

Action Research Project Evaluating Curriculum Revisions Using iMovie's Ken Burns Effect

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Abstract: This action research project evaluated a revised annual student multimedia iMovie unit by focusing on how to present pictures in video by 31 sixth grade students at a rural Molokai school. The curriculum design was revised to teach more learners how to manipulate still pictures in a video project. The action research project evaluated the modifications and revisions to the still pictures module using a technique called the Ken Burns Effect. Results indicated that most students could use the effect and therefore manipulate still pictures in a technically correct manner. Project implications for the future suggested revising other rubric module elements rather than isolating just one aspect.

Introduction

As part of the strategic plan for a rural school, students are required to complete a least one multimedia project per year. A cadre of teachers created a rubric to assess student projects and it was approved by the faculty. Over time it became apparent that the rubric needed to be revised to focus more upon the techniques used to create multimedia. This action research project focused upon the modification of one unit, the picture module.

In previous years, the sixth grades students have been taught how to import still pictures into a video project. So there was some familiarity with the concept. Building upon their past knowledge made it easier to present an expanded concept, movement after the picture was imported.

The picture module taught students how to effectively import digital still pictures into multimedia video projects using the Ken Burns effect in iMovie software. The Ken Burns effect is a technique developed by documentary film maker, Ken Burns. He would bring to life historical still photos by panning and zooming. This provided movement which, engaged the viewer with the picture's subjects. Panning is the side to side or up and down movement. While zooming is the close up or moving in and out. These basic concepts while in theory seem easy, they actually need to be practiced.

There are certain aesthetics which were addressed. These include what is the focal point and how do the techniques enhance that. In the case of facial features the eyes may

become the focus, so does the movement start at the eyes and go out to the face, the body or to what the eyes are looking at? Or is that order reversed? In the case of landscapes, is panning across the horizon that brings out the message of the picture, or is it zooming on a particular feature better? These are the aesthetic questions which the technique addresses.

The previous instructional design was revised and a new design unit was created. The literature points towards specific examples, which can be utilized to improve the instruction once the data revealed the weak and strong areas of the current multimedia curriculum.

The literature review covered student processes, teacher technology integration, specific multimedia rubrics and end products. According to Harrison and Loveland (2009), using curriculum based technological design can transfer from commercialism to education using preproduction procedures, which creates inventive problem solvers. The article focused upon design tools allowing students to logically sequence their multimedia projects. Integrating technology with story telling resulted in both quantitative and qualitative analysis including a digital story rubric Sadik (2008). The implications discussed the content of student work, professional development for teachers and the impact on learning digital story telling had. Teachers were willing to change their instruction and curriculum in reaction to the findings to improve student literacy skills.

Standard based technology rubrics for each video element and design were provided by Loveland (2005). By clearly defining the desired outcomes students could evaluate their work. This also reduced subjective grading. An important feature noted by the study was how the real world defines a quality student product by assessing video elements such pre and post production, media use and teamwork.

Authors, Li, Clark and Winchester (2010) emphasize enactivism, the connection between learning and doing, in technology instructional design revisions. The authors covered the role of interactive environments, which are based on doing, action and problem solving. An important paradigm shift would be framing goals in such a way that students could learn in their own manner in a stimulant filled environment. A good example of difference between process and product was provided by Morrison and Ross (1998). They said, normally, a writing assignment would not be judged on the word processing unless the process created a product. These resources support the design of a multimedia technological unit from the five different perspectives mentioned above.

Methods

In preparation for this multimedia action research project, I collaborated with one of the sixth grade teachers to plan the content. We chose the countries of the world as the general theme for all the sixth graders at the school. I created a pacing guide for the rest of the school year, detailing and scaffolding the weekly 45 minute lessons. Several

lessons were devoted to importing, applying effect and making adjustment to the pictures. In the following weeks, the students chose their countries, created their graphic organizers and found their countries' web link in Wikipedia. They used the web links to find pictures, maps and information. I required them to download and save a map, a picture of the capital city, citizens and a landscape. They stored all their information on the computer lab server.

I created a short video clip demonstrating how to use the Ken Burns effect to create movement in still pictures using Apple's iMovie software. I created a web page and incorporated the clip as well a link to an Apple tutorial which covered the same information in print.

Figure 1. Ken Burns Effect web page.

PHOTO TOPIC

CLICK ON THE MOVIE FOR INSTRUCTIONS ON EDITING PHOTOS

KEN BURNS EFFECTS



To edit a picture within iMovie click on the movie on the right to watch detailed instructions on how to use the Ken Burns effects on a still photograph. Zoom and pan your pictures so that the movement created is appropriate and appealing.

Follow the link for an over view, [link](#)

The original approach had students access the web page from their individual computers. However, this was modified due to two factors. For one the approval for the research did not come until the beginning of February. This resulted in the actual research start date

being pushed back. The second factor involved technical difficulties with the server which housed their projects. Attempts to fix the accessibility to files failed and so a fast work around was developed. The time delays created a sense of urgency to meet research deadlines. So the web page tutorial was shown in a whole group setting to make sure the students were exposed to the information.

In addition to the basic technique of panning and zooming, students were also taught how to eliminate a black border by zooming deeply into their pictures. The Ken Burns technique was demonstrated in whole group; the students also talked to their peers; and I went around one on one reviewing their work. They were cautioned against allowing the default importation be used in their projects with the emphasis upon using the Ken Burns' effect. They worked to perfect this for several class periods.

The work around required students to create another project on their desktop, drag and drop their pictures from the server into the new project, apply the Ken Burns effect and then make adjustments. Then students imported these modified pictures into their original project stored on the server.

The rubric used to evaluate the entire annual video project included three main areas as shown in the chart below. A total of 50 points could be awarded for a multimedia project. The picture component was worth a total of five points. The overall rubric was developed by a cadre of teachers, submitted to the school leadership team, and then presented to all the teachers for approval. Since its original development about four years ago, no changes or improvements had been made.

Components	Each project includes these elements:	Possible Points
Technical	Pictures, transitions/titles, time limit, Voice over, Musical background.	25
Content/Process	Evidence of planning, execution and final edit	15
Aesthetic value	Quality and organization	10
	Total project points	50

The revisions to the curriculum included revisions to the rubric used to evaluate the projects. The original is presented in the table below. The major problem with the rubric was that it evaluates content rather than technique. Yet in the computer lab, only technique is taught as the homeroom teachers provide the content.

Technical Techniques used to create project	5	4-3	2-1	0
Pictures 5 points	Pictures, video, drawings, clip art etc, enhance the impact of the message, story line, report, etc.	Project has video, pictures, drawings or clip art etc which conveys message, story line, report etc.	Pictures, video, drawings, clip art etc distract from message, story line, report etc.	No pictures, video, drawings, clip art, etc.

The following table shows the revision to the rubric with the emphasis on evaluating the manipulation techniques. I evaluated the student work based upon the revised rubric.

Technical Techniques used to create project	5	4-3	2-1	0
Pictures 5 points	Pictures, drawings, clip art etc has movement which is precise, technically correct and creates a “wow” factor.	Project has pictures, drawings or clip art etc which move appropriately within the picture, for example the face, body or landscape.	Pictures, drawings, clip art etc doesn’t move or zoom pan to an inappropriate location within the picture, for example, nose, sky, dark corner.	No pictures, video, drawings, clip art, etc.

Results

Out of 51 students, 31 handed in their parent permission forms. Of the 31 students 27 were able to successfully create a test project which manipulated their pictures. Four students imported pictures however did not use the Ken Burns effect. This resulted in a still picture with no movement. The average score was 3.39, the median was 3.5 and the mode was 4. Table 1 Shows the number of students who were awarded points across the possible spread and received parental permission..

Table 1. Rubric Points

	Parental Permission	5 Points	4 Points	3 Points	2 Points
Students	31	3	13	8	7

The results were greatly effected by the problems with the server where the projects were stored. The server needed to be reformatted and server software reinstalled. However this will not be done until the end of the school year. The Ken Burns Effect did not work when the projects were loaded off the storage server. A work around needed to be created. That involved creating a test project on the individual desk tops and dragging pictures from the storage server into the work around test project. The students applied the Ken Burn Effects to their pictures on their desktop computers. Then the students opened their original projects stored on the server and copied and pasted their modified pictures from the test into their real project. Most but not all were successful in the multiple step process.

Comments and notations about the projects were made on a spreadsheet which included their rubric points. Some of the criteria considered while awarding the points are listed in Table 2 below. The legend is on the last line explaining the notes made. A brief interpretation indicates that students who had black edges, trashed pictures, default import, and pictures lacking movement were minused points. These mistakes detracted from the overall quality and showed some misunderstanding of the process. The projects which had the required pictures and manipulated at least one of them were considered average, so received three points. The ones with diverse techniques mixing zooming and panning were awarded four points. Finally five points were given to projects with all the techniques used correctly on all the pictures. In one instance, there was a picture with pans following from the bow of a ship to the stern as if the ship was moving across the screen. Other exemplary projects showed pictures zooming out in reverse of the default zoom in. This showed understanding of the lesson technique.

Table 2. Project Notes

7 p Test pic in trash standard import	2
test on wrong drive all flat	2
4p Test was flat	.2
testWrong location4p flat	2
4 p, default zoom 4 bk	2
6p default zoom bk	2
3p default, 3bk	2
4p, default zoom, 1bk	3
4p, default zoom	3
3p bk edge no variation	3
4p default zoom bk edge	3
2p default zoom	3
4p 3bkedge same zoom	3
3p 1 pan	3
4P 1 zoom	3
5p 2bk 3 zoom	4
4p no bk 1zoom reverse	4
4p, default zoom, good face	4
4p diverse pan & zoom	4
3p diverse pan	4
3p, diverse pan	4
4p, diverse pan& zoom 2bk	4
3p, diverse pan&zoom	4
3p diverse pan& zoom	4
2p, diverse pan&zoom	4
4p diverse pan&zoom	4
6p 2pan 3 bk edges	4
6p 3zoom or pan 2bk edges	4
11p 2 test mov 5 & 6 pic zoom along boat and planes,	5
4p, diverse pan & zoom	5
diverse soom & pan	5
<i>p=picture; bk=black edges so careless; default=import not modified so careless; zoom/pan=done correctly; diverse=pan/zoom correctly configured differently;</i>	Legend

Because of the delay that the work around caused, some students corrected their errors after the various research deadlines, so that data had not been collected at the time of this paper. So the results reflected here represent the lack of student corrections due to time constraints. One of the impacts of the server problem resulted in “flat” pictures which showed no movement. Another problem which showed up was the default setting did not get modified by the students. However, because there was considerable class time spent to address and prevent these types of pictures, students lost points.

On the positive side, many students were able to zoom and pan giving the still pictures motion. Three students had projects with a “wow” factor. Thirteen had projects with a score of four. This implied that the technique was learned well by over half the students.

Scores of three were considered average in which some aspects of the techniques were utilized by student. Seven students had scores of two because they had careless errors or did not demonstrate they learned the techniques.

Implications or Discussion

Students were shown the Ken Burns technique through the web page presentation, whole group demonstration, peer discussions and one on one coaching. I observed that twelve of the students showed panning in their project. Eleven students successfully zoomed into a picture. Six projects had the default zoom. Seven projects showed no used of the technique. I believe that students who had mistakes would have done better if the time constraints and server problems had not been distractions to the overall process.

By focusing on just one aspect of the iMovie video, the Ken Burns effects, the students, had the opportunity to perfect the technique. However, I questioned how the picture module fits into the overall video project and needs to be considered in the future. The length of the pictures was the default five seconds. What I did not consider was the effect that the other components could have on the default. For example the narration which accompanies the picture may be more or less that the default. So adjusting the length of the clips needs to be considered in the future revisions of the curriculum.

Conclusion

The successful mastery of the Ken Burns effect was illustrated by more than half the students. Their projects showed pictures being animated through panning and zooming as taught in the picture module unit. Additional projects showing some aspect of the technique illustrated that more than two thirds of the students learned how to use and apply it. The detail lessons taught students how to enhance their projects by animating their still pictures. Students were able to follow the steps involved in creating that movement and apply it to their pictures illustrating understanding. Adjustment will need to be made in future curriculum design to enable all students to demonstrate understanding and mastery.

References

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