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BiblioBouts

What's in the game?

When undergraduate students arrive at the academy, they have a rudimentary knowledge of the disciplines, so they are totally in the dark about where to start and what expert research and discovery tools to use. As a result, students fall back on their habitual patterns: Google, Wikipedia, and other sites on the Web.¹⁻⁴ When they have exhausted this comfort zone, they do not know what to do next. This point of need is precisely when students are most receptive to information literacy instruction.

Because this point of need takes place online, we have enlisted online social gaming to transform library research from a solitary activity into a collaborative activity, where students document their research activities and share in the research trail that individual game players leave behind. Online social gaming builds a creative partnership between game players, putting professional research tools into their hands and ushering them through the research process, where they and their classmates work together to find, evaluate, and select high-quality information for their papers.

BiblioBouts: The online social game for information literacy

Funding from the Institute of Museum and Library Services has enabled a University of Michigan (UM) research team to design, develop, deploy, and evaluate the BiblioBouts online social game. BiblioBouts gives students repeated opportunities to develop and practice information literacy skills while completing their research and writing assignments. Since January 2011, we have encouraged information literacy and academic instructors to incorporate BiblioBouts into their courses, synchronizing a research and writing assignment with the

game and giving their students credit for playing the game. We conduct personal interviews with instructors whose classes have played BiblioBouts. At partner institutions, we enlist students to evaluate the game through one or more of these evaluation methods with students:

- pre- and post-game questionnaires,
- focus group interviews,
- in-game diary forms,
- follow-up interviews six months after playing BiblioBouts, and
- game-play logs.

We have used the evaluation results suggested by students, instructors, and librarians to improve the BiblioBouts game-like features, tagging and rating feedback, and social networking capabilities.

BiblioBouts overview

BiblioBouts is an online tournament made up of a series of bouts, each of which introduces students to a specific subset of information literacy skills within the overall research process. Instructors use the game's setup interface to schedule the game's starting and ending dates for its four bouts, set caps and quotas, and invite their students to the game. We highly recommend instructors invite librarians to class to introduce them to the library's database portal, demonstrate one or two relevant databases, and show them how to use Zotero to save both citations and full-texts they find online.

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Donor Bout

BiblioBouts starts with the Donor Bout. Students search the Web and scholarly databases for relevant sources (i.e., both citations and full-texts) and save them to the Zotero citation management tool. Playing this bout, students gain experience using these professional resource and discovery tools: library portal, scholarly databases, and Zotero. They repeatedly practice information literacy skills: selecting relevant databases, searching these databases, assessing the relevance of their retrieved sources, distinguishing citations from full-texts, downloading full-texts, and managing citations. Players earn points per donated source up to quota and a bonus for reaching quota.

Closer Bout

In the Closer Bout, players choose their best sources, make sure full-texts are attached, and submit them to BiblioBouts (see figure 1).

If BiblioBouts fails to detect an attached full-text, it highlights the citation in yellow, and will not allow players to close the source until they attach a full-text. Players have to backtrack, finding the source online and submitting it to BiblioBouts through Zotero, and thus, they get more experience and practice with the information literacy skills, tools, and concepts

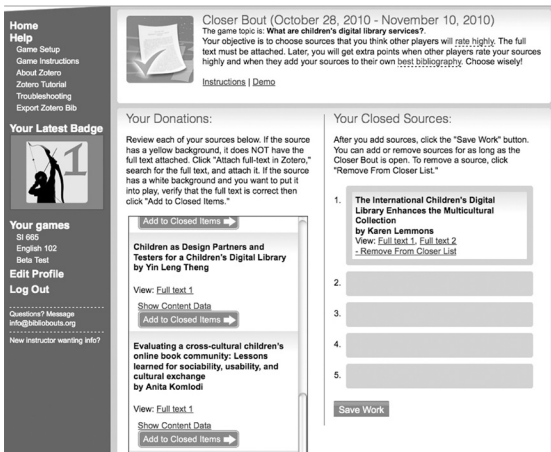


Figure 1. Choosing one's best sources in the Closer Bout. View this article online for detailed images.

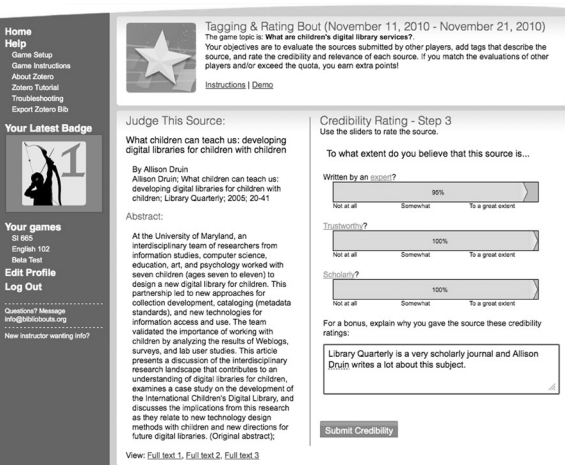


Figure 2. Rating the credibility of an opponent's source in the Closer Bout.

they encountered in the Donor Bout. Closer Bouts especially hone their relevance assessment skills because it requires students to scrutinize their sources for the very best ones. Players earn points per closed source and a bonus for reaching quota.

Tagging & rating (T&R) Bout

In the T&R Bout, game play shifts from one's own source to opponents' sources. BiblioBouts randomly chooses a source, displays it to the player, and asks him or her to check for a correct full-text and citation; tag the source's subject matter, format, and source of publication; and rate

the source's relevance and credibility. In figure 2, the player rates the credibility of an article written by Allison Druin in *Library Quarterly*. Clicking on the "full text 1" or "full text 2" links, players can download Druin's article, open, and read it to double-check for author expertise, trustworthiness, and scholarliness. After evaluating this source, players can compare their tags and ratings with those of their fellow players. BiblioBouts awards players base points per donated source up to quota, a bonus for reaching quota, and bonus points for exceeding quota.

Playing this bout, students are confronted with a host of information literacy tasks:

judging citation completeness, determining whether citations and attached full-texts match, rating scholarliness, assessing author expertise, assessing relevance (again), judging quality, assessing accuracy, and more. Players unfamiliar with terminology can click on links for pop-up windows bearing explanations; however, we encourage instructors to engage students in discussions to help them understand the various information literacy concepts they encounter and become more proficient in their assessments and more confident with their decisions. For example, instructors could discuss:

- Scholarliness: How to distinguish research and theory in their discipline from

opinion, anecdotes, second-hand reports of research, news reports, etc.

- Subject expertise: How to find clues on sources that reveal whether the author is an expert in the field.

- Trustworthiness: How to find and assess evidence that the source's information is truthful, reliable, and fair.

Best Bibliography Bout

The Best Bibliography Bout prompts players to define the specific topic that their written papers will address and three big ideas they will discuss. Finally, they choose the best sources for their paper's best bibliography from a list of *all* closed sources. In figure 3, the player has sorted the source library (on the left) so the highest-rated sources are listed first and is choosing the sources to add to her best bibliography (on the right). Listed sources have been enhanced with the

keywords and ratings that players entered in the T&R Bout.

The Best Bibliography Bout puts all the ingredients for building a bibliography at players' fingertips so that when they are done playing, they have in hand a best bibliography bearing their paper's title, the big ideas it will discuss, and the sources they will use to write it. They can submit the bibliography to their instructor as a prospectus for their

assignment and use to write their paper. BiblioBouts awards players base points per selected source up to the cap and a bonus for reaching the cap.

Instructors should schedule BiblioBouts so it ends before the deadline of the research

and writing assignment. Then students can double-check citations and find additional sources in BiblioBouts' Post-Game Library while they write their papers.

The most successful game-winning strategy is meeting all caps, exceeding quotas, choosing the same high-rated sources other students choose for their best bibliographies, and closing the sources one's opponents choose for their best bibliographies.

Deploying BiblioBouts: A librarian-instructor partnership

BiblioBouts is a flexible tool that provides students with repeated opportunities to practice research skills and strategies. Game play is an active learning exercise that bridges the gap between watching a database demonstration in class and scrambling for sources the night before the paper is due. Students can immediately apply what they learn to other

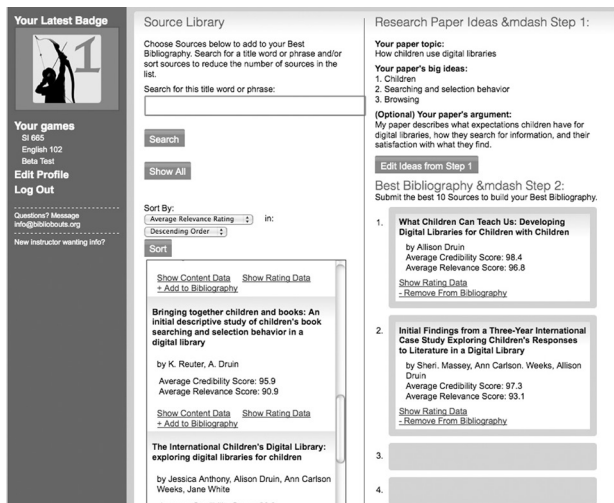


Figure 3. Choosing best sources in the Best Bibliography Bout.

courses once they have a Zotero account set up and have explored scholarly databases.

Incorporating BiblioBouts into a research assignment requires instructors to think carefully about how to prepare students for game play. Instructors must reflect on whether students are truly prepared to complete a research assignment and include content to support the relevant skills. Information literacy skills and concepts are brought to the fore as instructors contextualize the game for their students, ideally in collaboration with a librarian.

The Instructor FAQ⁵ provides detailed information on topics that instructors can cover in class to ensure that students are prepared for game play. Working with a librarian from the beginning of the planning process can help instructors write assignments that are a good match with available resources. Librarians can also break down the steps of the research process and offer insight into where students may need demonstrations, practice time, or in-class discussions to get up to speed. We strongly encourage instructors to enlist librarians' expertise especially to teach Zotero, search strategy, and library databases.

Benefits of BiblioBouts

Focus group interviews revealed student perceptions of how they benefited from BiblioBouts. BiblioBouts paced the research process for students and did not allow them to procrastinate.

"The BiblioBouts deadlines ... motivate [you] to get stuff done before the deadline [instead of] one big final deadline ... So you could take small steps in the process and as long as you put effort toward these small steps, at the end it will be done."

Playing BiblioBouts impressed on students the need to be disciplined and systematic about conducting library research, especially when evaluating sources.

"It reinforced how I would go through my research and make it more methodical ... It solidified my approach of doing research and it also would give me a platform tailored to those methods."

Students liked playing a game in which they conducted research collaboratively instead of going it alone.

"I think you could look at [BiblioBouts] as a way of brainstorming, like group brainstorming ... [instead of] just trying to do it yourself. You are basically inspiring [sic] with others. [It gives you] ideas that you might not normally come up with by yourself. There is definitely a benefit to this."

They praised game play because it introduced them to more sources and to better sources than they would have found on their own.

"It was really interesting to see the articles that other people chose because ... I still used some of my sources but it was reassuring just to see like, 'Oh, people are using some of the same journals that I am using' or, 'Oh, I never thought to look at this journal.' It kind of gave me some good ideas ... like how to find resources and it reassured me that I was doing okay."

Conclusion

What's in the BiblioBouts game? Opportunities for students to learn and practice information literacy skills using online library research tools and library collections while they work on a research and writing assignment, and opportunities for instructors to engage students in discussions about the information literacy concepts they encounter during game play.

We have recruiting academic and information literacy instructors to deploy BiblioBouts in their classes in fall 2011 and beyond.⁶

Acknowledgment

The BiblioBouts Project is funded by the Institute of Museum and Library Services (IMLS).

Notes

1. Karl V. Fast and Campbell D. Grant, "I Still Like Google: University Student Perceptions of Searching OPACs and the Web," *Proceedings of the ASIS annual meeting 2004*, 41 (2004): 138–146.

(continues on page 645)

including *BMJ* and more specific titles such as BMC's *Malaria*, which has been ranked number one by science citation reports in tropical diseases, and the *Journal of Medical Internet Research (JMIR)*, a scientist-published journal that managed to knock its Elsevier-published competitor from the top spot in its category of citation rankings.

The recently announced general medicine open access journal to be published on behalf of the Wellcome Trust, Howard Hughes Foundation, and Max Planck Institute represents yet another challenge to top tier journals that are holding onto their subscription plans. The funders' announcement states that the journal will look to "attract the most outstanding science for publication...", suggesting that it will look to compete with traditional journals in traditional medicine.

Because this journal will carry the names of prestigious funders, it stands a good chance of quickly gaining impact. Such new journals are possible because the costs of entering the digital marketplace are much less than the costs of the physical marketplace were. With greater competition, top tier journals may increasingly feel the gravitational pull of free.

For journals along all tiers, time will tell whether free is inevitable in scholarly communication. As Anderson emphasizes, free does not mean there are no resources

consumed in producing that which is found online. As publishers move forward in the digital environment, I expect that we will see new services and tools developed by publishers and others in order to meet the challenges of offering free content while remaining in business.

Notes


1. Chris Anderson, *Free. How today's smartest businesses profit by giving something for nothing* (Hyperion: New York, 2009).

2. See <http://pkp.sfu.ca/?q=ojs>.

3. Anderson, 123.

4. PEER (www.peerproject.eu) stands for Publishing and the Ecology of European Research, and is a project cofunded by the European Union. The aim of the project is to "investigate the effects of the large-scale, systematic depositing of authors' final peer-reviewed manuscripts on reader access, author visibility, and journal viability, as well as on the broader ecology of European research.

5. An interesting point that I learned from Anderson's book is that the Google page rank concept was inspired by the impact factor ranking in academia.

6. "Leading research organisations announce top-tier, open access journal for biomedical and life sciences," www.wellcome.ac.uk/News/Media-office/Press-releases/2011/WTVM051897.htm. 

("BiblioBouts" continued from page 635)

2. Alison J. Head, "How Do Students Conduct Academic Research?" *First Monday* 12, 8 (2007), firstmonday.org/issues/issue12_8/head/index.html.

3. Jeffrey Knapp, "Google and Wikipedia: Friends or foes?" *Teaching generation M.*, edited by Vibiana Bowman Cvetkovic and Robert J. Lackie (New York: Neal-Schuman, 2009), 157–178.

4. Head Allison J. and Michael B. Eisenberg, "How Today's College Students Use Wikipedia for Course-related Research," *First Monday* 15,

no. 3 (2010), firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2830/2476 (accessed April 18, 2011).

5. "BiblioBouts: Instructor FAQ," bibliobouts.si.umich.edu/instructorFAQ.html (accessed April 18, 2011).

6. To play the BiblioBouts demonstration game, use the Firefox browser, navigate to <http://bibliobouts.org> and into Email: enter demo@bibliobouts.org (minus the quotes and into Password: enter demo (minus the quotes). Contact us anytime at info@bibliobouts.org. 