

“Greeking Out”: Creating Digital Tutorials and Support Materials for Beginners¹

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ABSTRACT

The digital revolution has fundamentally changed how languages are taught. As the “digital presence” of ancient Greek continues to increase, instructors often find themselves faced with questions as to how best to use this technology to enrich their classrooms and to help their students. This article discusses our experience in creating screencasts (multimedia tutorial videos) for our beginning Greek classes. It is the goal of this article to encourage instructors of ancient Greek to explore methods for incorporating digital material into classes, as well as methods to create screencasts in particular using basic, readily available technology. In light of these aims, this article provides suggestion for resources on pedagogy, examples of several screencasts we produced, and a discussion of the procedures behind their filming. The article also touches on how we used these screencasts in our classes, and the relative success and failure of those approaches. There are also appendices on the “scripting” of the screencasts and on various components that could be used to produce screencasts.

KEYWORDS

Beginning Greek, Pedagogy, Online Courseware, Digital Resources, Screencasts, blended learning

INTRODUCTION

In the spring of 2013, we finished producing a set of 150 screencasts (i.e. multimedia tutorial videos) aimed at providing online support for students in their

¹ An earlier version of this article was given as part of the panel “Strong Beginnings, Greater Ends: New Resources in Beginning Greek” at the 109th Meeting of the Classical Association of the Middle West and South, Iowa City, IA, 04/20/2013. In taking the presentation from conference paper to article, we are grateful to have had the support and advice of Wilfred Major and John Gruber-Miller. The readers and editors at TCL who commented on the draft provided invaluable feedback that helped us to set the discussion of our project in a broader context. Thanks also to April Spratley and Connie Rodriguez for their help on earlier drafts, and to Malia Willey for securing production space for our sessions. Finally, we would like to thank Anne Groton for her blessing and encouragement, and for creating the textbook that inspired us. All mistakes and infelicities that remain are strictly our own.

first year of ancient Greek. What prompted us to create this series—which we privately dubbed “Greeking Out,” as a play on the popular expression “geeking out”—was a host of concerns that every instructor of ancient Greek, regardless of their level of experience, faces when they step into the classroom: How can these new technologies be used to enhance student learning? Where to find examples of digital materials that are helpful to both instructor and student? How best to integrate such materials into the classroom in particular or the course in general? And finally, how might instructors—especially those with limited experience and limited access to technology and tech support—go about making digital materials? In the interests of transparency, we would like to state up front that our sequence of 150 screencasts was purchased by Focus Publishing/R. Pullins Co. as part of their online courseware package for the textbook *From Alpha to Omega: A Beginning Course in Classical Greek* (Groton). That said, our goal in writing this article is neither to promote a specific text or the screencasts we produced nor to advocate their format as ideal. What we would like to share is why and how we made these materials. In doing so, we hope to encourage others, regardless of their experience in teaching Greek and regardless of their background in using technology, to explore and to expand the way beginning Greek in particular, may be taught and learned. In light of these aims, the first section, Greek Pedagogy in the Digital World, discusses theories, methods, and resources that may provide instructors interested in using digital materials with a context for doing so. The second section, the Screencasts, provides examples of the materials that we created and a discussion that is aimed at helping others approach similar projects.

GREEK PEDAGOGY IN THE DIGITAL WORLD

Beginning Greek Textbooks with Digital Platforms

It is easy to assume that ancient Greek pedagogy is a latecomer to the digital world, but that would be a misconception. In fact, for the last quarter century, no one has studied Greek without the ample digital resources provided by the [Perseus Project](#) or the [TLG](#) (Rydberg-Cox, “Hybrid”; de Luce, Bonefas, and Bonvallet; Solomon). Recently, digital resources for intermediate-level learners in particular have become both more abundant and better suited towards a blended or flipped learning approach; the *Dickinson College Commentaries* provide texts that are annotated with links to digital print materials, as well as images and video/audio files (*Dick-*

inson College Commentaries). Other intermediate readers feature print-on-demand options and systems of annotation and vocabulary listing difficult to accomplish in traditional print (Trzaskoma). *Imagining Ancient Corinth: An Introduction to Greek Literature and Culture* is a digital textbook that blends authentic Greek texts and intermediate-level grammar with an introduction to the culture of ancient Greece, complete with excerpts from Pausanias' travelogues (Gruber-Miller, *Imagining*).

Several important articles have appraised the "state of play" of e-learning and digital materials in the beginning Greek classroom. Rebecca Davis, "Challenges of Blended Learning in the Humanities: Ancient Greek," has discussed the challenges of using a blended learning model for ancient Greek and provides a set of citations for resources that have already been created, many of which focus on beginning and intermediate learners. Similarly, Rydberg-Cox's article, "A Digital Tutorial Based on John Williams White's *First Greek Book*," is an invaluable discussion of the how's and why's of creating a hybrid Greek class, and explains the context for such ventures. Reinhard's piece, "From Slate to Tablet PC," enumerates a variety of sites, sources, and techniques for incorporating e-learning into the beginning levels of both ancient languages, as well as encouraging the educational repurposing of e-resources not necessarily created for teaching purposes, like [Second Life](#). Major's articles, "On Not Teaching Greek" and "Teaching and Testing Classical Greek in a Digital World," discuss the challenges and opportunities provided by taking Greek instruction into digital platforms, and advocate that instructors at all levels, but especially those of beginning Greek, begin to consider how the discipline will do so.

However, where digital Greek pedagogy does lag behind that of the modern languages, and increasingly behind that of Latin as well, is in the availability of online resources for beginners that do more than replicate textbook pages (Major, "Teaching and Testing"). Although there have always been online resources available to students just beginning their study of ancient Greek—such as entire courses on New Testament Greek (Peurifoy)(*Teknia*), scans of many public-domain textbooks (*Textkit*)—and although these "replicated textbooks," print handouts, and worksheets can be invaluable to both students and instructors, these materials do little to further the question of how digital technology might be used to move beyond the traditional print textbook in order to improve and enhance how beginning Greek may be studied and taught. What follows below are select examples of digital courseware and resources that are integrated with a particular textbooks to form a learning experience for the students that is a combination of text, hyperlinked or

interactive materials, visual images, audio files, podcasts, screencasts, or videos. These examples were also chosen because the material presented is complete and consciously coordinated so as to encourage its adaptation for and adoption into the classroom via blended learning or flipped learning models, thereby providing students with an element of control over the place and pace of their learning, the ability to monitor or assess their own progress through the materials, and avenues for exploring content and topics not included in the print textbook.

In terms of building these sorts of systems for beginning Greek textbooks, the website for Mastronarde's textbook, [Introduction to Attic Greek](#), is one of the best-known early sites to house interactive drills and sound files that were meant expressly to enrich the learning of not only students using that particular text, but also of any student with computer access, regardless of what or where they studied (Mastronarde). More recently, Focus Publishing/R. Pullins Co. has begun assembling online courseware and resources for *From Alpha to Omega* that feature audio files, screencasts, and interactive drills ("From Alpha to Omega, Fourth Edition") that allow instructors and students to use these materials in a synchronous or asynchronous manner with the lessons in the print textbook. The website [Ariadne: Resources for Athenaze](#) (Gruber-Miller, *Ariadne*) houses an extensive set of resources for chapters 1-28 of the *Athenaze* series, including visuals and audio files, scripts for oral exercises, writing activities, links to primary source readings that enrich the frame story, and cultural essays. Similarly, instructors at Louisiana State University have created a set of instructional power points for the chapters in Shelmerdine's *Introduction to Greek* ([Greek Help at LSU](#)) and linked them with a series of screencasts created for the same text (Duncan); in addition, LSU instructors have also begun experimenting with eliminating traditional beginning textbooks entirely by creating an all-digital set of resources for students of beginning Greek, under the title "Ancient Greek for Everyone" ([Greek Help at LSU](#)); these resources are assembled in a progression that appears to feature a strong element of student self-assessment and pacing throughout the course of the term. Rydberg-Cox's site, "[A Digital Tutorial for Students of Ancient Greek Based on White's First Greek Book](#)," provides extensive drills, practice exercises, and explications of grammar and syntax, all geared to White's text and all presented in an online format; this site also employs tests and quizzes created to allow students to assess their own rate of progress and participate in managing their learning (Rydberg-Cox, "Digital"). The Open University's interactive site [Introducing Ancient Greek](#) is an overview of the alphabet, pronunciation, and

some elements of translating an inflected language, all independent of any textbook and meant to augment the university's course "Reading Classical Greek: Language and Literature"; the site features interactive drills, animation, and sound files, but unfortunately no resources for further study beyond the brief overview it provides. Finally, the site [World-Wide Ancient Greek](#) offers a series of support materials for Luschnig's *An Introduction to Ancient Greek: A Literary Approach*, including annotated and adapted excerpts from original texts (e.g. Sappho, Plato, Praxilla), and an abbreviated set of audio files that allow students additional avenues for exploring the language beyond the content of the print textbook.²

E-Learning Pedagogy and Resources For Beginners

As one can see from the previous section, how best to teach Greek with digital resources is an increasingly important consideration for instructors at all levels. For anyone looking to incorporate such materials and methods into their classes—especially for those like us with limited experience doing so—acquiring some background in e-learning pedagogy and in the resources available to instructors can be a tremendous help. In general, the incorporation of digital materials into a class fits under the conceptual umbrella of the broad term "e-learning," which may be generally defined as using electronic media and information and communication technologies in a class (Cross). Under this definition, for example, a MOOC (Massive Online Open Course) and an individual tutorial screencast are both examples of e-learning, despite their differences in scope and content. Exploring the variety of materials and methods encapsulated in the term e-learning at various resource sites (*The eLearning Guild*, *EditLib Digital Library*) helped us to refine our own thinking about what we hoped to accomplish with our screencasts project and which model of e-learning—that is, which specific system of structuring the use of digital resources within the course—would best facilitate those goals.

When we began considering incorporating digital materials into our classes, we knew we wanted to use the technology to create materials that prompted not simply more study, but also more effective and more engaged study (Alessi and Trollip). With these goals in mind, we decided that we would create screencasts that would use animation and voicework to help students review paradigms, morphology, grammar, and syntax, and could also assist with translation, pronunciation, and

² See *Ancient Greek Language on the Web* (Van Hall) for more websites, primarily self-paced distance learning sites not affiliated with degree-granting programs.

even handwriting skills. We also made the decision that we were not creating these materials to replace the direct instruction we did in the traditional brick-and-mortar classroom (i.e. not flipped learning, see below), but rather to supplement that learning environment in what is described as a blended learning model. Blended learning refers to a format in which the students study course materials and receive instruction in part through online delivery and in part through a brick-and-mortar classroom; integral to this system is the principle that the online element of the course be structured to allow students to determine, to some extent, how and when they access the online materials (Staker and Horn; Manousakis).³ This combination of self-paced/self-regulated online learning and traditional classroom experiences aims to create a synergistic learning experience in which the greater level of control exercised by the students over the schedule and pace of their learning ideally leads to more frequent engagement with instructors, fellow students, and the material studied (Gray). We discuss some of the successes, challenges and the solutions of the blended learning model in the section “Incorporating the Screencasts into Our Classes” in the second half of the article.

Another reason why we chose initially to employ the screencasts in a blended learning model was so that we could use the experience to better understand how their role would need to be expanded and augmented should we decide to transition the course to a flipped learning model.⁴ In contrast to blended learning, a flipped learning model is one in which the online portion of the class materials are those intended to provide the direct instruction for the course; the students’ time in the brick-and-mortar classroom is then spent in a group learning environment in which they apply the concepts and information learned in the online instruction to other materials and projects (“Definition of Flipped Learning”). More than just a “learn at home, do homework in school” approach, flipped learning makes use of digital resources in a manner that allows the content of the instruction to be expanded and enhanced by the technology employed. In practice, flipped learning creates a

3 Practical examples of how to create Classics courses in a blended learning model can be found within the course archives of Sunoikisis, a virtual Classics department created by the collaborations of faculty drawn from over 80 institutions (Sunoikisis).

4 To have classes available both in traditional and in e-learning formats is a precaution all faculty at Loyola University New Orleans have been encouraged to take in the wake Hurricane Katrina in 2005, when Loyola University New Orleans shuttered its doors for the entirety of fall semester. When classes did resume in January 2006, the university began an ambitious program to ensure that Loyola University New Orleans could remain “open and operational” during a similar crisis, including asking instructors to use digital resources in order to provide instruction during an extended evacuation.

learner-centered approach to the material studied, in which the instructor fulfills the role of facilitator and guide rather than “teacher,” and helps the students to evaluate their own learning, as well as providing for differentiation of instruction within the online materials (“Definition of Flipped Learning”). Although the efficacy of this model for language instruction has been well established, and even though the general strategies and resources necessary for a successful flip are similar across the beginning level of any language, to create, direct, and monitor such a course does require significant adaptations on the part of the instructor (Muldrow). We took this caveat to heart, and our decision not to employ this model initially was based solely on our novice-level of experience.

THE SCREENCASTS

The basis for this section of the article is our specific experience in producing the screencasts in spring term 2013, and then employing them in the subsequent academic year 2013/2014. Although we would be happy to hear that other instructors found our screencasts helpful and incorporated them as supplementary materials in their classes, we understand that many instructors may want to make their own materials for the same reason we did: in order to better reflect their textbooks and their style of teaching. And of course, students may also be more attentive to video materials created by their own instructors. That said, we hope that our experiences will give a sense of the challenges that instructors are likely to face in creating and incorporating such materials into their own classes, and that our experiences also may suggest possible solutions for them.⁵

⁵ For those looking to get a sense of how best to produce and employ screencasts in particular in their classes, there are several online resources that provide a good deal of background on hardware, software, and strategies for producing these materials. Two that are particularly informative and helpful are Ruffini’s “Screencasting to Engage Learning” and Douch’s “The Best Screencasting Software for Teachers.” Ruffini’s article provides an overview of techniques that may be used in creating and employing screencasts in order to make those materials more effective in engaging student learning. Douch’s blog “The Best Screencasting Software for Teachers” speaks to technological considerations, offering a comparison of various screen capture software options, including a discussion of their strengths, weaknesses, and price. In terms of information on a variety of issues pertaining to making and using screencasts, Schrock’s “Screencasting in the Classroom” is a metasite providing a series of resource links broken down by topic (e.g. General Screencasting Information, Screencasting Rubrics, Screencasting with Students) and geared towards an audience of educators.

How We Got Started Making the Screencasts

Perhaps the most daunting question instructors face when creating digital support materials is not so much what they want to accomplish—which is probably some combination of “help my students learn” and “create re-usable materials”—but how these goals can best be accomplished. Incorporating e-learning into a class can require a great deal of adaptation on the part of the instructor, and it is easy to get overwhelmed in the planning stage. In this regard, we made four strategic decisions at the outset of the project that helped us tremendously in its successful completion and implementation:

- *Deciding on the learning model.* What roles will the digital materials play within the class and how will they be incorporated in it? The most important consideration here is the instructor’s level of prior experience with e-learning in language classes. Best practices suggest that incorporating e-learning into an existing class should be done gradually by those, like us, with limited experience in doing so. In consideration of our level of experience, we decided that, whatever we created, those materials would be best employed in a blended learning model that would encourage students to access them at times of their own choosing and as part of their work outside of the classroom. We further determined that these materials would supplement instruction in the brick-and-mortar classroom, and that they would be recommended material, but not required. In making these decisions, we contextualized the materials in such a way that, regardless of their efficacy in their debut, the progress of the class overall would not be hampered. Deciding to use whatever materials we created in this manner and model took a great deal of pressure off of us in both the production and implementation of them.
- *Deciding on the format and content of the materials.* This is also, of course, a major consideration for a project that aims to produce multimedia materials, but hopefully in deciding on the method by which the materials will be incorporated, particulars about their format and content will become clearer as a result. In this regard, exploring resources for instructors can be helpful, as can talking

with colleagues and students. In making this decision ourselves, we spent the most time talking with our students about how and when they studied, and what sorts of materials they felt would help them best in their acquisition of the language. Since we aimed to have this supplementary material reinforce concepts taught in class, we also considered what would work best given the style of teaching and learning in our brick-and-mortar classroom. In terms of the students' preferences, an informal survey⁶ of our beginning Greek students revealed two things: they felt they learned best when working one-on-one with the instructors or the program tutors, and they loved their mobile devices. Given this, we decided that the way to create—as one student put it—“the experience of being with (an instructor) without really being there” when the students needed it most (e.g. “doing our homework at 2 AM”), was to create screencasts that would be universally compatible with smartphones, tablet computers, and laptops. In light of our sense of what format would best fit our pedagogical style, we decided that the screencasts would be brief, supplemental, and geared specifically to the lessons in the textbook used in first-year Greek at Loyola University New Orleans (Groton), an approach that is similar to what many publishers have done in expanding the online courseware for their modern language textbooks (Muldrow) and what publishers like Cambridge, for example, have done for their beginning Latin series (*Online activities for the CLC*). These screencasts would then be posted on the Blackboard sites for our courses, thereby allowing students 24/7 access to them and allowing us to track student use.⁷

6 The initial student input in shaping this project was gathered informally via conversations during tutoring sessions over the 2011/2012 academic year. The class sizes for beginning Greek at Loyola University New Orleans range from 8 to 16 students, but even within that small group, the support for tutorials in a video format, as opposed to supplementary exercises in a written format or online drill-games, was unanimous.

7 In the summer of 2013, the University of Colorado at Boulder turned a pre-existing intensive summer Greek program into an online course that used state-of-the-art courseware (Camtasia, Adobe Connect) to create a distance learning environment (“Classical Greek To Be Offered Online In Summer 2013”). The two courses featured video lessons that discussed grammatical points through the conceit of a graduate student playing the role of a student struggling with the Greek language as an instructor guides him through the material. While these dialogue videos simulated a classroom setting, daily online chat sessions added the important element of interactive multimedia. During these

- *Exploring the technology available to create the digital materials.* As increasingly feature-rich hardware and software become less costly, the technology necessary to produce materials containing voicework, videos, and animation becomes more common and easier to use. We recommend that instructors looking to create multimedia digital materials contact their institution's IT specialists or instructional research/technologies staff in order to get a sense of the hardware and software already available to them, along with its varying capabilities. Also, many tech manufacturers include how-to tutorials within the software packages that accompany their products, and instructional clips abound on YouTube as well. In terms of the hardware and software we used to create the screencasts, our lack of budget actually helped make certain production decisions for us, because we were limited to items already owned by our home institution. Once we decided upon the screencast format and the particular look we wanted the series to have, we began experimenting with screen capture software (i.e. programs that record images from various sources like a computer, an interactive white board, or digital drawing tablet), the various means by which written material could be digitally presented (e.g. digital drawing tablets, interactive white boards), and ways to record sound for the narration (e.g. built-in and external mics). What we discovered, much to our relief and delight, is that we were able to create the look we decided upon for our screencasts, that of an "animated student's notebook" (see "What We Created: Examples of the Screencasts") by using a combination of basic hardware and software, specifically a desktop computer with a screen capture program, an interactive whiteboard, and an external microphone. Details of how we set up this combination follow in the section "Considerations of Recording Space, Hardware, and Software"; alternative combinations for creating screencasts are discussed in "Appendix II—Equipment for Getting Started Screencasting."

chats, students checked in with the instructors and with fellow students, and received immediate feedback in real time, thereby creating a sense of belonging to a community of learners.

- *Standardizing the method of production.* This not only provides structure for the content and length of each item produced, but also a structure for the process of recording and editing. Even for instructors looking to produce a smaller amount of material, a system of organization will serve to free those involved from second-guessing themselves as to what needs to be done when and how it needs to be done. For us, although arriving upon a productive system did take time initially, it more than paid for itself when we were able to record and produce the materials on schedule despite full-time teaching loads. Thanks to our organizational system, we knew what we were producing during each recording session and what each of us was responsible for in the process. In addition, such uniformity of production also creates uniformity within each episode, and this consistency imparts to the students a sense of the tone, content, and runtime they can expect from the series. This may seem a supercilious level of structure, but when it became clear to us that in order to complete this project as we imagined it, we would be looking at producing 150 screencasts, we became focused on establishing a way to do so efficiently and quickly. More details on our particular system follow in the section “Our Process for Recording and Editing the Screencasts.”

Incorporating the Screencasts into Our Classes

Because the academic year 2013/2014 was the pilot-year for using the screencast tutorials, and because we created the tutorials based upon feedback from a particular group of students, the discussion of student use and the limited data behind it may sound anecdotal. However, we believe this information is important to share because it suggests trends for student use and because it may suggest additional strategies for incorporating digital materials into existing classes. Even with limited use, we can already make some general observations that we hope will prove helpful to instructors who are planning to incorporate similar materials into their classes for the first time:

- *Demonstrating how to access the materials.* Showing the students these steps, even if the procedure seems self-evident, encourages

them to do likewise and also allows the instructor address questions of IT literacy within the group.

- *Introducing the materials in class.* Even if the materials are meant to be supplemental, playing the materials in class, especially at the beginning of the term, creates familiarity and a level of comfort with the experience, thereby making it more likely that the students will access them as part of their routine of study.
- *Listing the materials on the syllabus as part of each class.* Even if such materials are supplementary study aids, listing on the syllabus the specific individual items to be viewed for each class allows the students to know which ones are appropriate to which days and how many to watch as part of their review. In suggesting when best to access the materials in conjunction with the textbook, the syllabus itself becomes a tool to encourage engagement with the materials, thereby also fostering more engagement with the language.

These observations stem from the challenges and problems we encountered across the first use of our screencasts in academic year 2013/2014. When initially integrating the screencasts, we treated them no differently than written supplementary materials, like review worksheets for example. That is to say, we posted them on the Blackboard sites for the classes and made the students aware of their presence via announcements in class and on Blackboard. This was a spectacularly unsuccessful approach. Enabling the tracking function on Blackboard allowed us to see the disturbing fact that, although all 16 students were aware of the existence of the screencasts, only three videos were watched during the first two weeks of the course. In order to remedy this, we took time in class to demonstrate for the students where on the Blackboard site for the class they could find the screencasts. We also showed them how to access the screencasts and then went on to play several for the class in conjunction with the day's work.

The students' reactions to actually seeing screencasts played in class for the group was illuminating. They were engaged by the animation, but the turning point seemed to be the group consensus that these were a helpful resource and the recognition that the narrator was their instructor. This consensus about the material and their increased comfort with the screencasts resulted in an explosion in use of all

the tutorials up through the current chapter on the syllabus, with the viewings accounting for 80% of the traffic for the course site. However, after this, the hits on the screencasts for the subsequent lessons became sporadic. In order to address that phenomenon, we re-wrote the syllabus to include the tutorials as part of the schedule for the day. An example follows with the original syllabus entry first, then the revised version.

(Original)

T 10/08 **In Class Work: Continuing Lesson 8**
Greek to English Sentences 1, 4, 7 (p. 48)
Adjective/Noun Agreement Drills
Review for Exam II

(Revised)

T 10/08 **In Class Work: Continuing Lesson 8**
Greek to English Sentences 1, 4, 7 (p. 48)
Adjective/Noun Agreement Drills
Review for Exam II
Tutorial Screencasts: *First/Second Declension Adjectives*
and *Adjective and Noun Agreement*

This inclusion of the screencasts within the structure of the syllabus resulted in a steady level of student viewing over the subsequent weeks with viewings of the tutorials accounting for 50-60% of the site traffic for the course, with increased traffic in the week leading up to an exam. But there were some usage patterns that the tracking data could not explain. For example, one of the most surprising elements revealed by tracking the viewings is that students seemed reluctant to view the screencasts on days when they needed to access the site for a mandatory worksheet that covered similar material. This would seem to be a counterintuitive strategy, based on the assumption that viewing the tutorial helps with the worksheet. However, according to one student, the thinking behind this usage pattern seemed to be that the worksheet and the tutorial were equivalent; therefore watching the screencasts represented a repetition, rather than a true review. In addition, the fact that these tutorials were designated as supplementary and not required material for the course

doubtless affects the viewing habits of our students, but to what degree it does so is difficult to assess in this initial run.

Examples of the Screencasts

As was mentioned above, the aesthetic vision we came around to for the screencasts was that of a student's notebook coming to life before them and helping them to review. For each episode, the material is presented on an animated page of lined notebook paper and in actual handwriting, as opposed to digital font. As the narrator reviews the material, new notes and comments appear, a yellow highlighter stresses particularly important items, and digital "post-it notes" surface for cross-references to important pages in the textbook. All of these audio/visual elements work together to review and reinforce the points of grammar or syntax that are the focus for that tutorial, but the multimedia nature of the presentation also provides reviews of orthography, accentuation, and even pronunciation. In order to avoid the sense that the screencasts were "lectures," as well as to avoid the unsettling feeling that the narrator was peering out from the screen⁸, we decided that the students would hear the narrator, but not see her. Beyond that, we hoped the elements of hand-drawn animation in the presentation of the Greek would give the videos a "fan vid," or home-made quality, which might make the material less threatening, if not more engaging. In addition, since many students lack confidence in writing Greek, throughout the screencasts we chose to employ legible, but far from beautiful handwriting, in order to let the students know that they, too, are free to write in Greek, as opposed thinking they must duplicate the textbook's lovely typeface.

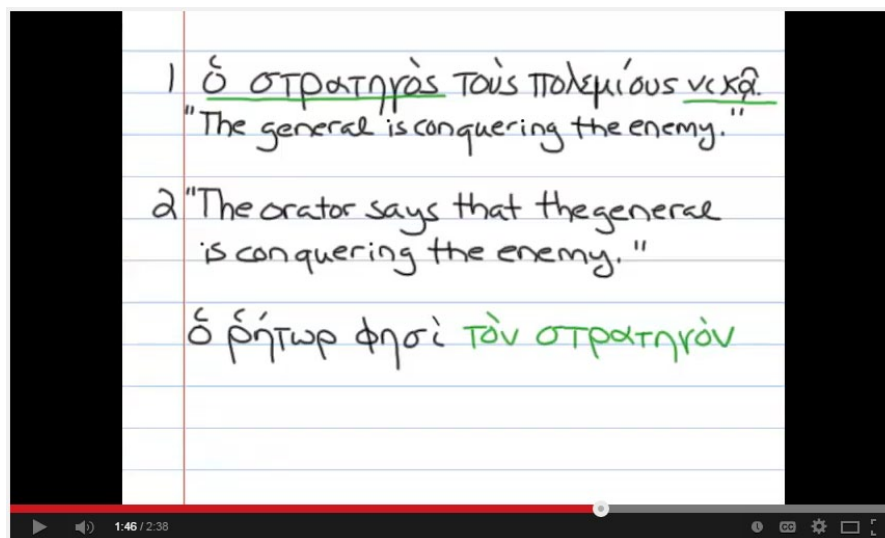
Since the screencasts were meant to augment the classroom experience, with each one created to serve as a brief review of only one element of grammar or syntax that had been introduced in the day's lesson, we decided on a maximum five-minute runtime for each. If a particular lesson covered several points of grammar or the grammar was complex, we made multiple screencasts for that lesson. The embedded links below lead to sample examples from our series. In the first tutorial, the narrator reviews how to translate the tense of the infinitive in indirect speech. This tutorial is an example of how we broke a complex concept (indirect speech using accusatives

⁸ Although many lecture capture programs (i.e. Camtasia, Adobe Connect) can provide a high-resolution window inset for an image of the instructor, often the picture provided is a limited, "shoulders and up" view. This "floating head" representation of the instructor can create the uncanny valley effect, in which the line between the viewers' perception of organic human appearance is confounded by something that appears not quite human enough, thereby causing discomfort and distraction.

and infinitives) into smaller pieces for the screencast series; here, the narrator does not teach the full concept, but simply reviews one aspect of it. In the second tutorial, the formation of the present active indicative is reviewed, thereby demonstrating how the same format may also be used to teach basic morphology.⁹

[Example 1: Indirect Discourse with Infinitives—Part One: The Infinitive and the Accusative Subject](#)

[Example 2: Forming the Present Active Indicative](#)



The format followed for these screencasts is illustrative of the method we followed throughout the series. After the title slide for the lesson and an introductory statement on the particular bit of grammar to be reviewed, the student is prompted via a digital “post-it note” to recall or look up any previous pieces of grammar that may be pertinent to the current topic. Then, the narrator takes the student through a review of the featured point of grammar. Along the way, yellow highlighter may appear, calling the student’s attention to important observations of morphology or translation, and additional “post-it notes” may prompt the student to review paradigms, etc., on other pages. At any time during the tutorials, the student may pause, rewind, or fast-forward the video in order to control the pace of the review or to go over the directives on the “post-it notes.” Exercises and exempla used within the

⁹ More examples from the series are posted at the publisher’s website and available to watch after signing in for the [demo site](#).

tutorial are kept straightforward in terms of their grammar and vocabulary, not for the sake of simplicity and ease so much as to allow the student to focus on the point of grammar or syntax being reviewed. This rhythm of content and presentation became a template for the production of the screencasts that allowed us to keep all 150 consistent in terms of their form and function; it also established for the students a sense what they could expect from these reviews in terms of content and running time. The section “Appendix I—Sample of Script for Screencast Tutorial” provides an example of how we “scripted” the content of the tutorials.

Considerations of Recording Space, Equipment, and Software

The prospect of making digital materials, especially ones that involved voicework and animation, can be daunting. At the outset of the project, after we had a sense how we wanted to incorporate the materials into our class and what their format would be, we struggled with the related question of how best to produce them. Since we knew we would be using some combination of a computer with screen capture software, an interactive whiteboard or drawing tablet, and a microphone, we decided to first consider where we were going to do the recording.

- *Finding a recording space.* This may seem like a counterintuitive first step, but where the recording happens will affect what combination of hardware and software can be used, and this in turn will affect what can be produced. For example, we experimented with recording in our offices, using a combination of a [Wacom Intuos](#) drawing tablet and a laptop. To our disappointment, we found that, although using the drawing tablet could give us the visual look we aimed for, the separation between images on writing surface and on the computer screen created an insurmountable kinesthetic disconnect for accurate writing and recording. If this project had had a large budget to draw upon, we would have purchased a [Wacom Cintiq](#), a drawing tablet featuring a highly sensitive touch screen monitor that could eliminate the disconnect mentioned above. The best choice for recording wound up being Loyola’s Library Instruction Classroom, a room dedicated to fostering the adaptation of technology in teaching, and already equipped with an interactive whiteboard, a projector, and a computer. This particular configuration allowed us to project the background image of the lined note-

book paper onto the interactive white board from a Dell desktop computer via a ceiling-mounted analog projector.

- *Selecting hardware and software.* Although drawing tablets offer a great variety of graphics, we found that writing on the interactive whiteboard also mimicked writing on a classic whiteboard, which was a better fit for the visual aesthetic we were aiming for. In addition, using the interactive whiteboard proved to be a more intuitive experience for us as novices. For example, changing the color of the writing is as simple as selecting the desired color-coded marker, rather than making changes within the software. We found that this hands-on system increased the naturalism of the presentation. The software accompanying the interactive white board also allowed for copying, pasting, undoing, and resizing text, which freed us from having to rewrite text if there was a mistake in our Greek or we ran out of room on the board. We also discovered that the interactive whiteboard's software allowed us to "turn the page" of the notebook by creating multiple images of a page that we could then move between, an option that was especially useful for longer lessons. Furthermore, the Greek text could be saved as an individual file for revisiting lessons, if need be, and the software for the interactive whiteboard even provided a wallpaper options for a lined paper background, a feature that was essential for mimicking the look of a notebook.

The microphone used for the project needed to allow easy movement, be quick to set up, and record high quality sound. These considerations eliminated the built-in mic on the computer. We also wanted to limit crisscrossing wires, and this consideration disqualified [boom](#), [lapel](#), and [headset](#) microphones, even though these microphones effectively minimize peripheral noise. Both a lapel or headset microphone would have worked well for in-office recording, but since we were in a classroom and standing at the interactive whiteboard, we decided that a [desk microphone](#) was the best choice for our project. Because desk microphones can pick up peripheral noise, we needed one with noise reduction qualities, which usually means a higher price. Fortunately, our institution already owned a [Rode Pod-](#)

[caster](#), a high quality and expensive desk microphone, which was able to record the quality of sound we wanted for the screencasts.

Selecting the screen capture software to record the materials was a bit more complicated; there are a plethora of options available for purchase, and there were multiple options available to us even at our home institution, such as [Adobe Captivate](#) and Telestream's [Screenflow](#), and TechSmith's [Camtasia](#). To narrow down the list of software, we focused on two essential considerations: editing capability and unlimited time for recording. Based on these considerations, Camtasia was ultimately chosen. Camtasia's unlimited recording time and ability to edit took the urgency off the recording process. It is easy to remove mistakes during the editing process because Camtasia has a robust editor that organizes content on a timeline of stacked tracks. This timeline representation greatly simplified the procedure for adding pictures and visual effects. This same editing feature also let fix visual mistakes during post-production by allowing us to alter accent marks, correct spelling, or even add missing letters. In addition, Camtasia can separate audio and video recordings, thereby providing the opportunity to fix mistakes in speaking without affecting the video and vice versa. For those who wish to learn how to use Camtasia, TechSmith provides an excellent [online tutorial database](#).

At this point in the discussion, we should also mention why we did not chose a free screen capture program to record the screencasts. There is a lot of free screen capture software available, with TechSmith's [Jing](#) being one of the most well known. Unfortunately, free versions of software usually come with major limitations; in the case of the free version of Jing, the program only allows five minutes maximum for recording and also includes a countdown timer that turns red in the last minute. The stress that the timer induces during that last minute of recording may cause more problems than it helps. Jing also does not have built-in editing capabilities, which were essential for our project, and its videos are exported as SWF files, a format that can result in trouble with streaming and may

lead to compatibility issues during the editing process. That being said, many of the free options may be quite suitable for recording screencasts once the producers have an idea of their strengths and limitations.

Our Process for Recording and Editing the Screencasts

Our organizational approach is not the only way that a project like this could be undertaken, and it is important that anyone undertaking a project such as this follow his or her own preferences when recording. With that being said, this step-by-step process worked well for us during recording and may provide a starting point for others looking to undertake similar projects.¹⁰

- *Creating a master schedule.* For those who must book space for recording, as we needed to, creating a master schedule and booking well in advance alleviate the weekly or daily task of checking room availability and competing with others for space and time. Even for those who have unlimited access to recording space and equipment, a master schedule for the sessions may help frame and prioritize the project. Once our personal schedules were set for the semester, we booked the Library Instruction Classroom at the appropriate times for the entire term.
- *Having a set-up procedure.* Having a set-up procedure to make sure the room and equipment are ready helps to facilitate a productive recording session. Our set-up “ritual” was also the result of discovering which configurations of our components worked best. For example, we placed a table with the microphone in between the interactive whiteboard and the computer because having the microphone face the interactive whiteboard produced the best sound. We found out after a series of problems with the accuracy of the electronic pens vis-à-vis the projection on the board that our interactive whiteboard needed to be re-oriented at the beginning of each session. It cannot be stressed enough how important this step is to setting up a project using a touchscreen; re-orienting the board to a fine calibration of

¹⁰ A short [video](#) of our room set up, recording, and editing process is available on our [YouTube Channel](#).

detail will ensure that touch from the pens is registered accurately, so that what is done on the interactive whiteboard's surface is aligned with the projection. Inaccuracy of electronic pens during recording can lead to frustration and affect the overall quality of the recording, which will then necessitate re-recording. Re-orienting the interactive whiteboard is a quick process and done through the software, and there are tutorial PDF's available to guide users through the process (Orienting your SMART Board™ interactive whiteboard).

After the microphone was set up and the interactive whiteboard was re-oriented, the board's software was opened and the lined paper background was projected on the board. After the background was ready, the script's content was added to the board and we made needed adjustments to the writing area, such as configuring the zoom or making the page longer. We checked the writing on the board against the script and used the interactive whiteboard's software to edit, copy, or move the text, if need be. With the written material configured, we then opened the Camtasia recorder, adjusted the recording area, and started the recording.

- *Strategies for not getting overwhelmed during recording.* We began recording the tutorials starting with the most straightforward topics first, rather than following the textbook's order, in order to allow our skills in production and presentation to grow along with the complexity of the material. In terms of creating the individual screencasts, we recorded each tutorial without any breaks. We chose to record this way to keep the flow of each episode consistent. The downside to this method is that all mistakes were recorded. When the inevitable misspoken word, lost train of thought, or grammatical error was noticed during recording, we stopped, made the necessary adjustments, and re-started the recording right before the mistake happened. This made for more editing in post-production, but in the long run saved us time during the recording process. This paradigm for the recording processes helped to remind us of one of our goals for this project, which was to create a sense of familiarity and accessibility, and not to strive for a level of polish that could be per-

ceived as sterile and perhaps even alienating. After each lesson was finished, we immediately watched the recording to make sure there were no egregious mistakes that we hadn't caught during filming.

- *Systems for editing and post-production.* For most instructors, as was certainly the case with us, the fun of making digital materials stems from their conception and creation. As a result, even a project that aims to create a smaller amount of digital materials can get caught up in a backlog of editing and post-production concerns. To keep our momentum going, we began editing as soon as possible after each day's recording was complete. After over 150 videos, we found this to be the most efficient method for editing:
 - Add title screens
 - Add “post-it notes” and highlighter
 - Correct audio
 - Add or alter any necessary content
 - Export and review video

As was mentioned earlier, Camtasia Studio's editor displays recorded content as a timeline of stacked tracks. The video and audio are automatically combined into one track, but they can be separated if necessary. The first step for editing each recording was to place the supplemental material—the title and credits page and any “post-it notes” indicated on the script—on that timeline.¹¹ We learned early on that this step was essential for expedience in editing and avoiding unintentional timing mistakes as to when the “post-it notes” would appear. Adding the title pages after adding “post-it notes” (which sit on individual tracks) causes the “post-it notes” to move from their original location on the timeline. After the title and credits are placed, the screencast is edited to remove any audio or visual mistakes. Highlighting and other supplemental visual effects were also added during this phase. On rare occasions, content was added during the editing process (e.g. adding a missing breathing mark, correcting an accent mark). Luckily, Camtasia's expansive animation ef-

¹¹ The insertion of the “post-it notes” from Microsoft Word text into Camtasia's timeline can be seen in the “Part 4: Editing” section of the short [video](#) of our room set up, recording, and editing process.

facts make this an achievable feat. Once the editing was complete, the screencasts were exported as MP4 files and reviewed.

CONCLUSION

What are we able to conclude about our production and use of the screencasts, even after just two semesters of use? We created the screencasts not only to provide our students with materials to support them in their journey through beginning Greek, but also in order to provide them with materials that would encourage them to engage more deeply with the language in a format that allowed them to control, in part, the time, place, and pace of their studies. Over the course of the pilot year, feedback from students and program tutors has been unanimously positive as to the fact that multimedia digital materials are invaluable in helping students with their acquisition of the language. In addition, incorporating this element of blended learning in the classes encouraged students to explore other digital resources for Greek on their own. In terms of our experience as instructors, producing the screencasts and integrating them into our classes helped us to grow as educators; the project challenged our assumptions about how our students prepared for our classes, and tested our suppositions about how best to incorporate such materials into our courses.

Perhaps more importantly, creating and using these digital materials in our beginning Greek classes has opened our eyes as to what sorts of resources the next generation of beginning Greek “textbooks” might offer students and instructors. We have all heard predictions from publishers and colleagues that the traditional print textbook will be phased out of most disciplines within the next ten years.¹² As instruction in ancient languages also moves from print to digital platforms, what will a beginning Greek class look like and what resources will be available to the students studying the language? We hope that our screencasts and the blended learning model we used to employ them may be part of the first steps in formulating an answer.

WORKS CITED

Alessi, S.M. and S. R. Trollip. *Multimedia for Learning: Methods and Development*. Boston: Allyn & Bacon, 2001. Print.

¹² A question very much like this was put to Wilfred Major at the “New Adventures in Greek Pedagogy” panel at the 108th meeting of CAMWS (Baton Rouge, 2012).

“[Classical Greek To Be Offered Online In Summer 2013](#).” *Classics Department*. University of Colorado Boulder, 2013. Web. 12 Nov. 2013.

Cross, Jay. “An Informal History of eLearning.” *On the Horizon* 12.3 (2004): 103-110. Print.

Davis, Rebecca Frost. “[Challenges of Blended Learning in the Humanities: Ancient Greek](#).” *Rebecca Frost Davis*, 24 May 2013. Web. 12 Nov. 2013.

de Luce, Judith, Suzanne Bonefas, and Susan Bonvallet, eds. *Special Issue: Classics and Technology*. *CALICO Journal* 18.2 (2001): 207-403. Print.

“[Definition of Flipped Learning](#).” Schoolwires, 2002-2014. Web. 07 May 2014.

[Dickinson College Commentaries](#). Dickinson College Commentaries—Department of Classical Studies, Dickinson College, n.d. Web. 07 May 2014.

“[Distance and Correspondence Education](#).” Southern Association of Colleges and Schools/Commission on Colleges, 1997-2012. Web. 07 May 2014.

“[Distance Learning Ph.D. Degrees](#).” *Department of Classics*. University of Florida, 2013. Web. 12 Nov. 2013.

Douchy, Andrew. “[The Best Screencasting Software for Teachers](#).” *Douchy’s Blog on ICT and Education*, 13 February 2014. Web. 07 May 2014.

Duncan, Al. [Al Duncan \(YouTube Channel\)](#). Web. 07 May 2014.

[EdITLib Digital Library](#). Association for the Advancement of Computing in Education, 2014. Web 07 May 2014.

“[EDUCAUSE Library Blended Learning](#).” *Educause*, 2014. Web. 07 May 2014.

[eLatin eGreek eLearn](#). Andrew Reinhard, Ning|Mode Social, 2014. Web. 07 May 2014.

[The eLearning Guild](#). Focuszone Media, Inc., 2006-2014. Web. 07 May 2014.

[Flipped Learning Network](#). Schoolwires, 2002-2014. Web. 07 May 2014.

“[From Alpha to Omega, Fourth Edition](#).” *Focus Publishing’s Online Courseware*. Focus Publishing/R. Pullins Co., 2013. Web. 12 Nov. 2013.

Gray, Caroline. “[Blended Learning: Why Everything Old is New Again—But Better](#).” *Learning Circuits (ASTD)*, May 2006. Web. 07 May 2014.

[Greek Help at LSU](#). *Dramata.com*, n.d. Web. 12 Nov. 2013.

Groton, Anne H. *From Alpha to Omega: A Beginning Course in Classical Greek*. 4th ed. Newburyport, MA: Focus Publishing, 2013. Print.

Gruber-Miller, John. [Ariadne: Resources for Athenaze](#). Cornell College, Web. 07 May 2014.

---. [Imagining Ancient Corinth: An Introduction to Greek Literature and Culture](#). Cornell College, Web. 07 May 2014.

---, ed. *When Dead Tongues Speak: Teaching Beginning Greek and Latin*. Oxford University Press, 2006. American Philological Association Classical Research Series (vol. 6), Print.

[Introducing Ancient Greek](#). The Open University, n.d. Web. 07 May 2014.

[Links for Beginning-Intermediate Greek](#). Cornell College, 2003. Web. 07 May 2014.

Luschnig, Cecelia, and Deborah Miller. [World-Wide Ancient Greek](#). n.d. Web. 12 Nov. 2013.

Major, Wilfred. “[On Not Teaching Greek](#).” *Classical Journal* 101.3 (2007): 93-98. Rpt. *CJ Forum*, 2007. Web. 07 May 2014.

--- “Teaching and Testing Classical Greek in a Digital World.” *Classical Outlook* 89.2 (2012): 36-39. Print.

Manousakis, Nikos. “[Blended Learning in an Advanced Course on Greek Tragedy](#).” *Teaching Classical Languages* 5.1 (2013): 30-49. Web. 07 May 2014.

Morrell, Kenny. “Language Acquisition and Teaching Ancient Greek Applying Recent Theories and Technology.” *When Dead Tongues Speak: Teaching Beginning Greek and Latin*. Ed. John Gruber-Miller. New York: Oxford University Press, 2006. 134-157. Print.

- Mastronarde, Donald J. [Ancient Greek Tutorials @ AtticGreek.org](#). University of California Press, 2013. Web. 12 Nov. 2013.
- Muldrow, Karen. "[A New Approach to Language Instruction: Flipping the Classroom](#)." *The Language Educator* (Nov 2013): 28-31. Web. 07 May 2014.
- [Online activities for the CLC](#). *Cambridge Latin Course*, University of Cambridge School Classics Project, 2013. Web. 07 May 2014.
- [Orienting Your SMART Board™ Interactive Whiteboard](#). Smarttech.com, 2010. Web. 07 May 2014.
- Peurifoy, Reneau. "[Materials for Mr. Peurifoy's Beginning Greek at Fuller](#)." *Reneau Peurifoy*, 2013. Web. 12 Nov. 2013.
- Reinhard, Andrew. "[From Slate to Tablet PC: Using New Technologies to Teach and Learn Latin and Greek](#)." *CJ Forum*, 3 Mar. 2008. Web. 07 May 2014.
- Ruffini, Michael. "[Screencasting to Engage Learning](#)." *Educause Review Online*, 01 November 2012. Web. 07 May 2014.
- Rydberg-Cox, Jeff. "[A Digital Tutorial for Ancient Greek Based on John Williams White's First Greek Book](#)." Jeff Rydberg-Cox, 2012-2014. Web. 07 May 2014.
- "[A Hybrid System for Teaching Ancient Greek: A Digital Tutorial for Ancient Greek Based on John Williams White's First Greek Book](#)." *Classical World* 107.1 (2013): 111-17. Web. 12 Nov. 2013.
- Schrock, Kathy. "[Screencasting in the Classroom](#)." *Kathy Schrock's Guide to Everything*, 2012-2014. Web. 07 May 2014.
- Solomon, Jon (ed.). *Accessing Antiquity: The Computerization of Classics*. Tuscon: The University of Arizona Press, 1993. Print.
- Staker, Heather, and Michael Horn. "Classifying K-12 Blended Learning." Inno-sight Institute. May 2012. Web. 07 May 2014.
- [Sunoikisis](#). Center for Hellenic Studies, Harvard University, n.d. Web. 12 Nov. 2013.
- [Teknia](#). Teknia, 2013. Web. 12 Nov. 2013.

[Textkit](#). Textkit, 2013. Web. 14 Nov. 2013.

Trzaskoma, Stephen. "[Innovation in Recent Intermediate Greek Textbooks?](#)" *Teaching Classical Languages* 3.1 (2011): 63-70. Web. 07 May 2014.

Van Hal, Toon. [Ancient Greek Language on the Web: A Critical Survey of Websites](#). Greekgrammarwikidot.com, n.d. Web. 07 May 2014.

APPENDIX I—SAMPLE SCRIPT FOR A SCREENCAST TUTORIAL

For any given tutorial, we did not write out a formal script beyond noting the Greek example sentences we would use. We did this in order to create a more natural flow to the voiceover. In not having a formal script, we hoped that the narration would retain a cadence similar to an instructor teaching in class. What was set for each tutorial, besides the exempla to be written on the board, were the “post-it notes” that would display the page numbers on which the grammar or vocabulary to be reviewed could be found. We chose to use the page numbers from the text rather than the textbook’s numerical section headings because the page number citations allow students to locate the pertinent information more quickly.

In terms of how much could be reviewed within our self-imposed five-minute limit, we discovered that we were limited to a handful of examples or one paradigm drill. Even more importantly, we discovered, after one particularly disastrous session, that it was difficult to do two things well within that five-minute window. This point is illustrated by the two scripts below. In this particular case, it proved impossible both to review the principles indirect speech and to translate a meaningful number of exempla within such a brief time. The solution was to break that concept into two discreet screencasts with one showing the principle, the other focused on practicing with the grammar.

[Lesson 41 \(Grammar\)](#)

Indirect Discourse with Infinitives—Part One: The Infinitive and the Accusative Subject

1. The general is conquering the enemy.

ὁ στρατηγὸς τοὺς πολεμίους νικᾷ.

Post-It Note: Indirect Discourse with Infinitives, pp. 296-299

2. The orator says that the general is conquering the enemy

ὁ ῥήτωρ φησὶ τὸν στρατηγὸν τοὺς πολεμίους νικᾷν.

Post-It Note: Subject Accusative, p. 297

Post-It Note: Conversion of Verb of Indirect Discourse to Infinitive, pp. 296-297

[Lesson 41 \(Practice Translation\)](#)

Indirect Discourse with Infinitives—Part Two: Translating Indirect Discourse with Infinitives

1. ὁ ῥήτωρ φησὶ τὸν στρατηγὸν τοὺς πολεμίους νικᾷν.

The orator says that the general _____ the enemy.

Post-It Note: Indirect Discourse with Infinitives, pp. 296-299

Post-It Note: Relative Time indicated by the Infinitive in Indirect Discourse, p. 297

2. ὁ ῥήτωρ φησὶ τὸν στρατηγὸν τοὺς πολεμίους νικήσειν.

The orator says that the general _____ the enemy.

3. ὁ ῥήτωρ ἔφη τὸν στρατηγὸν τοὺς πολεμίους νικᾶν.

The orator said that the general _____ the enemy.

4. ὁ ῥήτωρ φησὶ τὸν στρατηγὸν τοὺς πολεμίους νικῆσαι.

The orator says that the general _____ the enemy.

APPENDIX II— EQUIPMENT FOR GETTING STARTED SCREENCASTING

The following breakdowns are lists of possible equipment and programs for producing screencasts; all presuppose access to a desktop or laptop computer. The included links are meant to provide examples of hardware and software, and are not meant as endorsements. In terms of the particular configurations below, the **Low-Budget Approach** features hardware and software that is free and/or available on most desktop or laptop computers; the **Medium-Budget Approach** and the **High-Budget Approach** feature hardware and software that are normally purchased by institutions for use by faculty and staff. Those looking for a more in-depth discussion of software options would do well to investigate Douch's "The Best Screencasting Software for Teachers."

Low-Budget Approach: This approach features a combination of screen capture software, which creates a live recording of a computer screen, along with a word processing program, which creates a document containing the desired text, and the computer's microphone.

- Screen Capture Software: [Jing](#). Jing is both Windows and Mac compatible, and provides up to five minutes of recording time. A free version is available.
- Word Processing Software: [Microsoft Word](#). Most computers come with software that includes a word processing program. Here, Microsoft Word was selected because of its ubiquity across both desktop and laptop computers. However, it should be noted that this program is not free (Windows/Mac \$69.99/\$139.00), and those in need of a free word processing program might look to [Google Drive](#).
- Microphone: Computer with built-in microphone. Most laptop computers and traditional desktop monitors come equipped with a microphone.

Medium-Budget Approach: This approach features a combination of proprietary screen capture software, an interactive whiteboard, and an external microphone, which work together with a desktop or laptop computer.

- Screen Capture Software: [Camtasia](#). Camtasia provides a fully-featured software package, offering extensive editing capabilities and

unlimited recording time. The package is also available to educators at a discount (\$149). Those looking for a lower price point might explore Camtasia:mac (a Mac only version) available to educators for \$75.

- [SMART Board](#). Interactive whiteboards come in various models and in a range of prices. Because of the variety of product and capabilities, we would recommend that anyone looking to invest in an interactive whiteboard should work with their institution's technology specialists and/or appropriate salespeople as needed. The board mentioned specifically here is from Smart Technologies (approximately \$2,500).
- External Microphone. Combining these components with an external microphone, such as the [Blue Mic Yeti](#) (\$110), will increase the sound quality of the recording immeasurably.

High-Budget Approach: This approach features a fully-loaded drawing tablet in place of an interactive whiteboard. A higher quality external microphone is also put forward as an option.

- Screen Capture Software: [Camtasia](#) (see **Medium-Budget Approach** for description).
- Drawing Tablet: [Wacom Cintiq](#). For larger budgets, a drawing tablet that offers precise control over the writing surface and an almost-infinite range of graphic options provides a great degree of portability and creative options. A drawing tablet with a 22"-24" screen, such as the Wacom Cintiq, represents a substantial investment (\$2,500-\$3,000), and we would recommend that anyone looking to invest in a drawing tablet should work with their institution's technology specialists and/or appropriate salespeople as needed.
- External Microphone. Combining these components with a high-quality external microphone, like the [Rode Podcaster](#) (\$299), will provide further options for reducing background noise and capturing the highest quality sound.