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ABSTRACT

One ideal of digital media production software and technology is open file compatibility and exchange. Unrestricted transfer and duplication facilitates professional production, but may also facilitate improper reuse. This paper describes several pedagogical concerns and curricular adaptations that have arisen in dealing with student plagiarism issues in digital photography, non-linear video editing, and other digital-file-based university courses. The paper notes that conflicts exist between the open nature of digital media and the need to control dishonesty, and that technical and pedagogical methods developed to flag or obstruct ease of transport and reuse may undermine both applications and instructional design. It first focuses on what the issue is in general, what the digital plagiarism issue is, and how to detect and discourage plagiarized text. The paper then considers the plagiarism potential in photography, desktop publishing, and Web design courses, discussing how a digital still image can be stolen and how to detect and discourage digital still image plagiarism. It covers potential plagiarism in digital video editing projects, discussing how to steal a nonlinear video editing project and suggesting that the most effective solution is to change the methods of teaching and evaluation. (NKA)

OPEN vs CLOSED: Academic Dishonesty Issues in Digital Production Course Instruction.

by Gregory Gutenko

OPEN vs CLOSED:
Academic dishonesty issues in digital production course instruction.

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One ideal of digital media production software and technology is open file compatibility and exchange. Unrestricted transfer and duplication facilitates professional production, but may also facilitate improper reuse. This paper describes several pedagogical concerns and curricular adaptations that have arisen in dealing with student plagiarism issues in digital photography, non-linear video editing, and other digital file based university courses. Conflicts exist between the open nature of digital media and the need to control dishonesty. Technical and pedagogical methods developed to flag or obstruct ease of transport and reuse may undermine both applications and instructional design.

What is the issue in general?

Plagiarism, the act of passing off the work of another as the result of one's own intellectual or creative effort, is distinct from the issue of actual ownership rights to the work and its subsequent reuse. Copyright is about commodities and revenue. Plagiarism can be perfectly legal.

Who plagiarizes? Among students "the three main types of Internet cheaters are those who do it unintentionally, those who do it sneakily, and those who are desperate or lazy." (Renard). Another three classifications could be:
(1) Students who do not want to do the work (in general/required courses),
(2) Students who want to do the work but find themselves incapable, and
(3) Students who want to do the work, are capable, but have failed to allot the time, effort, and discipline to produce the work. The essay buyer/thief taking a course under duress is more likely to be motivated by apathy in the subject, resistance to the requirements, ignorance, etc. The digital media thief is more likely to be motivated by "panic" factors and would much rather be capable of delivering their own work.

There is considerable literature about text (essay) plagiarism (e.g.: "Techno cheats bedevil sector" (Utley)). There is little about digital media plagiarism in the classroom. Essay-buying is historic and pre-computer, and accessing the sources of these for-purchase materials used to be less than obvious. Digital acquisition is recent, sources are infamous and very easy to access and in step with "legal" on-line text, music and image downloading services. WWW.schoolsucks.com is there for any student who wants it.

What is the digital plagiarism issue?

It's incredibly easy. It's almost harder not to do it. ("Resistance is futile.") The entire nature and ethos of the internet promotes the user's expectation of open access without limits. If it's wrong why is it so easy?

Compounding this "design feature" of the internet is the "hacker mystique", which arguably can trace its ethical origins back to the subversive counterculture days of Yippies, the Weather Underground, and Abbie Hoffman's "Steal this Book" (http://tenant.net/Community/steal/index.html). The "open media" ethic underlies most attitudes of disregard for academic integrity.

How do you detect and discourage plagiarized text?

Appreciating the realistic performance limitations of your students is always going to serve as an alert to something being amiss. Eccentric language usage and unexpected conceptual awareness can be clues, and "take out the big words" (Bushweller) is an essential dumbing-down rewriting task for the successful plagiarist.

There is growing use of various internet search databases, such as Plagiarism.org, ABI/Inform, and Lexis/Nexis to detect unique phrases and text blocks (Denning; Andersen). There are some institutions that have considered screening papers on a regular basis, not just when there is cause for suspicion.

POTENTIAL IN PHOTOGRAPHY, DESKTOP PUBLISHING, AND WEB DESIGN COURSES.

How do you steal a digital still image?

This is the simplest non-text file type to obtain over the internet. Vast numbers of images are available on Web sites operated by corporations and private entities and individuals, all of whom wish to share their images without technical restriction for marketing, publicity, or shared interest motivations. While most explicitly note their copyright ownership of these images, these are still offered free for downloading and "personal" use. Acknowledging the ownership and/or refraining from modifying the images are usually the only restrictions placed on the use of these images.

To plagiarize an image one can download it with a click, modify it in PhotoShop or other photo-retouching program to alter the slightly tell-tale original pixel size, resize and filter it (despeckle, sharpen, etc.) to improve the overall resolution, unleash a barrage of more extreme filters and tools to modify its appearance, then convert it to another file type for good measure.

The duplicate may now be so far removed from the original in appearance that even the true owner may overlook it.

How do you detect and discourage digital still image plagiarism?

The intense filtering, cropping, layering, and other software manipulations that can be brought to bear on a pirated image makes any kind of "matching-template" method of searching for the original form of the image extremely unworkable. Searching for duplicated text strings is feasible, searching for elements of images is not. The Digimarc corporation offers as a "service solution" to this image tracking problem a process whereby a digitally readable pattern is embossed throughout an image (Digimarc). Digimarc scans the internet for "water-marked" images with its search service, MarcSpider, and reports on their occurrences. There is a subscription cost for this protection/ detection method which might be hard to justify at the classroom level. (PhotoShop version 4 and higher include a Digimarc "demo" that allows the visual effect of this digital watermarking to be observed.)

Tell-tale compression artifacts and posterization (uneven gradations) can alert the teacher to the original size and probable source of the file. These digital compression vestiges are difficult if not impossible to remove from an "improved" and altered image. Unlike the evenly structured grid of pixels to be seen when any digital image is enlarged, the image area sampling patterns created by compression are more subtle but larger and result in an uneven grid structure. Thin, high-contrast lines appear to have "ringing" traced outlines and flat tones appear blocky. Originally acquired high-resolution images will not exhibit these artifacts.

One barrier that can be erected to discourage Web-source pilfering, but one that will be anathema to any network-minded person, is to have an "unplugged" graphics lab. Make the computer graphics lab graphics-dedicated and isolated from the network. Professional labs must be networked for file transfer and legitimate downloading from stock photo libraries, but this is an academic environment with unique considerations. General access labs should be and need to be Web-connected labs.

While it is certainly not difficult to download material to disk in a Web-connected general lab and carry the disk to the graphics lab, it is not as easy as just clicking a mouse key. The ease with which theft is possible can be a factor in its incidence. A $20 bill lying on a sidewalk is more likely to be snatched than a $20 bill hanging out of a person's pocket. The $20 folded away in a billfold stuffed well down in a pocket has the best odds of being left alone. A casual disregard for plagiarism prevention conveys a message about its real significance to the institution. Do we care enough about plagiarism to make it less than irresistible?

POTENTIAL PLAGIARISM IN DIGITAL VIDEO EDITING PROJECTS

How do you steal a nonlinear editing project?

The nature of analog linear video betrays duplication. There is evident generational loss with all but the most robust formats (1 inch, Betacam SP). It is difficult to significantly re-edit a master tape because video and audio tracks are linked and physically bound in place on the tape; assemble editing to revise and disguise will be abrupt and crude.

It is easy to assign dedicated timecode/user bits to each individual student's master tape. The videotape editing system can be set up to use externally regenerated timecode, copying the timecode from the source tape machine to the record machine. This would indicate what the source material is. However, it is not hard to enter into a machine's menu and reset the timecode, so this is not a tamper-proof method of tracking and discouraging duplication.

Digital processes encourage duplication and ease of plagiarism. Within any software manufacturer's product line, file exchange must be easy and bug-free. One of Avid's major professional selling points is project exchange and ease of file duplication. The problem of non-compatible files exists almost exclusively between competing manufacturer's lines (in DTP and photo as well as video) and has been maintained as a "market defense" ploy used to retain the indentured customer/user base.

But within a closed "shop" such as a school lab that is likely to have a single software source, file duplication and renaming has always been easy and essentially undetectable. Any finished media product can be copied and slightly altered and so disguised.

Within the Avid product's windows environment, any clip, bin, or finished edited sequence can be duplicated and renamed in seconds. Easy duplication is essential to professional productivity, providing users and clients with multiple alternatives and quick revisions.

With the internet, user needs and pressure have compelled adoption of more universal file forms such as QuickTime. Open file exchange is the rule. Add-on encrypting or other forms of "locking" files also makes them usable during production. This becomes a hindrance (like seat-belts) to many users who simply avoid the process.

How do you discourage nonlinear editing project plagiarism? One method is to have students keep all of their project and bin files on a removable floppy and take that floppy with them. There are problems with this solution.

Avid systems among others do not work well (if at all) if project files are not on the hard drive. Access time for files on floppies will be too slow and floppies are likely to be too small in capacity for complex projects. Zip and Jaz drives should have the capacity, but will still cause some slow-down.

Students must copy off any files that are created on the hard drive, then purge these files, a task not often remembered and observed. It is inevitable that copies of student projects will be left behind. Additionally, the Avid system in particular creates automatic backups of project files during edit sessions that are stored in an "attic" and it is difficult to distinguish among these backup files and identify which belong to a particular student.

The most effective solution? Change the methods of teaching and evaluation.

The best way to evaluate video/film editing has always been based on the use of a shared bin or collection of raw camera takes. The "bank robbery" video rushes from First Light Publishing are an example of video editing course materials that support a clear instructional objective in editing. This approach equalizes the editing challenge.

If each student works on a type of project of their own choosing, an approach that makes sense in a more holistic, introductory production course where editing is but one of many objectives, the editing challenge will not be equivalent for all. Each student's project will be unique and therefore plagiarism free, but this also makes editing requirements and evaluation inconsistent. If a major course objective is editing, using shared bins or raw footage is essential. Professional tutorials and workshops, such as Avid's, are also based on the use of raw takes that all participants share.

One difference between the pro workshop (Avid) and the graded class is that in the former case there is no incentive to cheat because everyone gets their certification no matter how little effort they expend. In the latter case, however, there exists the grade penalty for low effort and so there is that avoidance incentive to plagiarize.

So, the best way to teach editing is by using a common footage source. Fortunately, the best way to teach digital production also provides the means to block digital plagiarism, by dividing work into discretely graded stages that can show clear evidence of evolving changes. In text writing, discretely graded stages "embracing the writing process" (Renard, 1999) examine a paper's development (outline, 1st draft without spelling-grammar penalties, 2nd draft with citations, etc.). In digital imaging and video this means breaking projects down into their stages of sequential development.

This implies more of a grading burden, since assignments aren't being dispensed with in one marathon end-of-semester grading binge. However, the burden need not be significantly greater because each discrete stage can and should have a much more limited set of criteria. This can make each evaluative stage simpler and also more consistent.

Non-linear video projects are in fact ideal content for stage-by-stage evaluation if students are actually learning to edit in a nonlinear thinking fashion

as opposed to linear tape fashion. Unlike tape editing where each shot must be trimmed, in-out adjusted, level adjusted, audio adjusted, and effected before moving on to the next edit "event", an entire non-linear project can and should be worked in a more narrowly task-focused sequence of discrete work stages, each with their own particular mental and creative attention requirements.

Capturing and video level adjustment should be that only. Creating the bins should be creating the bins. The rough cut should be the rough cut. Trimming should be trimming only. Adding effects should be adding effects. Retrimming to fit in transition effects this that process. Titling is titling, and so on. If the project is dealt with in a step by step evolutionary manner then the originality of the work will be obvious from the beginning of the process.

Unfortunately, a common tendency is for teachers and students alike to use a nonlinear editing system in a linear tape fashion, assembling a chain of edit-by-edit refined shots. The nonlinear capabilities tend to come into use as revision tools rather than creation tools. As Thomas Ohanian states, "the first-time user of the nonlinear system begins in a linear fashion. Only after significant minutes or hours have passed do the first-timers magically discover that editing nonlinearly is easy; it's thinking nonlinearly that can be difficult..."

Evaluating discrete stages with limited objectives becomes a teaching strategy that, aside from assuring originality of student work, also fosters the nonlinear frame of mind. Below are the grading elements from a production course wherein each student executes an edited project from a shared pool of film footage:

COURSE GRADING:	Element	Percent of course grade	
	Session tests (10)	15%	Due date
	Midterm Test	10%	
	Final Exam	15%	
	Film crew project	15%	
	Dub/digitize project	5%	March 10
	Rough cut project	10%	March 17
	Trimmed project	10%	March 31
	Final or FX cut project	10%	April 14

In this example, the editing portion of the production is subdivided into four graded stages with specific due dates. One difficulty that can arise with this approach occurs when students, on a wild roll, complete one stage and charge onto the next without saving a version of the first for evaluation! Reminding these rampant editors to pause and save is an ongoing lecture component.

It is also difficult, as mentioned earlier, to redirect students' thinking and working methods towards the specific parameters of a particular stage; during the

rough cut phase it is hard to resist the compulsion to trim or add transitions. This is the mindset holdover from linear video, "an orthodoxy of presumptions that are based in the linear mode of the editorial process and, consequently, the story-telling process. That is *wrong*." (Ohanian)

The conflicting ends and ideals that exist between the open nature of digital media and the need to discourage academic dishonesty will keep those in digital production course instruction off guard and looking for balance. The most unobstructive solutions for imaging and video appear to be pedagogical rather than technological. Breaking out, delimiting, and distributing scrutiny of student progress throughout the course is one solution that both obstructs plagiarism and stimulates nonlinear thinking in creative production.

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