PAUSE, POINT, REWIND

The Use of Screen Capture Software for Media Analysis

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Screen capture software enables people to create simple informal commentaries about any media texts that can be displayed on a computer screen. One 13-year-old student enrolled in a media literacy enrichment program was observed and documented completing ten spontaneous analyses of commercials using screen capture software. A detailed analysis of both the student's voiceovers and interactive visual engagement with the commercials, including pausing and rewinding video and pointing out details with the mouse pointer, revealed a modest strengthening of critical thinking skills over time. These findings suggest that screen capture analysis exercises completed regularly with a set of open-ended critical questions may have value to educators as a diagnostic, analytical and assessment tool for students at many developmental levels.

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The development of computer screen capture software (SCS) in the past decade has been cited as a major pedagogical tool for teachers, professors, librarians, and technology educators (Degenhardt, 2006; Murley, 2007). However, its potential as a creative tool for students remains unexplored in digital and media literacy, analysis, and production literature. To produce a screencast with SCS—which currently includes free online programs like *Jing* and *Screentoaster*—users record any visual or audio data from their computer screens while using a microphone to record a simultaneous voiceover. Though it has primarily been used to record lectures, screencasting also offers a range of media analysis and production opportunities for students at all age levels, from primary education through graduate higher education. Screen capturing used in conjunction with spontaneous or planned student voice-over to analyze a particular media text (including an online or DVD clip) is a simple composition activity that is flexible enough to ensure the completion of a project in a single learning period while supporting the development of critical thinking skills over time. It is a production activity that requires very little technical instruction and an analysis activity that does not rely heavily on traditional writing and literacy skills, making it ideal for students who have trouble expressing ideas through expository writing. Most importantly, screencasts can be used to document student progress in media analysis and critical thinking skills in a non-written form, serving as a diagnostic tool to assess student learning.

There is a body of research on teaching critical analysis of visual media texts dating back to the beginning of the contemporary media literacy education movement (see Buckingham, 2003; Hobbs and Jensen, 2009; Tyner 1998 for reviews). SCS and screencasting exercises offer a new paradigm for critical analysis by both individualizing the analysis process to specific students rather than an entire class and, perhaps more importantly, by combining visual analysis with a production process that both structures and records student work. In a traditional viewing and discussion format, analysis is often spontaneous and unrecorded; in order for students to be assessed on their ability to analyze a media text, a separate and often written assessment tool must be used. Students' abilities to vocalize ideas and arguments develop long before they are able to organize these thoughts into coherent and structured writing, and often what students are able to write does not reflect what they know (Alvermann & Hagood, 2000). SCS allows students to vocalize their understanding, with some pre-writing support

if necessary, and also to record the sometimes accidental intellectual breakthroughs that often happen when students ask open-ended questions of a media text upon repeat viewing. Teachers can then build upon these breakthroughs in providing assessment and feedback to positively model a more complex, abstract, or sophisticated line of questioning for future screencasting projects.

The elegance and simplicity of screencasting makes the use of SCS ideal for brief, regular student compositions. Like long-term journal and warm-up projects, screencast commentary activities need not be assessed rigorously as a series of "final products." Screencasts may be used as a diagnostic tool to assess *change* in intellectual development rather than as a stand-alone assessment of a particular product. As in a journal, teachers might use screencasts by specific students to track learning over the course of a unit or semester. In this way, intellectual growth could be measured longitudinally; students might be rewarded for progressing from, for instance, average performance at the beginning of a term to above-average performance by the end.

Case study: An Adolescent Creates Screencasts

To examine how screencasting may enable a close look at incremental changes in students' media analysis skills over time, I offer a case study of one young student who was enrolled in a summer media literacy program during the month of July 2010 in Philadelphia, Pennsylvania, USA. This student created nine SCS analysis activities by recording spontaneous voiceovers describing her observations while viewing various commercials—and integrated them into a mixed-media final screencast project exploring how certain ideas and values are embedded in fashion advertising. To develop this case study, I interviewed the participating teacher, observed the student at work on classroom activities, and viewed and analyzed the many SCS analysis activities created by the student as part of her coursework. All quotes used in this manuscript are drawn from transcripts of the student's ten screencasts. Table 1 shows the media texts used by this student for her SCS analysis projects.

Screencast	Original Advertisement	Selected student comment
"Screencast #1," created July 27, 2010	"Star Wars" (2010). Adidas. An outdoor party featuring Star Wars characters.	*Techniques*: "The title says the Star Wars collection and you can see Darth Vader right there."
"Screencast #2," created July 27, 2010	"World Cup" (2010). Nike. Montage of World Cup teams and local audiences.	*Omission*: "They only picked out certain teams, so people might think it was rude or they might get angry."
"Screencast #3," created July 27, 2010	"Tiger Woods Apology" (2010). Nike. Single shot. Zoom in on Tiger Woods. Voice-over is a recording of his dead father. B/W	*Values*: "I was watching a review of it on NBC News, and some people…might think he's just doing it for the money."
"Screencast #4," created July 27, 2010	"Crazy" (2010). Foot Locker. NBA rookies have fun playing basketball outside.	*Omission*: "They're not really showing the sneakers, so they're only showing it right here [points] and that's it."
"Screencast #5," created July 28, 2010	"Roman" (2010). Marshalls. Photographer prepares for a fashion photo shoot.	*Techniques*: "He's walking in slow motion to make it dramatic."
"Screencast #6," created July 28, 2010	"Mike and Spike" (1991). Nike. Spike Lee claims Nike shoes are responsible for Michael Jordan's success.	*Omission*: "What's omitted is Michael Jordan telling Spike Lee *why* he's so good."
"Screencast #7," created July 28, 2010	"Rome" (2010). Payless. Tourists in Rome drive scooters and visit a pizzeria.	*Values*: "They really value looking good. If you can see that in the beginning, they say 'when in Rome, always look your best.' You can see the Payless sign right there [points]."
"Screencast #8," created July 28, 2010	"Break to Build" (2009). Jordan. Montage of athletes exercising. B&W.	*Omission*: "They didn't show a whole lot of the sneakers; they just showed the players' body and strength."
"Screencast #9," created July 28, 2010	"Bathroom DSW" (2010). DSW. Animated shoes gossip about a date.	*Values*: They use talking shoes [but] they show how regular women party and act toward men."

Table 1 Summary of nine original student screencasts

In the summer of 2010, a 13-year old student, who I will call Asia, was a rising eighth grade student. She participated in a media literacy enrichment program run by the Media Education Lab at Temple University at a charter school in Philadelphia, Pennsylvania. The program offered a digital and media literacy enrichment program for students between the ages of 5 and 14, who learned key concepts of media literacy and created several productions in music, film, web design, and videogames. Asia and three other middle school students received media literacy lessons in the first two weeks of the four-week program and then created independent media production projects in the second two weeks. Asia's teacher, Tanya Jackson, demonstrated how to use SCS software and modeled the process of developing a critical analysis of media texts.

Students were introduced to the Five Critical Questions developed by the Media Education Lab at Temple University, which reflect a set of core concepts and values shared by media literacy organizations in the United States, including the National Association for Media Literacy Education:

Who is the author and what is the purpose?
What techniques were used to attract your attention?
What lifestyles, values, and points of view are represented?
How might different people interpret the message differently?
What is omitted from the message? (Media Education Lab, 2003)

During the second half of the program, students were free to develop a media production project in relation to their own interests. Asia parlayed her interest in contemporary fashion into a number of production activities throughout the summer ranging from magazine collage to a Powerpoint presentation on the history of shoe design. Within the Five Critical Questions framework, Asia's instructor determined a set of learning goals to document progress made throughout a series of ten screencasts. These goals fell into two major categories: (1) an ability to better understand the formal elements of advertising, and (2) an ability to answer the Five Critical Questions in an increasingly abstract way related to wider value systems, connotations, connections between texts and to lived experience and implications of messages beyond their literal meaning in the text.

As Asia, her instructor, the program administration and I reviewed Asia's screencasts, we were able to diagnose where Asia showed important progress in her intellectual development and where she was still

having difficulty with both basic comprehension and abstract analysis of the advertisements.

Asia's observations about fashion advertising began, as many student analyses do, in her visceral and intuitive feelings about the advertisements. Her first screencasts offered numerous evaluative opinion ("like" and "dislike" statements, for instance) and examples of immediate connection to lived experience as "home knowledge." We considered this an important step in the critical analysis process. Engaging with students' tastes while being careful not to overly challenge or reinforce them is part of the process of engaging students in discussion of popular media and advertising (Buckingham, 2003). An explicitly "anti-advertisement" slant in either the questioning or teacher modeling might ultimately cause Asia, who considers fashion to be an integral aspect of her emerging identity, to answer more superficially or more reticently than allowing her to explore her positive associations with advertising more deeply (Turnbull, 1998).

However, the Five Critical Questions are also designed to probe for richer responses than merely stating taste preferences. The term "active reasoning" refers to a student's ability to shape taste preferences into a series of descriptive or logical expository statements, and expected Asia to demonstrate some of this active reasoning in demonstrating home knowledge (Hobbs & RobbGrieco, 2009). To gauge Asia's development in formal analysis and the connection of formal technique to the commercials' messages, it was particularly important to model and then praise attention to detail and a connection of formal details to themes. During their one modeling exercise, "Screencast #1," Jackson and Asia created a screencast to examine a two-minute Adidas commercial "Star Wars" (2010), which used frenetic imagery, iconic imagery from the *Star Wars* (Lucas, 1977) films, and a cameo from rapper Snoop Dogg to deliver its message. Jackson also modeled not only basic viewing techniques like rewinding, pausing, and pointing with the mouse, but also provided model analyses of techniques and themes. To model the use of formal language, she made observations of camera angles and editing techniques:

> Jackson: "These guys are running up the stairs and you see it in a close-up. Use the terminology we've been learning. It's a close-up of a guy in his Adidas sneakers. So for me, I'm going to make an observation: I can't really see his sneakers all the time, so I'm not sure if Adidas is trying to get me to find the sneaker appealing, because they don't really show me the sneaker that much."

Jackson also made connections to genre and Asia's lived experiences with popular media:

> Jackson: "It almost seems like a movie where the world has ended, and these are the people that are still here at the end of the world. Have you seen The Book of Eli [a 2010 post-apocalypse film starring American actor Denzel Washington]?"

At the end of this modeling process, Asia made her first detailed observation. Pausing a shot featuring the Death Star—the moon-like home base of the villains in the *Star Wars* films—to demonstrate how the commercial subtly exploits imagery from the original film, Asia observes: "Watching it three times, I noticed that it [the shot] went into space—you can see outside, and you can see, kind of, the moon [the Death Star]."

Pausing, rewinding, re-viewing, and using the mouse pointer to aid observation helped Asia to make explicit connections between actors, images, techniques and ideas through the course of her ten productions in a way that relying on only written exposition or a group viewing setting would not as easily allow. For instance, during her sixth screencast—commentary on a Nike commercial featuring basketball star Michael Jordan and filmmaker Spike Lee, "Mike and Spike" (1991)—Asia was able to use the pointer as a shorthand for how two different sets of values were expressed by the two actors. Pausing the screen to isolate both actors in a simple two-shot, Asia observed: "He [pointing to Jordan] values his strength in playing, and he [points to Lee] values sneakers." To discuss the omission of images of shoes themselves from shoe commercials in her fourth screencast, Asia paused and rewound video for a Nike/Foot Locker commercial several times to point out the few frames in which shoes could be seen:

> Asia: "They're not really showing the sneakers, so they're only showing it right here [pauses on a shot of a basketball player in midair] and that's it. I think I can go forward to show [fast-forwards to next shot], like right there on his foot—you can't see it with the shot [where he is] in the air."

She also made a connection between the omission of shoes in the commercial and an emphasis on other Nike-branded clothing:

> Asia: "If we go back [rewinds], right here, if you don't notice, he's wearing a Nike shirt that has a Nike sign. And earlier there

> was the basketball—the basketball had Nike on it. [Pauses the video] I don't know if that went too fast for you. [Rewinds, points to basketball with mouse pointer] Right there."

In these beginning steps toward textual analysis, it was crucial for Asia to be able to have full control over the image, and the flexibility to point out small details—in this case in a shot lasting less than two seconds—to make a broader analytical point.

Asia's experience was a brief but intensive screencasting process in a summer program setting, an environment very different from the tool's wider potential as a periodic diagnostic tool in the average classroom. Asia's limitations in sustained abstract analysis may point to where further work and development with this tool is needed. I have described how the act of repeating the same open-ended critical questions of various texts with the aid of interactive, real-time tools (video control and mouse pointer) clearly demonstrated Asia's ability to isolate information and begin to make formal connections within and between texts. However, many of Asia's breakthroughs in abstract analysis were relatively unsupported or undeveloped due to constraints in time and scope; a classroom teacher might notice such breakthroughs and create consistent, long-term activities to strengthen these skills.

Asia had particular difficulty connecting the literal values of an ad, including the ad's literal text or dialogue, to any broader implication of the commercial espousing these values. Suggesting there is a "correct" answer to the question of a commercial's values is inherently problematic, but although we did not necessarily encourage a negative critique, we did expect some abstraction beyond the text itself. In her eighth screencast for the Jordan's brand shoe commercial "Break to Build" (2009), for instance, Asia described the message of the commercial in its most literal terms in the language expressed by the concluding text, "break to build": "the message in this commercial is that once you break yourself that means you're building up your strength." The next step in this analysis process would be to interrogate this claim—what does it mean to "break yourself," and *how* does it "build strength?" *Why* is the advertisement using this particular phrase to convey its message?

Asia's tenth and final screencast—a reflective synthesis of her nine other screencasting exercises—was a microcosm of her progress, areas for improvement, and possibilities for future strengthening in analysis skills. To complete her final project, Asia combined the video channels from the nine preceding commercials into a single channel—a powerful

image in its own right—and provided voiceover that addressed new questions, directing her analysis at individual videos as well as the videos collectively as a group or genre. She prepared her remarks in writing but also improvised during the course of the screencast as she noticed commercials she had already analyzed. Asia addressed stereotypes used in commercials in response to the question "What did you learn this summer about commercials?" With the mouse pointer she drew attention to a particular Payless Shoe Store commercial in which a man prepared pizza dough: "That stereotypes what happens in pizza shops—what Payless thinks Italians do." She had some difficulty providing an appropriately abstract response to certain questions. When asked, "How do you feel commercials use persuasion to sell their product?" she expressed concern that if ads were not persuasive enough, unsold shoes would be "a waste—I hope that they try to recycle their shoes." Here, Asia offered a common "proper response for the teacher" related to improving the environment—a value embedded in many lessons at her school, but only tangential to the question at hand.

One major benefit of creating multiple screencasts over time was the way in which it provided Asia a spontaneous, brief, and non-written venue for metacognitive observations. She identified questions 2 and 4 regarding technique and different perspectives, respectively, as important to her personally: "The other questions are usually easier to answer and more obvious when you're watching commercials." She also related this experience to future viewing experiences: "[this process] helped me analyze commercials more often than I do, and helps me look at different points of view instead of just waiting for the show to come back on."

Asia did make significant strides in her critical thinking—including attention to formal detail and an ability to connect these details to a constructed message—but this brief experience serves more accurately as a diagnostic to assess areas of strength and weakness in her visual textual analysis skills. Asia's own persuasive message at the end of her final project—"now that you've heard this I hope you take my techniques in analyzing commercials and use them for yourself"—may serve as a way for Asia herself to transfer her textual analysis to her everyday viewing situations. More realistically, it will be the work of her future instructors, educators and mentors to continue the process as the rest of her intellectual development also progresses. Screencasting is a simple, versatile, and effective tool for her to use in taking those next steps.

Instructional Potential of Screen Capture Technology for Media Literacy

Evidence from the case study suggests two key considerations for educators to consider before undertaking screencasting projects with their students: modeling and structuring prompt questions and creating an assessment rubric. It is also important to consider how technology limitations in particular school settings may affect the use of SCS technology.

Modeling and structuring prompt questions. Open-ended questions force students to ask critical questions of texts—both *how* the text is constructed and *why* its construction might have value in formal, abstract, or connotative terms. Such frameworks allow students to explore, expand, and challenge their own ideas without answering according to only their existing knowledge or only the "correct" knowledge from the teacher. Educators must carefully scaffold the learning process by modeling examples and structuring questions that do not allow simplistic responses. SCS makes the practice of repeatedly answering such questions—which can be a daunting process for students in writing or in a group setting—technically easier for teachers and students. However, questions must also be constructed carefully to guide student responses to levels of abstraction, connotation, connection to lived experience, and formal understanding that will be expected to improve over time and practice with multiple screencast activities.

Creating assessment rubrics. Individual screencast projects may serve as effective and efficient diagnostic tools to gauge critical analysis without conflating these processes entirely with expository writing. Though pre- and post-screencast writing may help structure the experience, the strength of the critical analysis itself is the component of screencasting that distinguishes it from other traditional discussion or writing assessment tools. Students can improvise spontaneously to make new observations, and accordingly small markers of gradual progress should be valued by a longitudinal assessment rubric. Rather than assess screencasts individually, educators might instead track progress more loosely over time, supporting and strengthening specific analytical insights made by particular students, and more rigorously assess the sum of the parts of a long-term project. This process of documenting and assessing intellectual development over a period of time is useful not only for primary educators, but also for higher

education, distance education, and extracurricular enrichment instructors for whom accurate diagnosis of student competencies in textual analysis and critical thinking can be difficult and time-consuming; such diagnosis is usually dependent on student writing undertaken as a major assignment or project rather than as a diagnostic tool.

Media production and analysis faculty in higher education in particular could use screencasting to develop the interface between production courses and analysis courses, which are often distinctly separate in undergraduate and even graduate learning (Scholle & Denski, 1994). For analysis teachers, small productions force students to interact directly with media texts, not merely writing about formal characteristics, but literally highlighting them while spontaneously providing commentary. For production teachers, SCS is a tool that enables students to easily self-assess or critique other students' work.

Strengths and limitations of the technology tool. Anything that can be viewed on a monitor can be recorded with SCS. Most educators find the software tools to be easy to use. However, certain technology limitations may affect the use of SCS technology in an educational context. Factors may include Internet filtering, inability to install "freeware" on computer systems, insufficient equipment (only a microphone is needed for the composition activity), and effective use of classroom and grading time for the activity. Essentially the SCS activities combine two fundamental elements: repeat viewing and documentation of student oral responses. If a dual system audio recorder is available – this may be as simple as the "record audio" function on a cellular phone—the same activity can be accomplished without using internet media or SCS. What SCS offers, however, is an opportunity for students also to record their own screen behaviors along with their voiceover, including cropping tactically to emphasize a section of a media text, using the mouse pointer to underscore important information, and using multiple windows to incorporate not just the primary media text but other media. For example, a student might record not only the balcony scene in a film adaptation of *Romeo and Juliet*, but also a separate window of accompanying text, which they could highlight with the mouse.

Limitations of the study. There is little research on student use of screencasting to support critical thinking and analysis; most innovative use of SCS is currently being done, and often not documented in any formal way, in individual classrooms, particularly in enrichment programs where student to teacher ratio is low and students and teachers are free to explore non-traditional teaching methods or curriculum.

Because of the time considerations of assessment of screencasting—each screencast must be watched and assessed in real time—this practice needs to be adapted for larger classrooms to be explored in general education settings where there are more students and also less time to do multiple screencasts for a single assignment. Asia's story merely hints at the potential for screencasting as a technique to strengthen critical thinking about media. However, if educators and researchers begin to imagine screencasting not only a demonstrational tool but as an active production technique for students in media analysis, it may be possible to assess the ways in which screencasting might also improve critical thinking in small group collaboration projects, warm-up exercises, or as a component of peer critique.

Future research on the inclusion of screencasting and SCS software in students' media analysis activities may help educators and researchers to understand how these new tools contributes to students' ability to analyze media texts over time in a variety of academic settings. As educators continue to use screencasting as a lecture and demonstration tool, students, too, can take advantage of its potential as a compositional tool for their own work. Using SCS software to create media analysis compositions connects students' understanding of media analysis to a media production activity, offers more immediate and sensitive control of media texts to enhance observations and spontaneous analysis, and provides multiple opportunities for strengthening and deepening critical thinking skills.

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