

A Hybrid Online System for Teaching Ancient Greek

A Digital Tutorial for Ancient Greek Based on John William White's
First Greek Book

Preprint of an article forthcoming in the journal Classical World.

By Jeff Rydberg-Cox

Director, Classical and Ancient Studies Program

Director, Liberal Studies Program

Professor, Department of English

Affiliated Faculty, Department of Computer Science

University of Missouri-Kansas City

rydbergcoxj@umkc.edu

Introduction

The current generation of students and scholars has an abundance of digital resources available for the study of Ancient Greek. For the last twenty-five years, nobody has learned Greek without having the option of consulting the Perseus tools for tricky morphological forms, and the Thesaurus Linguae Graecae first began producing searchable Ancient Greek texts almost forty years ago.¹ While these resources provide an abundance of help for readers who have a basic foundation in Ancient Greek as they read ancient texts, there are relatively few comprehensive digital resources for beginners.² One of the most trafficked sites for beginning students of Greek and Latin provides only PDF scans of public domain textbooks and discussion where students can seek help from their peers.³ Wilfred Major recently pointed out this surprising lack of resources for beginners, and he noted how poorly these students are served by online approaches that simply replicate the structures of printed pages rather

than use technology to focus on the grammar and vocabulary that appears most frequently in the texts that students want to read as well as to provide immediate feedback and correction to students.⁴

A comprehensive online curriculum for beginning Ancient Greek would have many advantages. Even students in a traditional classroom could use a digital textbook to learn vocabulary and grammatical forms, thereby freeing up classroom time for more difficult questions of grammar and syntax. A digital curriculum also provides a way to address the more pressing challenges of small Greek classes in university environments, where tight budgets make it increasingly difficult to justify low-enrollment Greek courses. At my university, we offer a three-semester introductory Ancient Greek sequence that begins every fall semester. Many students only have time in their schedules to take one or two semesters, so enrollment steadily falls during the three-course sequence, and by the third semester we sometimes fall below the minimum class sizes required at my university. At the same time, students will sometimes ask to begin or resume the sequence outside our regular rotation. With our current staffing levels, this simply isn't possible, and many of these students end up not taking Ancient Greek at all. Some interested students are also unable to enroll because of conflicts with other classes that they require in order to graduate.

To address these problems, we are developing a hybrid approach to Ancient Greek that combines online tutorial exercises with flexible face-to-face

meetings and assessment within the Blackboard Course Management System. The goal of this system is to enable us to offer all three courses in our beginning Greek sequence concurrently, which would allow students to begin in any semester, work independently online (while receiving any necessary help in a tutorial environment from the professor or a peer tutor), and continue their Greek studies at any time during their academic career without being constrained by a rigid three-semester rotation.

The Online Textbook

The curriculum for our first-year Greek course is based on an 1896 Greek textbook entitled *First Greek Book*, which was written by John William White.⁵ This text focuses on the language and vocabulary of Xenophon's *Anabasis* and is directed toward helping the students to develop the ability to read the *Anabasis* on their own at the conclusion of the book. We have selected this particular book because it allows us to make the curriculum freely available online, to any interested student, at <http://daedalus.umkc.edu/FirstGreekBook>. The text is divided into 80 lessons, each of which contains a grammatical explanation, a short vocabulary list, ten translation exercises, and – beginning in the thirteenth chapter – simplified readings based on passages from the *Anabasis*. White's text assumes that the students are familiar with Latin, so some short grammatical explanations have been added, while comparisons with Latin syntax have been excised. Most of the text, however, is presented as it was written.

The textbook was manually typed by the commercial data entry firm Digital Divide Data with generous support from the Faculty Center for Excellence in Teaching and the Classical and Ancient Studies Program at the University of Missouri-Kansas City. The textbook is presented as static HTML pages that operate independently of any particular web-server configuration, and they do not require a specific content management platform such as Blackboard, Drupal, or WordPress. Interactive drill and practice exercises are offered using JavaScript, but these scripts are written to a very low common denominator so that they will run on as many web browsers as possible. This strategy allows for long-term viability of the text without dependence on the availability of a particular content management platform.

The pages are designed so that they can be used on tablets and mobile phones. In online courses at UMKC, a rapidly increasing segment of our students use these devices in place of a traditional computer, and for some students, it will be their only way to access the course material.

Ten multiple-choice questions appear at the end of every chapter in the online textbook, which allows students to test their understanding of the grammar, vocabulary, and translation exercises from each chapter. The quizzes were kept to only ten questions in order to facilitate readability on a small mobile screen. Because most students can complete a ten-question quiz in five or ten minutes, this format will encourage 'check-in' behavior with mobile devices,

which means that students can quickly review grammar and vocabulary in small chunks throughout the day. The ten-question quizzes are drawn from a larger question pool that covers all the material in the chapter. If students have more time to review a particular chapter, they can reload the quiz with a different set of questions, thus improving their mastery of the material contained in each chapter.

In its current form, the quiz software only offers questions about each chapter individually. The questions are drawn at random from the larger pool of questions; reloading the quiz simply selects another random pool. As the web-based tutorial matures, we would like to introduce a spaced-repetition system that tracks what students have learned across chapters and integrates a review of older material into their study of new material. We would also like to develop a stand-alone study module that allows students to customize a question pool with content from different chapters.⁶

Hybrid Classroom Implementation

The digital textbook described in the previous section is freely available on the web and can be used by any interested individual to study Ancient Greek on their own. For students who take Ancient Greek for credit, we use this textbook in a hybrid classroom format that includes flexible classroom meeting times, peer mentoring, and formal evaluation of the students' mastery of

grammar, vocabulary, and translation skills using the Blackboard Learning management system.

The foundation of our Greek course is presented online as a Blackboard course site. Students are asked to read chapters from the online textbook, master the material, and then complete a multiple-choice quiz in Blackboard. The Blackboard quizzes are built using the same data as the quizzes in the online textbook. Students are asked to complete a thirty-five-question quiz in twenty minutes. Each quiz consists of ten grammatical paradigm questions, ten vocabulary questions, and five translation questions from the current chapter. An additional ten questions are drawn at random from the vocabulary, grammar, and translation pools in previous chapters. While Blackboard does not have a method for setting up a true spaced-repetition system that can focus the questions on the material that the students find challenging, this constant inclusion of material from previous chapters will help students continue to master the material after its initial presentation. After every five chapters, the students are required to take a cumulative quiz with thirty grammar and vocabulary questions, ten translation questions (in the format described above), and ten questions drawn from the previous five chapters.

As in the online textbook, the grammar and vocabulary questions are multiple choice. They are drawn at random from pools that have a question for every grammatical paradigm and vocabulary word in the chapter. These quizzes

are competency based; students can take them as many times as necessary until they achieve the desired grade. Both the questions and the order in which the answers appear are randomized every time a student takes a quiz. Students see a different set of questions every time they take the quiz, and even if they see the same question, the multiple-choice letter associated with the correct answer will be different. The twenty-minute limit requires students to have an active command of the material because there is not enough time to look up every answer while taking the quizzes.

While vocabulary and grammar are very easy to test in an online environment, it is much more difficult to teach students how to properly construe an Ancient Greek sentence online. With the Blackboard system, we can test knowledge of translations with questions that require students to match each word in a sentence with a description of its grammatical function.

While this format attempts to replicate the detailed discussion of a sentence that might take place in a classroom, it cannot completely replace detailed classroom discussion. For this reason, we supplement the online quizzes with flexible classroom meetings and peer mentoring. As a hybrid course, the class does not have set meeting times. Instead, the instructor holds office hours in several different time blocks during the week in order to accommodate the students' varying class and work schedules. Office hours take place in a room with multiple computers, so students can come with specific

questions, work through chapters, and ask questions as they come up. In addition to office hours with a faculty member, we also utilize a peer mentor, generally a more advanced undergraduate student who has already studied Greek. This student receives training from our campus Supplemental Instruction Program and holds office hours in different blocks during the week. These sessions generally focus on translations from the textbook, and they are all characterized by active learning driven by student questions and involve high levels of peer interaction. Because students have taken the time to review and master the grammar and vocabulary outside of these meeting times, the conversations generally focus on translations and on putting the grammatical principles from the chapters into practice.

Our model for this approach is drawn from the guidelines of the National Center for Academic Transformation. The NCAT offers their model as a method for reducing the cost and increasing the effectiveness of high-demand and high-enrollment courses. Their initial focus was on college algebra and math courses, but their approach has been successfully adopted in course subjects across the curriculum.⁷ Although the focus has been on high-demand, high-enrollment courses, the approach also seems well suited for lower demand courses, such as Classical Greek, because it allows us to offer multiple sections concurrently, while also allowing us to accommodate the needs of students at different levels. Between the peer-mentoring sessions and the professor's office hours, students

actually receive more opportunities for contact time than they would receive in a traditional classroom format. This contact time is beneficial to the students because it takes place in an environment tailored to answering their specific questions.

Future Work

As this online Greek tutorial moves into its next phase, there are several areas for future work. First, the Ancient Greek tutorial system would be greatly enhanced by audio recordings of the grammatical paradigms, vocabulary words, and sentences for translation. In preliminary planning for this audio functionality, however, it has become clear that recording the audio and linking it to the textbook would be more costly than the creation of the digital tutorial. Second, after students complete an initial Greek sequence, they are often interested in reading either the *Iliad* or the *Odyssey*. We would like to create a similar digital tutorial for Homeric Greek based on Pharr's Homeric Greek textbook in order to facilitate this transition. Digital Divide Data has already entered this text, and the conversion of this text to HTML in a similar format should begin in the fall of 2013. We could use the Pharr text in a third semester course, or we could allow students to select the text they would like to use for their introductory Greek experience. Third, we would like to improve the drill and practice aspects of the program. Students should be able to review and

study grammar outside the chapter where they learned the material. In the next iteration of the tutorial, we will implement a separate interface where they can select the material they want to review from many different chapters. Better still would be a system that gamifies the process of studying Greek by tracking students' progress as they work through chapters and rewarding them with badges as they achieve different levels of mastery of the material.⁸

Finally, we would like to use this digital tutorial to address the problems associated with leading students from their beginning textbook to reading actual Greek texts in an intermediate course.⁹ The format used for the online translation exercises is inspired by, and would mesh well with, the approach being used by the Perseus Project and the Alpheios Project to create treebanks of ancient Greek and Latin texts.¹⁰ In a treebank, readers identify the grammatical dependencies for every word in every sentence of a text. While this sort of tagging is designed to facilitate computational analysis of the grammar and syntax of the texts, it could also serve as a basis for intermediate readers, opening a gateway for meaningful undergraduate research in Classics programs. Translation exercises, similar to the ones described here, could be generated out of already existing treebanks. This would allow students to be actively guided toward understanding the grammar and syntax of a sentence in detail, while receiving instant feedback about their understanding of the sentence without having to wait for a class to meet or for a professor's office hours. Once students

demonstrate mastery working with known treebanks, they can be asked to create treebanks for texts that are not already included in the corpus, thereby making meaningful contributions to the field as an intermediate level student. It should even be possible to ultimately integrate this sort of exercise into the initial online tutorial. Students who have demonstrated appropriate mastery of a grammatical feature could be asked to complete the syntactic tagging of this grammatical feature.

Ultimately, this tutorial is designed as a first step in addressing the problems associated with low enrollment and the limited electives available to our students for the study of Ancient Greek. As noted at the outset, digital resources for beginners in Classical Greek have lagged behind those available at venues such as The Perseus Digital Library, the Alpheios Project, and the Dickenson Classical Commentaries. This project aims to fill the existing gaps by providing a starting point for an absolute beginner. Using an existing textbook allows us to focus on designing effective methods for teaching beginning Greek in an online environment, a process that is much quicker than writing a new book from scratch.

¹ Gorry points out some of the dangers of relying too much on these digital resources. G. Anthony Gorry, "On Still Not Knowing Greek," *Classical Journal* 102 (July 2006): 155-58.

² Toon Van Hal (<http://greekgrammar.wikidot.com/introductory-courses>) provides a listing of on-line resources for beginners, but a review of this list reveals few comprehensive digital programs and none that are as mature as the TLG or Perseus. Judith Sebesta and Janice Siegel provide similar surveys of pedagogical materials for Ancient Greek. Judith Lynn Sebesta, "Textbooks in Greek and Latin," *Classical World* 105, no. 3 (2012): 299–349 and Janice F. Siegel, "Audio-Visual Materials in Classics," *Classical World* 105, no. 3 (2012): 351–432. Laurie Keenan offers insight into the commercial constraints associated with textbook development. Laurie Haight Keenan, "Textbook Pedagogy: Some Considerations" *Classical World* 106, no. 1 (2012): 117–21.

³ <http://www.textkit.com>

⁴ Wilfred Major, "Teaching and Testing Classical Greek in a Digital World," *Classical Outlook* 89, no. 2 (2012): 36–39. See also Wilfred Major, "On Not Teaching Greek," *Classical Journal* 103, no. 1 (2007): 93–98 and Anne Mahoney, "The Forms You Really Need to Know," *Classical Outlook* 81, no. 3 (2004): 101–105). Stephen Trzaskoma makes a similar point about current intermediate level textbooks. Stephen Trzaskoma, "Innovation in Recent Intermediate Greek Textbooks?" *Teaching Classical Languages* 3, no. 1 (2011): 63–70. Wilfred Major and Byron Stayskal offer a discussion of specific approaches to teaching Ancient Greek verbs, but they do not discuss approaches to teaching ancient languages in on-line environments. Wilfred Major and Byron Stayskal, "Teaching Greek Verbs: A Manifesto," *Teaching Classical Languages* 3, no. 1 (2011): 24–43.

⁵ John Williams White, *The First Greek Book* (Boston: Ginn & Company, 1896).

⁶ There are several freely available flashcard programs that include this functionality, such as the software program Anki (<http://ankisrs.net>). Until this functionality can be integrated into the web-based textbook, we are providing downloadable tab-delimited files with the grammatical paradigms and vocabulary found in each chapter for users to download and import into their own flashcard software.

⁷ See Carol A. Twigg, "Improving Learning and Reducing Costs: New Models for Online Learning," *Educause Review* (October 2003): 28–38, <http://www.thencat.org/>. See also Carol A. Twigg, *Increasing Success for Underserved Students: Redesigning Introductory Courses*. National Center for Academic Transformation, 2005, <http://www.thencat.org/Monographs/IncSuccess.pdf>.

⁸ The on-line language learning site Duolingo (<http://www.duolingo.com>) provides a model for the gamification of language learning for Spanish, French, Portuguese, and English. For discussions of Duolingo, see Neil Savage, "Gaining Wisdom from Crowds," *Commun. ACM* 55, no. 3 (March 2012): 13–15 and I. Garcia and C. Cabot, "Does Machine Translation Support Language Learning?" *EDULEARN12 Proceedings* (2012): 4511–4519. Roger Travis offers a useful perspective on gaming and teaching ancient history. Roger Travis, "Practomimetic Learning in the Classics Classroom: A Game-based Learning Method from Ancient Epic and Philosophy," *New England Classical Journal* 38, no. 1 (February 2011): 25–42. See also Paul Christesen and Dominic Machado, "Video Games and Classical Antiquity," *Classical World* 104, no. 1 (2010): 107–110.

⁹ A problem discussed by Marleen and Stewart Flory and Timothy Winters, among others. Marleen B. Flory and Stewart Flory, "Plato's Younger Brother: Strategies for Teaching Intermediate Greek," *The Classical Journal* 79, no. 2 (December 1983): 140–145 and Timothy F. Winters, "Dedicated to Greek: Using Inscriptions in Elementary Greek," *The Classical Journal* 98, no. 3 (February 2003): 289–294.

¹⁰ See D. Bamman and G. Crane, "The Design and Use of a Latin Dependency Treebank," In *Proceedings of the Fifth Workshop on Treebanks and Linguistic Theories (TLT2006)* (2006): 67–78, <http://nlp.perseus.tufts.edu/syntax/treebank>; D. Bamman and G. Crane, "The Latin Dependency Treebank in a Cultural Heritage Digital Library," *ACL 2007* (2007): 33,

<http://alpheios.net>; D. Bamman, F. Mambrini, and G. Crane, "An Ownership Model of Annotation: The Ancient Greek Dependency Treebank," In *Proceedings of the Eighth International Workshop on Treebanks and Linguistic Theories (TLT8)*. Milan, Italy (2009) 5-15; and D. Bamman et al., "A Collaborative Model of Treebank Development," In *Proceedings of the Sixth International Workshop on Treebanks and Linguistic Theories*. December (2007): 7-8.