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Online Tools to Improve Faculty Collaboration and Time Efficiency Inside and Outside the Classroom

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Online Tools to Improve Faculty Collaboration and Time Efficiency Inside and Outside the Classroom

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Abstract
The optimization of time is a valuable commodity to achieve scholarly and teaching goals. Embracing technology and the use of online tools can assist with focused communication and project collaboration with both students and faculty. An innovative approach to connecting virtually is more relevant today, as a majority of current pharmacy students are millennial-learners who are technologically proficient and more likely to adopt online tools. The aim of this commentary is to highlight the advantages of using such tools, while also stressing the considerations one should have when navigating the best fit to a faculty member's needs.

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As practicing healthcare professionals and academicians, optimizing time is imperative to achieve desired outcomes efficiently. Planning and proper communication, in addition to the effective use of technology, are rational steps towards this aim. Teamwork is also vital to the success of achieving curricular goals for both students and faculty members. Embracing technology and using online collaborative tools, such as Slack (Slack Technologies; San Francisco, CA), Trello (Atlassian Inc, New York, NY), or Asana (Asana; San Francisco, CA and New York, NY), can serve as a means for focused communication and project collaboration both inside and outside the classroom. Learning environments continue to evolve to include distance learning, research is often conducted across multiple institutions, and there is a need to share best practices to solve patient care challenges. This commentary aims to highlight the need for faculty to implement online tools to facilitate collaboration and communication when teaching, conducting research, or providing service.

Many faculty use platforms such as Google Drive (Google Inc.; Mountain View, CA), Dropbox (Dropbox Inc.; San Francisco, CA), Outlook email (Microsoft; Redmond, WA), and Skype (Skype Inc.; Palo Alto, CA) separately, which can compromise project and time efficiency. Online collaborative tools proposed in this commentary (Table 1) provide users with multiple features streamlined within one easily accessible tool.

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Employing such tools can ultimately reduce unnecessary physical meetings and accelerate work execution. However, the selection of a proper tool requires the user to understand the goals of their project foremost. For example, some online tools are communication-focused and offer direct chats, group chats, or even discussion boards, which can be archived. This can assist with live dialogue to share best practices and brainstorm ideas across geographic locations. Project management-focused tools offer the same communication features, and also the ability to set group deadlines, create checklists, assign tasks, and track project milestones. Commonly, these tools also allow resource and document sharing. Many online collaboration tools promote "integration" by outsourcing certain features (e.g. email, video-chat, file-sharing) to other web-based programs to condense necessary features within one platform. An example is Trello, which allows "integration" to Google Hangouts for video conference calls, Outlook calendars to sync meetings, and MailChimp for email dispatch.

Project Management-Based Platforms within the Classroom
The accessibility of online collaboration tools to both students and professors across multiple disciplines presents many advantages. With the multitude of exams, projects, and extracurricular activities that require student focus, these tools can provide assistance with organizational and time management. Employing online collaboration tools for longitudinal group projects allows students a single space to organize material, manage workload via checklists, and distinguish information by topic. This avoids unorganized efforts to collaborate and communicate via a simple shared online document. Beginning projects with proper organization can provide stronger outcomes.

Faculty can apply online collaboration tools when team-based learning (TBL) strategies are employed in the didactic coursework. TBL requires group assignments to achieve course

outcomes.[1] Faculty access to the online tools can provide instructors insight into the degree of individual student input on group projects, as well as overall group dynamics. Features like discussion boards can allow students to pose questions to peers. Instructors can also note themes in student comprehension to provide direct constructive feedback to students. Not only can this serve as a means for more accurate assessment, but it can also assist professors in recognizing where individual students lack in "soft skills." If an absence in communication or effort is identified by the faculty member, it can be addressed with the student to develop fundamental abilities and professionalism.

Communication-Based Platforms Outside the Classroom
Faculty schedules are inundated with meetings that require planning and take away from individual work time. By creating group chats with specific colleagues or students, time can be saved from meeting face-to-face, thus creating more time for other endeavors. Group chat features and screen sharing can also make it possible for faculty to offer virtual office hours or exam review sessions to students outside of normal work hours. Faculty and students can also use the applications to facilitate communication between executive board or committee members of professional organizations on a local, national, or international level. Another application is to incite scholarly dialogue on team-based research projects that span over a long period of time and multiple institutions. For larger research initiatives, members have the ability to track the progress of multiple sub-projects. This also allows the primary investigator opportunities to share files and discuss various project goals with each member of the research team and track what has been completed and what is yet to be done. Employing these practices can cut down on the number of excessive emails back and forth. Additionally, platforms like Slack allow for keyword searches to quickly find pertinent files, discussions, or data related to sections of a research project.

Considerations or Limitations to Online Collaborative Tools
Though prior planning, communication, and organization are essential, there are some considerations to keep in mind when adopting the use of online collaboration tools. Many of the tools require payment for unique features, additional storage space, and additional users. Such fees can be per individual or institution by monthly use. For teaching faculty, universities will have to weigh whether the total sum is worth the investment. It should also be noted that some tools are not intuitive or may require a steeper learning curve for the faculty member. A majority of current pharmacy students are millennial learners who are technologically-proficient and are more likely to adopt these online tools.[2] This should motivate faculty members to put aside any hesitation to gain familiarity with these new online tools still, despite the learning curve. Additionally, while introducing online tools could reduce valuable classroom instruction time, creating video instructions for home-viewing can overcome this barrier.

It is imperative to recognize when collaboration is more appropriate than individual work. Workplace efficiency can be promoted by avoiding "collaboration overload" when not needed. This has been seen in large corporations, where up to 50% of time is lost to ineffective collaboration and excessive time spent planning rather than executing.[3] Proposing a personal limit to how much time is spent on planning can preserve the efficacy of these tools and avoid general meeting fatigue.

Conclusion
Online collaborative tools are advanced and multi-faceted. Ultimately, whether students or faculty, maximizing time is necessary to complete tasks efficiently and create more time for additional initiatives. Using the ideal online collaboration tools for specific projects or institutional needs can improve communication and promote inclusive teamwork, if used effectively. Once such tools are implemented more readily, further research will need to be conducted to evaluate the actual impact on time saving, increased learning, and teamwork efficiency amongst faculty and students.

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Table 1. Comparisons of features of various online collaboration tools

	Direct Chat	Group Chat	Video Chat	Discussion/ Forum Boards	Project/Task Management Features	File Sharing	Integration with Other Web-based Programs[d]	Mobile Device Application Available[e]	Fee Associated to Access all Features[f]
Communication-Focused Tools									
Slack Slack Technologies San Francisco, CA, U.S.	X	X	X[c]			X	X	X	X
Ryver Ryver Scottsdale, AZ, U.S.	X	X		X		X	X	X	X
Project Management Focused Tools									
Trello Atlassian, Inc. New York, NY, U.S.			X[d]	X	X[ab]	X	X	X	X
Asana Asana San Francisco, CA New York, NY	X	X	X[d]	X	X[ab]	X	X	X	X
Samepage Samepage Campbell, CA, U.S.	X	X	X		X[ab]	X	X	X	X
Wrike Wrike, Inc. San Jose, CA, U.S.	X				X[ab]	X		X	X
TeamGantt TeamGantt, Baltimore, MD. U.S.				X	X[a]	X	X		X
Basecamp Bascamp, LLC. Chicago, IL, U.S.	X	X		X	X[b]	X	X	X	X

[a] Board-format organization to visually organize and prioritize tasks

[b] Task-oriented format (e.g. checklists) and analytics can track overall progress on a project

[c] Only available if premium membership is purchased

[d] Feature is only available if integrated with other programs (e.g. Dropbox, Evernote, MailChimp, One-drive, Google-hangouts)

[e] Mobile applications available for both Android and iOS operating systems, allowing for on-the-go communication and collaboration

[f] Varying limits of free use until premium membership required