

Heuristic Evaluation of netTrekker

Prepared for John Cradler

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Items are rated, where appropriate, using the following scale:

(+) Positive element, be sure to keep through any revisions.

(1) - (4) Problematic element to consider changing. Rated from (1) most critical, to (4) least critical:

(1) Likely to prevent users from continuing or cause them to stop using the site.

(2) Likely to limit users, or cause errors.

(3) Likely to frustrate users.

(4) Likely to slow users down.

(?) Questions to consider. These items may indicate that further testing would be beneficial, or they may represent areas where the evaluator did not have enough information to determine whether a problem exists.

Overall Comments

1. **(+) Download times are minimal.** netTrekker pages load quickly, including search results. This complies with both early research (Miller, 1968) and more recent research (Shneiderman, 1984) recommending that the computer should respond to simple user entries within two seconds. In addition, Martin & Corl, (1986) found that best user results were experienced with pages that loaded in two seconds or less. These works concur with the meta-analysis by Bouch, Bhatti, & Kuchinsky (2000), indicating that response time is one of the most important components of user satisfaction.
2. **(+) The design is appropriately sized for the commonly used screen resolution of 800 x 600 pixels.** Though many current monitors are capable of displaying 1024x768 resolution, they are often preconfigured at a lower resolution (usually 800x600). Even though the monitor and computer would be more usable and may be designed for use at higher resolutions, many users keep the monitor at the default setting. One survey of monitor resolutions found user percentages to be the following: 640 x 480, 12.72%; 800 x 600, 54.2%; 1024 x 768, 25.78%; other sizes, 7.3%. (Software Engineering Information Repository, 2003). As such, web designers should now be developing for 800 x 600 and above.

Navigation and Layout

1. **(+) Users can always tell where they are and where they may go.** The large elementary/secondary/state standards buttons make it clear which section of the site a user is in. The tabs on the search results page help users refine their search without having to repeat the search. The tools panel shows users what other options are available at any time.
2. **(+) Logos, buttons, and tools are always placed in a consistent location throughout the site.** This greatly increases the site's usability (Detweiler & Omanson, 1996; Nielsen, 1999a). The more consistent a Web site is in its design, the easier it will be for users to quickly evaluate categories and match expectations on all pages. Users, particularly older users, tend to learn and remember locations of information, functions, and controls.
3. **(+) The site uses appropriate metaphors that are familiar to the target audience.** Research has shown that users are more likely to find and click appropriately on tabs that look like real-world tabs. Real-world tabs are those that look like the ones found in a file drawer. Users can be confused when the tabs do not look like real-world tabs and/or the words are not underlined in standard hyperlink

fashion (Bailey, Koyani, & Nall, 2000).

4. **(+) Every page of the site is clearly recognizable as belonging to netTrekker.** The visual branding is clear enough that users will not doubt whether they are, or are not, on a netTrekker page.
5. **(+) The interface is visually pleasing, uncluttered, and simple; all controls are available when they are needed.** Gratuitous graphics, advertisements, and the like have been omitted. There are no distracting animations. The focus of every page is clearly to help the user find the information s/he desires.
6. **(+) The right margin is used for vertical lists and navigation "cells."** Research shows that users click on topics in the right margin with much more efficiency than topics placed on the left because they are located much closer to the scroll bar. This allows users to quickly move the pointer between the scroll bar and the index items. Benefits are particularly strong for laptops (Bailey, Koyani, & Nall, 2000).
7. **(+) It is clear which text is a link and which text is not a link.** The netTrekker site (appropriately) does not rely on "mouseovers" for users to identify links. The site uses underlining, tabs, buttons and stacked items (e.g., lists) to indicate that words are links. Relying on mouseovers to designate links can confuse newer users and tend to slow them down because users are uncertain which links perform which functions (Bailey, R.W., Koyani, S. and Nall, J., 2000).
8. **(2) Visited links are not consistently indicated by a change of color.** Always indicate to users when a link has been visited. If a user selects one link, and there are other links to the same target, make sure all links to that target change colors. In a study of the speed with which users could find certain information, providing this type of feedback was the only aspect found to improve the speed of finding information (Spool, Scanlon, Schroeder, Snyder, & DeAngelo, 1997).

While netTrekker does generally follow the blue-to-purple color convention for new links that are then visited, not all levels of the site follow the convention consistently. Users continue to use link colors to understand which parts of a site they have visited. Where no evidence of link use exists, or non-standard colors are used, users repeatedly bounce among a set of pages not knowing that they are going back to the same page again and again (Nielsen, 1999b).

Icons

1. **(+) Icons are simple in design.** They are visually easy to "read" once users are familiar with them. The small icons used in the search results listing convey a lot of information in a very little space.
2. **(+) Each group of icons is visually distinct from other groups, and all icons within a given group share a common design.** This feature offsets the potential problem of having nearly thirty different icons used in a small space. Users can easily tell at a glance to which group a given icon belongs.
3. **(+) Icons are placed consistently from record to record.** Users can tell at a glance whether a given icon is present and/or which "state" of the icon is applicable (for example, site reliability).
4. **(+) The current status of any icon is clearly indicated.** Users can tell at a glance whether they are in the elementary, secondary, or state standards section. For the web content types, the dots that space the icons out allow users to quickly see whether a given type is available in the resource or not.
5. **(2) Users who are unable or unwilling to view images will not have access to many of the site's features or controls.** Most of the icons and buttons do not have appropriate ALT text attached. The buttons at the top of the screen (company logo, elementary/secondary/standards) are

not identified in any way. The content-type buttons all have text that reads "No <content type>" whether or not that type is available. Other iconic indicators also become unavailable (grade appropriate indicators; website reliability; language; etc.). Consider adding ALT text and/or rollover text to alleviate this potential problem.

6. **(3) Users may not realize how a site's ranking compares with the best possible ranking.** Only the number of checkmarks a site has earned is displayed; there is no immediate indication of the total number of possible checkmarks. Consider including fainter checkmarks showing the potential best rating for each. In other words, if there are five checks possible, a site getting 3 checks would have 3 bold or dark checks with 2 faint (unearned) checks.
7. **(4) Users may not recognize some icons until they have viewed the legend repeatedly.** For example, some of the icons used to represent types of web content (primary source documents, learning games, etc.) are not familiar enough to be immediately recognizable.
8. **(4) Icons representing types of web content are not ordered consistently across the system, which may make it difficult for users to find the icon they are looking for.** For example, in the legend, the last three icons are primary source document, charts/maps, and formulas/examples. In a given record, the last three icons are learning exercises, primary source document, and learning games. On the refined search page, the last three icons in the list are lesson plans, learning games, and primary source document. Each of the lists is arbitrarily ordered (instead of alphabetized, for example). Consider using the same ordering for each place where this list of icons occurs.

Main Menu (Subject Listings)

1. **(+) Sections of the site are visually distinct.** The colors make it easy to tell whether one is in the elementary or secondary section, for example. Cues other than color are also used as a backup.
2. **(+) The choices on the main menus are clear and simple.** The icons for each subject are clear and add interest without being overwhelming. The headings are clear and the subheadings add information that may help users make choices about which subjects to browse.

Search Options

1. **(+) The system provides several search options.** Users may choose to browse, search by keyword, revisit a saved search, browse their user history, search the timelines, search for famous people or themes, or do a refined search. The site offers multiple ways to find information of interest to the user.
2. **(+) The system suggests alternatives to user-defined keywords, including misspellings and similar topics and terms.** This feature increases the flexibility and ease of use of netTrekker.
3. **Search scope could be more defined.** Users should have information about and control over the range of their searches. Clearly state the scope of site pages or database being searched. Give users the ability to specify the scope of their search: for example, give users an option to search locally within a section or subsection, or globally across the site (Levine, 1996).

Search Results

1. **(2) It is not clear how the results are ordered, and users cannot reorder results according to criteria of their choice.** Results do not appear to be ordered by ranking, which would be expected. Users who perform a search that yields a high number of results may be frustrated by having to scroll through many pages to find the highest-rated sites (or sites reviewed by a certain person). Upon close inspection it may become apparent that sites are ordered according to reliability, but a secondary ordering by ranking would increase usability. Consider also adding an option for users to

specify which criteria they wish to sort results by.

2. **(4) Users may be confused at first when clicking the title of a resource results in them being taken offsite instead of bringing up resource details.** There is no indication that that link goes to the source rather than to a detail view. This problem will probably not happen more than once per user and may not be serious enough to merit any change.
3. **(4) Users may not realize how to access the website evaluation/detail view.** The "More" button, at the lower right of the resource box, is not noticeable at first. Users may try to click the title of the resource to find this information. This problem may not happen more than once or twice per user and may not be serious enough to merit any change.

Website Evaluation (Detail View)

1. **(+) Information is concise.** Users can quickly assess whether the resource is likely to be valuable to them by scanning the information included in the detail view.
2. **(4) Some icons which appear in the search results listing do not also appear on the detail view.** For example, the "Controversial Material" icon, which serves as a warning flag, does appear in the search results but does not appear on the detail page. There is a line of text, but no icon, and the text may be overlooked.

Help

1. **(+) The information in the help system is detailed, concise, and relevant.** Instructions are illustrated with current snapshots from netTrekker's interface. Descriptions of actions are presented in logical order and are clearly written. The information provided in the help system augments information presented elsewhere, rather than simply repeating it.
2. **(+) The help system is easy to access and navigate.** Users are given several options for accessing both the main help page and help that is specific to the task they are currently doing ("Help Tips," "Learn More About...").
3. **(+) The help system is visually consistent with the rest of the site.** Users who look something up in the help system will not feel lost or disconnected from netTrekker.
4. **(+) The icon legend is easily accessible when users need it.** Clicking on an icon brings it up at once, and it is very easy to read the legend.
5. **(4) Some information in the help system may be inaccurate.** For example, in the help section on State Standards Search, users are advised to double-click an icon to bring up the netTrekker legend, whereas single-clicking is the appropriate action.
6. **(4) The help system is not keyword-searchable.** Users who have a very specific question but do not know the correct system terminology may have difficulty finding the answers they seek.

User Preferences

1. **(+) Users may customize the site in a variety of ways.** Users have the option to select a default state for standards and to choose how much information they wish to see in the search results page. Users may hide the tools panel on the right if they would like a wider display area.
2. **(2) Printer-friendly versions of pages are unavailable.** Consider providing an alternate form of all documents, resources, or files that can be printed in their entirety. Many users prefer to read text from a paper copy of a document. They find this to be more convenient, and it allows them to make

notes on the paper. Users sometimes print pages because they do not trust the web site to have these pages available at a later date. (Detweiler & Omanson, 1996; Nielsen, 1997).

Sections Not Covered

The following sections were not covered in this review:

- Registration
- Feature Tour
- Timelines

References

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