

## Assessing Learning through Student Screencasts

By John Orlando

Technology has transformed how education is delivered. Yet the digital revolution has not had a dramatic influence on how students are assessed. Most instructors are still using the standard exams, problem sets, or papers to assess student learning.

The problem with these methods is that they show only the product; they do not demonstrate the process that was used to develop the product, and process is everything. Normally, a failure in product is produced by a failure in process. Was the work disorganized? Then the student does not know how to organize an assignment. Did the student misrepresent an idea from a reading? Then the student might not know how to read academic work.

The thinking that went into developing a work is probably the most important information that an instructor needs to help a student with performance problems. Illuminating that thinking is sometimes called “making thinking visible.” This can be harder to do in an online course, where the instructor does not have the face-to-face moments with students.

But technology now allows instructors to view students’ thinking online using screencasts—a simple video recording of what happens on the monitor, with voice narration. Students can use screencasts to describe the process that went into developing their work, thus cluing in their instructors to

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problems with process.

David Woods, assistant professor of computer and information technology at Miami University, uses student screencasts in his computer programming classes. Students write code to execute a particular program and hand it in for their assignment. But they also make screencasts that answer various questions about their thinking in writing the code.

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## TIPS FROM THE PROS

### Improving Student Motivation with Check-ins

By Alisha Etheredge

Students will naturally start losing motivation in a college course over time. This is an even bigger problem in online courses, where students can easily feel distanced from the instructor and each other. As an instructor, I notice this as a steadily deteriorating quality of student work during the course. But I found that scheduling a check-in near the beginning of the course will reverse the trend.

I like to do the check-in soon after the start, within the first three weeks. This is to show students that I care and to nip any early problems in the bud. The check-in also helps establish a relationship with the student. From this baseline I can then follow up with more messages throughout the course, returning to issues that came up in the first check-in.

I divide my students into two groups for my check-in, those with a course average above 80 percent, and those below 80 percent. For those above 80 percent, I send out a simple email that recognizes their work.

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## Improving Your Teaching Efficiency

By Stephanie Delaney

Some faculty go into online education under the impression that it will take less time than face-to-face teaching because lecturing is eliminated. But we know that online teaching takes as much, if not more, time than face-to-face teaching because of the added engagement with students in discussion and other activities. Here are some simple tips for making your online teaching more efficient, as applied to a sample assignment.

**The assignment**—Experiential education is one of the most powerful ways to learn because it melds theory with practice. There are many ways to get your students away from the computer to apply what they learned in the course. For example:

- In a biology class, they might catalogue the plants in their neighborhood with photos and an explanation of how the local ecosystem supports each
- In a psychology class, they might see what happens when they break a social norm, such as facing the back rather than the front in an elevator
- In a marketing class, they might photograph the storefronts of 10 businesses and explain how those businesses apply a tactic studied in class for getting people in the door
- In a sociology class, they might poll 10 friends on a topic related to the course and report the results

This type of assignment forces students to understand the material on a deeper level, seeing how it applies to their world. Plus, students can solicit the help of friends to set up experiments or find

subjects, which will help retention and completion.

In order to reduce questions about the assignment, you can include a short audio or video clip explaining the assignment, its purpose, the grading strategy, expected outcomes, benefits, and the like. This can serve as a kind of preemptive FAQ, with the topics drawn from past student questions. Multimedia material tends to draw our attention and so can be more effective than the usual text explanation.

**Submission**—We assume that any student content must be submitted through the LMS assignment bin, but there is no reason that this must be the case. Consider having your students submit assignments to the discussion forum, or to their blogs if you use them in your courses.

The benefit of a public submission is that students can get feedback from other students, not just the instructor. You may find that you do not have to add much beyond what other students have to say. Plus, students will generally put more time and care into work that will be seen by other students, so it may be more polished and require fewer corrections from you. The public forum also forces students to explain concepts in layman's terms, which deepens learning.

We tend to assume students need to be required to post a certain number of responses to any discussion forum, but again, there is no reason to require it if there is no pedagogical purpose. If the goal is to get feedback to the student who made the original posting, then there is no reason to require everyone to reply to it.

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Requiring responses can often lead to students' just rephrasing what others have said. Making the comments optional will cull the number of responses to those that add original content to the discussion. If you want evidence that students read each other's posts, you might have them write a brief assignment or a post highlighting their three favorite posts and why they liked them.

**Grading**—Some of the most frustrating time in grading is spent focusing on details that may not matter in the grand scheme of things. If the assignment is for a political science class, grammar and spelling are probably not identified course outcomes. As a result, you may not need to focus on them in every single assignment. As a political science instructor, your first focus should be on teaching political science, not basic grammar. You are a professor, not a copy editor. Give that job to your school's writing center—the people who are paid to do it.

Also consider giving a simple "complete/incomplete" grade for certain assignments. There is no law requiring every assignment to be graded on the A, B, C, etc. letter scale. For some assignments, it may be enough to simply require that

students complete all of the requirements of the assignment. I usually allow students with an incomplete score to resubmit once to get a complete grade. With completion-style grading, you save time on small details and focus on the larger issues related to the outcome of the assignment.

*Special considerations for large classes:* If you have a lot of students submitting, you can have them post to small-group discussion forums, and then have the group post a synopsis of the group members' results.

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**The first time [faculty] try a new assignment... it will have hiccups.**

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**Student feedback**—Faculty generally wait until they get their class evaluations to receive student feedback on the course. But this does not help with crafting individual assignments. All faculty members know that the first time they try a new assignment in their class, it will have hiccups. We learn from the results and modify the next version accordingly. But we

learn more quickly when we ask for student input on a new assignment right after trying it. Let students know that you are experimenting with the assignment, and solicit their feedback. Ask specifically about the clarity in the instructions, the time spent doing the assignment, and how much they enjoyed doing the assignment.

Soliciting student feedback gives students the pride of knowing that they are influencing the form of future courses. It also demonstrates your sincere interest in your teaching, and students will pick up on this and be motivated to perform better in the course.

The online teacher is often overwhelmed by the work involved. But a few simple tricks will allow you to achieve your pedagogical goals without becoming buried in that work.



*Stephanie Delaney is the Dean of Extended Learning at Seattle Central College. She will be presenting a seminar "Five Tips to Engage Students Outside of the Online Classroom" on Tuesday, October 6, at 1:00 p.m. CT. See Magna Publications' Live Online Seminars for more information. @*

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On the first assignment, they were required to make an observation about the C++ computer language that they used to make the code, since it was new to them. They could talk about how the language differs from those that they had previously worked with. They could also talk about parts of the language that they did not understand. This exercise forced the students to reflect on the course material and their struggles with it, and allowed the instructor to ascertain the student's true level of understanding.

On the next assignment, students were required to make a screencast that showed the code executing, as well as discuss their experience writing the code. For instance, they could discuss the hardest section for them to write.

One nice outcome of the screencasts was that Dr. Woods was able to come up with questions for students to answer on future screencasts based on what he saw from past screencasts. If a student had a particular problem, Dr. Woods could ask the student to talk on the next screencast about how he or she addressed it. This ensured that the students were thinking about their performance and Dr. Woods' feedback on it. Dr. Woods might also ask students whether they considered alternate ways to code some parts of the program. Thus, the system allowed customized assessment and student reflection.

Dr. Woods also used screencasts to move students beyond merely developing the program. Once they had become familiar with writing in the new language, they were asked to make a screencast that trained others to write code for a particular function. This forced

them to consider not only how they write code, but also how they could explain the process in a way that someone else could understand. The result is a deeper understanding of the material.

Finally, students were given the option at the end of class of presenting their work to others in a screencast. This gave them the experience of presenting their work to others as they would do in a face-to-face class or conference but doing it in an online environment.

Dr. Woods discovered a number of unexpected benefits of the screen-

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cast system. First, it made grading easier because the screencasts provided information that was not obvious from the code itself. Much of grading involves making inferences about the student's level of understanding of the assignment, and the screencasts can fill in the missing information.

Second, the screencasts provided fodder for discussion questions. Most online courses have all discussion questions set up at the beginning of the course. But the screencasts gave Dr. Woods ideas for new or alternate questions to ask. In particular, he could ask the class questions related to areas in which

the students reported struggles in their screencasts. The screencasts thus served as a formative assessment that allowed the instructor to make adjustments to the course format on the fly.

Third, students treated the screencasts as a conversation with the instructor. While students usually view assignments as just a means of checking off a class requirement, the students genuinely communicated their thoughts and concerns to their instructor through the screencasts. The assignments became more than just attempts to impress for a grade. They became an opportunity for a meeting of the minds on course concepts.

Fourth, the screencasts led students to reevaluate and correct their work. This might be due to students' taking more ownership of the work when they had to present it in a screencast. It seemed also due to students' identifying issues with their work as they talked about it during the screencast. Some students would even pause the recording to fix an issue that cropped up during the screencast. It is well known that students do not review their work enough before handing it in, and the screencasts forced this review and subsequent improvements in performance.

Finally, students were proud enough of their screencasts that many shared them with friends and family. How often do students share regular assignments with others? This demonstrates how we tend to want to share our digital artifacts with others.

Interestingly, none of the students had any questions about how to make a screencast. Dr. Woods suggested Screencast-o-matic as an option, which allows

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## Augmenting Education in the Online Classroom

By John Orlando

**A**ugmented reality (AR) is a growing field that offers new ways for teachers to engage students. Augmented reality allows people to view objects on their mobile device with content overlaid on the screen. For instance, when looking at a storefront, the user might see a list of current sales or a coupon. The user sees both the object and added content at once; hence, their reality is “augmented” by Internet content.

AR content is discovered through an app that triangulates GPS and compass information to tell users when they are near tagged locations. These locations are shown as points of interest that hover on their screen or can be identified on a map. The users can point their mobile device at a street and see where there is AR content to view. Once they are close enough to the point of interest to see it through their mobile device, the app picks up the image through their camera and overlays the AR content onto the screen.

Teachers are just now starting to experiment with AR in education. Thomas Cochrane, of the Auckland University of Technology, had students use the technology to create architectural tours of Auckland. They tagged structures with information about their history, design, etc., that would be of interest to others. The tags could contain a variety of media, from text to images to videos and podcasts, as well as links to websites. Others could then follow the tour on their cell phones or tablets. The system worked so well that one student’s project was adopted by the Auckland City Council as a tourist information guide.

AR technology is not new to New Zealand, as the city of Christchurch

used it to show historical photos of buildings overlaid on rubble after the 2011 earthquake. Not only could it show tourists pre- and post-earthquake views, but it also was used to get public input on proposed rebuilding designs.

The success of the first project led to a second iteration, where students from New Zealand, Ireland, Germany, and the U.K. collaborated in developing projects relating to their own neighborhoods. Students linked their projects via a shared Google Map, which allowed them to learn about areas outside their

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and content creators.**

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country through each other’s projects. For instance, one student created a map of Irish history, myths, and legends.

Augmented reality allows students to become both researchers and content creators, heightening engagement in the material and providing them with the pride of creating public content. It also connects theory to practice by requiring students to demonstrate the application of concepts to examples.

The process can be used in a wide variety of disciplines besides architecture.

Students in a history course can make historical tours of their city, perhaps focusing on a single event and how it impacted the area. Students in a civil engineering course could identify the basic structural principles that went into

construction of the bridges in their town. They could create drawings that sketch out the fundamental structure of the bridges in terms of categories. Zoology students could create a tour of their local zoo or other animal habitat with information about the different animals. Art students could create a tour of their local art exhibit with information about styles and artists overlaid on the work. Business students could tag a street or shopping district with information about how each business’s practices are influenced by the location.

Finally, students exhibiting projects that they create for their courses, such as posters, models, art, etc., can create AR content for them that provides viewers with background information, and even a means to comment on the works. This provides a means for students to engage in conversations with those who view their projects, as well as publicize them to the wider public and draw additional interest. Augmented reality content can also be connected to book or magazine images, allowing students to add their own content to textbook diagrams, or apply course concepts to content that they find in magazines.

While developing AR projects requires some technical know-how, it should not be beyond the reach of the average instructional designer, who can help a faculty member set up a project. Cochrane also found that his students took to it remarkably well. He had students do projects in two steps. First, they created their own Google Map, or a single map if they are collaborating, at <http://mymaps.google.com>. They then added points of interest to the map, which created the AR

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## TIPS FROM THE PROS

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*Congratulations on a successful start to our course! I didn't want your hard work to go unnoticed. You're doing a great job keeping up with the assignments and actively participating in the discussions. Please do not hesitate to let me know if you have any questions or concerns. Remember, I am here to help you throughout our short five weeks together.*

I will also add observations on things that they are doing particularly well and anything that they could still work on. Again, the point is to demonstrate that I am tracking their performance and am here to help.

For the students below 80 percent, I look at what is bringing their grade down. Are they missing an assignment? Is the quality of their work below par? Are they not following assignment instructions, or omitting important components? I then send out a very simple email to those students that might have the following start.

*Subject: Is Everything OK?*

*I just wanted to reach out because I noticed that you did not get off to a great start in our course. Although you submitted all your assignments, your performance on them was not as high as it could have been. Please reach out to me if I can be of any assistance. Review my feedback to you on your assignments, and contact me if you have*

*any questions on it. I want you to do well in the course, and I know that you are able to do it. Hang in there!*

After sending the message, I always find that many students open up and let me into their world. They explain why they are not performing well or why they were not able to get an assignment in. The information that they provide allows me to more effectively personalize my future communications with them. Instead of saying, "Why aren't you performing well on your work?" I can say, "I know it's tough taking care of a five-month-old, working full time, and going to school, but I know you can do it. Here are some tips for sneaking in some study time at different points throughout the day."

Students are always very appreciative and let me know that it meant a lot to receive that type of recognition. Here is one such response from a student.

*Wow!! Thank you!!! That means a lot. You are the first instructor to send something like this. I appreciate the positive encouragement.*

I have learned that the simple act of demonstrating your concern for students goes a long way. It can be easy for instructors to become cynical about student effort and fall into a "time clock" mentality of just going through the course motions. Students pick up on this and react accordingly. A simple

check-in will make a world of difference in student performance. Since starting this practice, I find my students are more engaged in the course—posting in the discussions earlier, responding to more of their classmates' posts, and putting more effort into their weekly assignments. And to think ... it all starts with a simple email.

*Alisha Etheredge is an adjunct professor of chemistry at Strayer University. @*

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users to create screencasts that are easily uploaded to the Screencast-o-matic website. Students can then simply send the instructor a link to the screen to view. Jing is another option that allows for screencasts up to five minutes long. But Dr. Woods found that many students loaded the videos to YouTube. Some used the free Google Hangouts on Air feature in Google+ to record their screencasts, which automatically uploads the result to their YouTube account.

Dr. Woods also noted that some students submitted the actual video files through the LMS. However, these files can be quite large, and one was too large for the LMS to handle. Plus, the process can require long uploading and downloading times on the parts of student and instructor.

Screencasting assignments should work in nearly any field. Engineering students could describe their thinking in designing models, while students working on math or physics problems could be asked to describe how they analyzed and

solved problems in an assignment.

Consider incorporating screencasting assignments into your online courses.

Woods, D. (2015). Student-Created Screencasts as an Aid to Grading and Tool for Student Reflection. EdMedia, Montreal, June 22-24.

*John Orlando is an associate director of faculty support at Northcentral University. @*

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locations. The points of interest are basically website dialogue boxes that allowed the student to add links to content such as Flickr images, YouTube videos, blogs, etc.

The second step was copying the Google Map content to Wikitude, a website that allows users to create public AR overlays. After the user creates a Wikitude account, the entire Google Map is exported as a KML file to the Wikitude site, and published. Now others can see the content either online or on-site using the Wikitude app or other AR apps such as Layar and Junao.

A faculty member who wants to worm his or her way into the waters of AR can start with the first step, having students create virtual tours of their area on Google Maps and sharing the maps with other students. This will provide them with the experience of applying course concepts to actual locations and creating content for others to view. Once comfortable with this initial step, the faculty member can then move to copying the content to Wikitude for a genuine AR experience.

Cochrane, T., Narayan, V., & Antonczak, L. (2015, 22-24 June, 2015). *Designing Collaborative Learning Environments Using Mobile AR*. Paper presented at the EdMedia: World Conference on Educational Multimedia, Hypermedia and Telecommunications, Montreal, Quebec, Canada. @

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## Wikipedia Projects for Learning

By John Orlando

**M**ost teachers consider Wikipedia the devil's realm, a place where rumor and misinformation are spread. But in reality, studies have found that Wikipedia has an accuracy of a regular encyclopedia. Inaccurate information is quickly corrected by volunteer editors, and there are strict standards for entering content, including the rule that "everything must be cited." Most important, Wikipedia is the place where many, if not most, people go to get initial information on a topic. This makes it probably the most important information source on the Internet, and because editing is public, it presents a wonderful opportunity for students to create articles as class assignments.

Developing Wikipedia articles lets students not only become content creators but also have a real impact on their world, as they know that their work will inform others. It is one of the best ways to add a practical application to course content and, as a result, improve student motivation and engagement.

There have been over 100 class and university projects in Wikipedia. One of the first was by Professor Jon Beasley-Murray at University of British Columbia in 2008. He had students in his Latin American Literature class create articles for Wikipedia on the books that they read.

As all Wikipedia work is reviewed by others, the students were instructed to make contact with the Wikipedia editors—called the "FA Team"—to receive feedback. This gave them a good understanding of Wikipedia article requirements. Many of these editors are academics, and thus Professor Beasley-Murray was effectively enlisting outside instructors to help students improve.

Wikipedia also has a quality ranking system that assigns "Good Article" or "Featured Article" status to exceptionally good works. About one in 800 articles reaches Good Article status, while one in 1,200 reaches Featured Article status. Beasley-Murray guaranteed an "A" for Good Articles and an "A+" for Featured Articles.

The results? The students, who worked in groups of two or three, produced three Featured Articles and eight Good Articles, an exceptional result given how few articles achieve these levels. These articles receive thousands of hits per month, demonstrating to students the value of their work.

I used Wikipedia in my Medical Ethics class by having a group create an entry for Surrogate Decision Maker. The article now gets over 1,000 views a month. The students who made it years ago can boast of having created something that is being viewed by researchers and possibly even medical professionals in real-life ethical situations.

Creating a Wikipedia article is not easy. It requires learning the article format, and students are likely going to be told to change it by the volunteer Wikipedia editors. Students should be told that despite their best efforts, they are very likely going to need to revise the work more than once. But revising work is a key to learning and improvement. As academics, we revise our articles many times before publication, yet do not require the same of students. Wikipedia assignments provide this experience without the instructor having to do the multiple reviews.

Since creating an article from scratch is a lot of work, one option is to have students add content to existing entries. This provides them with a manageable slice of a topic to address and the scaffolding

to structure their entry. You will certainly find hundreds of entries related to your field that have room for more content.

I suggest making this a course-long project, since it will take students a while to research and write their entries. Finally, entries require many citations, so I suggest having students work in groups because of the time involved. Consult the "Guide for University Projects" below for information on how to structure a Wikipedia assignment.

### Host a Course

Another option is to host course content on Wikiversity, which provides an easy way to put content outside the closed confines of the LMS by making it public. An instructor can load syllabi, lesson plans, and other material for the students to access both during and after a course. It will also show potential students what will be required of them in the course so that they can make an informed decision about whether to take it.

A Wikiversity page provides a place for students to add public content to a course. For instance, they could post information on projects that they developed during the course, speak to future students by adding recommendations for supplementary study material, or build self-tests on the material using the free quiz functions built into the system.

Take a look at what other faculty are doing in the listing of university projects below:

### Links

The Latin American Literature Project: <http://bit.ly/1EhRZhz>

Guide for university projects: <http://bit.ly/1JjXw5K>

Listing of university projects: [@">http://bit.ly/1WQwhHi @](http://bit.ly/1WQwhHi)