12 Principles of User Interface Design a.k.a. Usability

Meet your target

1 Users learn

experience other sites and Software

Each visit, each usage involves learning: fostering or disproving expectations.
Most learning occurs on the websites of others, or with other software.
→ Other sites/software define the expectations of *your* users.

know standards, concepts, behaviors

Users encounter websites and software with previous knowledge. Their experience leads them to believe, that it works "like everywhere else". Novices have less steady knowledge than experts.
→ Wherever possible the standard is used (shortcuts, menus, functions, operation).

build hypotheses

Users always have concrete or vague assumptions: where are they coming from, what is possible now resp. what are they expected to do, what will happen. The vaguer the supposition, the greater the insecurity.
→ The presentation (design, positioning, texts) supports correct assumptions and increases trust.

2 Users are in control

value & protect their input & data

Each input involves effort, and the user gives something. So each entry requires utmost respect and is to be preserved. Users reveal only, if they have trust and are treated respectfully.
→ Only comprehensibly neccessary data are requested. Data loss is avoided, deletion needs confirmation.

get what they need & want

Users decide what they do and when and how. The always get all functions and information (but none to many) needed in the current situation in appropriate manner. At any time the user stays in control over the system.
→ If they get only what is actually needed, they don't care that it's not everything.

understand their actions

To execute their control, users need comprehension for their competence: input, processing of data, results and effects. Trust bases on comprehension.
→ Each target/user group (novices, experts) achieves comprehension differently.

3 Users love-hate choices

demand often & much choices

Allegedly, the user has all decisions to do. In fact, users want as few decisions/choices as possible.
Their choice is valuable like their data and will only asked for if needed.
→ Option-sets are complete, clear, rare and tightly narrow.

despise irrelevant options

Functions, options to choose, or elements users don't need to reach their goals, obstruct decisions.
An appropriate integration of rarely needed options supports the "don't give me choices"-attitude.
→ Functions and options with (currently) low relevance are only visible when needed.

their choice makes the difference

Each made choice and decision has an effect — some immediately and directly, some later and indirectly.
Anyway, users always get a feedback confirming their decision or choice.
→ There are no functions, selections, decisions without (perceptible) effect.

4 Users are lazy

want the most efficient presentation

There is no need to search for information or elements, since they are recognizable as relevant by their positioning and design. Texts are well structured and make finding information easy.
→ What's currently most important is "in your face", less relevant things are easy to find.

need hassle-free error-correction

Suggestion, auto-complete, default values and plausibility checks reduce mistakes. Each input is checked and has appropriate error-handling. Critical entries are presented for confirmation.
→ Mistakes are immediately reported, users can correct it on spot or in the original context.

hate wasting their time

Meandering, dead-ends or unsuitable functions are recognized as such very early, so a new try is less frustrating than re-starting many steps later. Existing data are re-used if needed.
→ The first try should lead to the right and shortest way to success. Each detour is annoying.

Plan your actions

5 Manage expectations

reliable communication

All information are complete, correct, relevant. Labels are biunique. Tone and style are constructive, factual, no "I"-phrases. If previous knowledge is required, the user gets help to obtain it.
→ Esp. marketing-communication must only promise what software/website can deliver.

no contradictions

Direct and indirect communication are without contradictions, ever. Confirmations are green, a "Yes"-Button or check mark. Recjections are red, a "No"-Button or an cross/"X".
→ The attributed meaning of design elements supports the contentual meaning.

thruthful promises

All functions, elements are correctly labelled resp. the actual effect matches the label.
Nowhere are wrong, misleading or ambigious (direct or indirect) information.
→ No marketing-blah in the user interface; clear and unequivocal messages.

6 Synchronize all levels

hierarchy, functions, design, wording

No (virtual) object exists on its own. Each action is related to other actions.
The representations of objects and actions maintain such dependencies and relations.
→ Virtual representation works as metaphor; avoid breaking the metaphor.

optical & functional structures

Causal, sequential and other dependencies of functions are visually represented.
Design, arrangement, labelling depict functional limits, relations, conditions.
→ Top/bottom, left/right are interpreted as hierarchy or sequence — so they are such.

user goals & functions

Functions are presented in a way to show their appropriateness for the user's goals.
Labelling, arranging and behaviour (incl. success message) fit the user's mental models.
→ The software/website fulfills its primary purpose excellently. Secondary purposes are subordinate.

7 Value the context

of the data

Labels and information are compact, comprehensible and unambigious. The current context of content, functions and sequences determines the amount, type and portrayal of information.
→ Use the most common presentation of data/information for the current situation.

of the usage/goal

Goals and usage situation determine which wording, presentation and (functional) offerings are appropriate.
The relations to the real world are explicit and clear.
→ Not technical terms, but accepting how humans would describe it.

of the concrete situation

Information about progress, relevant status, estimated result (preview) are coherent, graspable, and according to the user context (other-directed, at work, self-determinded, on the way).
→ Presentation suits real situation (intrusiveness, volume, color, size, modality).

8 Deliver efficiency

best support for experts & novices

Professional experts get familiar terms and concepts. Computer experts get familiar elements and behaviours.
Novices get support with assistants and help (texts, documentation, training, hotline).
→ Using standards values the knowledge of experts and novices, and supports their learning.

effective information layout

Each view displays primary content resp. primary function as such. Users are pestered with the least acceptable amount of information and sequence length. The purpose of the view is identifyable without thinking.
→ What's relevant for the user, is marked as relevant in the presentation. There is only one primary purpose.

test, evaluate, probe

Whether a task can actually be carried out with little effort and still all special cases are considered, has to be tested in reality: corridor test, A/B testing, usability benchmarks, user-tests.
→ Only real users and real usage will tell, if and how efficient an interface is.

Know & use

9 Standard elements

correct & appropriate

Particularly form elements are standardized, additionally each system has its own elements.
Their meaning, function and usage are standard in the system context.
→ When using standard elements consult the according user interface guidelines.

wherever possible

When an standard element exists, it is used. Creating own elements means extra efforts for users to learn them, mostly the combination of standard elements is more effective.
→ Mock up tools help with the conceptualization. User-tests with prototypes show problems.

no deviatations

Using a standard element requires it to work according to standard — no exceptions in any regard.
When possible same elements are used (e.g. binary choices always as radio buttons, menu or check box).
→ For choosing 1 of X use radio buttons or menus, for N of X check-boxes.

10 Design guidance

grid, pattern, blocks, whitespace

What's near belongs together, what's apart has little relation. Invisible grids or patterns with blocks give uniform optical structure. These help user's orientation and understanding.
→ Layout: Few standard layouts with elements according to the actual context.

position, size, color, font

Each visual parameter is ascribed with meaning in regards to content, function and structure, depending on the context. These steer expectations and convey meaning indirectly.
→ Concrete design: The presentation supports the functional meaning of each element.

design supports function

Design is a service (not an art), it subordinates to usability and functionality resp. serves these.
Using standard design elements lightens orientation, understanding and using.
→ "Form follows function." "The prettier, the worse to use."

11 Consistency

same look = same meaning/effect

All elements with same function or structural message are designed identically (position, size, color, labelling).
Same functions have same sequences and same way of talking with the user.
→ The appearance conveys a correct hypothesis about the future effect.

similar look = similar meaning/effect

Labels and text also have an appearance, therefore the symbol for "bold" is "B".
The differences are in position (menu, modal dialog box, tool bar, palette).
→ The similarity of elements (appearance, position, etc.) correlates to their similarity in function.

different look = different meaning/effect

Esp. changing mode (palette, tool bar vs. dialog box, website overlay) are designed to convey the difference.
Design differences can occur in the elements themselves or in the surrounding design.
→ (Temporary) unaivalability is optically expressed.

12 Documentation

for Users

Answering the "Frequently Asked Question" (FAQ) or writing step-by-step-instructions show the worst problems, when compiled thoughtfully. Such problems involve labels, inconsistencies, sequences.
→ Adopt the user's perspective, their goals and understanding of the situation.

for your future self

At later development or corrections only few aspects are present in the developer's memory.
Concepts, used standards, interfaces, dependencies have to be noted seperately.
→ Detailed documentation as code-comment is only effective when base documents are available.

for your collegues

A deep and extensive technical documentation focusses on the concrete solution and describes *how* something is done and what is to be considered. Mostly the external context (the *why*) is missing.
→ User stories and personas establish mindset, goal and primary purpose.

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