Usability Principles

This week in class, we discussed the usability principles established by Jakob Nielsen, which prompted me to (once again) search for a definition of this concept that felt coherent within our professional field. It is interesting to view usability in this discipline as a field that studies how to design software so that users can interact in the easiest, most comfortable, and intuitive way possible—put simply and directly.

However, I would like to cite the ISO, which formally establishes that usability refers to the capability of a software product to be understood, learned, used, and attractive to the user under specific conditions of use [1]. Complementing this, it is understood that usability is the efficiency and satisfaction with which a product allows specific users to achieve specific goals in a particular context of use [2].

Based on these definitions, the emphasis placed on this topic in class begins to make sense. Initially, I did not understand why ten different principles were attributed to usability; however, upon deeper analysis, it is clear that usability must be considered an essential quality attribute for evaluating the ease of use of a graphical interface.

From this perspective, I can glimpse the primary notion that (perhaps in a vague and humble way on my part) gave rise to Nielsen's heuristics [3]: an object designed considering the psychology and physiology of the user is inherently more efficient. It requires less time to perform a particular task, is easier to learn just by observing the object, and is more satisfying to use.

Throughout my reading, I discovered that this list of ten principles is called "heuristics" because they function more as "rules of thumb" than as rigid, specific usability guidelines. I believe this distinction gives them the necessary weight to remain relevant today, serving as fundamental principles that must be considered from the very beginning of any iterative project.

As we know, these heuristics cover aspects such as visibility of system status, the match between the system and the real world, user

control and freedom, consistency and standards, error prevention, recognition rather than recall, flexibility and efficiency of use, aesthetic and minimalist design, help for users to recognize and recover from errors, and the need for accessible documentation and help.

Initially, the names of these principles seemed somewhat nonsensical or even "silly" to me, until I was surprised by an article analyzing and applying these principles to e-government [4]. This article discusses the practical implications of applying these theories in public administration, emphasizing the need to design digital public services that are accessible, efficient, and user-centered. All of this contributes to a better understanding of the critical role of Nielsen's heuristics in optimizing usability within electronic government platforms.

References (Format IEEE)

[1] *Software Engineering – Product Quality – Part 1: Quality Model*, ISO/IEC Standard 9126-1, 2001.

[2] E. R. Evers Castro, "La usabilidad en Ingeniería de Software: definición y características," *Revista de Ingeniería Informativa*, vol. 2, no. 1, 2014. [En línea]. Disponible: http://www.redicces.org.sv/jspui/bitstream/10972/1937/1/2.%20La%20usabilidad%20en%20Ingenieria%20de%20Software-%20definicion%20y%20caracteristicas.pdf

[3] J. Nielsen, "10 Usability Heuristics for User Interface Design," *Nielsen Norman Group*, 1994. [En línea]. Disponible: https://www.nngroup.com/articles/ten-usability-heuristics/

[4] G. A. Pérez-Morales, "Evaluación de la usabilidad en sitios de gobierno electrónico," *ICSHU Revista Científica*, 2024. [En línea]. Disponible: https://repository.uaeh.edu.mx/revistas/index.php/icshu/article/view/13429/12525