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# Using Online Sharing and Editing Tools for Classroom Collaborative Learning in Multimedia Journalism Education

# **Cover Page Footnote**

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New technology presents both challenges and opportunities for learning. Educators bemoan the distractions caused by the use of digital technology in the classroom—especially the personal technology of mobile phones and social media that divides students' attention and creates diversions for in-person classroom activities and discussions (Andersson, Hatakka, Grönlund, & Wiklund, 2014). But judicious integration of computer-based, digital technology in the classroom can also provide innovative approaches to pedagogy. Our research examines the use of web-based, real-time, multi-user, editing and sharing tools to foster collaborative learning.

Collaborative learning is an approach in which groups of students work together to complete an academic exercise to promote deeper understanding. It has been touted as an effective instructional framework for students that leads to emergent knowledge (Whipple, 1987), with opportunities to synthesize, apply, test, and solidify existing knowledge. Collaborative learning is one method that "operationalizes" three previously identified basic learning principles (Alavi, 1994). The learning principles are as follows: The first is an active learning process which forces students to piece together and apply disparate facts to construct more complex models. The second is a cooperative-based environment where interpersonal interactions figure prominently in the learning process. The third principle is a goal-oriented approach which gives students opportunities for problem solving.

This study investigates the effectiveness of two online tools, Piratepad and Padlet, to enable collaborative learning in the classroom. The study is based on observations of student success and overall classroom engagement, and with quantitative data collected from a mid-semester survey of undergraduate students in a journalism curriculum.

#### The Tools: Piratepad and Padlet

Piratepad (http://www.piratepad.net) is a web-based, collaborative, real-time text editor, which allows anyone with the unique hyperlink (URL) to a document to simultaneously edit the text and see all the other participant's edits. Similar to the popular Google Docs (http://docs.google.com), Piratepad allows collaboration on a single document between multiple authors. But unlike Google Docs, Piratepad requires no account or log-in, and is based on open-source software called Etherpad. Etherpad was

created in 2008, acquired by Google, and discontinued in 2014. The Etherpad software, however, continues in services such as Piratepad. Piratepad is a bare-bones editor without many of the bells and whistles that come with Google Docs or similar products. Piratepad is completely public, and supports only text with minimal formatting. There are no annotations, comments, or timestamps for edits. Authors can remain anonymous or be identified with color codes. The low-maintenance, no-frills, limited functionality of Piratepad is one of its biggest draws, making it easy to use with virtually no learning curve involved.

Padlet (http://www.padlet.com) is also a web-based, collaborative, real-time editor with the added functionality to share rich media such as videos and images. But unlike Piratepad, which presents lines of text arranged in chronological order, Padlet presents content in individual posts that look much like Postit sticky notes tacked to a wall. The posts can be sized differently and resized, and can be rearranged in a free-form spatial manner to juxtapose different ideas. The posts can also be re-organized in a grid or list fashion. Padlet boasts more design options than Piratepad. For example, the background can feature different colors or a texture to simulate a brick wall, bulletin board, or a traditional chalkboard.

#### **Challenges of Teaching Multimedia Journalism**

Our findings on the effectiveness of these two online sharing and editing tools are presented in the context of a communication curriculum. That is, the students enrolled in the classrooms that incorporated Piratepad and Padlet tools were all students at a school of communication who were learning digital and visual skills for journalism. That fact alone set the baseline functionality needs for classroom technology. Teaching and demonstrating digital storytelling skills require that the instructor provide certain digital-only assets. For example, discussing an online photo slideshow or an interactive data visualization is more beneficial when individual students have access to the URL at their own computer workstation. When instructors resort to writing long hyperlink addresses on a whiteboard, it becomes cumbersome, time-consuming, and error-prone. In addition to sharing hyperlinks, the curriculum in digital journalism skills requires the distribution of sample digital files for in-class exercises. Sharing photos or video footage allow all students to start with the same base assets for graphic design or video

editing exercises with Adobe Photoshop or Adobe Premiere. An online sharing tool was also required for group critiques of student work. Finished photo slideshows, blog entries, video stories, or data visualizations were uploaded to Padlet for discussions during class. It allowed evaluation of all the projects as a single collection to look for commonalities in visual problem solving and afforded rapid comparisons between different projects. Finally, the online sharing tools were used in real-time editing exercises, with all students participating in contributing, viewing, and revising content.

#### **Literature Review**

Though extensive, the literature is conflicted on the general issue of whether digital technology in the classroom is beneficial. Some studies suggest that computer-based technology in the classroom increases student academic success (Aktümen & Kacar, 2003; Chen, Nurkhamid, Wang, Yang, Lue, & Chang, 2013; López, 2010). Other research, however, finds very little correlation between technology in the classroom and academic success (Dunleavy & Heinecke, 2008; Rashid & Asghar, 2016; Du & Anderson 2003), or offers a more complex relationship based on grade level and teacher experience (Middleton & Murray, 1999). Moreover, research provides only minimal guidance on the particular issue of how online, multi-user, real-time editing and sharing tools can be used as effective pedagogical technology.

Academic success is but one measure of effectiveness. Vandrick (2000) argues that real-time editing and sharing tools increase participation in the classroom. The low-barrier for input that the tools enable encourages those students who may be particularly susceptible to keeping quiet to have a voice in the classroom. Vandrick cites class, gender, and culture as example factors for those who lack power and are less comfortable expressing themselves in a traditional classroom setup. Fuchs (2014) supports this contention, citing Padlet in particular as a beneficial classroom tool she calls a "graffiti wall" that encourages participation from the whole class rather than from a vocal minority. More recent studies seem to bear this out. In one classroom, researchers determined that lectures with Padlet had 43% higher participation by students writing the online bulletin board than verbal participation (Ellis, 2015).

There is evidence of additional benefits. Padlet was found to promote peer learning by exposing students to a wider range of ideas from their classmates (Fuchs, 2014). That, in turn, helps students generate new ideas (Dewitt, 2015).

Finally, incorporating these online sharing and editing tools in the classroom does have an impact on student engagement and attitude. Compared with a traditional classroom, Ellis (2015) found that 83% of students found their classroom with Padlet "more interesting" while Lysunets and Eogoryad (2015) reported an increase in student motivation.

#### **Research Goals**

This study seeks to further elaborate the nature of the benefits and effectiveness of integrating online sharing and editing tools in the classroom, and explore how classroom collaborative learning can be encouraged by the use of these tools. We analyze student participation with Piratepad and Padlet, and compare it to student participation in classrooms without Piratepad and Padlet. Specifically, we seek to reveal ways in which instruction in digital journalism can be enhanced with both tools. Previous scholarship has focused on classrooms presenting material in either library science or in business. Digital journalism, however, presents unique learning goals based on effective application of programs for the production of a rich media product. Our investigation probes the advantages and drawbacks of specific journalistic in-class collaborative exercises with online sharing and editing tools.

# Method

Qualitative assessments were made of student actions, reactions, and interactions across multiple sections of journalism undergraduate courses at a school of communication at a private university. The classes were as follows: two sections of a journalism tools course, a foundational course covering a variety of digital tools and approaches for storytelling, including social media, photography, video, and data, and one section of a journalism design course, a higher-level course on visual strategies and design principles for communication using Adobe Illustrator, Photoshop, and InDesign. The students were observed on multiple occasions using Piratepad and Padlet in two exercises.

The first exercise was a live editing assignment in Piratepad which required each student to write a short paragraph that summarized data about crime in the local counties. After all the contributions were posted, the class took time to read, evaluate, and discuss the paragraph variations. Students were then asked to suggest edits to their classmates and to revise their own work, incorporating new information from what was being discussed. There were 28 students across all sections that participated in the exercise and observation.

The second exercise required students to complete various journalism projects and share their completed work on Padlet. In one case, the task was to shoot a variety of photos to demonstrate an understanding of different shot types and rule-of-thirds framing. In another case, the task was to complete an infographic in Adobe Illustrator to demonstrate effective design strategies and skill with the software. The completed works were displayed on the Padlet for a class critique on how successful each project was in meeting the assignment criteria.

In the second part of the research, we sent out anonymous surveys to all the students from a different semester (n=32) via Google Forms to gather their mid-semester thoughts on the use of Padlet as a teaching tool in the classroom. Students responded to a series of statements on a Likert scale from one (strongly disagree) to five (strongly agree). An additional question allowed free-form qualitative responses as to whether Padlet was generally useful or not.

#### **Results**

Where students were live-editing text with all their peers, we observed that responses were both quicker and more numerous than we had experienced prior to using Piratepad. Students were able to add their solution to the in-class exercise simultaneously as others were doing the same. No longer were there chronological restrictions (taking your turn) for presenting a solution to the class. Ideas flowed freely, and we observed that students were correcting themselves as they were adding content to Piratepad. We noted greater participation with individuals that are normally not outspoken in verbal classroom discussions.

In the multimedia critiques with Padlet, students frequently cited each other's work in relation to their own. The comparative approach resulted in evaluations based on natural groupings of student work rather than an evaluation of an individual's work in isolation. Similarities in project solutions were pointed out and discussed. For example, in a critique of magazine layouts, students identified how several projects used a background color as an aide to unify the design, or how text wrapping around an image were used similarly across several of the layouts. Arranging and re-arranging student work on the Padlet facilitated visual comparisons.

Survey data collected on Padlet indicated generally positive attitudes toward its integration in the classroom (Figure 1). Only six out of the 32 total students who were surveyed had previously used a similar online sharing tool, and none of the students had ever used Padlet. The statement that generated the strongest degree of agreement was one that asserted that Padlet's function as a public space for criticism was good pedagogy. The statement that garnered the second strongest degree of agreement was one that more generally affirmed that Padlet made the classroom more "interesting."

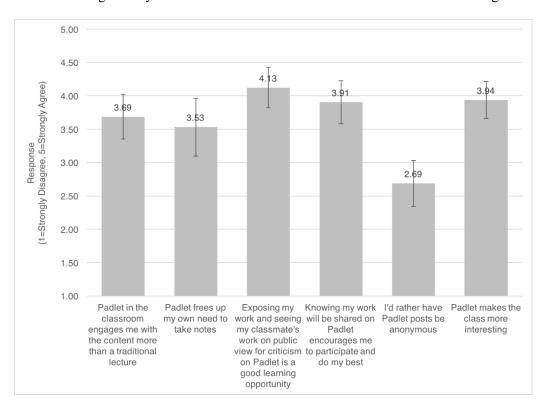


Figure 1. Mid-semester undergraduate student response to Padlet effectiveness in the classroom on a Likert scale from 1 (Strongly disagree) to 5 (Strongly agree). N=32 with 95% confidence intervals shown on the columns.

In the freeform responses as to whether Padlet was "useful" in the classroom, only one out of 32 students disagreed. The overwhelmingly positive responses to Padlet are listed in Table 1. The majority of comments centered around the fact that seeing their classmates' work drove their own individual desire for success and helped generated new ideas for themselves. The most frequent criticism of Padlet was its seeming lack of organization. Students faulted the site as "disorganized", "difficult to find certain things", and "a bit too cluttered."

Table 1

Responses from Students Who Agreed that Padlet is a Useful Tool in the Classroom

# Student Response

It allows us to learn in a more engaging way.

it gives you an opportunity to learn not only more about your own work, but the work of your classmates' as well.

It lets me see everyone's work as well as the professors. I can give and receive good feedback on my work as well.

you can see other people's work

let's us see others work and also be able to see notes

it is a good visual learning tool.

We are able to see examples and learn exactly what needs to be fixed or what was done correctly.

It is easy to go back and find notes. It is really great being able to see classmates work to get better ideas.

It makes it fun to post work and be more engaged to find work and notes all in one place.

It gives us an opportunity to see how the same assignments are done differently by other classmates.

## Student Response

Everyone's work is available to view, and since our work can be equally as subjective as it is objective, the criticism is extremely useful. The worst part about it by far is how cluttered it can get. By the end of the semester it may be hard to find certain items.

You can better gage your own progress and thinking process compared to classmates. And by knowing that everyone is sharing and you won't be singled out it feels less intimidating.

It helps with collaboration so that students can bounce ideas off each other and can improve their skills altogether instead of individually

it's accessible and cute

It allows easy access to the websites we're using in class. It also lets everyone see what the other students have been working on and more interactive.

It allows the whole classroom to get involved with the lecture as well as providing record of the lecture so if you miss a class, you know exactly what was discussed.

Things like links and photos can be easily shared while the class can simultaneously participate and share their work. I like having things in one central location where we can easily find something and have it right on our computers.

It is less time consuming

It eliminates the need to take notes and puts all the relevant information and necessary links for class all on one website.

It allows for visual examples and links involving assignments. This allows for a better idea of what to do for the assignment.

It's quick and students don't necessarily need to worry about keeping up with note-taking - they can absorb the information better by listening.

There are notes on the Padlet actually taken by the teacher. When and if there is a test, the notes on the Padlet would be helpful to study off of alongside the notes that I, myself, am taking the class.

# Student Response

You can easily access your work.

the notes are right there, and they can be easily accessed out of the classroom. It also takes the burden off of me taking notes every class, which helps because I won't miss anything important.

the summary of the class notes are on padlet for everyone to see, its easy to go back and look

Links are easily accessible, and every class's material is always posted, giving absent students a chance
to better understand what they missed. Works in concert with Blackboard well.

I feel that this use of a collaborative environment is beneficial for us all. We can easily and accessibly look and go over each other works, as well as, have everything we need in terms of notes, right in front of us. I'm not a big proponent of online classes, but this is very useful.

It is an interesting way to interact with the class and makes note taking a lot easier as well as getting to the same links that the teacher visited in class.

I am able to gain feedback from my colleagues and my teacher on what I did well and on what I have to work on.

#### Discussion

Our observations of student behavior in the classroom with both Piratepad and Padlet confirm previous research that supports its utility as an engagement tool, and confirm our assertion that it can serve as a tool for collaborative learning. In the group problem-solving sessions, the Piratepad provided evidence of active thinking. That students were spontaneously editing their responses as others were adding their own indicates that they were "thinking aloud" and incorporating other input. The idea that a real-time multi-user editor can facilitate "thinking aloud" is important because it emphasizes learning as a process rather than an outcome (Barber, 2014). Students are using Piratepad and Padlet not as a static board for finished work, but as an organic, dynamic tool for thinking, exploration, and processing ideas.

The low-stakes (ungraded) environment meant that students were free to make mistakes and were free to continuously make edits.

In contrast to the low-stakes environment of the group editing exercise, the multimedia critiques represented a more formal exposure to criticism. However, we argue that Padlet mitigates some of the more fearful aspects of a critique in two ways. First, it decouples the work from the individual. With the finished projects on an online site that everyone can access, the author of each work becomes less prominent. The author need not even be physically present to have their work recognized, presented, and critiqued. The second way in which Padlet reduces the anxiety of a group critique is that it emphasizes the work of the class as a whole, rather than works by individuals. We found students making connections and comparisons between works because they could see all of them at once as a collection. They could, and did, move posts around the virtual bulletin board to make comparisons easier. The resizing of each post, and the relative ease of zooming in and out of a website helped students view their work in context of the design principle of "near and far" (Groeger, 2013), which states that a design must be able to work far away (looking at the gestalt) as well as close up (looking at the details).

In the survey data we collected, we were particularly struck by the fact that students were in much stronger agreement with statements regarding Padlet as a tool for learning and participation than in the more utilitarian purposes, such as a note-taking service. The majority of students agreed that Padlet succeeded as a tool for engagement, a new learning opportunity, a way to increase participation, and as a way to make a class more "interesting." The only statement that elicited a neutral response was one that questioned the value of anonymity. Most felt that anonymity wasn't necessary, which suggests that they value not only learning *what* their peers were posting and sharing, but *who* was doing the posting and sharing. Making the connection between the work that appears on an online sharing site and the person sitting in the classroom is important and could be one way that tools like Padlet and Piratepad strengthen overall face-to-face collaboration even after the technology is put away.

#### Conclusion

Our examination of live editing exercises with Piratepad, multimedia critiques with Padlet, and results of a survey suggest that these two online, multi-user, real-time editing and sharing tools can have a positive effect on student engagement and interest, foster greater participation, and improve pedagogy by encouraging collaborative learning. One important factor for these benefits that we identified is that they provide a safer space (than a traditional discussion) for all students to participate in group exercises, and one which allows and exposes the process of thinking for everyone involved. We found that our diminished expectation for fully-formed thoughts on the Piratepad encouraged thinking out loud and promoted a greater sense of peer learning. Students often looked to their classmates' posts for help to develop their own analysis. In our survey, one student had explicitly cited the value of learning together as opposed to learning in isolation: "It helps with collaboration so that students can bounce ideas off each other and can improve their skills altogether [sic] instead of individually."

For the instructor and for the student, Piratepad, Padlet, and their ilk also represent tools for continuous formative assessment. Because all postings are public and easily accessible, instructors can see how students are progressing individually and as a class, and students recognize that they can make performance comparisons to their classmates. One student pointed out in the survey, "You can better gage [sic] your own progress and thinking process compared to classmates. And by knowing that everyone is sharing and you won't be singled out it feels less intimidating."

For educators in communication and in multimedia journalism, Padlet and Piratepad represent promising and powerful digital technology adjuncts for classroom collaborative learning, but we recognize some potential limitations and negative consequences of their adoption. First, both tools are dependent on a classroom equipped with computer workstations, projectors, and Internet connectivity. Assumptions about baseline technology support often neglect institutions without comparable resources and limit any touted benefits of digitally-based approaches to pedagogy. Secondly, while written-based contributions on Padlet or Piratepad can encourage participation among more students, it may dissuade students from participating verbally. These tools that are meant to spur wider participation may have the undesirable effect of diverting verbal participation to written participation, allowing students to hide

behind the technology. Further examination is warranted to explore not just the level of classroom participation, but the kind and quality of student comments using Padlet or Piratepad.

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