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Ilana R. Barnes

Purdue University, stonebraker@purdue.edu

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Incorporating Usability into the Database Review Process: New Lessons and Possibilities

Ilana R. Barnes, Business Information Specialist, Purdue University Libraries

Abstract

In summer 2013, Purdue Libraries introduced a modified standard usability concept (heuristic evaluation, or expert review) into an existing yearly electronic resource evaluation process. Introducing more user experience parameters into the process allows librarians to record usability errors to be communicated back to database vendors or to be considered for database renewal and selection in the future at the Libraries. In total, 37 databases were reviewed by eight librarians. This proceeding will review the reported impact the internal process made on librarians' database decisions.

Heuristic Reviews and Purdue University Libraries Yearly Database Review

Heuristic reviews, or expert reviews, are a user experience method commonly used to evaluate existing interfaces. While usability tests have been employed throughout libraries, heuristic reviews have not been formally used in libraries' collection development practices. My aim was to find out answers to the following two questions through a satisfaction survey:

1. Does the incorporation of database heuristic reviews affect the database review process?
2. Is it redundant with other parts of the database evaluation process? Is it perceived as valuable?

Every year, the Purdue University Libraries evaluates one-third of their library databases using a form called the "database review." Roughly 100 databases are reviewed each year by 20 librarians. They evaluate the databases' intended purpose, usage, audience content, marketing, and cost per use. While the form did have questions that touched upon good usability, the process did not include any explicit guidance on what did or did not make a database a good product. To test whether the introduction of a heuristic review would inform a librarian's database review, I created the Database Usability Heuristic Form (see Appendix).

User Satisfaction Survey Results

Overall, satisfaction with the new process was low in this group of librarians. Of the eight librarians surveyed, seven of them said that the database heuristic review had no impact on their final decision. All the librarians found the Database Usability Heuristic Review easy to use, but many had specific problems with structure, content, and organization of the form. One-half of the librarians surveyed ($n = 4$) felt like the new form was redundant with the existing form, but were not in agreement about which part of the Database Review with which it was redundant. One librarian said that the new process "asked different questions" and was therefore valuable. Another thought the questions were worth asking but perhaps could be asked more efficiently and effectively.

When asked if the library should continue the form next year, 75% ($n = 6$) said no. One librarian commented, "It would be useful in the case of a database that is really difficult to use or inappropriate for the intended audience." Another viewed the acquisition period as a better time to evaluate a product's usability.

Thirty-seven database heuristic reviews were completed. They included many interesting insights with recorded usability errors which may not have affected librarians' final decisions, but were nevertheless recorded for posterity for the use of the libraries. The heuristic reviews will be analyzed more thoroughly in a later paper.

New Directions

This study has found that while the heuristic reviews for databases can be useful, perhaps they do not belong in the yearly database review process. I will next examine new database acquisition, database renewals, and borderline cases where usability might play a larger role. In addition, I will communicate my findings to stakeholders and hold workshops and training on heuristic reviews for collection development.

Conclusion

This summer's heuristic review project offers some valuable insights as to how one can more effectively record usability errors in vendor products and formally incorporate them into collection assessment. They offer a quick, possibly useful object that a library can use when trying to articulate errors with a database product. The low satisfaction reported by the librarians included in this study suggests two things. First, perhaps usability is not a determining factor currently for librarians, but rather a second tier requirement

below the content and usage. Second, that the current tool may need better framing and design in order to be effective for librarians, or perhaps be used in other processes, such as database acquisition or borderline cases.

Inadequate interface design of vendor products affect perception by library users and can be very detrimental. Processes like the heuristic review can start a conversation between vendors and librarians that can lead to better user experience for vendors and libraries alike.

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Appendix: Database Usability Heuristic Review

Database being reviewed: _____

Purpose of Research

The objective of this study is to examine the impact of incorporating user experience study methods into library database purchase and renewal. It focuses on introducing a relatively standard usability concept (heuristic evaluation) into an existing yearly electronic resource evaluation process at Purdue. This study involves introducing more user experience parameters into process. This project could contribute to our internal process for database renewal and selection in the future at the libraries. Please fill out this form to the best of your ability.

Directions:

1. Review the information goals you have provided on the data resource. What is the expected user? Faculty from a specific department? Students? Staff?
2. Try a simple search in the product. As you go, write down any issues you find and their severity.
3. Observe the navigation of the site. Try a couple of links to observe consistency and path. As you go, write down any issues you find and their severity.
4. Try something incorrect in the database, such as group of keywords that have no effect or a link that is not on our access area. What happens? Does it prevent your errors? As you go, write down any issues you find and their severity.
5. Observe if there is help or documentation provided. As you go, write down any issues you find and their severity.
6. Observe if the system is easy to learn for your expected users. As you go, write down any issues you find and their severity.
7. Observe: Is the system easy to use? Is the design aesthetically pleasing and clear? As you go, write down any issues you find and their severity.
8. Fill out the questionnaire on the page by putting x in the square the match your feelings about the systems. As you go, write down any issues you find and their severity.
9. Comment on the average usability of the product as you have surmised from doing the evaluation.
10. After you have finished your database review, please fill out this survey your experience:
https://purdue.qualtrics.com/SE/?SID=SV_3atkcu5aiUPAfdz.

N/A Strongly Disagree Strongly Agree

Example.

		X				
N/A	1	2	3	4	5	6

1. Visibility of System Status

The database keeps the user informed through constructive, appropriate and timely feedback.

N/A	1	2	3	4	5	6

The database responds to the user-initiated actions. There are no surprised actions by the site or tedious data entry sequences.

N/A	1	2	3	4	5	6

2. Match Between the System and the Real World

Language usage in terms of phrases, symbols and concepts is similar to that of users in their day-to-day environment.

N/A	1	2	3	4	5	6

4. Consistency and Standards

The same concepts, word, symbols, situations or actions refer to the same thing.

N/A	1	2	3	4	5	6

Common platform standards are followed.

N/A	1	2	3	4	5	6

5. Error Prevention

The database is designed in such a way that the users cannot easily make serious errors.

N/A	1	2	3	4	5	6

When a user makes an error, the database gives the appropriate message.

N/A	1	2	3	4	5	6

6. Recognition Rather than Recall

Objects to be manipulated, options for selection, and actions to be taken are visible.

N/A	1	2	3	4	5	6

The user does not need to recall information from one part of a dialogue to another.

N/A	1	2	3	4	5	6

Instructions on how to use the system are visible or easily retrievable whenever appropriate.

N/A	1	2	3	4	5	6

Displays are simple and multiple page displays are minimized.

N/A	1	2	3	4	5	6

7. Flexibility and Ease of Use

The database caters for different levels of users, from novice to expert

N/A	1	2	3	4	5	6

Shortcuts or accelerators, unseen by novice users, are provided to speed up interaction and task completion by frequent users.

N/A	1	2	3	4	5	6

8. Aesthetic and Minimalist Design

Site dialogues do not contain irrelevant or rarely needed information, which could distract users.

N/A	1	2	3	4	5	6

9. Help Users Recognize, Diagnose, and Recover from Errors

Error messages are expressed in plain language.

N/A	1	2	3	4	5	6

Error messages define problems precisely and give quick, simple, constructive, specific instructions for recovery.

N/A	1	2	3	4	5	6

If a typed command results in an error, users need not retype the entire command, but only the faulty part.

N/A	1	2	3	4	5	6

Comments on usability of product: