

Home Design Web Sites: An Educative Perspective

Short Paper for

Nature of Constructionist Learning

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## **User-directed Home Design**

Very simply, the goal of good home design is to produce a home that satisfies the inhabitants. Whether you do-it-yourself or have experts do it for you, by having a home custom built or remodeled, you are creating something that is both personally meaningful and personally representative; your home is an extension of your identity and structures your behavior.

The homeowner must come to some assessment of his or her needs and express those needs in a way that can be translated to design and implementation. Home design is in part an expressive act, involving interaction with people with different kinds of expertise, tools, perspectives, and resources. The successful completion of custom home design requires a negotiated understanding, drawing on the language of design and the language of use.

The stereotyped idea of design, from the layperson's perspective, is one of aesthetic choices: "what do I like" and "what looks good." Issues of usability, safety, efficiency, maintainability, durability, and accessibility are on the periphery, as difficult concepts for most people to express in concrete terms or apply to their particular situation. Personal expertise about what makes a home livable, based on knowledge of self, knowledge of home, and knowledge of practices within homes, is something everyone has, but is not formally recognized, and often not strongly linked with home design decisions.

Information, tools, and experiences that make these concepts learnable and actionable and make personal expertise explicit, may help to widen the role that homeowners can assume in the design process. Rather than having to blindly accept the decisions that builders make, the homeowner may become a co-constructor, making balanced decisions on design trade-offs, relating personal practices to spatial needs, and demanding homes and products that match those needs.

## **Educating about Home Design**

In educating themselves about home design, most people draw on formally created resources, such as magazines, books, and home design software. On the web, information sites take the place of books and magazines and design tools stand in for CAD software. MSN HomeAdvisor and Home Depot Kitchen Design Center are examples of an information site and a design tool, respectively. Below are descriptions of these sites, followed by a discussion of what they may offer from an educative perspective.

### **HomeAdvisor – Kitchen Planning Guide**

*“The essential guide to remodeling and redecorating your kitchen. Learn everything you need to know about kitchen styles, appliances, flooring, work centers, lighting, and more.”*

The HomeAdvisor Kitchen Planning Guide is sponsored by MSN, with content provided by Better Homes and Gardens. The site is an information resource that includes text, photos, and illustrated graphics. Home design is treated at the level of room layout, structure, and organization.

The site is organized with a top-level menu, containing subdivided categories that including “Planning Basics,” furnishings, decorative styles, and work centers (Figure 1). Every page of content is one level deep, accessed through this top-level index, and there are no sibling-level links between pages. The top-left page of the guide is “Kitchen Planning Basics,” which includes definitions for traditional design concepts, including the work-triangle and work stations (Figure 2). The next page, “Planning Numbers to Know,” provides a diagram of counter and cabinets with respect to a human figure and spatial measurements for heights, widths, and spacing (Figure 3).

Aside from these initial general concept pages, the ordering of the other categories does not appear to represent a progression of topics. The menu-style format made feasible by the web, supports non-linear access. A user may choose to look at layouts, then work stations, then appliances, and back to work stations. The categories suggest the meaningful

units or levels of kitchen design. According to this information structure, kitchen design involves plan layout, work station organization, product material decisions, and appliance decisions.

Most of the categories represent decisions that have to be made between products or design options. Each option includes a basic definition and information upon which to base a decision, organized as pros, cons, and other considerations (Figure 4). The pros and cons acknowledge trade-offs for each decision. As pages are not directly linked, decisions are implied to be discrete; a decision about cabinetry is not directly related to a decision about counters. This requires the user to develop an integrated description of their kitchen, on their own, through the accumulation of several discrete decisions.

### **Discussion: Example of an Information Site**

The Home Advisor site educates by providing information; in this sense, it takes an instructionist approach, where knowledge is delivered from an expert source to the learner. The subject, source, pacing, and value, however, are user-determined. The information is not imposed on the learner, but instead selected in support of a larger goal.

Much of the information on the Home Advisor site is somewhat abstract, in the language of design rather than the language of use. There are specialized terms and definitions, such as “work triangle,” and unusual models or perspectives, such as the plan (“bird’s eye”) layout. Throughout the site are directives for exact measurements of spatial relationships, which are left unexplained. The process by which conclusions are made about the efficiency of a work station or the cooking practices afforded by the L-shaped plan is hidden from users. The source of the expertise is also invisible. Who came up with these ideas? What was the context of their development? How were they developed and evaluated? What is incomplete or disputed?

Because the information is abstract and decontextualized (from development), the user may be limited in his or her ability to create and innovate. No explicit links are made

with his or her experience as a user of kitchens. The design process is presented as one of informational research followed by a series of discrete decisions, about layout, materials, appliances, and organization. Left out of this process is an explicit evaluation of needs and resources, experimentation with the current kitchen, the act of communication with the builders, and re-evaluation and adjustment of practices, following implementation.

This site does convey that design is about more than aesthetics. Although it includes sections on interior decorating and material choice, it primarily focuses on issues of use, including efficiency, comfort, durability, and behavioral affordances (being able to monitor the children, being able to entertain with dinner parties). This added dimension potentially widens the connection that learners can make with home design. The homeowner's role of "what do I like" can be extended to "what do I do, what do I need."

The terminology and definitions, in the language of design, may be limiting in the sense of overlooking the user's expertise and restricting innovation, but they do equip the user with a way of talking that can be empowering in conversations with design experts (builders, architects, contractors, suppliers, etc.). The user will recognize terms like the "26-foot rule" and expect the type and number of decisions that will have to be made. He or she will be aware that decisions have trade-offs, as demonstrated by the "pros" and "cons" and may be ready with choices as the builder suggests them.

Two diagrams on the site include a human figure as a reference point for measurements. This is remarkable because most design content, on the web and otherwise, tends to show layouts, furniture, appliances, and homes without the presence of people. These diagrams remind users that a home is sized in human dimensions, to work with the height and reach of the inhabitants. They also remind users that they can use their own body as a frame of reference when thinking about spatial requirements, potentially triggering reflection in practice, about how space structures, supports, and limits movement. Diagrams such as these encourage users to employ their own tacit expertise, in this case, body-sense.

HomeAdvisor provides knowledge in a textual format. The web interface gives the user more control over what content he or she chooses to access, but with this also comes responsibility on the learner to select, collect, and integrate the information he or she needs to communicate to design professionals.

### **Home Depot – Kitchen and Bath Design Center**

*“Welcome to Home Depot’s online design center, where remodeling your bath or kitchen is as easy as 1-2-3. Change the wall color, cabinet style, flooring, appliances, and more with a click of your mouse.”*

Home Depot offers a design tool to help users visualize product choices. It is representative of the majority of interactive design tools on the web (e.g. SeeMyDesign, WearDated, GE Virtual Light Designer), focusing on material and decorating style choices. The instructions and interface suggest that home design is easy when it can be visualized.

A user designing for a kitchen begins by “defining his/her style,” selecting from decorating styles, which include traditional, contemporary, country, and eclectic (Figure 5). When the user selects a style, a list of small images, representing individual kitchens, is presented as the next selection. The user may experiment by changing the original style choice, which brings up a new list of kitchen images.

These images have captions that include descriptors for the layout, including “I-shaped,” “island,” and “one-wall.” No explanation of these terms is provided, reinforcing a visually-based decision process. That this step is so abbreviated suggests that the tool developers expect the user to have an idea about the general layout and structure of the room, either because they are remodeling the surface features of their current kitchen or because they (or paid professionals) have made these decisions through a previous process.

After the user decides about the style and example kitchen, a product-choice screen is displayed (Figure 6). The user can select flooring, cabinetry, counters, appliance exteriors, walls, trim, faucets, and sink bowls from drop-down lists. Each product selection results in an update to the example kitchen photo.

After making as many product decisions as desired, the user can click on “summary” to receive a page that lists the chosen products (Figure 7). The user is instructed to print the page and bring it to Home Depot, in order to view and purchase the listed products. The summary contains information that is meaningful to the user, such as product photos and short textual descriptions, and a model number, which is information that is meaningful to the store.

### **Discussion: Example of a Design Site**

The Home Depot Kitchen and Bath Design Center is presented as a tool for use rather than an educational resource. The user makes decisions and the tool provides a visual representation of those decisions.

Design is minimized to an aesthetic process. Although the scene is photo-realistic, it is quite different from a real home, lacking utensils, food items, and most significantly, people. Material choices are not explicitly associated with their use in cooking or cleaning. The trade-offs of cost and usability are not incorporated. Aesthetic preferences are often perceived as easy and enjoyable; a kind of knowledge that anyone can have and express. By simply focusing on visual taste, the tool is missing the opportunity to make connections with richer and more resonant personal models, of what it means to live in and use a home.

Stages of home design that precede the tool, such as evaluation of needs and layout and structural decisions, and stages that must follow the tool, such as purchase and installation of the products, are not explicitly addressed. Part of the educative value of a decision-making tool is its ability to make visible the process of design; this tool provides an oversimplified sense of that process.

Like the HomeAdvisor site, the tool gives users a sense of the number and type of decisions they will have to make, although limited to surface choices about material and color. Although each decision can be made separately, the result is visually integrated. Therefore, a choice about cabinetry and a choice about counters can be considered in

tandem. The act of making the decisions, rather than just considering options, may give users a more cohesive and customized understanding that is easier to implement.

The Home Depot design tool does not provide instruction or evaluative feedback, just a visualization of the integration of aesthetic style decisions. The user must decide how well the example kitchen model represents his or her planned kitchen and has the responsibility of considering whether the product choices have more implications than that of aesthetics.

The end goal, a printout summarizing the user's final decisions, represents an interface for communication between the user and the store. It reflects the process that the user completed and is meaningful as a public entity. The summary doesn't externalize the cycle of decision-making; the selected products may have been the first ones chosen or may have only been decided upon after a process of trial-and-error.

The design tool gives users the opportunity to practice making decisions and "creating" an integrated room. This practice goes beyond play, in that it has external value, as a means of initiating a relationship with a consumer resource. The learning is in the designing (or doing), allowing users to take some ownership of the ideas, identify what is alterable, experiment, and concretize their decision-making process.

The information sites empower by equipping learners with the language of design while the design tools empower by giving learners experience with the process of design. They both address a subject that is personally meaningful and resonant with an individual's expertise with self and home. The above examples are powerful in their subject and help users extend their decision process to include research and play. They miss out on opportunities to situate knowledge in personal expertise, address the user's preconceptions, and make visible the context of development and application of design concepts. They also fail to give users the ability to experiment and invent in the language of use.