

Most readability principles apply to Web-site design

Klare's "Useful Information" is Useful for Web Designers

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Abstract

In many ways the writing principles that Klare recommended 37 years ago to promote high readability scores still apply to web-site design. Behind the pursuit of readability lies audience analysis, a concern with the intellectual level, previous experience, motivation, and reading goals of one's intended audience. Suitably adjusted to take account of online interactivity, those same concerns should guide design work on web structure and interfaces today.

I.7.5 Document analysis—human factors

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Introduction

George Klare's "useful information for communicators" (Klare, 1963) has two themes:

- Writing principles for high readability scores,
- The use of readability formulas to measure the readability of writing.

The latter theme, which also promotes readability formulas as necessities for good writing, is outdated, especially since written communication means more than readable text. Redish and Selzer (1985) discuss the inapplicability of reading formulas to technical communication.

However, Klare's former theme presents two principles writers should follow to develop

readable information:

- Readability for the reader,
- The writer's purpose.

Thirty-seven years and an entire communication medium later, these principles hold true for designing useful information on the World Wide Web. This article examines Klare's principles from the perspective of a web designer. First, I discuss Klare's definition of readability and how it applies to designing information for the web. Then I discuss Klare's two principles, readability for the reader and the writer's purpose, and explain how they are essential to web design as audience analysis and information objectives.

Definition of Readability and Its Web Application

"The term 'readability' has come to be used in three ways:

1. To indicate legibility of either handwriting or typography.
2. To indicate ease of reading due to the interest-value or the pleasantness of the writing.
3. To indicate ease of understanding or comprehension due to the style for writing" (Klare, 1963).

Klare's definition of readability is specific to the two-dimensional nature of writing by concentrating on style, type, and "pleasantness"

without saying anything about how useful it is to the reader.

Information on the web has three parts that make up its three-dimensional nature:

- **Architecture** is the structure and organization of information.
- **Interface** is the element between the user and the computer that conveys the architecture.
- **Interaction** is action the users assign to the elements based on the how they perceive the interface.

Although Klare's definition of readability is specific to writing, if you remove a few words, the meaning becomes applicable to web design. The following could be a viable web designer's definition of readability:

1. To indicate legibility.
2. To indicate ease of use.
3. To indicate ease of understanding.

This definition is subjective, like Klare's, but thorough audience analysis and clear user goals ensure that a web site can be usable and useful. (The term "readable" is not used today in web design circles. Rather, the preferred term is "usable.") Combine this definition with the ISO's definition of usability, "The *effectiveness*, *efficiency*, and *satisfaction* with which specified users achieve specified goals in particular environments" (HCI, 1999), and usability and readability are synonymous with successful web design. If a user can't use or read the information, or even find it, then it might as well not be. The designer has to ensure that the two parts of web information are usable and adhere to both definitions. The site must be a useful tool with which the users can accomplish their goals.

In this article, I use the term "designer" instead of "writer." There's no dispute that a designer,

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especially in the field of technical communication, should write well. However, to ensure that a web site is usable, a web designer needs to consider the whole rather than the parts of a web site. The designer assembles the parts and creates a whole, usable experience.

"Readability for the Reader" or Audience Analysis

"The better point of view is that readable writing is desirable and important for the reader's sake" (Klare, 1963). Klare's statement is also true in the world of web design. "The only path to success on the Internet is to design for the users: making sites trivially easy to use and focused on supplying the exact information and services users want. Fast" (Nielsen, 2000).

A designer uses audience analysis, a modern term for "readability for the reader's sake," to determine what and how information is desirable and important for the user. For Klare, "readability for the readers" was important because it was "desirable" for the readers and resulted in higher readability scores. On the web, designs with evidence of audience consideration are not only desirable for the reader, but useful as a tool that helps users accomplish their goal.

For example, Spool et al. describe a travel site where a user could plan a trip itinerary. However, because the designers did not analyze the audience, they made assumptions about the users' knowledge of airfare pricing:

This site assumed that users understand the basic paradigm of booking travel. Users didn't realize they were booking *segments* of a trip, most likely because of the terminology. The term segments is familiar to a travel agent but had little meaning to most users, who thought in terms of round trips (Spool et al., 1997).

Reading, Education, and Intellectual Levels

Klare's first suggestion for making writing readable is to analyze the audience's "reading, education, and intellectual levels." In the world of readability formulas, knowledge of the reader's reading and education levels could help the writer choose the correct vocabulary, depth of concepts and explanations, organization of content, tone, and voice. Web designers do the same thing but to a further extent because they are designing an experience. The architecture, interface, and interaction need to be at same level as the users'.

The web designer needs to find these levels to create a three-dimensional space that is desirable for the user. To a designer, the structure of the content is the structure of the space. The content is the interface for the reader, not just words or ideas of the writer.

Knowledge of these levels helps web designers label and organize the information's architecture, interface, and interaction. These levels determine the simplicity of the terminology, concepts, and models of the information.

Write so people will understand and act quickly. Do not write to show your profound grasp of complex concepts and terminology. This is the key to reducing the intellectual load on the user. People interpret words based on their own experience and usage. Tank means 'gas tank' to a gas station attendant, 'mobile weapons system' to an infantry man. (Human Factors International, 1999).

Background or Previous Experience with Topic

"If this [background] is known, a reader's interests become somewhat predictable because the amount of background a reader has is roughly correlated with his interest in the topic" (Klare, 1963). Like knowledge of education and reading levels, a writer's knowledge of the background or previous experience with the topic helps web designers know what terminology and depth of information to use.

Unlike writers, however, web designers need to be concerned with the users' background

or previous experience with the web as a communication medium. "Users can be measured along a scale of level of expertise using the web site, ranging from people new to the site to people with great familiarity with the site" (Nielsen, 1994).

People's previous experience with the paper medium gives it two advantages over the web:

- They are not afraid of paper. They trust paper and the information that comes on it. How casually do you write a check at a store that not only transfers money but also gives the merchant complete details about yourself? People do not put this trust in the web when they use it.
- People also have the opportunity to lose their way the web, where they can follow links, receive no clues about their place, and get lost entirely. Paper usually doesn't allow this. Books have page numbers, tables of contents, indexes. Also, their linear nature allows you to turn a page or thumb through information. You know where you were, where you are, and where you can go.

The fear and displacement that are unknown to paper users are unfortunately familiar to web users. Web designers have to design with a full knowledge of the audience's previous experiences using the web. They must ensure that the web site and pages do not let fear and displacement enter the minds of the users. In his weekly web column Alertbox, Jakob Nielsen wrote, "Trust is a long-term proposition that builds slowly as people use a site, get good results, and don't feel let down or cheated" (Nielsen Norman Group, 1999).

Fortunately, examples of web design that readers can trust are growing, but there are still simple mistakes that a web designer can avoid:

Bad links

- Broken links
- Incorrect links
- Links that do not go where they say they will go

- Links that do not provide information that was promised
- Text that looks like a link, but is not
- Links that do not allow the user to go back

Inconsistency

- Visual cues that tell the user nothing or misinformation
- Labeling schemes that do not match from one page to the next
- An incomplete or incomprehensible site structure
- Varying depths of difficulty from one page to the next

Insecurity

- No notification that any information a person gives is secure
- No mention that the information will not be shared
- No confirmation that the information was received
- No explanation of how the security of the site works

In addition to knowing the audience's previous knowledge or experience with the topic, web designers need to know the audience's experience and knowledge of the medium to avoid any distrust caused by bad web design.

Interests and Motivation

Klare's suggestions about discovering the reader's interests and motivation concentrate on whether or not the reader is "set to learn" the information. However, motivation has a different meaning for web design. Learning a site is not as important as interacting with the site and completing the goal (this is a different consideration from designing a web site for learning purposes). Users only need to learn the site's architecture, interface, and interaction once. The design should communicate the information needed for this one-time learning. This learning contributes to the web designer's job to design a site that caters to users' interests

and motivations as it relates to their use of the web site.

"When users go looking for information, they have a goal. They want to find out what time 'Saving Private Ryan' is playing at the local theater, or whether a Palm Pilot III will meet their needs" (User Interface Engineering, 1999).

Knowing the audience's interests and motivations is part of task analysis. Web designers analyze user goals and tasks to determine why a person would visit their site. Then they structure the parts to help the users accomplish their goal.

Web designers are not new to task analysis, or they shouldn't be, especially if they are from a technical communication background. In *The Nurnberg Funnel*, John Carroll states that technical communicators "are empirically driven by what people want to do, how they want to do it, and the problems they observe during the experience" (Carroll, 1990, p. 3). Because web sites are ultimately tools that aid users in accomplishing goals, Web site design is driven by what people do, how they want to do it, and what problems they observe. A web designer who knows user interests and motivations can make a site usable and useful by designing the whole to be a tool for the users.

Voluntary or Involuntary Attention to the Material

Klare ties a reader's attention to the material in with their motivation to learn the material. On the Web, everything seems to be voluntary. A web designer needs to design an experience with the idea that users are one click away from visiting another web site.

An entire site design needs to keep voluntary visitors at the web site. If the site is a shopping site, the designer needs to consider every aspect of the users' interaction with the information to ensure they will buy the product.

The designer conveys the hierarchy of information to the users so they can get the most important facts first and have the option to get more information. Also, designers show which

information needs voluntary or involuntary attention. For example, when you register for web sites, how does the site let you know that you have to attend to the registration process?

Corporate intranets are examples of sites that users might involuntarily attend to. For example, a company might place all their policies and procedures online and end their run of hardcopy. If users need to know a procedure or policy, they must go to the web and find it. The designer ensures that this happens, just like a person buying a product online.

User Goals or “the Writer’s Purpose”

Klare focuses on the writer’s purpose for the readability of information. The web designer’s purpose is different from the writer’s. The designer’s purpose derives from the users’ purpose to use the site as a tool to accomplish their goals. The web designer finds out what the users require from the web site—what the users’ wants and needs are—and develops the purpose of the site to fill those needs. “The goal is to provide for the needs of all of your potential users, adapting Web technology to their expectations, and never requiring the reader to simply conform to an interface that puts unnecessary obstacles in their paths” (Horton and Lynch, 1997).

The web is a user-driven medium with competing information one finger click away. Therefore, a web site must cater to the goals that the users want to accomplish. The entire purpose of the site caters to these goals. In order for designers to accomplish their goals, they need to break the goals into tasks. These tasks describe what a user can do with the information on the site. Goals and tasks not only describe a clear direction the design must take; they also define a goal the designer can accomplish. Audience analysis gives the designer the goals.

Reading Speed and Efficiency

Klare suggests writing for reading speed, efficiency, and the “principle of least effort.” These objectives also apply to web design. Web

designers design for reader efficiency by ensuring that all parts of the web design require the least amount of effort. If the users’ goals include reading speed and efficiency, then the design should account for those goals. For example, Flash media is popular for web sites; however, it requires users to get a special Shockwave plug-in to view. Another example is web sites that have numbers for their addresses. These design flaws do not cater to users’ sense of least effort and hamper users’ ability to accomplish their goals.

Also, it is well known that people read a lot more slowly from the computer screen than from paper. Therefore, any information on the screen must lessen users’ eyestrain.

Readable web pages:

- Are not text-heavy and make effective use of white space,
- Have no unnecessary animated graphics,
- Use high contrast for graphics and text,
- Include only necessary information.

A web designer needs to design for scanning with a clear and simple display of information. A well-designed site adheres to the least-effort principle, and a user’s reading speed and efficiency benefit from it. Presenting only the most relevant information in a clear, concise manner helps users determine the most important information and act upon it.

Reader Judgment

“He may stop reading relatively unacceptable material because the effort does not seem justified” (Klare, 1963). Klare preaches simplicity of writing to ensure that readers judge the material as readable and preferable. Simplicity is also the standard for information on the web. Simplicity makes a user’s experience pleasant and worth the effort. “Simplicity is, of course, the essence of good Web design. As our networked world grows increasingly complex, layers and streams of information constantly bombard us. If you want to successfully design for the Web, you will take control of your content and boil it down to its very essence” (Veen, 1998).

In usability circles, reader judgment means user satisfaction. User satisfaction does not equal user enjoyment, but it does mean that users can continue to come back to a site because it is an effective and satisfying tool for achieving their goal. Simplicity is paramount for user satisfaction. The web designer needs to engage users with the overall experience, not alienate them with impossible navigation or technical jargon. The web site shouldn't insult users by hiding the correct pathway, misleading them, or not providing them a way to fix their mistakes. The fear and displacement I previously discussed do not add to user satisfaction. Web designers can measure this by testing and retesting their design to ensure that the user is satisfied with their experience.

Readership

"If the writer is concerned chiefly with the probable number of his readers, more readable material again will provide for a rather consistent increase" (Klare, 1963). Klare's ideas for web designers can result in successful web design.

IBM's redesigned site is an example of how an easy to use site raises readership. "IBM's Web presence has traditionally been made up of a difficult-to-navigate labyrinth of disparate subsites, but a recent redesign has made it more cohesive and user-friendly. The redesign included making adjustments to more than 150,000 of these pages. According to IBM, the massive redesign effort is already paying dividends. The company says in the month after the February re-launch, traffic to the Shop IBM online store increased 120 percent, and sales went up a whopping 400 percent" (Batty, 1999).

Comprehension, Learning, and Retention

Users need to understand the content presented to them on the web, but unless it's a learning site (a site where one of the objectives is for users to learn the content), a web user doesn't need to learn and retain information. The web designer can design the site to do it for them. MyYahoo is an example of a site

that "learns" and retains information for the user. Cookies are an example of how a site can "learn" information about the user. These functions prevent users from needing to learn what topics they enjoyed the last time they visited or where they found the information the last time. The simplest way that web designers can have their sites learn or retain information about visitors is by allowing the use of the back button (not opening a new window) and by using a distinctive color for visited links.

Conclusion

Klare's thirty-seven-year-old useful information on writing readability can help web designers design usable and useful experiences for web users. The web site is a tool for users to accomplish their goals. Designers need to analyze their audience's reading and education levels about, backgrounds or previous experiences with, interests and motivations for, and attention to the web information. With that information, the designer determines the audience's goals for the web site and designs the site's architecture, interface, and interaction to meet those goals.

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