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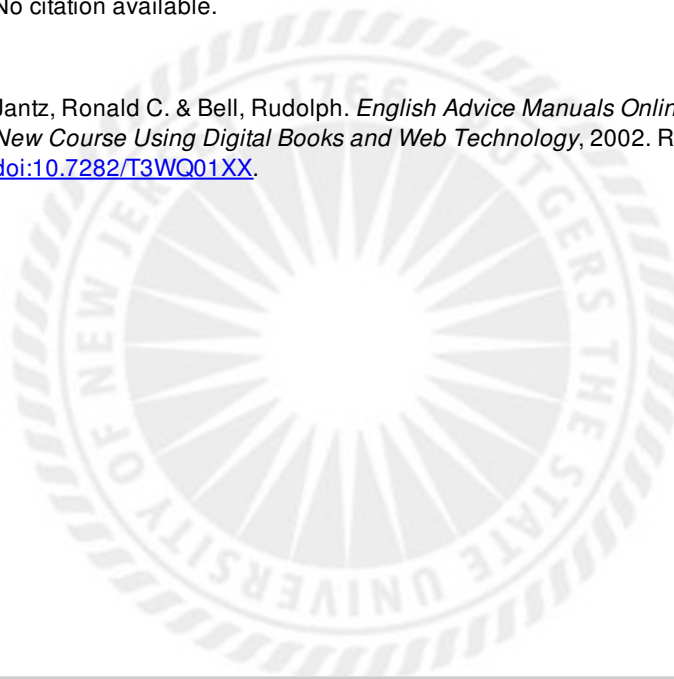
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## English Advice Manuals Online at Rutgers: A Partnership in a New Course Using Digital Books and Web Technology

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### **Abstract**

The authors' experiences in launching a new course at Rutgers University is described. The new honors course resulted from a collaboration between the History Department and Rutgers University Libraries (RUL) in which academic instruction, a unique source of digital books, and web/internet technology were brought together to provide a new learning experience for undergraduates. Students used the Early English Books Online (EEBO) collection at RUL and were challenged to learn as much as possible in a single semester about some facet of early English advice manuals. The course objectives, technology platform, and student experiences are discussed.

*Keywords: medieval history, digital books, EEBO, collaboration, internet technology*

## Introduction

This paper describes the authors' experiences in launching a new course at Rutgers University. From the outset, this honors course was a partnership between the History Department and Rutgers University Libraries (RUL). Inspired by Professor Rudolph Bell, the course sought to bring together academic instruction, a new library resource, and web technology in order to introduce undergraduate students to the study of daily life in the early modern period, with a specific focus on English advice manuals. RUL had recently obtained Early English Books Online (EEBO) on license from Bell & Howell (<http://wwwlib.umi.com/eebo>) and the Scholarly Communication Center (SCC) of RUL was in a position to apply web and database technology to create a special course website for accessing and reading the EEBO digital books.

Technological innovations are modifying the landscape of academic instruction and offering unique opportunities to provide access to materials heretofore unavailable in the undergraduate classroom. We are proceeding headlong toward virtually infinite capacity in the three dimensions of computing, storage, and network bandwidth. As advances in these dimensions are incorporated into products that can be applied in the academic institution, teaching faculty and librarians have the opportunity to provide more effective classroom experiences.

For students (and some administrators), our pitch was: "From the British Library in London to Rutgers University Libraries and thence to your dormitory room in New Brunswick or Piscataway," thereby highlighting the goal of making rare books available to undergraduates directly in their residences and classrooms.

## The Collection

The EEBO website provides the following introduction to their collection:

***"From the first book printed in English by William Caxton, through the age of Spenser and Shakespeare and the tumult of the English Civil War, Early English Books Online contains over 125,000 titles listed in Pollard & Redgrave's Short-Title Catalogue (1475 - 1640), Wing's Short-Title Catalogue (1641-1700), and the Thomason Tracts (1640-1661)."***

EEBO is a broad, inter-disciplinary resource that has subject content ranging from art and astronomy to theology and travel. So called "modern" disciplines are included in the EEBO collection such as gender studies and science fiction. One will find works by Malory, Spenser, Bacon, More, Erasmus,

Boyle, Newton, Galileo; musical exercises by Henry Purcell and novels by Aphra Behn; prayer books, pamphlets, and proclamations; almanacs, calendars, and other primary resources, all in full facsimile. All in all, EEBO offers a vast collection of early books with much variety in subject content and format. This sizable collection thus provided many opportunities and challenges for Rutgers undergraduates participating in their first serious research endeavors in the humanities. They found fascinating titles, such as this selection dealing with hair style:

***“Advice to the maidens of London: to forsake their fantastical top-knots”;***

and the following that treated married life in the medieval period:

***“Any thing for a quiet life, or, The Married mans bondage to a curst wife”.***

## **The Course**

In late 1999, Professor Bell proposed a new course that would involve the History Department, the Scholarly Communication Center (SCC) of RUL, and the EEBO in a novel partnership. The course, entitled English Advice Manuals Online at Rutgers (EAMOR), would involve students perusing the EEBO collection, choosing a topic related in some general way to popular advice manuals, and then selecting specific material from EEBO on which to base their individual research projects. The SCC would create a website (<http://www.scc.rutgers.edu/e-amor>) and local archive that would not only offer ease of access and reading, but also an electronic community for the students to review what other students would be studying, to view annotations, and to publish their papers.

From the library perspective, digital books are becoming more prevalent as new publishing business models emerge and as e-book reading devices and standards mature. Academic libraries have an opportunity to join teaching faculty in a partnership that not only provides ease of access to digital resources but, in fact, improves the research experience through content availability and text analysis features not possible in the print world. Increasingly, librarians are working with faculty to explore the use of the Internet and the World-Wide Web to help students develop information literacy and critical thinking skills. Similar initiatives to EAMOR involve medieval studies (Walter, 2000), world mythology (Larson & Azcuy, 2000), and an honors computer science course (Woodward, 1996). Ury (1999) discusses the library trends that are leading to a new service model and have resulted in a faculty-library partnership to deliver an upper level course in religious history. The University of Washington articulates the fundamental importance of faculty-librarian collaboration in their digital library initiative (Bunker & Zick, 1999).

Although the Early English Books collection has been available for some time on microfilm, only the most dedicated scholar was willing to tackle the mechanical difficulties of reading research material in microfilm format. Certainly microfilm was never a viable option for undergraduate purposes in which students enrolled in a 3-credit course over 14 weeks would be investigating popular advice manuals for clues about the social behavior of early modern people. The EEBO digital collection dramatically improved access and enabled use of these materials within the relatively compressed time period of a standard academic semester.

### **Course Objectives**

The teaching focus of the course was on reading and critical thinking. Moreover, students were to make their thoughts “visible” in both oral and written form. They were encouraged to browse and search the full EEBO collection, to carefully examine citations and abstracts, and to select appropriate texts for their individual projects. Throughout the course, Professor Bell allowed student interests and the varieties of material found in EEBO to shape the intellectual direction. The only “requirement” was that, whatever the specific topic (midwifery, childrearing, suicide, do-it-yourself exorcism), students search exhaustively for every relevant text contained in the collection. The sense of knowing everything about some topic, more thoroughly than anyone else in the world, was simultaneously the students’ greatest challenge and a source of deep satisfaction. Perseverance and imagination in searching the EEBO catalog were uniformly on display. During the semester, the students were reading, learning, exercising skepticism, and drawing inferences and conclusions. Each presented her analysis and conclusions through an oral presentation at a public EAMOR conference (<http://www.scc.rutgers.edu/e-amor/conference/12072000.html>) held at the Scholarly Communication Center and by writing a term paper.

In launching this course, we wanted to accomplish several key objectives:

**Pedagogy.** First and foremost we wanted to provide an opportunity for the students to study and analyze historical texts that dealt with advice in the early modern period. Students would select a topic and explore the EEBO collection for books that dealt with the topic. During this exploration, they would select books appropriate for the topic and then these books would be downloaded to the local EAMOR archive. The students in this course chose topics varying from accounting practices, to foreign language instruction, and early modern views on suicide or “self-murder”.

**Access.** A second major objective dealt with providing effective online access throughout the semester. The EAMOR website provided very rapid access to the digital books for repeated viewing, reading, or downloading. This

ease of access was accomplished by having a very simple search and browse user interface and storing all the student-selected books on the SCC server.

Although EEBO offered significant access improvements over the microfilm collection, we knew that reading a book on a workstation video screen would not provide an ideal reading experience. In the early stages of planning for the course, we examined the possibility of purchasing e-book reading devices that the students could use throughout the semester. We found that the e-book industry must develop further before these devices can be readily used in an academic course (Jantz, 2001). In particular, standards dealing with digital rights and with formats are not in place yet. In our specific situation, we were not able to find an e-book appliance at a reasonable price point with the necessary features that would meet our needs. The devices that we examined and that were appropriate for academic applications were either too expensive or would not accommodate the formats of the EEBO collection, specifically Adobe's portable document format (pdf) or LizardTech's ([www.lizardtech.com](http://www.lizardtech.com)) djvu format for images.

**Student Community.** The SCC has been involved in several partnerships with teaching faculty to explore the possibilities of the Web for learning and virtual student communities (Kesselman et al, 2000). The EAMOR website (<http://www.scc.rutgers.edu/e-amor>) enabled students to develop a local collection of early modern advice books. The students could easily return to this site to access their selected books and read or re-read specific excerpts. The students could also search and browse the entire collection to view what other students were studying. At the end of the semester, all term papers were posted on the website, and in a future offering of the course we hope to have students sharing early drafts via the website.

**A Framework for Future Courses.** We are on the threshold of a digital book revolution. In addition to popular reading and novels, we will see significant scholarly collections, as in EEBO, and hyper-linked textbooks or even textbooks that are customized for a specific course. Currently, there is much confusion about standards, digital rights, distribution mechanisms, preservation, e-book reading devices, and the overall quality of the reading experience. As we move through these transitions, libraries can help to bridge the gaps between the publisher and the end-user, the student.

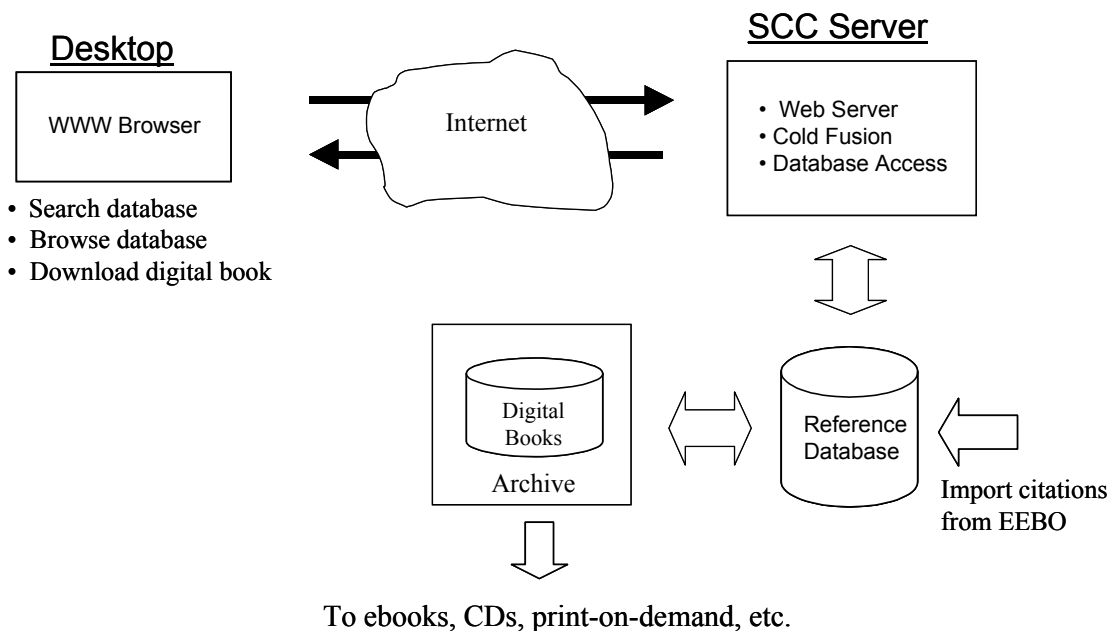
In addition to the EAMOR course, we believe that the specific model of faculty-librarian partnership described here can be "re-used" in other disciplines and courses. There is much history in these types of partnerships and many models that have been tried in various experiments and prototypes. In his survey of 25 to 30 years of library instruction, Farber (1999) states that "from an educational perspective course-related instruction was the most effective one." The EAMOR model integrates traditional bibliographic instruction within the academic course, but also addresses access and technological issues that the students are likely to encounter. Although digital libraries can improve access, the technological obstacles and the allure of instant information on the Web will

continue to be a primary reason for underutilization of important library resources.

We plan to use the EAMOR website for subsequent offerings of this unique honors course and the local archive will grow as students add to the special collection of research topics. Similar approaches to improving access and usability are applicable in other disciplines as digital books become more prevalent in academia. One can easily imagine a website such as EAMOR containing all the monographs, journal articles, and textbooks for a particular course and also providing ease of access and a virtual community for the student.

### Web Architecture for EAMOR

The Scholarly Communication Center (SCC) is a digital center within RUL that has directed its attention at providing access to unique information resources for both research and the classroom. In the process of carrying out this mission, the SCC has developed a reusable architecture for publishing databases on the web (Jantz, 2000). This approach provides a much higher quality product and one that can be implemented in a relatively short time. The architecture and its application to EAMOR is briefly discussed below.



**Figure 1 – The Architecture for EAMOR**

It is not the intent of this paper to discuss the technical aspects of the website in detail. A summary of the salient points regarding the EAMOR website are offered here.

**User Features.** As shown in Figure 1, basic features offered to the user include searching the reference database by author, title, subject, or keyword. Browsing by author is also available, with results displayed in alpha order by author. Once a book is found, the user can view the full bibliographic record and access the book for reading on the screen. Alternatively, users can choose to save a digital book locally on a workstation or, if they are in the SCC Data Center, they can choose to write the file to a re-writable CD. In the future we would like to seamlessly incorporate e-book appliances into these scenarios.

**Architecture.** In addition to the user features, the architecture consists of a reference database containing the bibliographic data for each book that a student selects for the course. The archive is a special directory on the SCC server where the digital images for the books are stored. Microsoft's MS-Access was used for defining the database and ColdFusion ([www.allaire.com](http://www.allaire.com)) was used for providing access from the web to the server-side database. A special Perl script was developed to import citations from the EEBO website to the EAMOR reference database as shown in Figure 1.

**Network.** The SCC network consists of Microsoft's Windows 2000 (NT 5.0) operating system running Internet Information Server. A ColdFusion server is also running under NT and provides the database access functions via SQL. Via the ColdFusion server, database search results are transformed into standard html and returned to the client's browser.

### **The Reading Experience and Student Feedback**

Throughout academia, there is a growing about the decline in reading among undergraduates (MacAdam, 1995). Some view digital books as just another obstacle that will further alienate students. Libraries must take ownership of this issue and explore service options that can help expand and improve the reading experience. While digital books do offer improvements in access over media such as microfilm, the reading experience is still inferior to print books. Thus, although the EEBO collection has dramatically improved access to early English sources and significantly improved the mechanics of reading over the microfilm collection, there still remain some significant usability issues.

Over the course of the semester, students selected almost 200 books resulting in a local EAMOR archive that was about 2 GB in size. The average size of a book was therefore in the range of 10 MB, however some of the books ranged as high as 145 MB. Obviously, such files do not fit on a floppy disk, the most common offline storage device available to students. Unless the student is on the campus high speed network, downloading these files over standard modem connections can be very frustrating and time consuming. In addition to these network technology issues, most academic communities have little experience with reading digital books. How do students read these books? Do



they download the books to a laptop, a device that might offer a more convenient reading experience or do they read the book on a standard computer monitor? Do they print entire books or major portions of them to reproduce the more traditional print reading format and to provide the capability to annotate with a pencil?

From not only the course perspective, but also from the library perspective, we wanted to gain more experience with the digital book and pursue options that might improve the usability of EEBO and many other digital collections (e.g. digital dissertations, journal articles in image format, etc). At the end of the semester, students were asked to provide feedback on the how they read the books, the quality of the reading experience, and technological obstacles that they encountered. What follows is a summary of student experiences collected from the EAMOR feedback survey.

- Most students said that reading the EEBO books on the computer screen was “OK”, not a resounding endorsement, but also not a negative view.
- A major advantage of on-screen reading was the ability to scroll and zoom to conveniently view parts of the text in more detail. Given some of the Old English fonts, this capability became very important. [Note: Since all of the EEBO books are in image format, text searching was not possible.]
- Generally, the students printed all or portions of the books they were studying. Although somewhat of a mental twist in thinking in this digital era, we may want to offer inexpensive “print and bind” services until quality e-book reading devices become available.
- Several of the students mentioned that they would prefer to read the books in a nice comfortable chair or in an otherwise reclining position. This comment reflects just one aspect of the many qualities that we assume in the print reading experience.
- Frequently cited technology problems included the following: 1) The djvu plug-in required for some of the EEBO images was not readily available on campus computers. Note that some students did not own their own computers so they were required to use library computers which had the djvu plug-in. 2) Infrequently accessed volumes in the EEBO collection are stored offline; it was time consuming for these volumes to be loaded into the more readily accessible online storage. [EEBO installed full online service only after the semester had ended.]
- Finally, students suggested that other digital sources be available to them. Although we intended for the focus of the course to be on the primary collection represented in EEBO, one could imagine supplementing the students’ resources with other collections such as those available at Project Gutenberg ([www.gutenberg.net](http://www.gutenberg.net)).

## **Enhancements for Future Courses**

We continue to monitor the e-book appliance industry. Major e-book advances are needed, not only in the areas of standards, but also in the technology and features offered in the appliance. For an e-book appliance to be attractive to a college student, the device must be relatively lightweight, approximately two pounds or less, and be able to accommodate all the digital materials that one might use throughout the semester. Although prices are still high, we hope to be able to launch a trial run of some devices in a future course.

The Scholarly Communication Center runs a general purpose conference webboard server which would allow students to easily comment on each others' papers and to carry on a threaded conversation throughout the course of the semester. This facility provides a virtual community for the students and could enhance discussion outside of the classroom.

For large digital objects, especially those that will not fit on a diskette, we need to explore other modes of storage. Re-writable CDs offer a flexible solution in that most workstations and laptops are typically equipped with CD drives. Re-writable CDs are also relatively inexpensive (about two dollars per CD) compared to zip drives. We have offered a prototype service in the SCC Data Center for students to write CDs. It is expected that we will see CD writers become a more universal device on our public reference computers so that students will be able to write CDs from the computer that they are using to access library resources.

## **Conclusion**

As our digital collections grow, librarians must collaborate with faculty to become essential partners in the task of improving undergraduate education. In his review of articles on Web-based learning environments, Beagle (2000) states that only a few authors discuss issues related to library access or resource integration. We believe the EAMOR model addresses both these issues and provides an environment to achieve both librarian and faculty objectives in a setting that is mutually reinforcing and promises to deliver higher quality education to the student. Although there are improvements to be realized, the authors feel that the EAMOR course was successful and innovative in bringing together academic instruction, a unique source of digital books, and web/internet technology.

From a pedagogical viewpoint, the students participating in the course had little or no background information on early modern English history, or for that matter, in historical research methods. None were history majors, two were first-year students, and all were taking four other courses during the same semester. Despite the students' work overload and inexperience, we believe that the open-ended yet serious, high purpose of the course encouraged students to do their best. They learned how research across a range of humanistic disciplines can

be conducted in ways we expect will last them a lifetime: commitments to balance, thoroughness, probing and questioning, even the humility that comes with ultimate uncertainty. For both of us, working with the students was exciting and rewarding.

The availability of the EEBO collection made it possible to offer this new course on a trial basis. We plan to offer the EAMOR course for two more semesters, with the possibility of introducing some of the enhancements described above. In the future, we hope to see librarians join with publishers and distributors to enhance the online medium, allowing students and other lovers of reading to digitally attain an enjoyable, high-quality reading experience.

**Biographical Note**

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