

Student Journalism 2.0: Testing Models for Participatory Learning in the Digital Age

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Abstract

Many educators and educational institutions have yet to integrate web-based practices into their classrooms and curricula. As a result, it can be difficult to prototype and evaluate approaches to transforming classrooms from static endpoints to dynamic, content-creating nodes in the online information ecosystem. But many scholastic journalism programs have already embraced the capabilities of the Internet for virtual collaboration, dissemination, and reader participation. Because of this, scholastic journalism can act as a test-bed for integrating web-based sharing and collaboration practices into classrooms. Student Journalism 2.0 was a research project to integrate open copyright licenses into two scholastic journalism programs, to document outcomes, and to identify recommendations and remaining challenges for similar integrations. Video and audio recordings of two participating high school journalism programs informed the research. In describing the steps of our integration process, we note some important legal, technical, and social challenges. Legal worries such as uncertainty over copyright ownership could lead districts and administrators to disallow open licensing of student work. Publication platforms among journalism classrooms are far from standardized, making any integration of new technologies and practices difficult to achieve at scale. And teachers and students face challenges re-conceptualizing the role their class work can play online.

Keywords

scholastic journalism, open licensing, open education

Recommended citation:

Caswell, Tom; Kozak, Alex (2010). Student Journalism 2.0: Testing Models for Participatory Learning in the Digital Age In *Open Ed 2010 Proceedings*. Barcelona: UOC, OU, BYU.
[Accessed: dd/mm/yy].< <http://hdl.handle.net/10609/5161>>

Project Rationale

While the possibilities presented by a global Internet are well known and often championed, it can sometimes appear as if those areas that could benefit most from that innovation have been changed the least. Education is an area in desperate need of innovation, but so far the Internet has had relatively little impact (Bissell, 2007).

A confluence of factors has isolated education from the transformative power of information sharing and communication online. In primary and secondary education, students and teachers face significant obstacles to integrating web-based collaboration into the classroom (Ertmer, 1999). Teachers often have little time to familiarize themselves with the technical requirements of information sharing. A proliferation of content repositories, publishing methods, and copyright restrictions can make finding, using, and sharing educational content an overwhelming task (Rothery & Bell, 2006). Even if teachers do have the time, familiarity, facilities, and resources to integrate these new practices, school policies can also stand in the way of these educational innovations by restricting what and how educational content travels into and out of the classroom (Geser, 2007).

Students face an additional set of challenges. While today's generation of students appear to possess a high degree of technical sophistication, legal and social barriers limit students' ability to become active participants in their education, and instead confine students to passively receiving information. Fear or confusion around student privacy (Swartz, 1999), content decency, and copyright infringement liability (Hylén, 2007), while not individually intractable, can summarily result in a de facto policy of limited access and availability of web-based tools and resources. These policies may also instill and reinforce a belief among students that online sharing happens at home, not in the classroom.

But while there are significant challenges to achieving a fully connected classroom, there are also great opportunities. Through the Internet, educators and students are able to tap into a vast digital commons (Lynch, 2003). Teachers can guide students to content on almost any topic, including content too recent to be found in a printed textbook.

The introduction of the Internet into classrooms also brings with it a chance to re-imagine the role that class work plays in a student's education. Student assignments, such as essays, worksheets, and presentations, are no longer limited by physical barriers to development and sharing and can be easily transmitted to anyone, anywhere. Collaborative educational communities could become a norm as more and more content travels outside of the classroom and onto the web. With these new capabilities, classrooms no longer need to be end-points in the information ecosystem, and can now become nodes in a growing network of educational content modification and sharing (Geser, 2007).

A growing global community of educational content creators, combined with an increased awareness of the legal conditions for openness and interoperability has resulted in a vast digital commons of educational content. These Open Educational Resources (OERs) are free for the world to use, customize, and share, without the need to ask permission. Students and teachers will have the legal right and encouragement to download, modify, and re-distribute these educational resources (Downes, 2006). Allowing classrooms to contribute back to this global commons of educational

resources will continue to enrich and extend the reach of high-quality educational resources, and open up new opportunities for students to engage with scholastic topics through the creation and curation of educational materials (Nolan & Costanza, 2006).

If one acknowledges that online information sharing has the potential to improve education, several questions arise. The most pressing question is, given all of the challenges mentioned above, how can we embrace these new practices and actually integrate them into the classroom? How can we begin to not just make online information sharing acceptable, but part of what it means to be a learner in the 21st century?

Our research focused on these questions, as today's students and teachers are beginning to appreciate and embrace the boundless nature of communication online and the possibilities presented by digital transmission of student work. The goals of the Student Journalism 2.0 (SJ 2.0) project were 1) to introduce new concepts and practices relating to open licensing into the scholastic journalism workflow and then evaluate the impact it had on student behavior and beliefs; 2) to evaluate the conceptions and beliefs that students have about the value of their work and how that relates to sharing practices and norms in the classroom; and 3) to report the challenges and outcomes from our methods for the benefit of future initiatives seeking to integrate openness and open practices into similar educational programs.

We partnered with two California Bay Area schools, Palo Alto High in Palo Alto and Monta Vista High in Cupertino, and presented their journalism students with the option to use Creative Commons licenses to openly license their journalistic works as a part of their publication workflow. In addition to interacting directly with students through in-class visits and online communication, much of the project was dedicated to supporting teachers and advisers as they adjusted to ideas and procedures in their publication process that frequently challenged older practices and conceptions of student work.

Methodology

The research aims of the Student Journalism 2.0 project were primarily pragmatic, focused on gathering useful information about our experiences so we could share it with other groups interested in similar efforts. The project was motivated by questions like “Can we have a meaningful dialogue with students and teachers about new content sharing practices enabled by the Internet, and if so, are they willing to embrace them as a part of their everyday activities?” Our approach towards integrating Creative Commons into two classrooms required adjustments along the way. We documented all of this with the hope of providing a roadmap for others who might follow.

Research Design

During the Student Journalism 2.0 project we employed a design-based research approach to study the introduction of open web sharing practices at our two partner high schools. Design-based research is a methodological framework developed by Ann Brown (1992) and Allan Collins (1992)

in which interventions are designed and implemented in natural settings to test the ecological validity of a dominant theory or framework. In our case we set out to explore the potential impact of Web 2.0 information sharing and open licensing within the scholastic journalism setting.

An important factor in our choice of research design was the ability to adjust our approach as needed to meet unforeseen challenges and to better support the teachers and students participating in the SJ 2.0 project. This methodology gave us the flexibility to systemically adjust different areas of our intervention as needed while working in a naturalistic context (Barab & Squire, 2004).

Over the course of the Student Journalism 2.0 project, several adjustments were necessary as unanticipated challenges arose. Our methodology allowed us to adjust our intervention as we went along, and we were able to address challenges as they arose without compromising the study.

Our findings are presented as a narrative roadmap, primarily for the benefit of those who seek to learn from the challenges we faced. While we recognize this is a departure from the more traditional presentation of results, we feel that blending our observations with a thoughtful discussion of the challenges we faced provides the best possible narrative for future classroom implementations of open licensing and Web 2.0 information sharing.

Data Collection Methods

This pilot study aimed to examine the interactions between students, teachers, facilitators, and the topics introduced in the Student Journalism 2.0 project through focused interviews and conversational meetings. Rather than attempt to design a research method that would allow rigorous statistical evidence of behavior modification, and due to restrictions on such methods through the Institutional Review Board, we chose to integrate ourselves fully with the participating classes and fully embrace a dual role of investigator and participant. As in other design-based research programs, the Student Journalism 2.0 "practitioners and researchers work together to produce meaningful change in contexts of practice" (Design-Based Research Collaborative, 2003).

Data collection consisted of audio and video recordings of student reflection interviews, as well as audio recordings from teacher meetings with project facilitators. A Flip digital video camera and a digital audio recorder were used in the data collection. Student interviews were conducted near the start of the second semester after a full semester of in-class exposure to Creative Commons and related concepts. We examined the student reflections for elements that were either representative or unusual with regards to our perception of student beliefs. We also identified student misconceptions or negative impressions that were captured during the course of the data collection to look for opportunities for improvement in our approach. Teacher support meetings were recorded to better understand teacher questions, concerns, and how teachers responded to the possibilities presented by CC licenses. With these different data sets we are able to describe student and teacher perspectives on the successes and challenges of the SJ 2.0 project and the integration of the licenses.

Student Interview Methodology

We employed a semi-structured expert interview approach. The interviews follow structured questions guiding the conversation while providing enough space for subjective perceptions of the experts and for the discussion of all relevant topics (Flick, 2006). A certain level of comparability between the interviews is guaranteed, since the same questions are posed to all interviewees.

At the beginning of the second semester, 13 students from Palo Alto and Monta Vista high schools were interviewed about their experience with the Student Journalism 2.0 project and asked a series of reflection questions. Student interviews lasted anywhere between 5 and 15 minutes and were digitally recorded with the permission of interviewees using a Flip digital video camera. Students were selected at random during regular classroom activities from a list of students who had submitted the necessary paperwork. These responses are cited in the roadmap section as part of our discussion. Sample interview questions and student responses are also provided in the appendix.

Teacher Meetings with SJ 2.0 Project Facilitators

Student Journalism 2.0 facilitators from Creative Commons met at one to two month intervals with participating teachers at Palo Alto High School and Monta Vista High School during the first semester of the project. These meetings were not the sole contact facilitators had with teachers involved in the project, but were a method to "check-in" and see if there were any common issues and concerns among the teachers and to discuss them as a group. Audio recordings were made with the teachers' permission using a digital audio recorder. Teacher-facilitator meetings were where many of the legal and technical challenges to integrating Creative Commons licenses were discussed, which were mentioned in the Project History, and thanks to the tremendous experience and excitement of the involved teachers, were a venue for exploring recommendations to make to teachers or other initiatives attempting similar integrations.

A Roadmap for Integrating Open Practices into an Educational Setting

The Student Journalism 2.0 is one example of how Creative Commons licensing and open, web-based sharing could be integrated into a classroom, and we describe the steps we took below. We approach the descriptive goal of our study with a qualitative research perspective in an effort to share the opportunities and challenges we faced during the project. Audio and video recordings of student interviews and teacher-facilitator meetings provide the basis for the narrative and discussion of the Student Journalism 2.0 project. We offer our experiences in the form of a roadmap for others pursuing similar projects to consider. The most important challenges to overcome are described in each section, with the intent that one could undertake a similar project and know in advance what issues might come up in that effort.

1. Identify potential programs and schools

It was no accident that the first major Creative Commons licensing integration effort in primary education occurred in scholastic journalism classrooms rather than an English class, for example, or even media class such as Video Production or Photography. Even before web-based publication became commonplace, journalism students were researching, writing, editing, and publishing stories with the goal of sharing knowledge and opinions. Student publications are sometimes as old as the parent institutions themselves, and for local communities have been a source for news and commentary for centuries. Just as the journalism industry faced new challenges with the coming of the digital age, so too did scholastic journalism. Rather than missing out on the journalistic opportunities of a 21st century information economy, many scholastic journalism programs have evolved and begun to introduce digital publication and web-based journalistic practices into the classroom.

In the process of integrating web-based publication, scholastic journalism programs are breaking new ground for how to go about providing a student with general education. Never before has web-based collaboration and publication been so fully integrated into everyday class work. For this reason, scholastic journalism can serve as a test-bed for how participatory learning, digital media, open educational resources, and web-based education can together create a truly innovative educational experience for students; namely, the experience of being involved in the use and creation of open content. Those scholastic journalism programs that have fully embraced the capabilities of the Internet will be an invaluable resource in the effort to understand the full impact of these kinds of classroom innovations.

There are several reasons why it has been easier to integrate web-based practices into scholastic journalism than "core" scholastic disciplines. First, because it is an elective course, journalism isn't constrained by many of the state standards requirements that are mandated with core subjects such as English (California State Standards for Media Literacy, 2003). As a result, journalism teachers have more flexibility in terms of class procedures, syllabi, testing, learning outcomes, etc. While much of what goes on in a high school journalism class supports English media literacy standards, there is no fixed journalism curriculum that must be followed. This additional flexibility allows journalism and other teachers of elective subjects to innovate and try new approaches to teaching journalism that would be more difficult to implement in a core subject.

Second, because nearly all of mainstream journalism has embraced web-based publication, and frequently serves as a model for scholastic journalism and young journalists, students learning about journalism have become familiar with many of the innovative practices developing in the industry. It is easier to introduce new web-based practices to teachers and students who are already used to working online as a regular part of their classroom activities. Students from schools participating in our research project used, among other software, Google Docs, Gmail, the Adobe Creative Suite, Twitter, Facebook, and both closed and open-source Content Management Systems. We found high levels of familiarity with web-based content creation, collaboration, and sharing. In addition to existing familiarity, journalism programs have found it easier to justify facilities and resources required for in-class Internet use given that the entire journalism industry has moved towards publishing online.

Lastly, given the extra-curricular nature of many journalism programs, teachers often become advisers out of personal interest or experience rather than by assignment, biasing journalism

programs towards teachers with dedication to the journalistic enterprise and the methods therein. Scholastic journalism teachers and advisers have formed strong communities through national and local chapters of the Journalism Educators Association. Journalism teachers are therefore more willing to experiment with new processes and practices that might enable students to better achieve their goals and increase the educational value of the program. The existence of a professional network and a sense of shared purpose with a set of geographically disparate teachers has enabled widespread sharing of best practices, informal training and technical support, and the highlighting of exceptional student and teacher achievement, all of which create a sense of possibility and isolate teachers from the current sense of pedagogical stagnation in traditional disciplines.

Scholastic journalism programs share many characteristics with the kind of fully participatory, open learning environment enabled by the Internet. First, just as with new pedagogies around classroom collaboration in open education, work produced by students is primarily meant to be shared. That is, the working assumption in a journalism class is that students will somehow share their work, which is built into the very structure of the assignment or activity. Students write work with the knowledge that it could or will be published. Even before students begin the publication process, they often share the work with peer-based editor groups rather than solely with teachers or advisers. And if accepted for publication by their peers, work is often published in print, online, or both with the intention that people outside of the classroom read it.

Both participatory educational practices and scholastic journalism involve collaborating with peers on a shared narrative or experience through content or a medium that can engender a sense of shared purpose and ownership over classroom subject matter. Participatory learning with digital media and open educational practices can enable students to connect with a global community of peers and learners in the consumption of and contribution to a common pool of educational resources. A core belief to advocates of participatory and open education is that contributing back to the global pool of educational resources will create this sense of ownership of the subject matter, in contrast to current norms where students are passive recipients of educational content with no stake or responsibility for the quality of the content.

In scholastic journalism, students tend to forge their own educational paths and have a high degree of control over the work produced in class. Not only do they often define the stories they want to write according to personal or community interests, but they are also able to collaboratively define overarching journalistic goals for their publications. Students discuss themes, reader engagement strategy, current issues and events, and similar topics that require a high level of collaboration, debate, reasoned argument, and critical thinking. As the creators of the content and structure of their publications, students become the stakeholders in the success or failure of their journalism, however they define those goals.

Even within scholastic journalism, however, there are limitations. Different journalism programs around the country enact different policies and organizational structures that can expand or limit student input and control. There is a strong editorial element in many scholastic journalism programs which tend to filter what student work is available for public consumption. Student editors often hold this editorial control, although teachers, advisers, and school administrators exercise control at varying levels. In many scholastic journalism programs, digital development and publication is either not central or not integrated at all within the journalism curriculum. While these programs might fully embrace the spirit of collaboration and sharing, often external barriers have kept them from migrating those practices to the Internet.

Although many scholastic journalism students have encountered difficulties migrating their publications to the web, it has been even *more* difficult to integrate digital media and open educational content within K-12 education generally. Therefore, scholastic journalism presents an opportunity to test some of the potential challenges and solutions to these practices.

2. Clear legal and institutional challenges.

From the beginning of the project, Student Journalism 2.0 faced fundamental legal questions about the possibility of bringing open licensing into a classroom context. Conversations at the first meetings with the participating teachers were narrowly focused on the legal and institutional barriers to students licensing their work with Creative Commons licenses. Specifically, teachers were concerned about whether school districts or school administrators would acknowledge that students own the copyright to the work they create in a journalism class, insofar as owning the copyright to their work would be a prerequisite for the legal validity of students using the suite of CC licenses.

The non-legal intuition shared among members in the Student Journalism 2.0 working group was that the students did hold the copyright to their work, but that there was sufficient room for disagreement, which might allow some schools or school districts to challenge the legitimacy of that intuition. The risk that district or school administrators and policies would claim that students did not have the right to apply open licenses to their class work was compounded by past precedent in an open source software licensing context within the Palo Alto School District which indicated, in the interpretation of a participating teacher, that the school district assumed at least some ownership stake in student work.

To mitigate these concerns with our project partners, and to examine ways of resolving these worries at scale, we sought guidance from the Student Press Law Center, a leading advocate for student free press rights, and the Berkman Center at Harvard University and the Berkman Center's Citizen Media Law Project. Following conversations with those organizations we were able to build a working consensus internally that we would not encounter district claims of copyright ownership in the pilot project. However, participating teachers and we remain skeptical that there is currently a scalable answer to this unresolved question around the legal foundations of open licensing in K-12 education. It is probable that some significant proportion of school districts, when asked if students own the copyright to their class work, will default to a position of district ownership. Some districts may have policies regarding this question, but many may not, and as our participating teachers put it, "No" is the easiest answer for school districts to give. In creating a large-scale program to integrate Creative Commons licenses into schools, or indeed any program involving content collaboration, this ambiguity is a potential barrier to achieving harmony with school administration.

Before students can be encouraged to make decisions about how to license their creative works, one assumes that they *have* the rights to their work. Because there isn't a clear answer as to whether students, in all circumstances, fully control the copyright to work created in class, and because even if there were a clear answer school districts might have enacted policies which contradict the law, it is important to get a clear expression of school or district policy on student ownership of class work early on in the integration effort. The course we chose was to reach out to external organizations for advice should district policy present a legal barrier to students using CC licenses, but there is a lack

of legal consensus around the copyright status of student work. While for our research project there was no legal challenge to our assumption that students owned the copyright to their class work and could therefore license them under Creative Commons licenses, the answer to the legal question is ambiguous enough such that some school districts might challenge that assumption. Having research or position statements for teachers and advocates to use in combating these potential legal challenges would help increase the number of student publications using CC licenses.

3. Integrate Creative Commons licenses into classroom practices

There were a number of technical challenges to implementing CC licensing into the publication platforms of scholastic journalism programs. In the absence of a standard publication platform or statement of best practices, journalism programs are using anything from WordPress blogs to a custom content management system (CMS) to publish student work online. While this is to be expected with such a wide variety of needs and available options, it presents a problem for the integration of a standardized procedure or tool into the discipline.

Our participating schools had two very different publication platforms. At El Estoque, the online student publication at Monta Vista High, students use the open source CMS Joomla! as their publication platform. Stories are often developed collaboratively online either within Joomla or in a third-party service such as Google Documents, and are then published to the web. To integrate Creative Commons licensing into El Estoque, students were able to install an open source extension to Joomla! that enables a choice of Creative Commons licenses in the publication workflow. Specifically, the extension translates certain strings of text inserted into the content editing window, where students upload or write their stories, into a Creative Commons license marker. The student is required to look-up or remember a specific string for each license (e.g. "`cc by-sa-nc`") and type or paste it at the end of the work.

While the existence of a drop-in plugin for the existing publication workflow at El Estoque made integrating CC licensing simple and quick, this specific implementation has drawbacks. Students were required to memorize or reference the strings for their desired license if they wanted to use Creative Commons licenses, and it is likely that as a result some students who intended to license their work either forgot or avoided the process. Additionally, the absence of a module integrating the CC-maintained license chooser code, students were not piped through a vetted or standardized license selection process. These processes tend to ask short questions in human-readable form (e.g. "Prohibit Commercial Use?") allowing the licensor to select license conditions with check boxes based on simple questions. Without this functionality it is more difficult for students to know exactly which CC license to choose based on their interests, decreasing the likelihood that they will go through the licensing process.

At The Paly Voice, Palo Alto High's web-based publication which in addition to publishing original content acts as an outlet for all of the campus' print publications, students faced a different set of challenges in integrating CC licenses. Their publishing platform was a custom content management system programmed by previous students and maintained by a very small group of programming-literate students from year to year. Because it isn't based on a commonly used open source platform, there are no "drop in" solutions to easily integrate Creative Commons licenses.

Thus, integrating the licenses, and indeed integrating any new functionality, required original programming. This gave the program more flexibility in the actual implementation of the licenses, but required expertise that is unlikely to be available to other programs.

An additional difficulty to integrating Creative Commons fully into a custom CMS, or into any CMS in which a Creative Commons extension or module hasn't been created or is not well supported, is correctly implementing the technical side of CC license metadata. Creative Commons' CC REL specification provides a standard vocabulary and format for all license metadata which could lead to a scalable method for re-use tracking, among other uses (Ableson 2008). Both methods we saw for integrating CC licenses into student publications in our research project were not able to implement license metadata. Rather, CC licenses existed within the online document with no structured data.

One of the biggest wishes students and teachers had, and one of the most exciting possibilities for using CC license, was tracking CC-licensed work as it was redistributed and remixed around the web. In theory, both content publishers and content re-users enable tracking redistribution and derivative works through adherence to the CC REL specification. In reality, lack of proper source material metadata markup by content re-users and lack of software to aggregate and display this metadata in a way that's easy for students to use makes tracking based on CC REL metadata more of a future possibility than a current reality. And as described above, neither school was able to implement the CC REL metadata specification. While available software and norms around re-use metadata markup don't currently support student-friendly tracking of CC licensed work, custom search engines such as Google CSO or Yahoo! BOSS or CMS-based pingback or trackback features could be one way to help students find re-use cases of their work on the web.

We take our participating schools' experience integrating CC licenses indicative of the challenges many classrooms will face in trying to add new functionality to publication platforms that aren't well supported or easily extend-able. When choosing a publishing platform, be aware of the level of community support for extensions, modules, and add-ons, whether the platform requires a software license or adherence to a free or open source software license, and how difficult it will be to maintain the software in the future. If you know you'd like to implement Creative Commons licenses, ensure that you're working with a platform that minimizes the barriers to that implementation through existing CC integration or by having well-supported add-ons and extensions.

There are no best practices in choice of platforms for student publication. Teachers and advisers are often unsure which publication platform to use when moving to a web-based student publication. This uncertainty can be mitigated by communication with other teachers on mailing lists or at journalism educator conferences, but there is no consensus on which publication platforms are the easiest for students to implement, modify, and work with. If new practices like content licensing are to be integrated into scholastic journalism at scale, data about what platforms are being used will be important, as will a set of recommendations for platforms that are most amenable to modification or extension within a classroom setting.

While some programs might struggle with platform-specific issues, in other programs there are still barriers to getting the Internet into classrooms. While Internet filtering was not an issue we encountered at our participating schools, our participating teachers indicated that it is a significant challenge for many journalism programs around the country. Many schools and districts enact "allow lists" of websites students can visit through the school network, which is usually a small

sliver of the overall web. Adding sites to this list can be a battle, even for sites full of educational content. In these schools teachers and students have to fight for why sites should be allowed, rather than for sites to not be blocked. Adding web-based collaborative tools and publication platforms, let alone the suite of CC licenses and repositories of CC-licensed content, would be a significant challenge for many journalism classrooms.

4. Teach Creative Commons licenses

Teaching Creative Commons licenses in our participating schools took the form of introductory presentations and informal conversations, combined with handouts of Creative Commons-created literature.¹ Teachers engaged students in separate lessons about Creative Commons licenses and copyright, which were not supervised as a part of this project. The presentations began as a discussion about copyright and the Internet, and the role that Creative Commons plays in removing legal barriers to sharing and collaboration online. The suite of six CC licenses were introduced by way of discussing the four license conditions (Attribution, Share-Alike, No Derivatives, and Non-Commercial).²

In our student interviews, we gauged students' overall understanding and use of Creative Commons licenses by first asking them to simply describe Creative Commons.. Then they were asked how had they used Creative Commons licenses in their publication process, which licenses they chose, and if they could explain their choices. The intent was to learn to what extent students understood Creative Commons licenses and how they had used them, if at all. We were particularly interested in whether students had connected with any larger perspective of open licensing on the web, the practices enabled by the licenses, and whether they saw collaborative tools as enablers to any new journalistic practices that allow students to tap into a wider information ecosystem. We were interested in examining whether students saw any potential in becoming content contributors as well as re-users of others' openly licensed creative works.

Almost all of the students interviewed were able to justify their CC license terms, even if it was at a basic level. One student explained that he had started out using a more restrictive license, but then changed to an attribution-only license to make it easier for others to re-use his work. Another student explained that she uses a "no-derivatives" license because "I want to share but don't want someone making a small change and then taking credit for it."

All of the interviewed students were able to formulate an explanation Creative Commons is their own words. While students focused on different aspects of the licenses, or different possibilities presented by the licenses, no student gave an explanation that could be described as wholly incorrect. One student said Creative Commons is "a way to let the public know how you would like to share your work." Another typical answer from a different student was that Creative Commons is a "license that enables your work to be used in other ways. It's a way for our work to be spread everywhere." Other students described Creative Commons as a "sharing engine," a "free copyright," and "an organization that's promoting the use of not copyrights but things like that so people can use articles and images and things." These answers were typical of the responses given during the student interviews. Common to many of the definitions was the idea that Creative Commons is a way to communicate what others can and cannot do with a particular creative work, making it easier

for others to share and re-use it. Some students also included the notion that Creative Commons reduces legal barriers.

There are still frequent misunderstandings that ought to be eliminated. For example, some students don't understand the difference between technical openness and legal openness. That is, if the technology allows a photo to be copied, some students assume it is legal to do so. It will be important for students to understand the difference between being technically shareable and legally shareable, as well as many of the nuances behind distinguishing fair use from copyright infringement.

Despite the prevalence of open licensing online, there are no comprehensive resources focused on teaching Creative Commons to high-school students and teachers. Creating a full suite of instructional materials (including handouts, presentation materials, lesson plans, learning outcomes and evaluation materials) for high-school students and teachers about Creative Commons licenses was beyond the scope of this research project but would be extremely helpful, if not required, for any implementation of Creative Commons licenses in an educational setting without the presence of facilitators.

5. Discuss domain-specific implications of Creative Commons licensing

In our research, we found that a powerful way to get students interested in Creative Commons licensing is to discuss how digital media and the law interact within their specific domains. In a scholastic journalism context, this meant having conversations about how the Internet changes journalism, and what new issues and opportunities arise in a journalism landscape that's predominately online.

Students had varying opinions about the advantages and disadvantages of online and print publications, but there was a general consensus that there has been a shift towards online publishing in the "real world." Students and teachers saw the fact that a large portion of student journalism work was either written or published digitally as preparing students for future work outside the classroom.

We asked students questions aimed at revealing their' perceptions of the advantages or disadvantages of print and online publications. The questions were designed to identify students' publication preferences, allowing them to comment on the value of traditional print journalism as well as the shift towards online journalism, and were an opportunity for students to share their perspectives on the future of journalism. But the questions were primarily a way for us to examine whether students had connected with the notion that digital media enables new ways of engaging with educational content, one of the primary assumptions of advocates for digital media in learning.

Many students working on the print publications identified benefits to that medium for journalism. One said print publications were good for schools and other local audiences. Another student said print had more authenticity, while still another commented that print was easier on the eyes and more enjoyable for longer periods of reading.

Students interviewed clearly understood the value of online publication as a way to disseminate their articles beyond their own school community. Some advantages of online publication cited by

students included greater reach, more immediacy, and the ability to include video and other rich media.

6. Encourage students to use and remix CC licensed work

During the year, we discovered that most students could readily connect with the idea that Creative Commons licensed content was free for them to use without worrying about potential legal consequences, so long as they followed the easy-to-understand terms of the license. We encouraged students to use and remix Creative Commons licensed images and other media from popular sources of CC material such as Flickr, Archive.org, and Wikimedia Commons. The idea that their publication could draw from a vast digital commons without asking permission opened the door to a conversation about many of the issues we had hoped to bring up, such as copyright and digital materials, the value of student work, and methods to contribute back to the digital commons

7. Encourage students to license their own work under CC

Overall it is clear that students understood the basic concepts of Creative Commons licenses from both a legal and social perspective. While there were varying degrees of comfort and familiarity with legal concepts like copyright and licensing, and technical concepts such as metadata and re-use tracking, the idea that the Internet opens up new possibilities for collaboration and sharing was very familiar to them. And insofar as students had beliefs about the moral and ethical foundations of copyright, or at least a familiarity with the moral debate around use and re-use of digital work, and a familiarity with the available terms in the suite of Creative Commons licenses, it is fair to say that students were fully equipped to make competent choices when licensing their own work and re-using the CC licensed work of others.

But while students can connect with the idea of using CC licensed work and with the legal implications of licensing their own work under CC, they don't fully understand the value in licensing their work under Creative Commons. That is, they don't tend to see their own work as an inherently valuable contribution to a digital commons and therefore find it difficult to conceive that people might want to use their work but avoid doing so because of legal barriers. Connected to this is an apparent belief that their work doesn't have usefulness or potential impact outside of their limited community or intended audience.

While mechanisms were put in place to allow students to select Creative Commons licenses, students made their own licensing decisions as they published their content (i.e. whether or not to use CC licenses at all). The absence of site-wide licenses allowed students to maintain control over which license to use. Interestingly, all 13 students interviewed had chosen to use CC licenses at least at some point in the school year, and informal data collected from the publication platforms indicated a high level of CC license use. At one point in the project there were over two hundred stories licensed with Creative Commons licenses.

It was critical to allow students to explore the licensing options to engage them with the broader implications of open licensing, and to encourage re-conceptualizations of value of their work. We

don't recommend applying site-wide licenses to student content because it doesn't allow the students to make their own decisions about how their content will fit into a larger context.

Students' hesitancy to attach significant value to their journalistic works beyond their immediate context, coupled with the availability of the whole suite of CC licenses, leads to interesting license choices. Based on collected data and informal conversations, it became apparent that many of the students who did not think that their work was a valuable contribution to the digital commons wanted to use the least restrictive CC license, the Creative Commons Attribution 3.0 license. And students who did think that their work was valuable or potentially useful in some other context were interested in adding more restrictions to the licenses. While this data wasn't collected rigorously, these informal findings are broadly supported by discoveries in another remix community composed of minors where researchers found that re-mixers of original work were more likely to experience plagiarism complaints than re-mixers of remixed work (Hill, Monroy-Hernández, & Olson, 2010).

8. Seek new ways to utilize project infrastructure

Having resolved the legal and technical issues to implementing CC for our pilot project partners, and having developed a project infrastructure for potentially resolving these challenges at scale, attention for the second half of the project was focused on more substantive implications of CC in a high-school journalism context. Rather than limiting the scope of the project to teaching students how to use CC licenses in their own work, we were interested in getting them to embrace the kinds of practices that the licenses can enable.

The overarching research aim for the second phase of the Student Journalism 2.0 project was to examine what is possible with the Phase 1 project infrastructure in place. What new models of story development and reporting are the students and teachers excited about? What were the barriers (if any) to putting these new ideas into practice? How could one reduce those barriers in a scaled-up implementation of Creative Commons licenses in a classroom?

In our regular meetings with teachers, several interesting ideas for using CC licenses for collaborative projects came up. Teachers discussed the possibility of using existing tools and websites to construct a photo repository in which publication alumni could contribute photos from campus protests and events in the wake of California state budget cuts and funding decreases. These photos would have been CC licensed so that students at the participating schools could legally republish them without the need to ask permission.

Teachers discussed the possibility of creating a student journalism wiki in which students created guides, documentation, and statements of best practices for publishing student journalism online. These collaborative documents would have been open and shareable through the application of Creative Commons licenses. But teachers feared student participation would be low, and were skeptical that there was a need for that kind of resource.

Common to all of the ideas teachers came up with to experiment with a CC infrastructure was the need for some technical platform or technical work to take place that enabled the realization of that idea. Even in schools that have students willing and capable to program or deploy and maintain technical platforms, such as Palo Alto High, it seemed too large and complex a task to set up any web-based platform for using or sharing student work in new ways beyond the current implementation within the existing platforms.

As it turned out, integrating Creative Commons into the two publication platforms, teaching the students and teachers about CC licensing and copyright, and tying it all together in the context of journalism and scholastic journalism took up the majority of our integration effort and there was little time left in the school year to experiment further with the project infrastructure. Indeed, much of the initial work teaching and discussing the licenses and the implications of the licenses with students extended well into the second semester.

Summative Impressions

It is clear that integrating open practices into classrooms, even those classrooms best equipped for that change, requires overcoming significant challenges. In our Student Journalism 2.0 project there were doubts from the very beginning about the legal validity of students applying Creative Commons licenses to their work. But while these challenges are real, they are not intractable, as we have demonstrated.

The Student Journalism 2.0 project was focused on integrating new practices. Consequentially, there was little capacity to implement ideal evaluative metrics and statistical evidence for how students and teachers reacted. Nevertheless, we were able to synthesize our informal conversations and interactions with students and teachers into a description of our specific implementation with general lessons for other implementations. We have shown how one could, in practice, execute a project to introduce the foundations of those practices, and what many of the potential issues will be for similar projects. We hope that our experiences can serve as a guide or model for similar efforts to integrate open, participatory practices into learning environments.

Figures

	Why do you think the Paly Voice story about Creative Commons got so many hits? Why was it so popular?	Have you used Creative Commons? Why did you choose the license you chose?	In your own words, what do you think Creative Commons is?
Student 1	It was something new. Not a lot of schools have partnered w/ CC before. Mr Kandell's award also attracted attention.	Did multimedia videos for Spirit Week, licensed under CC-NC (Didn't know why I chose that particular license, but I did read all the licenses)	It's a way to let people know what they can and can't do with your work.
Student 4	It got shopped around. They encourage us to do that.	On all our stories since it came out. Don't remember why I chose CC-BY-NC.	CC is an engine that allows you to use and share things. It allows things to be used w/o worry of the repercussions. Encourages knowledge to be shared and spread.
Student 5	Because you guys put it on your website.	Used CC-BY-NC on the first one, but then switched to CC-BY.	CC makes it a lot easier to share; it's very clear and easy to use by anyone.
Student 6	We wrote something We've been using it in the Campanile, so people were interested in it because they had seen it.	Chose CC-BY-ND because I want to share but don't want someone making a small change & then taking credit for it	A way you can decide what your work is used for, It's like a copyright, and you can decide how others use your work.
Student 8	It's exciting because we get to use it (CC) at the high school level.	I applied it the first article I wrote, but it got reversed somehow. I used all the terms, but don't really remember. I wouldn't mind sharing	CC is an organization that's promoting the use of not copyrights but things like that so people can use articles and images and things.
Student 9	It's cool that people will be able to look at our stories other than Paly and our parents.	CC-BY, because I didn't want any one to use my articles without giving me credit.	It's different sort of copyrights, so you can use picture and articles and things.

Figure 1 Summaries of Sample Student Interview Responses

Notes

1. To download the CC handout used in the project, see http://wiki.creativecommons.org/images/6/62/Creativecommons-informational-flyer_eng.pdf.
2. For a complete explanation of the Creative Commons licenses, see <http://creativecommons.org/about/licenses/>.

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