Social Bookmarking	www.del.icio.us
DimDim	Web Meeting (voice, chat, application sharing)	www.dimdim.com
Facebook	Social Networking	www.facebook.com
Freemind	Mindmapping tool	http://freemind.sourceforge.net/wiki/index.php/Download
Google	Personalized search, calendar, web- based apps	www.google.com
Google Talk	Collaboration (IM, voice, file sharing)	www.google.com/talk
Moodle	Learning Management System	www.moodle.org
MySpace	Social Networking	www.myspace.com
OpenOffice	Web-based apps	www.openoffice.org
Second Life	Virtual World	www.secondlife.com
Skype	Video Calling (conferencing, file sharing)	www.skype.com
SoTL	Scholarship of Teaching and Learning	www.sotl.ilstu.edu
Twitter	SMS and Instant Messaging Service	www.twitter.com
Web Huddle	Web Meeting (voice, recorded sessions)	www.webhuddle.com
Zoho	Collaboration, web-based apps	www.zoho.com