Chapter 14

Experimenting with Google Docs for Group Projects

Storm Gloor

Group projects can be a very useful and effective instructional strategy for college courses. Researchers have found that students working in small groups tend to learn and retain information better and are more satisfied with their courses (Davis, 1993). I have found that group projects can also be effective in developing communication skills, offering the ability to delve deeper into a subject, as well in developing group organization skills

However, despite these benefits, faculty often avoid using group projects in their courses because of some common issues associated with group projects. For instance, faculty often struggle with how to fairly assess group projects, as well as motivating students to take full advantage of the benefits of such work. But perhaps the biggest problem faculty face with group projects is push back from students. Students are reluctant to work with or depend on others, especially on graded assignments. This reluctance tends to stem from previous poor experiences they have had with group projects. They may recount stories of non-communicative team members, difficulties in finding times for everyone to meet, overbearing group leaders, insignificant or error-ridden contributions by apathetic teammates, or fellow students who fail to make deadlines or even contribute at all.

I have sensed this trepidation from students in my own courses when I assign group projects. Rather than simply avoid group work, I have tried to search for ways to make group work more satisfying and equitable for my students. Therefore, during the spring of 2009 I began experimenting with using Google Docs with group projects and formally documenting the results. I was interested in better understanding students' perceptions of Google Docs and its effectiveness in group projects. In the following pages, I will briefly report on some results of studying Google Docs and my experience using Google Docs to improve students experiences in group projects.

Google Docs
Google Docs is a free, web-based, program that includes a suite of applications that enable users to create spreadsheets, presentations, or word processing documents. It is essentially a much lighter version of Microsoft Office that utilizes "cloud" technology to store and manage documents online rather than on your computer. But unlike Microsoft Office and other desktop office applications, with Google Docs (because it is web-based) multiple users can access documents, spreadsheets, or presentations as either viewers or editors. In fact, multiple editors can be assigned to a document and they can edit the same document simultaneously in real time.   In other words, with Google Docs, a group of students can all be added as editors to the same document, they can then collaborate and create the document together and even track the revisions and contributions of each member of the group through the revision history of the document, presentation, or spreadsheet. Access to documents is password protected, therefore privacy and security of student work is maintained. Online storage of a "master" document also eliminates the need for tracking the latest version of a document and the risk of losing it. Google Docs also eliminates the necessity of having

to coordinate face-to-face meetings. It enables students to easily see each other's contributions to the project. All of these advantages could possibly address major concerns students have with group projects.

I should point out that Google Docs is only one of many applications that can accomplish these goals. For instance, faculty have used wiki's for a number of years in much the same way. I chose to use Google Docs though because it is the most accessible and simplest application to implement. The applications themselves, particularly the word processor, are fairly intuitive, especially for anyone accustomed to Microsoft Word.

Method

Sample and Context

To investigate whether Google Docs (as an online collaboration tool) would affect students' perceptions of the group project experience, I tracked two classes that had group projects. One was required to use Google Docs and the other was not. I was also interested in the practical limitations of the program, particularly its word processor, for academic work.

The first class—which I will refer to as "Class A"—was a course that was being offered for the first time. It was an elective course that included 28 students. Students were separated into seven groups for the group project. The focus of the project was on predicting the future of the music industry. Each group was required to produce a term paper that outlined their prediction based on research they gathered as well as knowledge gained from the course textbook and presentations. Students in this class, Class A, however, were required to produce their group term paper in Google Docs. I created seven "shells" (i.e. blank online word processing documents) in Google Docs, and invited each member of each group as editors of their respective version. Students could only view and access the work from their own group; they could not access the work of other groups. From that point forward each group determined on its own when, if ever, they would meet and how they would organize the project. The assignment was assigned a due date, at which time I went in and changed each student's access from "editor" to "viewer"—thus prohibiting any further changes to their work.

The second class—which I will refer to as Class B—was a course that had been offered as an elective for years. However, a new group project assignment was added to the course to complete this study. There were 20 students enrolled in this course. The students were randomly grouped into four groups. Each group needed to find a local musical artist that they felt should be signed to the student-run record label. As a group, they would prepare a report about the artist, why the artist should be signed, and a detailed plan for how the artist would be marketed, what content would be created, and how the project would be financed. This assignment, like Class A, was assigned a due date. But unlike Class A, each group could turn in their project as a hardcopy, electronic document emailed to me, or as a Google Doc file. It was essentially their choice on how they wanted to turn in their project and the format of the project.

Students in Class A and Class B were both given detailed instructions about their project as well as a copy of the rubric that was going to be used to assess their project. Students in both courses were also given the opportunity at the end of the project to evaluate the performance and contribution of the other students in their group. Those evaluations were factored into one part of their grade for the project. It should be noted that four students were enrolled in both classes.

Even though Class A was required to use Google Docs, students did not receive any instructions and/or training on how to use Google Docs. They were simply required to submit an e-mail address to me so that I could give them access to their groups' blank document. Throughout the semester students were reminded that I could assist them with any questions that they might have about how to use Google Docs. However, not a single student requested such assistance. I also from time to time got online and viewed each groups' progress and updated the rest of the class about which group appeared to have done the most work up to that point, based on the amount of content on their document. This was simply intended to motivate the other teams.

Data Collection and Analysis

A pre and post survey was used to collect data. The surveys were administered online; they were anonymous and completely voluntary. The first survey was administered soon after the group projects were assigned. The purpose of this survey was to understand, among other things, student's initial comfort with online technology, familiarity with Google Docs, and perceptions of group projects. This data established a benchmark for later comparison. A follow up survey was administered at the end of the semester which measured the students' perceptions after completing their group projects. At this point, only preliminary analysis have been done; that is, only basic descriptive statistics have been conducted on the pre and post survey data. Future analysis will likely include statistical analyses of the differences between these two groups.

Results and Discussion

The preliminary results of this study indicate that Class A, the Google Docs class, did experience a *slight* change of opinion regarding group projects (see Table 1).

Table 1. Class A (The Google Doc class) Perceptions of Group Projects

"How effective are group projects as a learning/educational experience?"		
	Pre	Post
Not at all	2	2
Somewhat	11	6
Generally	10	15
Very	3	4
Extremely	0	0
Total	26	27

The biggest change took place in the group of students who felt that group projects were generally effective. In the pre survey, 10 students reported that they believed that group projects are generally effective. That number jumped to 15 students in the post survey. But the ends of the spectrum stayed the same across the pre and the post survey with only two students reporting that they didn't think group work was effective at all and no students reporting that they felt group work was extremely effective.

In Class B (where Google Docs was not required), when asked the same question, there was also an apparent change from the pre vs. the post survey. But unlike with Class A in which about 20% of students started to think more highly of group projects, three students out of eighteen in Class B began to think less highly of group projects by the end of the semester. For instance, the number of students who thought group

projects were "very effective" as a learning experience reduced from 8 on the pre survey to 5 on the post survey. But like Class A, the ends of the spectrum did not change.

Table 2. Class B (the non-Google Doc Group) Perceptions of Group Projects

"How effective are group projects as a learning/educational experience?"		
	Pre	Post
Not at all	0	0
Somewhat	4	4
Generally	5	9
Very	8	5
Extremely	0	0
Total	17	18

In both courses, there was somewhat of a shift in opinion regarding the effectiveness of group projects. However, when asked to compare group projects to individual projects, in both courses opinions did not appear to change that much between the pre and post survey (see Table 3). In Class A, a couple of students appear to view group projects slightly more favorable than when they began the course but most students in Class A stayed the same. Similarly, in Class B, by the end of the semester, two students rated that they enjoyed group projects much more than individual projects.

Table 3. Preference of Group vs. Individual Projects

"How much do you prefer group projects versus individual projects?"				
	Class A		Class B	
I prefer…	Pre	Post	Pre	Post
Individual projects much more	10	8	1	0
Individual projects slightly more	10	11	6	5
An equal mix of both	5	6	10	10
Group projects slightly more	1	2	1	1
Group projects much more	1	1	0	2
Total	27	28	18	18

When asked in more direct terms, once their respective projects were complete, whether their opinions had changed regarding group projects, only seven percent of the respondents in Class A liked them "much more" while 60% of the students in Class A and 71% of the students in Class B felt the same about group projects at the end of the semester.

Table 4. Changes in feelings about Group Projects

"When comparing your current feelings about group projects to how you felt about them at the beginning of the semester, which one of these statements would most apply?"		
I like them…	Class A	Class B
Much less	7%	6%
Somewhat less	11%	6%
I feel the same	60%	71%
Somewhat more	15%	17%
Much more	7%	0%
Total	100%	100%

The preliminary results suggest that the use of Google Docs does seem to have a very small affect on students' perceptions of group projects. And when asked if I should continue requiring Google Docs for the same project in the future, 24 of the 28 students in Class A indicated "yes," while only four responded "no." Those who selected "yes" were asked why they felt that way. Among the responses were comments such as "It creates a de-centralized meeting place", "it's very effective and teaches students about new media", "It's easy to use and no one can 'lose' it", and "it is a good way to see what your peers have done."

Keep in mind that students responded this positively to Google Docs without any specific instructions on how to use the program. In fall of 2009, I continued to require the use of Google Docs for group projects. But this time I conducted a 30-minute presentation of the basic elements, uses, and benefits of the program. Of the 21 students surveyed at the end of the semester, 19 recommended that the next class utilize Google Docs for their projects.

Benefits of Google Docs from a Faculty Perspective

I have illustrated how two different groups of my students have enjoyed using Google Docs. But using Google Docs has also made my job easier. For example, there were no issues as to whether or not a project was turned in on time, nor were there any stories of lost copies due to hard drive crashes or an error by a teammate. I could monitor progress, or lack thereof, on the project without having to ask or survey students. I also had the opportunity to recognize early on if a group is having problems with the project. It was also possible to objectively observe to at least some degree the contributions to the group project that each individual member made by reviewing the revision history. [note: The revision history has some limitations; for example, a student could prepare their work in a separate document and simply copy-and-paste it to the project document once they've written up their entire contribution. But appear like they have only accessed the document once. Because of issues like these, one group even required each member of the team to color-code their work so that I could more easily and accurately ascertain their individual contribution.] Another benefit of Google Docs is that it enabled me the ability to provide feedback or answer questions along the way by commenting on the document itself.

Drawbacks of Google Docs

Functionally, the Google Docs word processor has its disadvantages in terms of producing an online version of the traditional term paper, whether it's collaboratively written or not. This likely frustrated some students. As one student put it, "Google Docs is NOT Word," comparing it to the most popular software for producing reports. For one thing, the ability to automatically footnote was not available. Students simply manually identified references. But since there are no separate "pages", per se, in a Google Doc, the only option was to use makeshift endnotes, or to use the program's footnoting option, which simply places an index tab to the far right of the document wherever footnotes are included. Specific reference information can be added to a text box in the tab. But Google Docs is regularly updated and these features are likely to change over time.

Typing into Google Docs can be quite unwieldy as well, a sentiment brought up by several students in the study. Edits, particularly those involving font and color adjustments, undo themselves for no apparent reason sometimes. Word documents uploaded to the program or Google documents downloaded into Word do not always

convert and maintain their formatting as well as you would expect (especially if a document has a lot of complex formatting).

Conclusion and Implications

But for the purposes of collaborating to create a written document, students involved in this study were comfortable using Google Docs. Though its use didn't seem to markedly change their perception of group projects in general, perhaps the practical advantages carried the day. Not having to meet in person, no worries about who's holding the "master" copy, and simply not having to worry about actually submitting on time the finished product were among the reasons students favored the use of the program.

Despite its drawbacks, I've learned from my initial research that Google Docs definitely has its practical advantages for collaborative work, even though its use doesn't fully influence student perspectives on group projects. Considering the mission of preparing students for careers, however, might be as good a reason as any to utilize the program for such assignments. Tools like Google Docs will likely be a part of the workplace in which students eventually find themselves. As one student put it, "this is the future, we might as well start learning about it now."

References

Davis, B. G. (1993). *Tools for teaching.* San Francisco: Jossey-Bass.

Bio

Storm Gloor is an Assistant Professor in the College of Arts and Media at the University of Colorado-Denver, where he serves as Area Head of the Music Business program. Along with teaching various music business courses, Gloor oversees the college's award-winning record label, CAM Records. He's also developed the Music and Entertainment Marketing and Music and Entertainment in the Digital Age courses at the college. He holds an MBA degree from West Texas A&M University. Prior to academia, Professor Gloor spent many years in the retailing of recorded products industry.