Title
Remixing Science Education: Learning Through Video Production and Reinterpretation

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REEmixing SCIENCE Education

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Remixing Science Education:  
Learning through video production and reinterpretation  

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Introduction

The state of science education  
The public education system is in a state of flux. After almost 200 years, it has become clear that the paradigm of education does not foster what this society values as learning. Schools are expected to turn their students into active learners who seek knowledge on their own and who think critically and creatively. However, schools as they have existed have for the most part failed to do this effectively. Students spend most of their time learning by rote, preparing for tests, and mechanically completing given tasks without delving deeper into the material they are supposed to be engaging. The result: rather than being critical, creative, and analytic learners, the student body is disinterested in school and ill-prepared for life outside of school. This is the crisis in public education, one that has been going on for decades (Handbook of Literacy 1998).

Recently, efforts to reform education have been focused on science, technology, engineering, and mathematics (or STEM) subjects. The United States National Academies’ Committee on Prospering in the Global Economy of the 21st Century expressed concern over the declining state of STEM education in the United States. They found that only 29% of 4th-grade students, 32% of 8th-grade students, and 18% of 12th-grade students performed at or above the proficient level on the National Assessment of Educational Progress science tests (National Academies 2007). In response to these growing concerns, policymakers and nonprofit organizations alike have created numerous programs to bolster STEM education. Many of these reforms are aimed at providing more funding to STEM instruction. However, scores of educators and education professionals argue that more money is not the complete answer. Instead, a large part of the solution is in fundamentally changing how STEM learning—and learning in general—takes place in schools (Waiting for Superman 2010).

Many in education lay the blame of underperformance in STEM subjects on the enduring model of public schools. Called alternatively the banking model of education (Freire 2000), the curricular learning paradigm (Handbook of Literacy 1998), the “sage on a stage” (Labs for Learning 2013), and many other names, it is a model that is all too familiar to anyone who has experienced a public school. For purposes of this paper, the model will be referred to as the banking model of education. The banking model of education consists of an instructor who “deposits” knowledge into the minds of the students in a classroom. This model suggests a one-way path for intellectual material, from instructor to student, with little to no exchange in the opposite direction or between students. Although banking education is a simplified view of how traditional educational institutions operate, it is nonetheless a fairly accurate view.
Project-based learning through video production

A large part of reforms in education looks to move away from the banking model of education and increase interaction between students and the material they are to engage with and learn. This can be carried out through project-based learning (PBL). In PBL, students “go through an extended process of inquiry in response to a complex question, problem, or challenge (Buck Institute for Education 2013).” To do this, students undertake an overarching project that answers the question or solves the problem. For example, students may be asked to explain why so many of their classmates fall ill during a certain time of the year. They will then be asked to do the research and present their answer by creating an informational pamphlet that will educate others about what they can do to avoid getting sick. PBL puts students in a position to find solutions on their own and gives them a motivating objective to reach, all while physically interacting with knowledge creating activities (Davidson 2011).

PBL draws parallels with the scientific method. Just like students carrying out PBL, scientists explore hypotheses through a process where they interact directly with what they are studying. This process has been driving the formation of knowledge throughout the modern age, and scores of discoveries and innovations have come forth from its adoption. Therefore, if students are to discover, innovate, and ultimately learn, then PBL, which reflects the scientific method, appears to be a good path of doing so.

Among the many potential projects that students can undertake in PBL, documentary film/video production can be a highly effective project for these very reasons. Film/video production already plays into the medium’s well-recognized ability to provoke and educate. With the rising popularity of documentaries such as The Cove and An Inconvenient Truth, the effectiveness of motion pictures as a means of informing, instructing, and mobilizing communities is undeniable. Films and videos by themselves can also be powerful teaching tools. Any teacher who has screened a documentary film in their classroom can attest to its ability to captivate its audience and impart knowledge in the process. Also, film/video is a medium young people gravitate to. Think of all the online videos that have gone viral because millions of young people viewed and shared them.

The dominant view, though, is that audiences can only learn from films and videos by watching them. They are often considered objects whose value comes from being passively consumed by the audience and that the educational benefit they impart is only through this consumption. However, the act of producing videos can also be valuable to the learning of students (Goldfarb 2002). Just as a scientist must conduct background research before initiating her own analysis, a documentarist must delve into the backstory of his topic. And just as a scientist must interact with her study site and species of interest with her experiments, a documentarist must interact with the scenes, events, and persons he is capturing with his camera. Finally, just as a scientist must observe and then discuss her findings in a scientific paper, a documentarist must observe and then discuss his footage in a film or video. In many ways, then, a documentarist acts as a “scientist” insomuch as he examines a topic or question by engaging with it, records the result of that interaction, and then presents those results in order to further discussion about the topic. The act of producing a documentary film can therefore be a means by which learning can take place.

By delving into the subject of the video through research as well as first-hand experiences and
observations, students may learn in-depth information about that subject. Then, when it comes time to communicate the knowledge they have acquired, the students will reinforce what they have learned by teaching others through the videos they produce. In other words, students can indeed learn about something by making videos about it.

**Learning by remixing videos**

Still, video production alone acts as a one-way process, with the producers creating objects that are viewed by an audience. As a result, the audience does not benefit from the act of production. Even if students are given the means and opportunity to create videos, they would still be perpetuating the banking model of education. Their videos may present a host of perspectives and knowledge, but they would do so without providing a platform from which their audience can respond openly and immediately to what they are presenting.

This has changed with the advent of new digital technologies that have made video production simple and accessible. Now, almost anyone can be a viewer AND a producer. Participation in production does not necessarily mean making something from scratch. Increasingly, production involves the recombination and reinterpretation of existing resources. This process is called remixing.

Remixing is a recently popularized term that captures the proliferating practices of creation based on appropriation and reuse of existing media. More generally it has come to be defined as the mixing of cultural resources and other resources to insert one’s own purpose and interpretations. Remixing as a mode of interactivity can provide an important model for learning. Most of the time, remixing appears in the medium of music, where artists (professional and amateur) borrow and recombine elements from separate musical pieces to create an original composition. However, remixing occurs all the time in every imaginable field. When a biologist designs an experiment, for example, she draws from a vast library of cultural and intellectual resources that constitute the field of biology. She takes what resources she needs for her project, adding in her own ideas and interpretations, and recombines these elements in the execution of her experiments and the interpretation of the data produced. Remixing takes place in classrooms as well. For example, high school English students learn about literature by reading texts and then writing essays by incorporating literary devices drawn from those texts with the students’ own interpretations. Any graduate student who has written abstracts summarizing the scientific papers they have read for class has also engaged in the act of remixing. Remixing, therefore, can be seen as the method by which knowledge and culture are learned, reused, and modified (*Digital Literacies* 2008). By encouraging this process of acquisition, recombination, and interpretation, educators can stimulate their students to interact with course material in ways that foster deeper, more critical understanding.

Remixing has also transformed the video medium through the proliferation of low cost recording and editing technologies, from phone cameras to desktop and online editing software and distribution social media platforms like YouTube and Facebook. The ability to easily create and re-create videos could augment the medium of video as an educational resource. Rather than a unidirectional transmission of knowledge from video producers to video viewers, now viewers can respond by adding, altering, and re-imagining the content of videos. Thus, video production becomes a conversation, a dialog that can promote learning for both producer and viewer. Video’s capacity to communicate knowledge and its
mass appeal with young people give it great potential in educational settings. Given video’s characteristics and combining them with the capability to remix videos generates a potentially powerful tool to promote learning.

**Interactivity and Web 2.0**

What video production and remixing can bring to education is interactivity. Interactivity, though, means more than holding a camcorder or pushing a button to make something happen on a computer screen. The work of Sugata Mitra in India, Nepal, and Great Britain has shown how adding digital technology into a learning context can be highly effective in engaging young people. However, as Mitra points out, the addition of digital technology alone does not get the job done. Human interactions is what is needed to create the right conditions for learning to occur. Both teacher-student and student-student interactions work to foster the kind of environments where real knowledge building takes place. Therefore, technological interactivity can act to assist in the creation of human interactivity in an educational setting by providing tools that facilitate these personal interactions (Sugata Mitra: Build a School in the Cloud 2013).

Web 2.0 brings even greater technological and personal interactivity to education in the form of virtual resources and collaborations. The World Wide Web has greatly expanded opportunities for interactivity between people and cultural/intellectual resources. With a computer, tablet, or smartphone, the collective knowledge of the entire human species can be made available to almost anyone. The advent of “Web 2.0” has moved the Internet from connecting people with information to connecting people with people. Web 2.0 takes us beyond the consumption of cultural/intellectual resources to the consumption AND creation of these resources. The preceding “Web 1.0” can be described as “read only.” Anyone who has been sent an electronic document that allowed no changes to the document will be familiar with that term. The Internet of the past operated under the same premise, with only a handful of individuals with the know-how to create Web content. The majority of online users played the role of passive consumers of this content, unable to influence it, change it, or produce their own content. The Internet, though, has changed. The philosophy of Web 2.0 has taken the online experience from “read only” to “read and write.” Examples of its affordances include the ability for Internet users to easily create online journals (blogs), make comments on news articles, and share videos they have produced. Web 2.0 can bring both technological and personal interactivity into the classroom (O’Reilly 2005).

What Web 2.0 tools are available to generate human interactivity? How can these tools be used for learning purposes? William Richardson (2006) describes at length what these tools are and how they can be used in a classroom. These tools include blogs, wikis, podcasts, and image sharing services like Instagram. Richardson contends that these tools have the ability to do the following for students:

- Provide students ways to share and teach what they have learned.
- Archive knowledge students have acquired.
- Create forums for dialogue between students through comments.
- Allow students to collaborate.
- Encourage critical analysis, fact-checking, and the updating of information.
- Bridge various digital media with language skills, either through writing or through speech.
All of the above features serve to build students' critical thinking skills while providing access to information and ideas from an expanded set of sources that contribute to knowledge building. Students will engage repeatedly with information when they are involved in these acts. Also, all these web tools promote the communication of learned material through an online platform, such as a blog. The sharing of knowledge further advances learning. In addition, Web 2.0 blurs the line between authors and readers of web content and nurtures dialogue between students and educators. This allows for a greater level of knowledge sharing that enriches the learning process. Web 2.0 tools can be productively utilized for educational purposes.

In order to move away from the obsolete banking model of education, interactivity must be incorporated and encouraged in the learning process. Interactivity includes not just the interaction of learners with the material they are learning, but also the interactions between learners and between learners and teachers. PBL through video production, remixing, and Web 2.0 can deliver that interactivity into educational environments by introducing the ability to both read and write content for the Internet.

Methods
This study looked to engage high students in science education by taking advantage of the medium of video and the practice of remixing as means of exploration, investigation, and peer-to-peer exchanging of knowledge. To do this, an educational activity was designed that brings together video production, web content, and remixing in order to promote interactivity between students and science. Through the acts of producing and remixing videos, the students would interact with the course material and with each other in multiple ways rather than being passive consumers of it.

Mozilla Popcorn Maker
Central to this educational activity is Mozilla Popcorn Maker. Motivated by the remixing trend, the Mozilla Foundation developed Popcorn Maker, a multimedia framework that adds "interactivity and context to online video" by letting its users "link social media, news feeds, data visualizations and other content" directly to the video. The web content Popcorn Maker’s users include in their video remixes are called “events.” The goal is to encourage the continuous "remixing" of online videos in order to make them more interactive for viewers and transform viewers into producers (Mozilla Foundation 2013). Mozilla Popcorn Maker combines many of the same features and principles of other Web 2.0 tools along with the concept of remixing. Its capabilities are fundamentally aimed at a “read and write” Internet, with a greater focus on the medium of video. Because of this fact, this software may be effectively leveraged for pedagogical purposes that benefit students, much like other Web 2.0 tools. Popcorn Maker is still in the beta testing phase; the final version has not yet been released.

Educational activity
Through Popcorn Maker, students participated in an educational activity that combines the learning benefits of video, Web 2.0, and remixing. Utilizing video as their medium, students recorded their experiences, observations, and lessons learned during the course of their science class. How they did this was left up to the students. They could record something as it occurred in the moment, like a
documentary, or they could record video blog entries of their impressions and opinions. They could also use videos they find online through websites such as YouTube or Vimeo that were relevant to the topics in their class. Or they could use a combination of self-produced and found footage. How ever they chose to do this, they were required to engage the content of the class using video.

They then used Mozilla Popcorn Maker to remix these videos by adding relevant content such as links, comments, and other media, and thus enriching the videos. Their videos were posted onto their class website and a website that has been created specifically for this project. Once those videos were made available online, the students had the opportunity to remix their classmates’ videos, thus continuing the video enrichment process.

**Campuses**

For this study, science classes were chosen from two high schools in the San Diego Unified School District. These campuses were High Tech High Media Arts and Kearny School of Science, Connections, and Technology.

*High Tech High Media Arts (HTHMA)*

Founded in 2000, High Tech High (HTH) began life as a public charter school founded by a coalition of San Diego educators and business people. It has since grown into a network of 11 schools spanning kindergarten to Grade 12 with approximately 5000 students. HTH’s mission is “to develop and support innovative public schools where all students develop the academic, workplace, and citizenship skills for postsecondary success (High Tech High 2013).” HTH campuses are driven pedagogically by PBL. HTH was established on 6 “design principles.” They are as follows:

- **Personalization:** “Create settings where teachers and students can know each other well.”
- **Adult world immersion:** “Situate students directly in the world beyond school.”
- **Intellectual Mission:** “Articulate a common intellectual mission for all students.”
- **Contexts for Reflection:** “Provide integrated, reflective contexts for students and teachers to uncover the meaning of their work.”
- **Community Partnership:** “Involve family and community in program planning, implementation, and evaluation.”
- **Teacher Ownership:** “Support the teacher as designer, inquirer, and clinician.” (Riordan et al. 1999)

One of the High Tech campuses is HTHMA. As its name suggests, HTHMA includes classes in the digital arts in its students’ courses of study (*HTHMA Courses of Study* 2012). The combination of the 6 design principles and the emphasis on digital arts made HTHMA an appealing campus to test my project in the field.

Efforts were focused on one class of 11th grade students at HTHMA. Unlike most high schools, the students remain together as they go from course to course rather than splitting off to attend different subjects when the periods end. The class periods at HTHMA differ from other schools as well. Rather than 7 periods in a day, HTHMA has only 4. As a result, they spend about twice the amount of time on half the number of subjects as compared to other schools. This cohesion and longer periods allowed for
opportunities to see the same students in different subjects with different teachers (HTH Media Arts Daily Schedule 2013).

The students in this cohort were to be working on a project of their own to investigate food-related issues. To do this, the students would adopt various diets to live out while they explored the topics related to those diets. During their explorations, they would take part in several activities such as authoring cookbooks containing recipes from their families. While participating in these activities, their teachers would teach them about nutrition, metabolism, government policies on food regulation, and historical investigations of family traditions.

Kearny School of Science, Connections, and Technology
Kearny School of Science, Connections, and Technology (KSCT) is a public high school in the San Diego Unified School District. In 2004, the original Kearny High School was reorganized into the Kearny High Educational Complex, and the campus was split into 4 small autonomous schools. Each school focuses on a specific professional theme. As the name suggests, KSCT concentrates on the scientific fields (Kearny High School 2013).

This study centered around two classes of Advanced Placement Environmental Science (APES) students. KSCT structures its school day similar to HTHMA, with 4 one and a half-hour long periods per day. The students, however, diverge to different subjects for each period. Because the APES exam had already been administered by the time of this study, the classes’ schedules were clear for the students to focus exclusively on the educational activity.

At the time of this study, the students at KSCT were working on a project of their own. Under the guidance of two graduate students from the University of California, San Diego, the students developed their own small-scale aquaponics systems. As part of the aquaponics project, the students documented their experiences on a blog (http://www.greensteamcommunities.org/trails/KSCT-wi13/).

Recruiting student participants
The recruitment process for students participants began with regular visits to the two high school classes. These visits were done at least twice per week, and eventually ramped up to 4-5 days out of the week. After the introductions between the researcher and the classes, the rest of the visit time was spent familiarizing the researcher with the routines, schedules, and cultures of the classrooms and schools. After establishing rapport with the students, the researcher presented a summary of the study, its procedures, its goals, and what was expected of the students. The outline of the presentation can be found in Appendix A. The students were then asked to either contact the researcher directly or through their teachers if they were interested in taking part in the study.

Site visit notes
Notes were kept that recorded the researcher’s observations during campus visits. Any significant events or observations related the project and its progression were documented.
Student feedback
At the conclusion of the video project, the students were asked for any opinions or suggestions they had about the technology they utilized, the educational value of the activity, and any problems or setbacks they may have faced during the activity. These feedback sessions were video-recorded and later transcribed. The transcripts can be found in Appendix B.

Analysis of student videos
As part of its goal of encouraging users to freely remix videos, the Popcorn Maker user interface makes viewable events and media that were added into a student-produced video. This feature was used to determine what parts of a video were borrowed from already existing videos and audio files and what elements were created by the students. The structure, content, and methodology the students used for their videos were examined.

Results
Student videos
As of the writing of this paper, no videos have been produced at HTHMA. Being in the midst of standardized testing and activities related to their food project, the 3 students that volunteered to participate in the educational activity have not found the time to work on the educational activity.

After a total of 15 hours of production time, 28 students at KSCT created 15 videos. One of these videos, however, is missing due to an improperly generated embed code. The remaining 14 videos can be viewed at http://remixingeducation.weebly.com/student-videos.html. These students worked either alone or in groups. 4 students decided to go solo. The remaining students organized into 8 pairs and 2 trios.

The topics of the videos were all drawn from previous lessons in the APES curriculum. Probably due to the fact their aquaponics project had just concluded, 4 of the 14 videos talked about aquaponics. The remaining videos dealt with various environmental issues, a class field trip, and the water cycle.

In their videos, the students employed a number of different media to create their videos. 3 videos used purely still images, mostly acquired through the Internet. 7 videos were composed of video only. The remaining 4 videos utilized a mixture of both video and still images. 5 videos contained video footage that the students filmed themselves, while the remainder borrowed footage acquired from online sources such as YouTube. Of the videos that contained original footage, 4 are in the style of “whiteboard videos.” These are videos that use a series of writings and drawings done on a whiteboard rather than live footage or animation. 1 video featured live-action footage of a student speaking about her aquaponics system.

Because of time restrictions on the educational activity, the remixing phase of the activity was not carried out.
Student feedback
During two discussions with the KSCT students, the consensus reached was the educational activity was enjoyable for them. Many of them attributed the gratification of the activity to the freedom to create videos the way they wanted.

Students also praised Popcorn Maker’s ease of use. Popcorn Maker, however, was far from perfect. One student raised issues with the default settings of the software that would alter their videos in ways that were not anticipated.

A common issue that the students brought up was the Internet connection at the school. They called the connection “slow,” “frustrating,” and susceptible to being overloaded by users. There were also complaints about the content blocks placed on websites such as YouTube.

Although the students did not get an opportunity to remix each others videos, they were asked to give feedback about the idea of remixing. Remixing proved to be a point of contention between the students. Some of the students liked the concept, stating that it would allow for collaboration and constructive criticism. Others opposed allowing others to alter their work.

When asked about the educational value of the activity, the students felt that the videos would promote learning if a specific topic was given. This way, they would have to research that topic before communicating what they learned. They also agreed that making videos about material they had learned previously could be valuable as a “refresher” to their education (Appendix B).

Discussion
Although reception of the educational activity was positive at HTHMA, the study proved difficult to get off the ground at this campus. The realities of the education system, such as standardized testing and established teacher curricula, acted as obstacles to project initiation. The amount of time in the school periods became the most important limitation. Even with the longer periods like those at HTHMA, there was not enough time to execute the educational activity while still accomplishing the rest of the activities required by the teachers. In addition, much of the time was taken up by instruction by the teacher. Even in a campus that utilizes PBL as its main pedagogical approach, the banking model of education still existed in the classrooms. This left less time for the students to do the work that was expected of them. With so many tasks already weighing upon them, adding the video project only served to accumulate yet another burden on the students.

At KSCT, this issue was not present. The students had already completed their AP exam for this subject. As a result, they had effectively completed the course curriculum and were entirely free to take on a new activity. Being able to commit about 1½ hours per day over a 10-day period, most of the students were able to complete their videos. Three groups, however, struggled to finish their videos in that timespan. These groups had undertaken their own original “whiteboard videos.” These are time-consuming to produce and require a great deal of planning and dedication on the part of the creators. As a whole, however, the students were able to generate either completed videos or the raw
footage for their videos.

In the future, this educational activity should be incorporated into a course's curriculum from the start if it is to be carried out to completion. Because the activity was initiated as something extemporaneous to the coursework of the HTHMA classes, students chose not to concentrate on it. By including the video production and remixing as either a recurring activity throughout the class term or as a concluding assignment at the end, student participation can be ensured. In addition, the educational benefits generated by the activity could have had a clearer impact on the students' learning.

Because the learning activity was completely reliant on digital technologies, it quickly uncovered a problem that pervaded the classrooms. Although technology is present in the schools, its use as an educational tool is restricted by poor implementation of that technology. This was an issue common to both HTHMA and KSCT. Larry Cuban (2001) points out that although computers are commonly found in schools today, students rarely use them for anything more than word processing. He goes on to say that often educators are not given the training or resources to utilize technology in more varied and effective ways. Much of what Cuban wrote about was observed at HTHMA and KSCT. Although the teachers involved in this study frequently made use of technology, most of the time it was for their students to do light researching, write papers, or display presentations.

Much of this may be due to the level of technology that is made available to schools. Even at schools like HTHMA and KSCT where "tech" and "technology" are in their names, the devices, software, and supporting hardware were obsolete, inadequate, or incompatible. Of all these, the Internet access at the schools emerged as the most glaring inadequacy. During the course of the educational activity, the low bandwidth of the web connection consistently hampered the students' efforts to work on their videos. Because Popcorn Maker requires access to the Web, the lack of a fast, reliable connection slowed--and sometimes prevented--progress of the video production. The absence of a capable Internet connection epitomized the technological deficiencies in the two campuses.

Even though KSCT was able to devote their APES class periods to the educational activity, they could not do so until the end of their school year. Consequently, that left a limited number of days that could be spent on producing the student videos. By the time the videos were completed, this study had to be concluded. This prevented the remixing phase of the project from taking place. Despite this setback, the students had been aware of that aspect of the activity from the inception of the study and were able to provide their views on it. The students had mixed feelings about the idea of their classmates manipulating their videos. While some of the students saw remixing as a positive process that could enhance their videos and facilitate collaboration, others were insistent that no one should change their work. As an alternative to remixing, one of the students proposed that changes should be put in as suggestions in Popcorn Maker's timeline interface. That way, a video's creator can choose which changes should be made rather than having his work changed without his input. In future applications of this educational activity, this method could be adopted in cases where the students decide outright remixing of each others videos is undesirable.

Based on the students' feedback, there is a perceived educational value to the video activity. All the
students agreed they may be able to learn about an assigned topic by producing videos about it. Furthermore, they felt that creating videos about topics that had been previously covered in their class would reinforce the knowledge they had acquired. Conversations with teachers and administrators at HTHMA and KSCT support the opinion of the students. In future studies, more measurable forms of assessment should be conducted to confirm these perceptions.

What the students did not bring up but became apparent in their videos was the students’ internalization of the information they shared. For example, in one video about air pollution, all the text the student producers inserted were written in the first person. When a graph of sources of air pollution was displayed, the students highlighted specific sources (such as agriculture) and commented that they made use of these sources. In other videos, the students utilized music that they enjoyed listening to but also expressed a specific emotion that they felt related to what was shown in their videos. In producing their videos, the students appeared to be moving toward having a deeper, more personal connection with what they were learning.

**Conclusion**

Pedagogical approaches to STEM education are in need of reform. A promising alternative to the current model of education is project-based learning. The production of videos with topics originating from science courses may be a worthwhile project for students to undertake because it parallels the scientific method’s approach to knowledge building. Such an activity can be further enhanced by the incorporation of remixing, which turns the videos into interfaces for dialogue exchanges of knowledge. Students’ response to this mode of learning was positive, and afforded the students new opportunities for exploration, inquiry, and self-expression. More importantly, the students formed a closer connection with what they were learning, associating the knowledge in their videos with themselves rather than treating it as something separate from their lives. As valuable as video production and remixing may be as an educational activity, it must be included as part of larger course curricula in order for it to have a possibility of being effective as a learning exercise. However, if video production, and PBL more generally, are to be effective in transforming science education, it is clear that time, budget, equipment, and training constraints must be addressed.

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References


Appendix A: Mozilla Popcorn Maker Tutorial

Share your video.
1. Sign in to Vimeo.
   a. Go to https://vimeo.com/log_in
   b. Enter email and password
      i. KHS
         1. Email: yatlpoo@gmail.com
         2. Pass: khsogo7651
      ii. HTHMA
         1. Email: ypoon@gmail.com
         2. Pass: hthma2230

2. Click “Upload a video.”
3. Click “Choose a video to upload.”
4. Select the video you want to share.
5. Click “Upload selected video.”
6. Email me once the video is finished uploading.

Remix other videos.
1. Sign in to Popcorn Maker.
   a. Go to https://popcorn.webmaker.org/
   b. Click “Start a project”
   c. Click “Sign up”
   d. Enter email and password
      i. These are the same as the Vimeo account
2. Click “My Projects” under the email address.
3. Click a video you want to view and remix.
4. Click “Events”
5. Drag an Event onto the Timeline.
   a. Make sure to put the event in a Layer above the video Layer.
6. Move the Event to the point in the Timeline you want it.

Edit events.
1. Move the Event around the frame.
2. Resize the Event
3. Change the Event values

Try it yourself!
Appendix B: Student Feedback

KSCT - Period 1

Researcher (R): Hi, guys! I want to start off by asking if you have any general comments or impressions about the educational activity. What did you think of it?

Student 1: It was amusing.

Student 2: It was fun, to be able to do what you wanted. We got to do the videos the way we wanted to do them.

R: Did anyone experience any problems with the software, with Popcorn Maker?

(Several students shake their heads and say, “No.”)

Student 3: It didn’t work very well. Like, it wouldn’t put text into anything.

R: Yeah, that was weird. I’ve never run into that problem myself, but it happened to another group in Period 2. That’s something Mozilla should fix.

R: What about the Internet connection? It was slow, wasn’t it?

(Several students respond with a loud “Yes!”)

Student 4: They don’t let us go on any websites.

Student 5: Too many people were using [the Internet].

R: If you did this for a class, do you think you could have learned something?

(Several students nod their heads.)

R: What about beyond just how to use the software?

Student 1: I don’t think so.

Student 2: Yeah, I think so. Like if we were given a topic and we were told to show a video about it, we would have to research it.

R (to Student 1): Why do you disagree? You don’t think you can learn from doing the videos?

Student 1: Not really because other than using it for a research topic unless you’re doing it for a fun
video or whatever, you’re not going to learn from it whatsoever.
R: What if you were doing a video about something you’ve already learned?

Student 1: Yeah, because it gives you like a refresher for what you did learn.

R: OK. So there was one part of this activity that we didn’t have time to get to, and that was the remixing of each others videos. Would you like to have done the remixing?

(Students debate amongst themselves.)

Student 6: I don’t want anyone touching my video.

Student 1: I would totally spam your video!

R: How many of you would like it if someone were to change it?

(4 hands are raised.)

Student 7: If they were going to do something good, yeah.

Student 8: Not just for fun.

R: And how many of you wouldn’t want anyone touching your work at all?

(2 hands raised)

Student 9: It’s copyright! You can’t touch my stuff!

(Students laugh.)

R: So if you knew that someone was going to be changing it later, would you have done anything differently?

Student 2: No.

Student 1: Not really.

R: Can you guys think of anything I could improve my approach, what we did, that sort of thing?

Student 10: YouTube access.

Student 8: Internet connection.
Student 9: I think you did it before, you showed us like how to do it. One thing that’s better is if you sit down and show us as a class for like 10, 15 seconds how to really do it, like how to put the SoundCloud in. I know some people know how to do that, but not many people know how to do that. So you could show us how to do it step by step this is how you do it.

R: So like a tutorial?

Student 9: Yeah, like 10 seconds you should be fine.

Student 2: He did do that.

R: Yeah, but I didn’t do SoundCloud. What about the software itself? Was there anything that was frustrating or that you wanted to change?

Student 11: In Popcorn Maker the default of the length of the video. It’s like 30 seconds and I forgot to change it so I started freaking out.

(Other students verbally agree.)

Student 12: I feel like what we were doing was too simple. I know there are other programs that are confusing and I would like to learn more about how to use those.

R: So you thought it was too simple?

Student 9: Yeah, everything is right there for you.

Student 1: I kinda agree.

(Other students verbally agree.)

KSCT - Period 2
R: How’s it going, everyone? I want to start by asking if you have any general comments or feedback about the video activity?

Student 1: It was fun.

Student 2: Yeah, fun.

Student 3: It was useful for future projects. I think it’s a new way to engage students in the new era of electronics. Instead of making paper posters, you can make videos with links without the big knowledge of the hard, tough editing software you would use otherwise.
R: Were there any problems you guys ran into?

Students 4: More like restrictions from the school.

R: What about Popcorn Maker itself, did you have any problems with it.

Student 5: It was really frustrating because the Internet was very slow and we weren’t allowed to use YouTube videos.

Student 6: I really like it because it was easy to use.

R: If you guys had to do this for a grade, would this be something you’d like to do?

(Several students nod their heads and answer, “Yes.”)

R: Are there any ways we could have done this differently?

Student 1: I would’ve like to have taken more time.

(Other students verbally agree.)

R: Do you think this could help you learn about the things you’re making the videos about?

Student 3: Since it is easy to use, you could follow into it and continue on into presenting all your information on say a project.

R: OK. So there was one part of the project that we didn’t get around to and that was the remixing. Would like to have done that?

Student 7: I think that it allows you to collaborate more. It’s very useful if say I go over to my buddy ______’s here and put something in or take something out if I didn’t like it. When we get around to it, I’d like to practice that more.

R: How would you guys feel about someone changing your work?

Student 8: I don’t like it.

Student 1: I like it because it’s like you’re critiquing their work.

Student 3: Unless the person is hypersensitive, people should take it in the way of constructive criticism. Editing someone’s video may be a little too much. But say, put tags in the timeline of the video, so say they log in within an hour of you, and you’ve looked at it and put some notes to it. They come back, look at it, see if some different person’s input could improve their video.
R: Do you have any ideas on how we could have done things differently:

(Students call out “filters,” “Internet,” “WiFi”)