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UsabilityvsUX

The HCI studies the interaction between humans and computers, proving theoretical and methodological bases for understanding the computer and the people who use it, with the aim of generating effective and pleasant interaction for users, integrating knowledge of psychology, sociology, anthropology, ergonomics, etc. Usability is a quality attribute that evaluates the ease of use of UI [1]. It refers to the methods to improve the ease of use during the design process. It measures parameters such as the time to perform tasks, number of errors made, and the time needed to become a competent user. On the other hand, UX goes beyond the functional since it includes the entire user experience before, during and after the interaction with the product, including emotional, contextual factors in which the product will be used, motivational factors and knowing who the user is. Usability is what unites all the concepts, since usability will confirm if the system is efficient, effective, safe, practical, easy to learn, remember and use. HCI provides the theoretical framework for creating user centered designs, while UX focuses on the practical application of these principles to design useful products and enjoyable experiences.

One of the main differences between usability and UX is the approach. Usability focuses on the set of quality attributes that we consider during design development, such as effectiveness, efficiency, and ease of learning when interacting with the system. UX, on the other hand, evaluates an emotional and more subjective perception of how the user feels when using the product. It's important to understand that usability and UX aren't at odds with each other or contradictory. Usability can be more measurable if defined in advance, and although UX is more subjective, it's highly valuable in achieving the quality the user desires. A product that meets the defined quality attributes is of no use if the user doesn't enjoy using it.

Our Project is an arithmetic reinforcement game for 6-7 years old. Therefore, our primary users are children who are just beginning to develop their math and reading skills. Usability reflects a quality attribute such as the learning curve, so we aim for children to be able to quickly learn to use buttons without errors or confusion. On the other hand, UX implies knowing that our primary users were children, so we designed user-friendly buttons with clear labels explaining what the buttons do ("Roll dice, place board, confirm move") with the goal of generating less frustration and a more enjoyable experience.

One UX feature not implemented in the project was Cognitive Accessibility. This feature is very important to ensure children can easily understand the game's instructions and avoid a frustrating experience that could affect their use and effectiveness. The game currently has instructions with complex words like "object," "valid," and "objector," along with complex explanations that are not appropriate for their age and environment, which can cause frustration. The proposal is to simplify the language, taking into account children's cognitive abilities, with the goal of developing a more accessible and understandable experience for them.

To verify and measure this attribute, we can use the Number of Support Requests (counting the number of times a child asks for support or clarification after reading the instructions). A high number indicates low Cognitive Accessibility. Similarly, we can measure the time it takes for the child to begin performing the task after reading the instructions. Both metrics can be applied in usability tests, comparing the current version with the improved version and obtaining evidence of whether Cognitive Accessibility contributes to a better UX.

Ultimately, all three concepts are fundamental, especially considering our primary users when defining the quality attributes we want our product to achieve to achieve the desired usability. It's equally important to consider user characteristics to create a product with a user experience that keeps them satisfied throughout its entire use.

Referencias

[1]Nielsen J. (2003) Usability 101. http://www.useit.com/alertbox/20030825.html